

9TH EDITION



Mergers, Acquisitions, and Other Restructuring Activities

An Integrated Approach to Process,
Tools, Cases, and Solutions

Donald M. DePamphilis



MERGERS,
ACQUISITIONS, AND
OTHER RESTRUCTURING
ACTIVITIES

Praise for Mergers, Acquisitions, and Other Restructuring Activities, Sixth Edition

DePamphilis has masterfully covered in one book all relevant managerial, strategic, financial, accounting, legal and tax aspects of M&A in an easily understood roadmap for any M&A transaction, large or small. With totally up-to-date material, he provides the crucial information that is necessary in today's rapidly changing M&A world.

—**Lloyd Levitin**, Professor of Clinical Finance and Business Economics, University of Southern California

After teaching M&A for ten years, I was relieved when last semester I finally switched to DePamphilis' text. His single book replaced numerous other sources that I had to use before. His academic rigor is combined with his deep personal experience as a deal maker, and thus the textbook is highly valuable to both newcomers and those who have been involved in transactions for many years.

—**Viktoria Dalko**, Global Professor of Finance, Harvard University Extension School

Mergers, Acquisitions, and Other Restructuring Activities, Sixth Edition, delivers an essential understanding of the corporate restructuring processes by combining insights from many case studies with academic rigor. The book points out how M&A can create value as well as the ways it can lead to value destruction. In addition to the state-of-the-art valuation techniques, it also explains the regulatory corporate governance framework for both the United States and Europe. It's an excellent text, and I highly recommend it.

—**Luc Renneboog**, Professor of Corporate Finance, Center, Tilburg University

Great textbook that in a simple and straightforward manner combines the latest insights from academia with contemporary industry practices. It fits perfect in a class of MBA students or executives. I will for sure use it next time I teach M&A.

—**Karin Thorburn**, DnB Nor Professor of Finance, Norwegian School of Economics and Business Administration

Mergers, Acquisitions, and Other Restructuring Activities is quite simply an outstanding text. Don DePamphilis delivers a comprehensive guide to the M&A process from start to finish. . . . In sum, this book is a comprehensive, up-to-date, outstanding text.

—**Scott C. Linn**, R.W. Moore Chair in Finance and Economic Development, the University of Oklahoma

Praise for Mergers, Acquisitions, and Other Restructuring Activities, Fifth Edition

This is a truly comprehensive text and does a wonderful job at supplying the underlying motives and theory as well as the critical 'in practice' elements that many books lack. It spans all types of M&A and restructuring transactions and covers all the relevant knowledge from the academic research to the practical legal, accounting, and regulatory details. The book is up-to-date and teaches the state-of-the-art techniques used today. It contains numerous cases and spreadsheet support that enable the reader to put into practice everything that is covered. The combination of great writing and active case learning make this book the best I have seen in the M&A and restructuring arena.

—**Matthew T. Billett**, Associate Professor of Finance, Henry B. Tippie Research Fellow, University of Iowa

I am happy to recommend the Fifth Edition of *Mergers, Acquisitions, and Other Restructuring Activities*. Having used prior editions of Don DePamphilis' text, I can affirm that this edition builds on a firm foundation of coverage, real-world examples, and readability. My students have consistently responded favorably to prior editions of the book. In this edition, I was delighted to discover that Don is expanding his coverage of family-owned businesses, already a strength in his earlier editions that were distinguished by their coverage of the valuation of privately held businesses. Additional attention is paid to restructuring, bankruptcy, and liquidation as well as risk management, which are clearly topics of interest to every business person in today's economic climate.

—**Kent Hickman**, Professor of Finance, Gonzaga University

The fifth edition is one of the most comprehensive books on mergers and acquisitions. The text combines theories, valuation models, and real-life cases to give business students an overall insight into the M&A deal process. The up-to-date real-life examples and cases provide opportunities for readers to explore and to apply theories to

a wide variety of scenarios such as cross-border transactions, highly levered deals, firms in financial distress, and family-owned businesses. The chapter on restructuring under bankruptcy and liquidation both inside and outside the protection of the bankruptcy court is timely and most useful in light of today's economic crisis. Overall, this is an excellent book on mergers, acquisitions, and corporate restructuring activities.

—**Tao-Hsien Dolly King**, Rush S. Dickson Professor of Finance, Associate Professor,
Department of Finance, The Belk College of Business, University of North Carolina at Charlotte

Mergers, Acquisitions, and Other Restructuring Activities is an interesting and comprehensive look at the most important aspects of M&A and corporate restructuring—from strategic and regulatory considerations and M&A deal process, through several chapters on M&A valuation and deal structuring, to other types of restructuring activities. It not only provides a road map for the M&A and other corporate restructuring transactions, but also highlights the key things to watch for. The book is clearly written with extensive but easy-to-follow case examples and empirical findings and cases to illustrate the points in the text. It is a book by an expert, and for M&A instructors and students as well as practitioners.

—**Qiao Lui**, Faculty of Business and Economics, The University of Hong Kong

I am delighted with Don DePamphilis' *Mergers, Acquisitions, and Other Restructuring Activities, Fifth Edition*. It is a clear, comprehensive, and thorough discussion of the issues involving all restructuring activities. The use of mini-cases throughout each chapter both highlights and clarifies key elements of aspects of the decision-making process. The end-of-chapter discussion questions are ideally complemented with the problem set questions to challenge readers' understanding of the covered concepts. I am impressed with the current reflection of market conditions throughout the text and the extent of the recent changes to provide greater understanding for students. I expect to find that the students are also impressed with its the clarity and structure when I introduce this edition to my course. I recommend it to any professor covering mergers, acquisitions, bankruptcies, or other restructuring , , , to cover limited topics, or as a text for a complete course on restructuring.

—**John F. Manley**, Professor of Finance, Hagan School of Business, Iona College

Mergers and acquisitions continue to be amongst the preferred competitive options available to the companies seeking to grow and prosper in the rapidly changing global business scenario. In the Fifth Edition of his path breaking book, the author and M&A expert Dr. DePamphilis illustrates how mergers, acquisitions, and other forms of restructuring can help a company grow and prosper in the highly complex and competitive corporate takeover marketplace. Interspersed with most relevant and up-to-date M&A case studies . . . , this book deals with the multifarious aspects of corporate restructuring in an integrated manner . . . a lucid style. . . . Every effort has been made to deal with the intricacies of the subject by offering comprehensive coverage of the latest methods and techniques . . . of both public and private companies.

The book provides practical ways of dealing with M&As even in an economic downturn with a chapter on corporate restructuring under bankruptcy and liquidation. With the greatly enlarged and up-to-date material on varied aspects of the subject, the book provides a plethora of real-world examples which will go a long way in making the subject easy, stimulating, and interesting to both academicians and practitioners alike.

—**Donepudi Prasad**, ICAFI Business School, Hyderabad, India

Professor DePamphilis has made significant, important, and very timely updates in the Fifth Edition of his text. He incorporates contemporary events, such as the credit crunch and the latest accounting rules in the West, plus M&A issues in emerging markets including family businesses. He also readdresses corporate governance, a topic that will become increasingly important in Business Schools the world over in M&A. This text has become, and will increasingly become, the definitive comprehensive and thorough reference on the subject.

—**Jeffrey V. Ramsbottom**, Visiting Professor, China Europe International Business School, Shanghai

I think the Fifth Edition of *Mergers, Acquisitions, and Other Restructuring Activities* does a comprehensive job of covering the M&A field. As in the previous edition, the structure is divided into five parts. These are logical and easy to follow, with a nice blend of theory, empirical research findings, and practical issues. I especially like two chapters—the chapter on bankruptcy and liquidation is extremely relevant in today's economic conditions, and the chapter on private equity and hedge funds is interesting because M&A activities by these players are not well-documented in

the literature. Overall, I believe that MBA students would find the book useful both as a textbook in class and as a reference book for later use.

—**Raghavendra Rau**, Purdue University and Barclays Global Investors

This book is truly outstanding among the textbooks on takeovers, valuation, and corporate restructuring for several reasons: the DePamphilis book not only gives a very up-to-date overview of the recent research findings on takeovers around the world, but also offers nearly 100 recent business cases. The book treats all the valuation techniques in depth and also offers much institutional detail on M&A and LBO transactions. Not just takeover successes are analyzed, but also how financially distressed companies should be restructured. In short, the ideal textbook for any M&A graduate course.

—**Luc Renneboog**, Professor of Corporate Finance, Tilburg University, The Netherlands

The Fifth Edition of *Mergers, Acquisitions, and Other Restructuring Activities* by Professor Donald DePamphilis is an excellent book. Among its many strengths, I could easily identify three features that stand out. First, it is up to date, covering the recent knowledge published in most of the academic journals. Second, it offers comprehensive coverage of the subject matter, including chapters on the U.S. institutional, legal, and accounting environment; on technical aspects; valuation techniques; and strategic issues. Third, it is practical by including Excel Spread Sheet Models and a large number of real cases. These three aspects along with the . . . end-of-chapter discussion and review questions, problems, and exercises make this book one of the best choices for the subject.

—**Nickolaos G. Travlos**, The Kitty Kyriacopoulos Chair in Finance, and Dean, ALBA Graduate Business School, Greece

It is difficult to imagine that his fourth edition could be improved on, but Dr. DePamphilis has done just that. This edition is clearer, better organized, and contains a wealth of vitally important new material for these challenging times. I especially recommend the new chapter on liquidation for members of boards of directors who face extreme circumstances. This is a remarkably useful book for readers at any level—students, instructors, company executives, as well as board members. Bravo Don!

—**Wesley B. Truitt**, Adjunct Professor, School of Public Policy, Pepperdine University

The book is an excellent source for both academicians and practitioners. In addition to detailed cases, it provides tools contributing to value creation in M&A. A must book for an M&A course.

—**Vahap Uysal**, Assistant Professor of Finance, Price College of Business, University of Oklahoma

An impressive detailed overview of all aspects of mergers and acquisitions. Numerous recent case studies and examples convince the reader that all the material is very relevant in today's business environment.

—**Theo Vermaelen**, Professor of Finance, Insead

The DePamphilis text is an excellent textbook that provides a full end-to-end view of the process with the appropriate level of detail. I have reviewed many M&A texts, and this text provides an excellent process view rather than just a series of topics.

—**Stephen G Morrisette**, University of Chicago

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Tools, Cases, and Solutions

NINTH EDITION

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Dedication

I would like to express my gratitude for my wife, Cheryl, and my daughter, Cara, whose patience made the completion of this book possible; for my brother, Mel, who encouraged me to undertake this book; and for the blessings of my beautiful grandchildren Max and Hannah.

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About the Author

Dr. Donald DePamphilis has managed through closing more than 30 transactions, including acquisitions, divestitures, joint ventures, minority investments, licensing, and supply agreements in a variety of different industries. These industries include financial services, software, metals manufacturing, business consulting, healthcare, automotive, communications, and real estate. He earned a BA in Economics from the University of Pittsburgh and an MA and a PhD in Economics from Harvard University.

He is currently Emeritus Professor of Finance at Loyola Marymount University in Los Angeles, where he has taught mergers and acquisitions, corporate restructuring, deal making, financial analysis, financial modeling, micro- and macroeconomics (to both business and nonbusiness majors) to undergraduate, MBA, and Executive MBA students. In addition, he has taught corporate governance and executive leadership to Executive MBA students.

Dr. DePamphilis has also served as an instructor in the Loyola Marymount University International Executive Education Program, teaching corporate restructuring tactics and strategies in a global context. He has served as chair of the Student Investment Fund at Loyola Marymount University's College of Business and has been a member of the graduate business program curriculum committee. He has also directed curriculum development and faculty recruitment efforts in specific teaching modules within the University's Executive MBA program.

Dr. DePamphilis is the recipient of the Loyola Marymount University Executive

MBA Leadership Achievement Award and has represented the University on the Los Angeles Council of Economic Advisors serving Mayor Eric Garcetti on matters relating to the economy.

Dr. DePamphilis has lectured on M&A and corporate restructuring, financial analysis, and economics at the University of California, at Irvine, Chapman University, and Concordia University. As a visiting professor, he taught mergers and acquisitions and corporate restructuring strategies at the Antai School of Management, Shanghai Jiao Tong University, in Shanghai, China. He has also served as a Teaching Fellow in economics at Harvard University.

The author has more than 25 years of experience in businesses ranging in size from small privately owned firms to Fortune 100 companies in various industries and with varying degrees of responsibility. Previously, he served as vice president of Electronic Commerce for Experian Corporation, vice president of Business Development at TRW Information Systems and Services, senior vice president of Planning and Marketing at PUH Health Systems, director of Corporate Business Planning at TRW, and chief economist for National Steel Corporation (formerly a Fortune 100 company).

He also served as Director of Banking and Insurance Economics for Chase Econometric Associates providing consulting services to dozens of clients in private industry and the government and as an economic analyst for United California Bank. While at United California Bank, he developed a complex, interactive econometric forecasting, and

simulation model of the US economy, which was used in both internal and external bank forecasts and in conducting simulations of alternative economic outcomes based on differing assumptions. Dr. DePamphilis has also spoke to numerous industry trade associations and customer groups and to Los Angeles community and business groups. He is a graduate of the TRW and National Steel Corporation Executive Management programs.

Dr. DePamphilis has authored numerous articles, chapters in books, and books on M&A. He has published in the areas of business planning and development, marketing, and economics in peer-reviewed academic journals, as well as business and trade publications. His books include the highly popular, award-winning *Mergers, Acquisitions, and Other Restructuring Activities*, now in its ninth edition; *Mergers and Acquisitions Basics: All You Need to Know*; and *Merger and Acquisition Basics: Negotiation and Deal Structuring*. *Mergers, Acquisitions, and Other Restructuring Activities* has been translated into Chinese (now in its second edition) and Russian and has been used in more than 100 universities

worldwide. The 7th edition was voted the 2014 Textbook Excellence Award (Texty) in the business book category by the Text and Academic Authors Association. For more detail, see <http://www.taaonline.net/2014-taa-textbook-award-winners>

Dr. DePamphilis has served as a consultant in product and personal liability, patent infringement, and business valuation litigation, including but not limited to providing expert analysis and depositions in cases primarily related to mergers and acquisitions. He has also served in an advisory capacity on matters of acquisition target selection, negotiation support, and business valuation.

The author has been a board member of the National Council of Orange County (California), Economics Club of Pittsburgh, Economic Council of Western Pennsylvania, and the Hospital Council of Western Pennsylvania. He has also been active in the Rotary Club and Junior Achievement.

Please forward any comments you may have about this book to the author at dondepam@pacbell.net. Your suggestions about ways in which this text may be improved are welcome.

Preface to the Ninth Edition

TO THE READER

The pace of change in today's world could hardly have been imagined a few generations ago. The accelerating change and broadening scope of technology has irretrievably altered our lifestyles and the way we conduct business. New products and services are required to address the needs of the world's aging population. And an increasingly interconnected world in terms of information, capital, and trade flows means that what happens in one region impacts other areas almost in "real time," having both immediate and long-term implications. For example, largely unanticipated events such as "Brexit" (i.e., the UK's vote to withdraw from the European Union) in mid-2016 immediately whipsawed global financial markets and raised questions about the long-term viability of the European Union and future global trading patterns. The largely unexpected outcome of the US elections in late 2016 created additional uncertainty about the country's tax and trade policies and their potential impact on future economic growth. Mass migration from civil war, culture clash, and questions about who is benefiting from expanding international trade have stoked concerns about the sustainability of the "globalization" of the last four decades. Uncertainty has become the norm. How we deal with it is the challenge.

The dynamism of today's global economy requires corporations to restructure their businesses to remain competitive. This restructuring entails activities ranging from mergers and acquisitions to divestitures and

spin-offs to reorganization under the protection of national bankruptcy laws. Against this backdrop, this book attempts to bring clarity to what can be an exciting, complex, and sometimes-frustrating subject. Intended to help the reader think of the activities involved in mergers, acquisitions, business alliances, and other types of corporate restructuring in an integrated way, M&A activities are discussed in the context in which they occur.

This book is unique in that it is the most current, comprehensive, and cutting-edge text on M&A and corporate restructuring available. It is *current* in that it includes many of the most up-to-date and notable deals and precedent setting judicial decisions, as well as new regulations, trends, and tactics employed in M&As. Today's challenges threaten to make obsolete some of the tools employed to value businesses, the way M&As are financed, and the way society thinks about M&As. The implications of the continuing low (and in some instances negative) interest rate environment for commonly used valuation methodologies has yet to be fully understood. The proposed takeover of Time Warner by AT&T in late 2016 raises concerns that such combinations could concentrate too much power in a single media company. Today's politics, policies, and economics are reflected in the case studies in the ninth edition which involve deals either announced or completed during the last several years. This edition is *comprehensive* in that nearly all aspects of M&As and corporate restructuring are explored from business planning to target selection and valuation to negotiation and integration. It is *cutting edge*

in that conclusions and insights are anchored by the most recent academic research, with references to more than 160 empirical studies published in leading peer-reviewed journals just since 2015.

The highlights of the new edition are listed here:

- **New Cases:** More than ninety-percent of the nearly forty case studies are new and involve transactions announced or completed since 2015. These cases represent friendly, hostile, highly leveraged, and cross-border deals in ten different industries, involving public and private firms, as well as firms experiencing financial distress. All end of chapter case studies begin with a “Key Objectives” section indicating what the student should learn from the case study and include discussion questions and solutions available in the online instructors’ manual to measure student comprehension (<https://textbooks.elsevier.com/web/Manuals.aspx?isbn=9780128016091>).
- **Latest Research:** This edition focuses on the most recent and relevant academic studies, some of which contain surprising insights changing the way we view this subject matter. Recent research has significant implications for academicians, students, M&A practitioners, and government policy makers shedding new light on current developments and trends in the ever-changing mergers and acquisitions market.
- **New Content:** Each chapter contains fresh information and insights on the changing market for M&As. This new content is highlighted in the following discussion.
M&A Environment: Chapter 1 which provides an overview of M&As now includes updated merger wave activity, the impact of target earnings management

on acquirer postmerger financial returns, how takeover defenses affect premiums paid and deal completion rates, and the impact of investor sentiment on bidder abnormal returns. The chapter also discusses the limitations of the methodologies and data employed in the various academic studies cited. The discussion of M&A regulatory matters in Chapter 2 has been expanded to include the impact of the United States Federal Trade Commission’s net neutrality rules on M&As, the effectiveness of Securities (SEC) and Exchange Commission enforcement actions and their impact on firm value, and new SEC M&A related governance rules, as well as an update of prenotification filing and SEC reporting requirements. Chapter 3, which deals with takeover tactics and defenses, contains an expanded discussion of the role of the board of directors in promoting good corporate governance and the incentive for firms to reincorporate to other countries to take advantage of more management friendly laws. This chapter also addresses how concentrated ownership can affect board member selection, how the “white squire” defense can be used to entrench management, and the impact of an acquirer’s corporate culture on governance practices and a firm’s M&A strategy.

M&A Process: Chapter 4 introduces the 10 steps of the M&A process with a focus on the role of business and acquisition plans and now contains a more detailed discussion of the role of a firm’s corporate mission/vision in achieving successful outcomes, as well as how “blue ocean” strategies can be used to create markets without competitors. Implementation phases of the M&A process outlined in Chapter 5 now describe the characteristics of

“high performing acquirers” and how high entry barriers impact competition within markets, innovation, and provide an incentive for startups to be acquired by leading market competitors. Furthermore, this chapter addresses the growing popularity of “data analytics” in M&A and how the acquirers’ approval process affects target selection. Chapter 6 deals with postmerger integration and includes new discussions of alternative integration strategies and the importance of selecting the integration strategy consistent with the acquirer’s objectives and the circumstances surrounding closing. The chapter discusses in more detail how to address employee concerns and the challenges of integrating family or privately owned firms. Finally, the chapter describes how digital tools can be used to accelerate cultural change within the combined firms.

M&A Valuation and Modelling:

Chapter 7 focuses on discounted cash flow valuation and now discusses how firms often adjust discount rates when subject to financial and operational constraints. The chapter also addresses the knotty question of how abnormally low interest rates may distort firm valuation and how the CAPM can be adjusted to reflect the bias introduced by the “near zero” (or negative) interest rate environment of the last decade. Chapter 8 introduces the basics of relative valuation methods and includes a discussion of what valuation professionals actually do in practice. The basics of M&A modeling introduced in Chapter 9 include new examples of how companies may use pro forma accounting to manipulate their performance and an update to the financial models accompanying this book. Chapter 10 which describes the challenges of buying and selling private

firms now addresses the selection of the appropriate marginal tax rate when the acquirer is something other than a publicly traded firm, the wealth effects of alternative exit strategies for closely held firms, and the use of special purpose acquisition corporations as a mechanism for taking a private firm public.

Deal Structuring and Financing

Strategies: Legal and payment considerations described in Chapter 11’s deal structuring discussion have been updated to include the role of convertible securities in resolving acquirer and target concerns when both are lacking in critical information about the other. Moreover, the chapter contains recent changes in Delaware law allowing for expedited backend mergers involving public companies and reducing the need for expensive and time consuming top up options and dual track structures. Recent court rulings clarifying when squeeze out mergers should be subject to the “business judgment rule” or the more rigorous “unified fairness standard” are also addressed. Chapter 12 deals with tax and accounting aspects of deals and now addresses the criteria for determining the acquirer in a deal, the implications of this designation, and how this determination is sometimes ambiguous. This chapter also discusses the relationship between “restructuring” charges and the likelihood of a subsequent takeover bid, new Treasury rules intended to discourage “tax inversions,” potential changes in corporate tax rates and their implications for inversions, and recent changes in how goodwill is calculated and how it is treated for private firms under GAAP. Finally, this chapter discusses the impact on a firm’s balance sheet of pending Financial Accounting Standards Board reporting requirements

for operating leases and pending changes in revenue recognition methodology and its potential impact on M&As. Chapter 13 addresses M&A financing issues and includes an updated discussion of how M&As are funded as well as the financing implications for M&As of near zero/negative interest rates. This chapter also contains a discussion of new bank regulatory guidelines pertaining to leveraged loans and their potential impact on LBOs and a more detailed discussion of how dilution occurs and its potential impact on current shareholders. Chapter 14's discussion of the application of financial models to M&As includes a more detailed discussion of how solvency and liquidity considerations can constrain how a deal is structured and financed.

Alternative Business and Restructuring Strategies: Chapter 15 addresses alternatives to M&As and has been updated to include a discussion of how different tax rates influence the selection of the legal entity for various types of business alliances, how intangible assets contributed to JVs are valued and how they may impact the determination of equity contributions made by partners; and an updated discussion of the advantages and disadvantages of alternative alliance structures. Chapter 16 deals with non-M&A related corporate restructuring and now describes the mechanics of how IPOs are executed, the typical IPO timeline, and how purchase premiums are determined. Furthermore, the chapter includes a more detailed discussion of how spin-offs, split-offs, and Morris and Reverse Morris Trusts must be structured to qualify as tax-free deals, implementation issues, and the legal agreements that must be negotiated. Chapter 17 deals with bankruptcy and now analyzes how

the strength of creditor rights affects a firm's financing strategies and includes a complete rewrite of the section on bankruptcy prediction models. This chapter also addresses the degree to which so-called systemic risk has changed since the 2008 global financial market meltdown and the potential impact on M&As. In dealing with crossborder M&As, Chapter 18 includes a discussion of the implications of the recent backlash against globalization for cross border M&As, as well as an expanded analysis of the motives for such deals, common bidding strategies and tactics in international M&As, and how to adjust for political risk in valuing firms in both emerging and developed countries. This chapter also discusses the potential for high financial returns from undertaking M&As in "frontier economies."

Updated Ancillary Materials: Both student and instructor PowerPoint slide presentations have been updated to reflect recent research, trends, and new chapter content. Located below each slide, Instructor PowerPoint presentations also contain suggested topics and key points to be made by the instructor for each slide. The student PowerPoint slides are structured to serve as student study guides.

The textbook contains more than 300 end-of-chapter discussion and review questions, problems, and exercises that give readers the opportunity to test their knowledge of the material. Many of the exercises enable students to find their own solutions based on different sets of assumptions, using Excel-based spreadsheet models available on the companion site to this textbook. Solutions to all questions, problems, and exercises are available on the expanded Online Instructor's Manual, available to instructors using this book

(<https://textbooks.elsevier.com/web/Manuals.aspx?isbn=9780128016091>).

The online manual contains more than 1600 true/false, multiple-choice, and short essay questions as well as numerical problems. In addition to Excel-based customizable M&A valuation and structuring software, Power Point presentations, and due diligence materials, the companion site also contains a Student Study Guide. This book is intended for students in courses on mergers and acquisitions, corporate restructuring, business strategy, management, and entrepreneurship. This book works well at both the undergraduate and graduate levels. The text also should interest financial analysts, chief financial officers, operating managers, investment bankers, and portfolio managers. Others who may have an interest include bank lending officers, venture capitalists, government regulators, human resource managers, entrepreneurs, and board members. Hence, from the classroom to the boardroom, this text offers something for anyone with an interest in mergers and acquisitions, business alliances, and other forms of corporate restructuring.

TO THE INSTRUCTOR

This text is an attempt to provide organization to a topic that is inherently complex due to the diversity of applicable subject matter and the breadth of disciplines that must be applied to complete most transactions. Consequently, the discussion of M&A is not easily divisible into highly focused chapters. Efforts to compartmentalize the topic often result in the reader's not understanding how seemingly independent topics are integrated. Understanding M&A involves an understanding of a full range of topics, including management, finance, economics, business

law, financial and tax accounting, organizational dynamics, and the role of leadership.

With this in mind, this book provides a new organizational paradigm for discussing the complex and dynamically changing world of M&A. The book is organized according to the context in which topics normally occur in the M&A process. As such, the book is divided into five parts: M&A environment, M&A process, M&A valuation and modeling, deal structuring and financing strategies, and alternative business and restructuring strategies. Topics that are highly integrated are discussed within these five groupings. See [Exhibit 1](#) for the organizational layout of the book.

This book equips the instructor with the information needed to communicate effectively with students having different levels of preparation. The generous use of examples and contemporary business cases makes the text suitable for distance learning and self-study programs, as well as for large, lecture-focused courses. The extensive use of end-of-chapter discussion questions, problems, and exercises [with answers available in the Online Instructors' Manual (<https://textbooks.elsevier.com/web/Manuals.aspx?isbn=9780128016091>)] offers instructors the opportunity to test the students' progress in mastering the material. Prerequisites for this text include familiarity with basic accounting, finance, economics, and management concepts.

ONLINE INSTRUCTOR'S MANUAL

The manual contains PowerPoint presentations (including instructor commentary for most slides) for each chapter [completely consistent with those found on the companion site (<https://www.elsevier.com/books-and-journals/book-companion/9780128016091>)], suggested learning objectives, recommended ways to teach the materials, and detailed syllabi for both undergraduate- and graduate-level classes, and an exhaustive test bank.

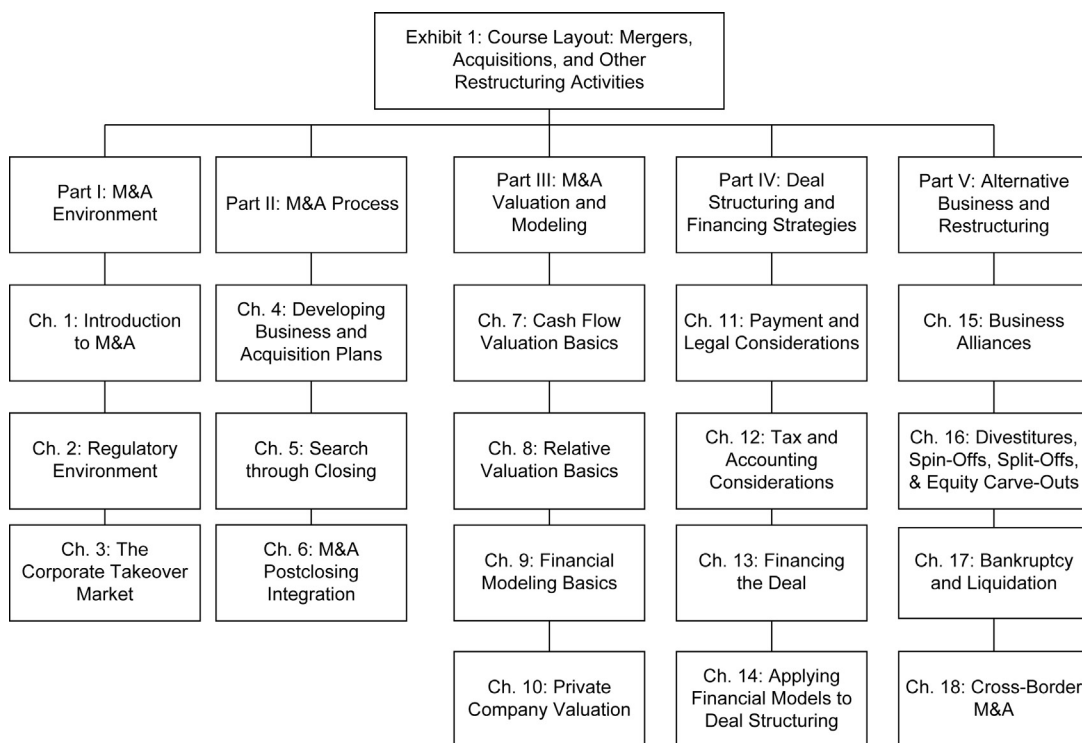


EXHIBIT 1 Course Layout: Mergers, Acquisitions, and Other Restructuring Activities.

The test bank contains more than 1600 test questions and answers (including true/false, multiple choice, short essay questions, case studies, and computational problems) and solutions to end-of-chapter discussion questions and end-of-chapter business case studies in the book. The online manual also contains, in a file folder named “Preface to the Online Instructor’s Manual and Table of Contents,” suggestions on how to teach the course to both undergraduate and graduate classes (<https://textbooks.elsevier.com/web/Manuals.aspx?isbn=9780128016091>).

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STUDENT STUDY GUIDE

The guide contained on the companion site to this book includes chapter summaries highlighting key learning objectives

for each chapter as well as true/false, multiple-choice, and numerical questions and answers to enhance the student's learning experience.

MANY PRACTICAL, TIMELY, AND DIVERSE EXAMPLES AND CURRENT BUSINESS CASES

Each chapter begins with a vignette intended to illustrate a key point or points described in more detail as the chapter unfolds. Hundreds of examples, business cases, tables, and figures illustrate the application of key concepts. Many exhibits and diagrams summarize otherwise-diffuse information and the results of numerous empirical studies substantiating key points made in each chapter. Each chapter concludes with a series of 10 discussion questions and recent integrative end-of-chapter business cases intended to stimulate critical thinking and test the reader's understanding of the

material. Many chapters also include a series of practice problems and exercises to facilitate learning the chapter's content.

COMPREHENSIVE YET FLEXIBLE ORGANIZATION

Although the text is sequential, each chapter was developed as a self-contained unit to enable adaptation of the text to various teaching strategies and students with diverse backgrounds. The flexibility of the organization also makes the material suitable for courses of various lengths, from one quarter to two full semesters. The amount of time required depends on the students' level of sophistication and the desired focus of the instructor. Undergraduates have consistently demonstrated the ability to master eight or nine chapters of the book during a typical semester, whereas graduate-level students are able to cover effectively 12 to 14 chapters during the same period.

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PART I

THE MERGERS AND ACQUISITIONS ENVIRONMENT



"You've caught the acquisition fever."

Merger and acquisition (M&A) activity globally and in the United States declined in 2016 from the prior year's pace. According to research firm Dealogic, more than 8000 deals totaling almost \$1.9 trillion were announced in 2016 in the United States. Worldwide, announced M&A deals topped \$3.7 trillion, well below 2015's record \$4.4 trillion, which exceeded the prior record of \$4.6 trillion set in 2007.

At the time of this writing, the global recovery remains fragile and spreading geopolitical conflict continues to spark civil wars and mass migrations. China's economy, the second largest in the world, sputters amid a growing mountain of debt. Growing populism in the United States seeks to insulate home markets through protectionism. Britain's exit from the European Union and the rise of populism in parts of Western Europe raise concerns about the long-term viability of the European Union. The limits of expansionary monetary policies are evident. Countries engage in thinly disguised currency manipulation by driving interest rates into negative territory. By the end of 2016, more than \$13 trillion worth of government bonds showed negative returns creating unprecedented financial market conditions and a murky outlook.

In this highly uncertain environment, corporate decision making is increasingly difficult. Strategic questions abound. Should excess cash flows be reinvested in the firm or distributed to shareholders? Does restructuring through a combination of divestitures and spin-offs make sense? Should firms continue to "buy" growth through M&As and run the risk of overpaying, making achieving required shareholder returns more challenging? Should corporate executives stay with what they know or diversify? Should firms downsize their operations to better focus on markets in which their core competencies give them a competitive advantage? These are important questions with no easy answers.

While this book does not promise quick answers to these demanding questions, it does offer insight into all aspects of the corporate restructuring process from takeovers and joint ventures to divestitures and spin-offs and equity carve-outs and reorganizing businesses inside and outside the protection of the bankruptcy court. Consequently, virtually all of the material covered in this book can be viewed as part of the corporate restructuring process. This part discusses the context in which mergers, acquisitions, and corporate restructuring occur, including factors often beyond the control of the participants in the M&A process.

Chapter 1 provides an overview of M&As of basic vocabulary, the most common reasons why M&As happen, and how such transactions occur in a series of somewhat predictable waves. Alternatives to M&As and participants in the M&A process, from investment bankers to lenders to regulatory authorities, are discussed in detail. The chapter also addresses whether M&As benefit shareholders, bondholders, and society, with conclusions based on recent empirical studies.

The tangle of regulations that impact the M&A process are covered in Chapter 2, including recent changes in US federal and state securities and

antitrust laws as well as environmental, labor, and benefit laws that add to the increasing complexity of completing deals. The implications of cross-border transactions, which offer an entirely new set of regulatory challenges, also are explored here and elsewhere in this book in the setting in which they commonly occur.

Viewed in the context of a market in which control transfers from sellers to buyers, Chapter 3 addresses common takeover tactics employed as part of an overall bidding strategy, the motivation behind such tactics, and the defenses used by target firms to deter or delay such tactics. Bidding strategies are discussed for both friendly and unwanted or hostile business takeovers. In hostile deals, the corporate takeover is viewed as a means of disciplining underperforming management, improving corporate governance practices, and reallocating assets to those who can use them more effectively. While such takeovers occur infrequently, the mere threat of hostile takeovers often encourages incumbent managers to change their behavior. This chapter also addresses the growing role activists are taking in promoting good corporate governance and in disciplining incompetent or entrenched managers.

The reader is encouraged to review deals currently in the news and to identify the takeover tactics and defenses employed by the parties to the transactions. One's understanding of the material can be enriched by attempting to discern the intentions of both the acquiring and target firms' boards and management, if the proposed business combination makes sense, and thinking about what you might have done differently to achieve similar goals. While completed deals tend to make the headlines, much can also be learned by examining those that fail.

An Introduction to Mergers, Acquisitions, and Other Restructuring Activities

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If you give a man a fish, you feed him for a day. If you teach a man to fish, you feed him for a lifetime.
—Lao Tze

INSIDE MERGERS AND ACQUISITIONS: BATTLE OF THE DISCOUNT RETAILERS—DOLLAR TREE ACQUIRES FAMILY DOLLAR

KEY POINTS

- Mergers between competitors offer the greatest potential shareholder value creation, but they also face the greatest scrutiny from regulators.
- Protracted bidding wars and negotiations can weaken operationally both the acquirer and target firms.
- Realizing anticipated synergy on a timely basis often is elusive.
- Postmerger integration is often the determining factor in the ultimate success or failure of a merger.

In an industry in which three major competitors all have the word dollar in their names, it is not surprising that it is sometimes difficult to keep the players straight. For purposes of clarity, the participants in this transaction are Dollar Tree (the acquirer), Family Dollar (the target), and Dollar General (the losing bidder). If you can keep that straight, what follows offers insight into challenges common to many mergers and acquisitions (M&As).

Discount retailing in the United States is dominated by Walmart, Dollar General, Family Dollar, Dollar Tree, and Five Below. While Walmart is the proverbial 800-lb gorilla in the industry, Dollar Tree and Family Dollar, if combined, offered the greatest potential for significant value creation (synergy) and for receiving regulatory approval because few store locations overlap. Although their business strategies or models are different, the limited operational overlap provides greater geographic coverage and access to new customers. Common overhead offers significant opportunities for reducing operating costs and buying in larger volume provides increased negotiating leverage with vendors.

While both stores compete as discount retailers, the way in which they market their products is significantly different. At Dollar Tree, most items actually retail for \$1. The firm

specializes in buying “going-out-of-business” merchandise enabling it to pass on savings to its customers and to provide an ever-changing product offering. Dollar Tree describes itself as offering a “thrill-of-the-hunt shopping experience.” In contrast, Family Dollar is a dollar store in name only, with product prices ranging as low as \$1 to in excess of \$20. The firm tries to maintain similar products in inventory over time so that its customers can expect to see the same products from week to week. While this model may have worked years ago, today it means that a discount retailer with a predictable product selection must compete directly with the likes of Walmart.

Family Dollar CEO Howard Levine had been under increasing competitive pressure from Walmart and Dollar General and had been underperforming the competition for years. Moreover, well-known billionaire activist investor Carl Icahn was publicly calling on the beleaguered Family Dollar CEO to put the business up for sale. Activist investor Trian Fund Management LP invested in Family Dollar in 2009 and, with an executive on the board, supported the sale. In the face of both competitive pressure and the threat of a proxy battle for control of the board, Mr. Levine and the Family Dollar board were ready to negotiate a deal to sell the business. In July 2014, Dollar Tree announced that it had reached an agreement to acquire Family Dollar for \$8.5 billion or \$74.50 a share.

When the deal closed in mid-2015, Dollar General, previously the biggest of the three dollar store competitors, faced a larger competitor that had more locations around the country. The combined Dollar Tree and Family Dollar companies will operate more than 13,000 stores nationwide, not including the 330 they had to sell to gain regulatory approval, and annual revenue of more than \$20 billion. By comparison, Dollar General operates 12,000 stores in 43 states. The new Dollar Tree will keep both brands and operate both dollar store business models.

The deal’s announcement prompted an aggressive response by the then much bigger Dollar General that offered \$9.1 billion or \$80 per share offer for Family Dollar. Uncertainty over whether the higher takeover bid would receive regulatory approval eventually sank Dollar General’s chances. Family Dollar argued that any deal with its bigger competitor would require divesting as many as 4500 stores in order to get regulatory approval.

Successfully integrating the two chains has proven to be a major challenge, likely to take several years or more. Efforts to restore Family Dollar’s profitability negatively impacted consolidated earnings in 2015 and 2016. Remodeling stores, introducing new merchandise and promotional campaigns, and paying severance expenses to terminated employees have proven to be more expensive than anticipated. In addition, layoffs at both firms invariably reduce employee morale and productivity and in turn customer satisfaction and attrition. Breakdowns in logistics can also disrupt inventory management and restocking operations adding to both employee and customer discontent.

In 2016, Dollar Tree showed some success in increasing both sales and net income as it has added more food shelves and freezers to its stores. An important rationale for the business was the potential for significant synergies. But realizing anticipated synergies on a timely basis is proving daunting. Dollar Tree’s management in an effort to reassure investors has pointed out that the company’s operating performance, excluding the Family Dollar acquisition, is showing healthy sales and profit growth. But drawing this comparison makes some wonder why Dollar Tree bought Family Dollar at all.

CHAPTER OVERVIEW

This chapter provides insights into why M&As happen and why they tend to cluster in waves, as well as into a variety of legal structures and strategies that are employed to restructure firms. The roles and responsibilities of the primary participants in the M&A process also are discussed in detail. Subsequent chapters analyze this subject matter in more detail. This chapter concludes with a series of discussion questions, an end of chapter case study with questions, and recommendations for relevant case studies from Harvard Business Publishing.

A firm that attempts to acquire or merge with another company is called an acquiring company, acquirer, or bidder. The target company is the firm being solicited by the acquiring company. Takeovers and buyouts are generic terms for a change in the controlling ownership interest of a corporation. A review of this chapter (including practice questions and answers) is available in the file folder entitled “Student Study Guide” on the companion website for this book (<https://www.elsevier.com/books-and-journals/book-companion/9780128016091>).

WHY M&As HAPPEN

Table 1.1 lists some of the more prominent theories about why M&As happen. Of these, anticipated synergy between the acquirer and target firms is most often cited in empirical studies as the primary motivation for M&As.¹ Each theory is discussed in greater detail in the remainder of this section.

Synergy

Synergy is the value realized from the incremental cash flows generated by combining two businesses. That is, if the market value of two firms is \$100 million and \$75 million, respectively, and their combined market value is \$200 million, then the implied value of synergy is \$25 million. The two basic types of synergy are operating and financial.

Operating Synergy

Operating synergy consists of economies of scale, economies of scope, and the acquisition of complementary technical assets and skills, which can be important determinants of shareholder wealth creation.² Gains in efficiency can come from these factors and from improved managerial operating practices.

Economies of scale often refer to the reduction in average total costs for a firm producing a single product for a given scale of plant due to the decline in average fixed costs as production volume increases. Scale is defined by such fixed costs as depreciation of equipment and amortization of capitalized software, normal maintenance spending, and obligations such as interest expense, lease payments, long-term union, customer, vendor contracts, and taxes. These costs are fixed since they cannot be altered in the short run. Variable costs are those that change with output levels. Consequently, for a given scale or amount of fixed expenses,

¹Ferreira et al. (2014).

²DeLong (2003).

TABLE 1.1 Common Theories of What Causes Mergers and Acquisitions

Theory	Motivation
Operating synergy • Economies of scale • Economies of scope • Complementary technical assets and skills	Improve operating efficiency through economies of scale or scope by acquiring a customer, supplier, or competitor or to enhance technical or innovative skills
Financial synergy	Lower cost of capital
Diversification • New products/current markets • New products/new markets • Current products/new markets	Position the firm in higher-growth products or markets
Strategic realignment • Technological change • Regulatory and political change	Acquire capabilities to adapt more rapidly to environmental changes than could be achieved if they were developed internally
Hubris (managerial pride)	Acquirers believe their valuation of the target is more accurate than the market's, causing them to overpay by overestimating synergy
Buying undervalued assets (Q-ratio)	Acquire assets more cheaply when the equity of existing companies is less than the cost of buying or building the assets
Managerialism (agency problems)	Increase the size of a company to increase the power and pay of managers
Tax considerations	Obtain unused net operating losses and tax credits and asset write-ups, and substitute capital gains for ordinary income
Market power	Actions taken to boost selling prices above competitive levels by affecting either supply or demand
Misvaluation	Investor overvaluation of acquirer's stock encourages M&As using acquirer stock

M&A, Merger and acquisition.

the dollar value of fixed expenses per unit of output and per dollar of revenue decreases as output and sales increase.

To illustrate the potential profit improvement from economies of scale, consider the merger of Firm B into Firm A. Firm A has a plant producing at only one-half of its capacity, enabling Firm A to shut down Firm B's plant that is producing the same product and move the production to its own, underutilized facility. Consequently, Firm A's profit margin improves from 6.25% before the merger to 14.58% after the merger. Why? Because the additional output transferred from Firm B is mostly profit as it adds nothing to Firm A's fixed costs (Table 1.2).³

³The profit improvement is overstated because of the simplifying assumption that variable costs per unit are constant at \$2.75. In reality, average variable costs rise as output increases, reflecting equipment downtime due to needed maintenance, increased overtime pay, additional shifts requiring hiring new and often less productive employees, and disruptions to production resulting from the logistical challenges of maintaining adequate supplies of raw materials. In addition, the example excludes the cost of financing the transaction and any shutdown costs incurred in closing Firm B's plant.

TABLE 1.2 Economies of Scale

Period 1: Firm A (premerger)	Period 2: Firm A (postmerger)
Assumptions: • Price = \$4 per unit of output sold • Variable costs = \$2.75 per unit of output • Fixed costs = \$1,000,000 • Firm A is producing 1,000,000 units of output per year • Firm A is producing at 50% of plant capacity	Assumptions: • Firm A acquires Firm B, which is producing 500,000 units of the same product per year • Firm A closes Firm B's plant and transfers production to Firm A's plant • Price = \$4 per unit of output sold • Variable costs = \$2.75 per unit of output • Fixed costs = \$1,000,000
Profit = price $\times$ quantity – variable costs – fixed costs = $\$4 \times 1,000,000 - \$2.75 \times 1,000,000 - \$1,000,000 = \$250,000$	Profit = price $\times$ quantity – variable costs – fixed costs = $\$4 \times 1,500,000 - \$2.75 \times 1,500,000 - \$1,000,000 - \$6,000,000 - \$4,125,000 - \$1,000,000 = \$875,000$
Profit margin(%) = $\frac{\$250,000}{\$4,000,000} = 6.25$	Profit margin(%) = $\frac{\$875,000}{\$6,000,000} = 14.58$
Fixed costs per unit = $\frac{\$1,000,000}{1,000,000} = \$1.00$	Fixed cost per unit = $\frac{\$1,000,000}{1,500,000} = \$0.67$

Notes: Contribution to profit of additional 500,000 units = $\$4 \times 500,000 - \$2.75 \times 500,000 = \$625,000$.

Margin per unit sold at fixed cost per unit of \$1.00 = $\$4.00 - \$2.75 - \$1.00 = \$0.25$.

Margin per unit sold at fixed cost per unit of \$0.67 = $\$4.00 - \$2.75 - \$0.67 = \$0.58$.

Economies of scale may also affect variable costs such as a reduction in purchased material prices due to an increase in bulk purchases and lower production line setup costs resulting from longer production runs. When one company buys another, the combined firms may be able to negotiate lower purchase prices from suppliers because of their increased negotiating leverage. Suppliers often are willing to cut prices, because they also realize economies of scale as their plant utilization increases if they are able to produce and sell larger quantities. Setup costs refer to the expense associated with setting up a production assembly line. These include personnel costs in changing from producing one product to another, any materials consumed in this process, and the time lost while the production line is down. For example, assume a supplier's initial setup costs are \$3000 per production run to produce an order of 2500 units of a product. Setup costs per unit produced are \$1.20. If the order is doubled to 5000 units, setup costs per unit are cut in half to \$0.60 per unit. Suppliers may be willing to pass some of these savings on to customers to get the larger order.

Economies of scope refers to the reduction in average total costs for a firm producing two or more products, because it is cheaper to produce these products in a single firm than in separate firms. Economies of scope may reflect both declining average fixed and variable costs. Common examples of overhead- and sales-related economies of scope include having a single department (e.g., accounting and human resources) support multiple product lines and a sales force selling multiple related products rather than a single product. Savings in distribution costs can be achieved by transporting a number of products to a single location rather than a single product. In 2012, following its emergence from bankruptcy, Hostess Baking achieved significant reductions in distribution costs when its unions allowed the firm to

transport both bread and other baked goods to customers in the same truck rather than in separate trucks as had been the case. Economies of scope also include the cost savings realized by using a specific set of skills or an asset currently employed in producing a specific product to produce multiple products. Procter & Gamble, the consumer products giant, uses its highly regarded consumer marketing skills to sell a full range of personal care as well as pharmaceutical products. Honda employs its proprietary knowledge of internal combustion engines (an intangible asset) to enhance the manufacturing of engines used in cars, motorcycles, lawn mowers, and snow blowers.

Complementary technical assets and skills are those possessed by one firm that could be used by another to fill gaps in its technical capabilities. Gaining access to this know-how can be a significant motivation for one firm to acquire another. For example, merger activity is likely to occur between firms pursuing related research and development activities, with certain technologies owned by one firm appearing to be very attractive to the other.⁴ Both firms gain potentially from an increased rate of innovation after the merger, because they have access to each other's technical skills and patent portfolios. For example, when Pharmacia & Upjohn combined with Monsanto to form Pharmacia, the merger gave Pharmacia & Upjohn access to Monsanto's Cox-2 inhibitors and Monsanto access to the other's expertise in genomics. The merger allowed for expanded in-house clinical R&D, resulting in an increase in the average size of R&D projects and a reduction in the time required for getting products to market.

Financial Synergy

Financial synergy refers to the reduction in the acquirer's cost of capital due to a merger or acquisition. This could occur if the merged firms have cash flows that are relatively uncorrelated, realize cost savings from lower securities' issuance and transactions costs, or experience a better matching of investment opportunities with internally generated funds. The conventional view holds that corporations moving into different product lines whose cash flows are uncorrelated reduce only risk specific to the firm such as product obsolescence (i.e., business-specific or nonsystematic risk) and not risk associated with factors impacting all firms (i.e., systematic risk) such as a recession, inflation, or increasing interest rates.⁵

Recent research suggests that M&As that result in firms whose individual business unit cash flows are uncorrelated can indeed lead to a reduction in systematic risk. Such firms may be better able to withstand the loss of customers, suppliers, employees, or the impact of financial distress than single product firms. Sometimes referred to as coinsurance, the imperfect correlation of business unit cash flows allows resources to be transferred from cash-rich units to cash-poor units as needed. In contrast, the loss of key customers or employees in a single product firm could be devastating. Consequently, multi-product line firms with less correlated business unit cash flows can have less systematic risk than firms whose business unit cash flows are correlated.⁶

Target firms, unable to finance their investment opportunities, are said to be financially constrained, and they may view access to additional financing provided by an acquirer's

⁴Bena and Li (2014).

⁵Ross et al. (2008, p. 823).

⁶Hann et al. (2013).

TABLE 1.3 The Product–Market Matrix

Products	Markets	
	Current	New
Current	Lower growth/lower risk	Higher growth/higher risk (related diversification)
New	Higher growth/higher risk (related diversification)	Highest growth/highest risk (unrelated diversification)

unused borrowing capacity or excess cash balance as a form of financial synergy. That is, financially constrained firms often increase their investment levels following acquisition by a firm not subject to financial constraints.⁷

Diversification

Buying firms beyond a company's current lines of business is called diversification. Diversification may create financial synergy that reduces the cost of capital as noted earlier, or it may allow a firm to shift its core product lines or target markets to ones that have higher growth prospects. The new product lines or target markets may be related or unrelated to the firm's current products or markets. The product–market matrix illustrated in [Table 1.3](#) identifies a firm's primary diversification options.

A firm facing slower growth in its current markets may accelerate growth through related diversification by selling its current products in new markets that are somewhat unfamiliar and, therefore, more risky. Such was the case in 2012 when IBM acquired web-based human resource software maker Kenexa to move its existing software business into the fiercely competitive but fast-growing market for delivering business applications via the web.

A firm also may attempt to achieve higher growth rates by acquiring new products with which it is relatively unfamiliar and then selling them in familiar and less risky current markets. Retailer J.C. Penney's \$3.3 billion acquisition of the Eckerd Drugstore chain (a drug retailer) and Johnson & Johnson's \$16 billion acquisition of Pfizer's consumer healthcare product line are examples of such related diversification. In each instance, the firm assumed additional risk by selling new product lines, but into markets with which it had significant prior experience: J.C. Penney in consumer retail markets and J&J in retail healthcare markets.

There is considerable evidence that acquisitions resulting in unrelated diversification frequently result in lower financial returns when they are announced than nondiversifying acquisitions.⁸ Firms that operate in a number of largely unrelated industries, such as General Electric, are called conglomerates. The share prices of conglomerates often trade at a discount to shares of focused firms or to their value if broken up.⁹ This markdown is called a

⁷Erel et al. (2015).

⁸Akbulut and Matsusaka (2010).

⁹Khorana et al. (2011) and Ammann et al. (2012).

conglomerate or diversification discount, a measure that sometimes values conglomerates as much as 15% lower than more focused firms in the same industry.¹⁰ Investors often perceive conglomerates as riskier because management has difficulty understanding these firms and may tend to underinvest in attractive opportunities.¹¹ Additionally, outside investors may have trouble in valuing the various parts of highly diversified businesses.¹² Investors also may be reluctant to invest in firms whose management appears intent on diversifying to build “empires” rather than to improve firm performance¹³; moreover, such firms often exhibit poor governance practices.¹⁴ The larger the difference between conglomerates whose share prices trade below those of more focused firms, the greater the likelihood these diversified firms will engage in restructuring that increases their focus.¹⁵

Other researchers find evidence that the most successful mergers in developed countries are those that focus on deals that promote the acquirer’s core business, largely reflecting their familiarity with such businesses and their ability to optimize investment decisions.¹⁶ Related acquisitions may even be more likely to generate higher financial returns than unrelated deals,¹⁷ since related firms are more likely to realize cost savings due to overlapping functions. There is also evidence that cross-border deals are more likely to be completed when the degree of relatedness between the acquiring and target firms is high.¹⁸

It is important to note that the existence of a conglomerate discount is not universally true. While conglomerates have not fared as well as more focused firms in North America and certain other developed countries, their performance in developing nations has been considerably stronger. Diversified firms in countries having limited capital market access may sell at a premium since they may use cash generated by mature subsidiaries to fund those with higher growth potential.¹⁹ Furthermore, conglomerates in such developed countries as South Korea and Singapore have outperformed their more focused rivals in part due to their ability to transfer ideas and technologies among their various businesses.²⁰ Diversified firms

¹⁰Some researchers argue the magnitude of the discount is overstated (Campa and Simi, 1992), while others say it reflects sample bias (Graham et al., 2002; Villalonga, 2004). Recent research (Custodio, 2014) suggests that the magnitude of the discount may reflect the way in which acquired assets are recorded for financial reporting purposes. Conglomerates often are more acquisitive than focused firms; as such, their book values are often higher as acquired assets are written up to fair market value resulting in lower market-to-book ratios than more focused firms. Market-to-book ratios are commonly used to measure this discount; consequently, the magnitude of the discount may be overstated as conglomerate market-to-book ratios may be lower than those of less diversified firms for accounting rather performance reasons. Other researchers argue the discount is overestimated due to methodological differences that systematically undervalue diversified firms (Rudolph and Schwetzler, 2014).

¹¹Seru (2014).

¹²Best and Hodges (2004).

¹³Andreou et al. (2010).

¹⁴Hoechle et al. (2012).

¹⁵Hovakimian (2016).

¹⁶Harding and Rovit (2004) and Megginson et al. (2003).

¹⁷Singh and Montgomery (2008).

¹⁸Lim and Lee (2016a, 2016b).

¹⁹Fauver et al. (2003).

²⁰Economist (2014).

also tend to perform better in downturns than more focused firms, because they can use excess cash flows generated by some businesses to offset deteriorating cash flows in other businesses.²¹

Strategic Realignment

Firms use M&As to make rapid adjustments to changes in their external environment such as regulatory changes and technological innovation. Those industries that have been subject to significant deregulation in recent years—financial services, healthcare, utilities, media, telecommunications, and defense—have been at the center of M&A activity,²² because deregulation breaks down artificial barriers and stimulates competition. Firms in highly regulated industries often are unable to compete successfully following deregulation and become targets of stronger competitors. As such, deregulation often sparks a flurry of M&A activity resulting in a significant reduction in the number of competitors in the formerly regulated industry.²³

Technological advances create new products and industries and force a radical restructuring of existing ones. The smartphone spurred the growth of handheld telecommunications devices while undercutting the point-and-shoot camera industry and threatening the popularity of wristwatches, alarm clocks, and MP3 players. Tablet computers reduced the demand for desktop and notebook computers, while e-readers reduced the popularity of hardback books. Services such as WhatsApp and Microsoft's Skype erode a major source of mobile phone company revenue: voice and text messaging. A shift to cloud computing enables businesses to outsource their IT operations.

Hubris and the “Winner’s Curse”

CEOs with successful acquisition track records may pay more than the target is worth due to overconfidence.²⁴ Having overpaid, such acquirers may feel remorse at having done so—experiencing what has come to be called the “winner’s curse.”

Buying Undervalued Assets: The Q-Ratio

The Q-ratio is the ratio of the market value of the acquirer's stock to the replacement cost of its assets. Firms can choose to invest in new plant and equipment or obtain the assets by buying a company with a market value less than what it would cost to replace the assets (i.e., a market-to-book or Q-ratio that is less than 1). This theory is useful in explaining M&A activity when stock prices drop well below the book value (or historical cost) of firms.

²¹Volkov and Smith (2015).

²²Mulherin and Boone (2000).

²³Ovtchinnikov (2013).

²⁴Billett and Qian (2008) and Malmendier and Tate (2008).

Managerialism (Agency Problems)

Agency problems arise when the interests of current managers and the firm's shareholders differ. Managers may make acquisitions to add to their prestige, build their spheres of influence, or augment their compensation, or for self-preservation.²⁵ Furthermore, agency problems may be more pronounced with younger CEOs. Since acquisitions often are accompanied by large, permanent increases in compensation, CEOs have strong financial incentives to pursue acquisitions earlier in their careers.²⁶ Such mismanagement can persist when a firm's shares are widely held, since the cost of such negligence is spread across a large number of shareholders. Fairness opinions to evaluate the appropriateness of bidder offer prices and special committees consisting of independent directors to represent shareholders may be used to mitigate agency problems in target firms. Used to evaluate offers in about one-fourth of takeovers,²⁷ special committees are subcommittees of a target's board composed of independent, disinterested directors who are not part of management or a group attempting a buyout of the firm.

Tax Considerations

Taxes influence corporate decision making.²⁸ Acquirers of firms with accumulated losses and tax credits may use them to offset future profits generated by the combined firms. However, the taxable nature of the transaction often plays a more important role in determining whether a merger takes place than do any tax benefits accruing to the acquirer. The seller may view the tax-free status of the transaction as a prerequisite for the deal to take place. A properly structured transaction can allow the target shareholders to defer any capital gain until the acquirer's stock received in exchange for their shares is sold. Taxes also are an important factor motivating firms in high-tax countries that derive a large portion of their income from foreign sources to move their corporate headquarters by acquiring a firm located in a country with more favorable tax rates. Since a firm's income is taxed both in its home country and abroad, multinational companies are motivated to move to lower-tax environments as part of their global financial strategies. So-called corporate inversions are discussed in more detail in Chapters 12 and 18.

Market Power

The market power theory suggests that firms merge to improve their ability to set product prices at levels not sustainable in a more competitive market. However, many recent studies conclude that increased merger activity is much more likely to contribute to improved operating efficiency of the combined firms than to increased market power (later in the chapter). There is, however, evidence that increased industry concentration can force suppliers to lower their selling prices.²⁹

²⁵Masulis et al. (2007).

²⁶Yim (2013).

²⁷Boone and Mulherin (2014).

²⁸Doidge and Dyck (2015).

²⁹Bhattacharyya and Nain (2011).

Misvaluation

Absent full information, investors may periodically incorrectly value a firm.³⁰ If a firm's shares are overvalued (undervalued), they are likely to decline (rise) in the long run to their true value as investors more accurately value such shares based on new information. Acquirers may profit by buying undervalued targets for cash at a price below their actual value or by using overvalued equity (even if the target is overvalued), as long as the target is less overvalued than the bidding firm's stock.³¹ Overvalued shares enable the acquirer to purchase a target firm in a share for share exchange by issuing fewer shares, reducing the dilution of current acquirer shareholders in the combined companies.³² Target firm shareholders may be willing to accept overvalued acquirer shares if they believe the likely synergy resulting from the merger is substantial enough to offset the potential for the overvalued acquirer shares to decline.³³

The effects of misvaluation tend to be short-lived, since the initial overvaluation of an acquirer's share price often is reversed in 1–3 years as investors' enthusiasm about potential synergies wanes.³⁴ Both acquirer and target shareholders often lose in improperly valued deals. Acquirers tend to overpay for target firms and often anticipated synergy is insufficient for the acquirer to earn back the premium paid for the target. Target shareholders who hold their acquirer shares see them over time decline to their true economic value.

HISTORICAL DEVELOPMENTS IN M&As

M&As cluster in waves, with public firms being more active buyers than private firms due in part to their greater access to financing and their more liquid stock.³⁵ Insights gained by analyzing these waves help buyers to understand when to make and how to structure and finance deals.

Why M&A Waves Occur

M&As in the United States have tended to cluster in six multiyear waves since the late 1890s. There are two competing explanations for this phenomenon. One argues that merger waves occur when firms react to industry "shocks,"³⁶ such as from deregulation, the emergence of new technologies, distribution channels, substitute products, or a sustained rise in

³⁰Edmans et al. (2012).

³¹Ang and Cheng (2006) and Dong et al. (2006).

³²Consider an acquirer who offers the target firm shareholders \$10 for each share they own. If the acquirer's current share price is \$10, the acquirer would have to issue one new share for each target share outstanding. If the acquirer's share price is valued at \$20, only 0.5 new share would have to be issued, and so forth. Consequently, the initial dilution of the current acquirer's shareholders' ownership position in the new firm is less the higher the acquirer's share price compared to the price offered for each share of target stock outstanding.

³³Di Giuli (2013).

³⁴Petmezas (2009) and Akbulut (2013).

³⁵Maksimovic et al. (2013) and Gugler et al. (2012).

³⁶Martynova and Renneboog (2008a) and Brealey and Myers (2003).

commodity prices. Such events often cause firms to acquire either all or parts of other firms.³⁷ The second argument is based on misvaluation and suggests that managers use overvalued stock to buy the assets of lower-valued firms. For M&As to cluster in waves, goes the argument, valuations of many firms must increase at the same time. Managers whose stocks are believed to be overvalued move concurrently to acquire firms whose stock prices are lesser valued.³⁸ For this theory to be correct, the method of payment would normally be stock. In fact, the empirical evidence shows that less stock is used to finance takeovers during merger waves.

Since M&A waves typically correspond to an improving economy, managers confident about their stocks' future appreciation are more inclined to use debt to finance takeovers,³⁹ because they believe their shares are currently undervalued. Thus, the shock argument seems to explain M&A waves better than the misvaluation theory.⁴⁰ However, shocks alone, without sufficient liquidity to finance deals, will not initiate a wave of merger activity. Moreover, readily available, low-cost capital may cause a surge in M&A activity even if industry shocks are absent.⁴¹

While research suggests that shocks drive merger waves within industries, increased M&A activity within an industry contributes to M&A activity in other industries due to customer-supplier relationships.⁴² For example, increased consolidation among computer chip makers in the early 2000s drove increased takeovers of suppliers of chip manufacturing equipment to accommodate growing customer demands for more complex chips. More recently, British American Tobacco's (BAT) takeover of Reynolds American Tobacco for \$49.3 billion in early 2017 creating the world's biggest publicly traded firm in the industry pressured rivals to consolidate to achieve potential cost savings and to enhance marketing and distribution capabilities.

The First Wave (1897–1904): Horizontal Consolidation

M&A activity reflected a drive for efficiency, lax enforcement of the Sherman Anti-Trust Act, migration, and technological change. Mergers were largely between competitors and resulted in increased concentration in primary metals, transportation, and mining. Fraudulent financing and the 1904 stock market crash ended the boom.

The Second Wave (1916–29): Increasing Concentration

Activity during this period was a result of the entry of the United States into World War I and the postwar economic boom. Mergers also tended to be horizontal and further increased industry concentration. The stock market crash of 1929 and the passage of the Clayton Act that further defined monopolistic practices brought this era to a close.

³⁷According to Netter et al. (2011), the existence of merger waves in industries subject to shocks is less apparent in larger data samples than in smaller. M&A activity that includes small deals and private acquirers is much smoother and less wavelike than patterns observed with only public acquirers and large deals.

³⁸Rhodes-Kropf and Viswanathan (2004) and Schleifer and Vishny (2003).

³⁹Malmendier et al. (2011).

⁴⁰Garcia-Feijoo et al. (2012).

⁴¹Harford (2005).

⁴²Ahern and Harford (2014).

The Third Wave (1965–69): The Conglomerate Era

Firms with high P/E ratios grew earnings per share (EPS) through acquisition rather than reinvestment by buying firms with lower P/E ratios but high earnings growth to increase the EPS of the combined companies. This boosted the share price of the combined firms—as long as the P/E ratio applied to the stock price of the combined companies did not fall below the P/E ratio of the acquiring company before the deal. To maintain this pyramiding effect, though, target companies had to have earnings growth rates that were sufficiently attractive to convince investors to apply the higher multiple of the acquiring company to the combined companies. In time, the number of high-growth, relatively low-P/E-ratio companies declined, as conglomerates bid up their P/E multiples. The higher prices paid for the targets, coupled with the increasing leverage of the conglomerates, caused the “pyramids” to collapse.

The Fourth Wave (1981–89): The Retrenchment Era

The 1980s was characterized by the breakup of many major conglomerates by so-called corporate raiders using hostile takeovers and leveraged buyouts (LBOs). LBOs involve the purchase of a company financed primarily by debt. A management buyout occurs when a firm’s management team buys the operations they manage, usually relying on an outside source of financing provided by an investor group commonly referred to as a financial sponsor. Conglomerates began to divest unrelated acquisitions made in the 1960s and early 1970s. For the first time, takeovers of US companies by foreign firms exceeded in number and dollars the acquisitions by US firms of foreign companies. Foreign buyers were motivated by the size of the market, limited restrictions on takeovers, the sophistication of US technology, and the weakness of the dollar against foreign currencies. Toward the end of the 1980s, the level of merger activity tapered off in line with a slowing economy and widely publicized LBO bankruptcies.

The Fifth Wave (1992–99): The Age of the Strategic Megamerger

The longest economic expansion and stock market boom in US history was a result of a combination of the technology revolution, deregulation, reductions in trade barriers, and the global trend toward privatization. Both the dollar volume and the number of transactions continued to set records through the end of the 1990s before contracting sharply when the Internet bubble burst, a recession hit the United States in 2001, and global growth weakened.

The Sixth Wave (2003–08): The Rebirth of Leverage

US financial markets, especially from 2005 to 2007, were characterized by a proliferation of highly LBOs and complex securities collateralized by pools of debt and loan obligations. Much of the financing of these deals, as well as mortgage-backed security issues, has taken the form of syndicated debt (i.e., debt purchased by underwriters for resale to the investing public). Lenders have an incentive to increase the volume of lending to generate fee income by accepting riskier loans.⁴³ Once loans are sold to others, loan originators are likely to reduce the monitoring of such loans. These practices, coupled with exceedingly low interest rates made possible by a world awash in liquidity and highly accommodative monetary policies, contributed to excessive lending and encouraged acquirers to overpay for target firms.

⁴³Brunnermeier (2009).

However, limited credit availability, as banks attempted to rebuild their capital following substantial asset write-downs, not only affected the ability of private equity and hedge funds to finance new or refinance existing transactions but also limited the ability of other businesses to fund operations. These conditions were exacerbated by European sovereign debt concerns and escalating oil prices that triggered a global economic downturn in 2008. Mirroring the global malaise, M&A activity languished during this period.

Similarities and Differences Among Merger Waves

M&As commonly occur during periods of sustained high rates of economic growth, low or falling interest rates, and a rising stock market. Historically, each merger wave has differed in terms of a specific development (such as the emergence of a new technology), industry focus (such as rail, oil, or financial services), degree of regulation, and type of transaction (such as horizontal, vertical, conglomerate, strategic, or financial deals discussed in more detail later in this chapter). Merger waves also occur in cross-border M&As, with European waves following those in the United States with a short lag.⁴⁴

Why it Is Important to Anticipate Merger Waves

The stock market rewards firms acting early and punishes those that merely imitate. Firms pursuing attractive deals early pay lower prices for targets than followers. Late in the cycle, purchase prices escalate as more bidders enter the takeover market, leading many buyers to overpay.⁴⁵ Reflecting this “herd mentality,” deals completed late in M&A waves tend to show lower acquirer returns than those announced prior to an upsurge in deal activity.⁴⁶ However, trying to predict the timing of the next merger wave is problematic due to the sluggish and uneven global economic recovery since 2009. Having reached its prior peak in 2015, M&A activity tapered off in 2016 raising the question as to whether this M&A activity is grounded on strong economic fundamentals or a financial market bubble created by historically low interest rates.

UNDERSTANDING CORPORATE RESTRUCTURING ACTIVITIES

Corporate restructuring often is broken into two categories. Operational restructuring entails changes in the composition of a firm’s asset structure by acquiring new businesses or by the outright or partial sale or spin-off of companies or product lines. It could also include downsizing by closing unprofitable or nonstrategic facilities. Financial restructuring describes changes in a firm’s capital structure, such as share repurchases or adding debt either to lower the company’s overall cost of capital or as part of a takeover defense. The focus in this book is on business combinations and breakups rather than on operational downsizing

⁴⁴Brakman et al. (2005) and Gugler et al. (2012).

⁴⁵McNamara et al. (2008) and Gell et al. (2008).

⁴⁶Duchin and Schmidt (2013).

and financial restructuring. Business combinations can be known as mergers, consolidations, acquisitions, or takeovers and can be friendly or hostile.

Mergers and Consolidations

Mergers can be described from a legal perspective and an economic perspective.

A Legal Perspective

A merger is a combination of two or more firms, often comparable in size, in which all but one ceases to exist legally. A statutory or direct merger is one in which the acquiring or surviving company assumes automatically the assets and liabilities of the target in accordance with the statutes of the state in which the combined companies will be incorporated. A subsidiary merger involves the targets becoming a subsidiary of the parent. To the public, the target firm may be operated under its brand name, but it will be owned and controlled by the acquirer. A statutory consolidation—which involves two or more companies joining to form a new company—is technically not a merger. All legal entities that are consolidated are dissolved during the formation of the new company, which usually has a new name. Shareholders in the firms typically exchange their shares for shares in the new company.

An Economic Perspective

Business combinations may also be defined depending on whether the merging firms are in the same (horizontal) or different industries (conglomerate) and on their positions in the corporate value chain (vertical). Fig. 1.1 illustrates the different stages of the value chain. A simple value chain in the basic steel industry may distinguish between raw materials, such as coal or iron ore; steel making, such as “hot metal” and rolling operations; and metals distribution. Similarly, a value chain in the oil and gas industry would separate exploration activities from production, refining, and marketing. An Internet value chain might distinguish between infrastructure providers such as Cisco, content providers such as Dow Jones, and portals such as Google. In a vertical merger, companies that do not own operations in each major segment of the value chain “backward integrate” by acquiring a supplier or “forward integrate” by buying a distributor. When paper manufacturer Boise Cascade acquired Office Max, an office

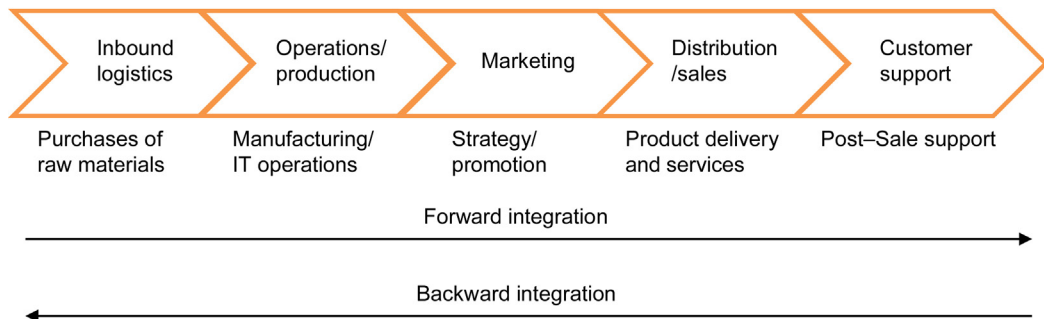


FIGURE 1.1 The corporate value chain. *IT*, Information technology.

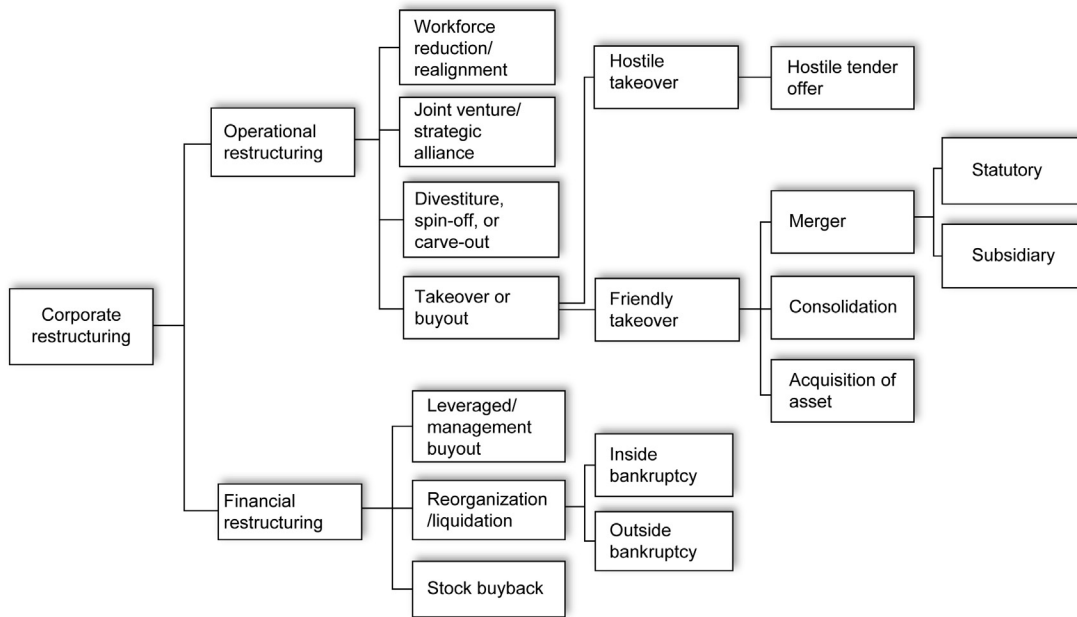


FIGURE 1.2 The corporate restructuring process.

products distributor, the \$1.1-billion transaction represented forward integration.⁴⁷ PepsiCo backward integrated through a \$7.8-billion purchase of its two largest bottlers to realize \$400 million in annual cost savings.

Acquisitions, Divestitures, Spin-Offs, Split-Offs, Carve-Outs, and Buyouts

An acquisition occurs when a company takes a controlling interest in another firm, a legal subsidiary of another firm, or selected assets of another firm, such as a manufacturing facility. They may involve the purchase of another firm's assets or stock, with the acquired firm continuing to exist as a legally owned subsidiary. In contrast, a divestiture is the sale of all or substantially all of a company or product line to another party for cash or securities. A spin-off is a transaction in which a parent creates a new legal subsidiary and distributes shares in the subsidiary to its current shareholders as a stock dividend, with the spun-off subsidiary now independent of the parent. A split-off is similar to a spin-off, in that a firm's subsidiary becomes an independent firm and the parent firm does not generate any new cash. However, unlike a spin-off, the split-off involves an offer to exchange parent stock for stock in the parent firm's subsidiary. An equity carve-out is a transaction in which the parent issues a portion of its stock or that of a subsidiary to the public (see Chapter 15). Fig. 1.2 provides a summary of the various forms of corporate restructuring.

⁴⁷ According to Gugler et al. (2003), horizontal, conglomerate, and vertical mergers accounted for 42, 54, and 4%, respectively, of the 45,000 transactions analyzed between 1981 and 1998.

ALTERNATIVE TAKEOVER STRATEGIES

The term takeover is used when one firm assumes control of another. In a friendly takeover, the target's board and management recommend shareholder approval. To gain control, the acquiring company usually must offer a premium to the target's current stock price. For example, French telecommunications giant Altice paid \$34.90 per share of US cable company Cablevision in cash, 22% higher than Cablevision's closing stock price on September 16, 2015 (the day before the deal was announced). The excess of the offer price over the target's pre-merger share price is called a purchase premium or acquisition premium and varies widely by country,⁴⁸ reflecting the perceived value of obtaining a controlling interest (i.e., the ability to direct the activities of the firm) in the target, the value of expected synergies (e.g., cost savings) resulting from combining the two firms, and any overpayment for the target firm. Overpayment is the amount an acquirer pays for a target firm in excess of the present value of future cash flows, including synergy.⁴⁹ The size of the premium fluctuates widely from one year to the next. During the 30-year period ending in 2011, US purchase price premiums averaged 43%, reaching a high of 63% in 2003 and a low of 31% in 2007.⁵⁰ The premium size also varies substantially across industries, reflecting their different expected growth rates.⁵¹

A formal proposal to buy shares in another firm made directly to its shareholders, usually for cash or securities or both, is called a tender offer. Tender offers most often result from friendly negotiations (i.e., negotiated tender offers) between the boards of the acquirer and the target firm. Cash tender offers may be used because they could represent a faster alternative to mergers.⁵² Those that are unwanted by the target's board are referred to as hostile tender offers. Self-tender offers are used when a firm seeks to repurchase its stock.

A hostile takeover occurs when the offer is unsolicited, the approach was contested by the target's management, and control changed hands. The acquirer may attempt to circumvent management by offering to buy shares directly from the target's shareholders (i.e., a hostile tender offer) and by buying shares in a public stock exchange (i.e., an open market purchase). Friendly takeovers are often consummated at a lower purchase price than hostile deals, which

⁴⁸US merger premiums averaged about 38% between 1973 and 1998. Rossi and Volpin document an average premium of 44% during the 1990s for US mergers and find premiums in 49 countries ranging from 10% for Brazil and Switzerland to 120% for Israel and Indonesia. A more accurate representation of the purchase price premium paid to target firm shareholders would reflect the run-up in the target's share price in advance of the deal announcement date plus the price offered for the target shares in excess of the target's share price immediately prior to the announcement date.

⁴⁹Analysts often attempt to determine the premium paid for a controlling interest (i.e., *control premium*) and the amount of value created due to operating synergies. An example of a pure control premium is a conglomerate willing to pay a price above the prevailing market price for a target to gain a controlling interest, even though operating synergies are limited. The acquirer believes it will recover the control premium by making better management decisions for the target firm. What is often called a "control premium" in the popular press is actually a purchase or acquisition premium that includes both a premium for synergy and a premium for control.

⁵⁰Factset Mergerstat Review (2011).

⁵¹Madura et al. (2012).

⁵²Speed is important to acquirers if there are other potential bidders for the target firm. Cash tender offers may be completed more rapidly than mergers since no target shareholder meeting is required and the length of time regulators have to review tender offers is less than for mergers (Offenberg and Pirinsky, 2015).

may trigger an auction for the target firm. Acquirers often prefer friendly takeovers because the postmerger integration process is usually more expeditious when both parties are cooperating fully and customer and employee attrition is less. Most transactions tend to be friendly, with hostile takeovers usually comprising less than 5% of the value of total deals.

THE ROLE OF HOLDING COMPANIES IN MERGERS AND ACQUISITIONS

A holding company is a legal entity having a controlling interest in one or more companies. The key advantage is the ability to gain effective control⁵³ of other companies at a lower overall cost than if the firm was to acquire 100% of the target's shares. Effective control sometimes can be achieved by owning as little as 30% of the voting stock of another company when the firm's bylaws require approval of major decisions by a majority of votes cast rather than a majority of the voting shares outstanding. This is particularly true when the target company's ownership is highly fragmented, with few shareholders owning large blocks of stock. Effective control generally is achieved by acquiring less than 100% but usually more than 50% of another firm's equity leaving the holding company with minority shareholders who may not always agree with the strategic direction of the company. Implementing holding company strategies may become contentious. Also, holding company shareholders may be subject to an onerous tax burden, with corporate earnings potentially subject to triple taxation.⁵⁴

THE ROLE OF EMPLOYEE STOCK OWNERSHIP PLANS (ESOPs) IN M&As

An ESOP is a trust fund that invests in the securities of the firm sponsoring the plan. Designed to attract and retain employees, ESOPs are defined contribution⁵⁵ employee pension plans that invest at least 50% of the plan's assets in the sponsor's common shares. The plans may receive the employer's stock or cash, which is used to buy the sponsor's stock. The sponsor can make tax-deductible contributions of cash, stock, or other assets into the trust.⁵⁶ The plan's trustee is charged with investing the trust assets, and the trustee often can

⁵³One firm is said to have effective control when control has been achieved by buying voting stock, it is not likely to be temporary, there are no legal restrictions on control (such as from a bankruptcy court), and there are no powerful minority shareholders.

⁵⁴Subsidiaries of holding companies pay taxes on their operating profits. The holding company then pays taxes on dividends it receives from its subsidiaries. Finally, holding company shareholders pay taxes on dividends they receive from the holding company. This is equivalent to triple taxation of the subsidiary's earnings.

⁵⁵Employee contributions are set as a percentage of salary, while the value of their pensions depends on the performance of the sponsoring firm's shares.

⁵⁶Cash contributions made by the sponsoring firm for both interest and principal payments on bank loans to ESOPs are tax deductible by the firm. Dividends paid on stock contributed to ESOPs also are deductible if they are used to repay ESOP debt. The sponsoring firm could use tax credits equal to 0.5% of payroll if contributions in that amount were made to the ESOP. Finally, lenders must pay taxes on only one-half of the interest received on loans made to ESOPs owning more than 50% of the sponsoring firm's stock.

sell, mortgage, or lease the assets. Stock acquired by the ESOP is allocated to accounts for individual employees based on some formula and vested over time. ESOP participants must be allowed to vote their allocated shares at least on major issues such as selling the company.

ESOPs may be used to restructure firms. If a subsidiary cannot be sold at what the parent firm believes to be a reasonable price and liquidating the subsidiary would be disruptive to customers, the parent may divest the subsidiary to employees through a shell corporation. A shell corporation, as defined by the US Securities and Exchange Commission in 2005, is one with “no or nominal operations, and with no or nominal assets or assets consisting solely of cash and cash equivalents.”⁵⁷ The shell sets up the ESOP, which borrows the money to buy the subsidiary; the parent guarantees the loan. The shell operates the subsidiary, whereas the ESOP holds the stock. As income is generated from the subsidiary, tax-deductible contributions are made by the shell to the ESOP to service the debt. As the loan is repaid, the shares are allocated to employees who eventually own the firm. ESOPs may be used by employees in LBOs to purchase the shares of owners of privately held firms. This is particularly common when the owners have most of their net worth tied up in their firms. ESOPs also provide an effective antitakeover defense, since employees who also are shareholders tend to vote against bidders for fear of losing their jobs.

BUSINESS ALLIANCES AS ALTERNATIVES TO M&As

In addition to M&As, businesses may combine through joint ventures (JVs), strategic alliances, minority investments, franchises, and licenses. The term business alliance is used to refer to all forms of business combinations other than M&As (see Chapter 15 for more details).

JVs are business relationships formed by two or more parties to achieve common objectives. While the JV is often a legal entity such as a corporation or partnership, it may take any organizational form desired by the partners. Each JV partner continues to exist as a separate entity; JV corporations have their own management reporting to a board of directors. A *strategic alliance* generally does not create a separate legal entity and may be an agreement to sell each firm’s products to the other’s customers or to codevelop a technology, product, or process. Such agreements may be legally binding or informal.

Minority investments, those involving less than a controlling interest, require little commitment of management time for those willing to be passive investors. Such investments are frequently made in firms that have attractive growth opportunities but lack the resources to pursue them.⁵⁸ Investors often receive representation on the board or certain veto rights in exchange for their investment. A minority investor can effectively control a business by having veto rights changes in strategy, capital expenditures over a certain amount of money, key management promotions, salary increases applying to senior managers, the amount and timing of dividend payments, and when the business would be sold.

Licenses enable firms to extend their brands to new products and markets by permitting others to use their brand names or to gain access to a proprietary technology. A franchise is

⁵⁷Shell corporations are created with the sole intent of merging with a privately held company, after selling their operations and assets to another firm, or as a result of the bankruptcy process.

⁵⁸Liao (2014).

a specialized form of a license agreement that grants a privilege to a dealer from a manufacturer or franchise service organization to sell the franchiser's products or services in a given area. Under a franchise agreement, the franchiser may offer the franchisee consultation, promotional assistance, financing, and other benefits in exchange for a share of the franchise's revenue. Franchises represent a low-cost way for the franchiser to expand.⁵⁹

The major attraction of these alternatives to outright acquisition is the opportunity for each partner to gain access to the other's skills, products, and markets at a lower overall cost in terms of management time and money. Major disadvantages include limited control, the need to share profits, and the potential loss of trade secrets and skills to competitors.

PARTICIPANTS IN THE MERGERS AND ACQUISITIONS PROCESS

In addition to the acquirer and target firms, the key participants in the M&A process include providers of specialized services, regulators, institutional investors and lenders, activist investors, and M&A arbitrageurs (arbs). Each participant plays a distinctly different role.

Providers of Specialized Services

The first category includes investment banks, lawyers, accountants, proxy solicitors, and public relations personnel. Not surprisingly, the number and variety of advisors hired by firms tends to increase dramatically with the increasing complexity of the deal.⁶⁰

Investment Banks

Investment banks provide advice and deal opportunities; screen potential buyers and sellers; make initial contact with a seller or buyer; and negotiation support, valuation, and deal structuring guidance. The "universal or top-tier banks" (e.g., Goldman Sachs) also maintain broker-dealer operations, serving wholesale and retail clients in brokerage and advisory roles to assist with the complexity and often-huge financing requirements of megatransactions.

Investment bankers derive significant income from so-called fairness opinion letters—signed third-party assertions that certify the appropriateness of the price of a proposed deal involving a tender offer, merger, asset sale, or LBO. They often are developed as legal protection for members of the boards of directors against possible shareholder challenges of their decisions.⁶¹ Researchers have found that fairness opinion letters reduce the risk of lawsuits

⁵⁹Franchising has been limited to industries such as fast food services and retailing, in which a successful business model can be easily replicated.

⁶⁰DeMong et al. (2011).

⁶¹Typically limited to "change of control" transactions, fairness opinions include a range of values for a firm. The proposed purchase price is considered "fair" if it falls within the range. Problems with fairness opinions include the potential conflicts of interest with investment banks that generate large fees. Often, the investment bank that brings the deal to a potential acquirer is the same one that writes the fairness opinion (Henry, 2003). Acquirers using one firm to write the fairness opinion for a fixed fee and a different firm in an advisory capacity for a contingent fee to close the deal show higher abnormal positive returns than those that do not (Chen, 2010).

associated with M&A transactions and the size of the premium paid for targets if they result in acquirers performing more rigorous due diligence and deal negotiation.⁶²

In selecting an investment bank, acquirers and target firms focus far more on a bank's track record in generating high financial returns for their clients than on its size or market share.⁶³ Smaller advisors may generate higher returns for their clients than the megainvestment banks because of proprietary industry knowledge and relationships. About one-fourth of merging firms tend to hire so-called boutique or specialty investment banks for their skill and expertise as their advisors, especially in deals requiring specialized industry knowledge.⁶⁴ However, size and market share do matter in certain situations. Contrary to earlier studies that report a negative or weak relationship between bidder financial advisor size and bidder returns,⁶⁵ bidders using top-tier investment banks as advisors report on average a 1% improvement in returns in deals involving public targets.⁶⁶ Top-tier investment banks are better able to assist in funding large transactions, which typically involve public companies, because of their current relationships with lenders and broker networks. Public company takeovers often are more complex than private firm takeovers due to their greater bargaining power, need for greater disclosure, and regulatory issues.

Long-standing investment banking relationships do matter. However, their importance varies with the experience of the acquirer and target firm. Targets, having long-standing relationships with investment banks, are more likely to hire M&A advisors⁶⁷ and to benefit by receiving higher purchase price premiums. Frequent acquirers are more likely to use the same investment advisor if they have had good prior outcomes. Otherwise they are very willing to switch to a new investment advisor. Investment banking relationships are significant for inexperienced acquirers that are more likely to hire financial advisors with whom they have had a long-standing underwriting relationship for equity finance deals.⁶⁸

Investment banks often serve as advisors for firms undergoing extensive restructuring involving asset sales. Such firms are more likely to utilize investment banks when they are in a different industry from the potential buyer and the asset to be sold is large. Buyers of divested assets are more likely to use investment banks when the target is large relative to the buyer (i.e., they have more at stake), is a foreign firm, is in the technology industry, or is in a different industry from the buyer.⁶⁹

Firms that are in the mature stage of their corporate life cycle (net cash generators with limited investment opportunities) are more inclined to use investment bankers than firms in their growth phase (net cash users with many investment opportunities). Mature firms hiring investment bankers often show higher returns than those that do not, suggesting that financial advisors add value perhaps by helping such firms identify and value appropriate investment opportunities. Firms in their growth phase are less likely to use financial advisors

⁶²Kisgen et al. (2009).

⁶³Bao and Edmans (2011).

⁶⁴Song et al. (2013).

⁶⁵Hunter and Jagtiani (2003) and Ismail (2010).

⁶⁶Bao and Edmans (2011).

⁶⁷Forte et al. (2010).

⁶⁸Francis et al. (2014a, 2014b).

⁶⁹Cao et al. (2014).

due to the many investment opportunities that exist for such firms, but those not using advisors tend to earn lower returns than those that do.⁷⁰

In recent years, active acquirers are relying more on their internal staffs to perform what has traditionally been done by outside investment bankers. According to Dealogic, 27% of public company deals valued at more than \$1 billion in 2016 did not use investment advisors. This compares to 13% in 2014. The trend is driven by a desire to control costs, keep deals confidential, and move quickly when needed.

Lawyers

Lawyers help structure the deal, evaluate risk, negotiate the tax and financial terms, arrange financing, and coordinate the sequence of events to complete the transaction. Specific tasks include drafting the purchase agreement and other transaction-related documentation, providing opinion of counsel letters to the lender, and defining due diligence activities.

Accountants

Accountants provide advice on financial structure, perform financial due diligence, and help create the optimal tax structure for a deal. Income tax, capital gains, sales tax, and sometimes gift and estate taxes are all at play in negotiating a merger or acquisition. In addition to tax considerations, accountants prepare financial statements and perform audits. Many agreements require that the books and records of the acquired entity be prepared in accordance with Generally Accepted Accounting Principles (GAAP).

Proxy Solicitors

Proxy contests are attempts to change the management control or policies of a company by gaining the right to cast votes on behalf of other shareholders. In contests for the control of the board of directors of a target company, it can be difficult to compile mailing lists of stockholders' addresses. The acquiring firm or dissatisfied shareholders hire a proxy solicitor to obtain this information. The target's management may also hire proxy solicitors to design strategies for educating shareholders and communicating why they should support the board.

Public Relations Firms

Such firms often are hired to ensure that a consistent message is communicated during a takeover attempt or in defending against takeovers. In initiating a hostile takeover attempt, the message to target shareholders must be that the acquirer's plans for the company will increase shareholder value more than the plans of current management. Often, the target's management will hire a private investigator to develop detailed financial data on the company and do background checks on key personnel, later using that information in the public relations campaign in an effort to discredit publicly the management of the acquiring firm.

Regulators

Regulations that affect M&A activity exist at all levels of government and involve security, antitrust, environmental, racketeering, and employee benefits laws. Others are industry

⁷⁰Chuang (2017).

specific, such as public utilities, insurance, banking, broadcasting, telecommunications, defense contracting, and transportation. State antitakeover statutes place limitations on how and when a hostile takeover may be implemented. Moreover, approval at both the state and federal levels may be required for deals in certain industries. Cross-border transactions may be even more complicated, because it may be necessary to obtain approval from regulatory authorities in all countries in which the acquirer and target companies do business.

Institutional Investors and Lenders

These financial intermediaries pool funds provided by others and invest or lend those funds to finance the purchase of a wide array of assets, from securities to real property to corporate takeovers. Such organizations include insurance companies, pension funds, and mutual funds; private equity, hedge funds, and venture capital funds; sovereign wealth funds; and angel investors. Commercial banks also are prominent intermediaries; however, under recent legislation their role is relegated primarily to lending rather than investing money deposited with the bank.

Insurance, Pension, and Mutual Funds

Risk averse and subject to substantial regulation, these institutions invest mostly in assets whose risk and return characteristics match their obligations to their customers. For example, an insurance company offers to mitigate risk for its customers in exchange for an insurance premium. The main source of profit for insurance companies is the sale of insurance products, but they also make money by investing premium income. Employers establish pension funds to generate income over the long term to provide pensions for employees when they retire. Typically, pension funds are managed by a financial advisor for the company and its employees, although some larger corporations operate their pension funds in-house. Mutual funds are pools of money professionally managed for the benefit of investors.

Commercial Banks

Traditionally, commercial banks have accepted checking, savings, and money market accounts and would lend these funds to borrowers. This model has evolved into one in which banks sell many of the loans they originate to others for whom buying, selling, and collecting loan repayments is their primary business. Commercial banks also derive an increasing share of their profits from fees charged for various types of services offered to depositors and fees charged for underwriting and other investment banking services. The Dodd–Frank bill, passed in 2010, is intended to limit the riskiness of bank lending and to severely restrict the types of investments that can be made. See Chapter 2 for a more detailed discussion of Dodd–Frank.

Hedge, Private Equity, and Venture Capital Funds

These funds assume higher levels of risk than other types of institutional investors and usually are limited partnerships in which the general partner has made a substantial personal investment. They are distinguished by their investment strategies, lockup periods (i.e., the length of time investors are required to commit funds), and the liquidity of their portfolios. Hedge fund investment strategies include trading a variety of financial

instruments—debt, equity, options, futures, and foreign currencies—as well as higher-risk strategies, such as corporate restructurings (e.g., LBOs) and credit derivatives (e.g., credit default swaps). Because of their shorter lockup periods, hedge funds focus on investments that can be readily converted into cash. In contrast, private equity funds often make highly illiquid investments in private companies and hold such investments for 5 years or more; they attempt to control risk by being actively involved in managing the firm in which they have invested. Venture capitalists are a significant source of funds for financing both start-ups and acquisitions.

Sovereign Wealth Funds

Sovereign wealth funds are government-backed or -sponsored investors whose primary function is to invest accumulated foreign currency reserves. Countries with huge quantities of US dollars would, through such funds, often reinvest the money in US Treasury securities. These funds are increasingly taking equity positions in foreign firms, often making high-profile investments in public companies.

Angel Investors

Angel investors are wealthy individuals who band together in “investment clubs” or networks to identify deals, pool money, and share expertise. Some angel groups imitate professional investment funds, some affiliate with universities, while others engage in for-profit philanthropy.

Activist Investors

Such investors can be either an individual or a group that purchase large numbers of shares of a firm to vote their shares as a block or to obtain seats of the firm’s board of directors with the objective of effecting change. Institutions often play the role of activist investors to alter the policies of companies in which they invest and especially to discipline inept corporate management. Institutions having a long-term investment horizon have been shown to contribute to a firm’s financial performance due to their more active monitoring of management decisions.⁷¹ Activism has also assumed a more important role in recent years by replacing the historic role of hostile takeovers in disciplining underperforming managers or changing corporate strategies.⁷²

Mutual Funds and Pension Funds

Institutional ownership of public firms increased substantially in recent decades. While regulations restrict the ability of institutions to discipline corporate management, institutional investors with huge portfolios can be very effective in demanding governance changes.⁷³ Corporate governance is the system of rules, processes, and practices that direct and

⁷¹Andriosopoulos et al. (2015) and Kim et al. (2015).

⁷²Denes et al. (2016).

⁷³Mutual funds, to achieve diversification, are limited in the amount they can invest in any one firm’s outstanding stock. State regulations often restrict the share of a life insurance or property casualty company’s assets that can be invested in stock to as little as 2%.

control a firm. These organizations may challenge management on such hot-button issues as antitakeover defenses, CEO severance benefits, and employee stock option accounting. Voting against management, though, can be problematic, since some mutual funds manage retirement plans and, increasingly, provide a host of outsourcing services—from payroll to health benefits—for their business clients. Mutual funds may own stock, on behalf of their clients, in these same firms.

Pressure from institutional activists may account for the general decline in the number of executives serving as both board chairman and CEO of companies.⁷⁴ Sometimes, CEOs choose to negotiate with activists rather than face a showdown at an annual shareholders meeting. Activists also are finding that they may avoid the expense of a proxy fight simply by threatening to vote in certain ways on supporting a CEO or a management proposal. This may mean a “no” vote, although in some instances the only option is to vote in the affirmative or abstain. Abstaining is a way to indicate dissatisfaction with a CEO or a firm’s policy without jeopardizing future underwriting or M&A business for the institution.

Hedge Funds and Private Equity Firms

Hedge funds and private equity firms have had more success as activist investors than other institutional investors. They are successful about two-thirds of the time in their efforts to change a firm’s strategic, operational, or financial strategies, often generating attractive financial returns for shareholders.⁷⁵ They seldom seek control (with ownership stakes averaging about 9%) and are most often nonconfrontational. Their success as activists can be attributed to their managers, who direct large pools of relatively unregulated capital and who are highly motivated by financial gain. Because hedge funds are not subject to the same regulations governing mutual funds and pension funds, they can hold concentrated positions in a small number of firms. Moreover, they are not limited by the same conflicts of interests that afflict mutual funds and pension funds. Hedge funds tend to have the greatest impact on shareholder returns when they prod management to sell a company, but their impact dissipates quickly if the sale of the company is unsuccessful.⁷⁶ Firms once targeted by activists are more likely to be acquired.

M&A Arbitrageurs

When a bid is made for a target firm, the target’s stock price often trades at a small discount to the actual bid—reflecting the risk that the deal may not be completed. Merger arbitrage refers to an investment strategy that attempts to profit from this spread. Arbs buy the stock and make a profit on the difference between the bid price and the current stock price if the deal is completed. Others may “short” the stock once it increases betting that the proposed merger

⁷⁴(Goyal and Park, 2002). The number of executives serving in both positions of their companies declined from about 91% during the 1980s to 58% during the 1990s (Kini et al., 2004).

⁷⁵Brav et al. (2008) argue that activist hedge funds occupy a middle ground between internal monitoring by large shareholders and external monitoring by corporate raiders. Clifford (2008) and Klein and Zur (2009) found that hedge fund activism generates an approximate 7% higher financial return to shareholders than normal around the announcement that the hedge fund is initiating some form of action.

⁷⁶Greenwood and Schor (2007) found that under such circumstances, there is little change in the firm’s share price during the 18 months following the sale of the company, even if the firm follows the activist’s recommendations and buys back shares or adds new directors.

will not be completed and the target's share price will drop to its premerger announcement level. Assume a target firm's shares are selling at \$6 per share and an acquirer announces an offer to pay \$10 per share. Because the outcome is uncertain, the target's share price will rise to less than \$10, assume \$9.⁷⁷ Other investors may bet the merger will not be completed and sell the stock short (i.e., sell borrowed shares—paying interest to the shareowner based on the value of the shares when borrowed—hoping to buy them back at a lower price) at \$9 and buy it back at \$6.

Hedge fund managers, playing the role of arbs, may accumulate a substantial percentage of the stock held outside of institutions so that they can be in a position to influence the outcome of the takeover attempt. If other offers for the target firm appear, arbs approach institutional investors with phone calls and through leaks to the media, attempting to sell their shares to the highest bidder. Acquirers making a hostile bid often encourage hedge funds to buy as much target stock as possible so that they can gain control of the target later by buying the stock from the hedge funds.

Arbs also provide market liquidity during transactions. In a cash-financed merger, arbs seeking to buy the target firm's shares provide liquidity to the target's shareholders that want to sell on the announcement day or shortly thereafter. Arbs may actually reduce liquidity for the acquirer's stock in a share for share merger because they immediately "short" the acquirer shares. The downward pressure that arb short-selling puts on the acquirer's share price at the time the deal is announced makes it difficult for others to sell without incurring a loss from the premerger announcement price. Merger arbitrage has the potential to be highly profitable.⁷⁸

THE IMPLICATIONS OF M&As FOR SHAREHOLDERS, BONDHOLDERS, AND SOCIETY

The outdated notion that most M&As fail in some substantive manner is not supported by recent evidence. On average, the sum of target and acquirer shareholders' gains around the deal's announcement date is positive and statistically significant (i.e., not due to chance). While most of the gain accrues to target shareholders, acquirer shareholders often experience financial gains in excess of what would have been realized in the absence of a takeover.⁷⁹ In the 3–5 years after a takeover, it is less clear if shareholders continue to benefit from the deal. As time passes, other factors impact performance, making it increasingly difficult to determine the extent to which a change in performance is due to an earlier acquisition.

Researchers use a variety of approaches to measure the impact of takeovers on shareholder value.⁸⁰ What follows is a discussion of the results of the two most common types

⁷⁷The target's share price would rise by \$4–\$10 if investors were certain the deal gets done. Because it rises only to \$9, investors are implicitly stating that there is a 75% (i.e., \$3/\$4) probability that the merger will be completed.

⁷⁸Such arbitrage generates financial returns ranging from 4.5% to more than 100% in excess of what would be considered normal in a highly competitive market (Mitchell and Pulvino, 2001).

⁷⁹Ahern (2012).

⁸⁰In an analysis of 88 empirical studies between 1970 and 2006, Zola and Meier (2008) identify 12 different approaches to measuring the impact of takeovers on shareholder value. Of these studies, 41% use the event study method to analyze premerger returns and 28% utilize long-term accounting measures to analyze postmerger returns.

of analyses of M&A financial returns: premerger event returns and postmerger accounting returns. So-called event studies examine abnormal stock returns to the shareholders of both acquirers and targets around the announcement of an offer (the “event”). Such studies presume that investors can accurately assess the likely success or failure of M&As realizing expected synergy around the deal’s announcement date.⁸¹ The results of such studies vary widely depending on the listing status,⁸² size of the acquirer and target firms, and the form of payment. Empirical studies of postmerger returns use accounting measures to gauge the impact on shareholder value in the years immediately following the announcement date.

Both event and postmerger returns in academic studies of M&As typically are estimated using regression analysis (i.e., a process used to quantify the relationship among variables). Fluctuations in the so-called dependent variable (in these studies some measure of financial returns or performance) are explained by selecting a set of factors (i.e., independent variables) whose variation is believed to explain changes in the dependent variable. These studies do not “prove” that certain independent variables explain returns but rather suggest that they are statistically relevant (i.e., their correlation is not due to chance) for the sample and time period selected by the researcher. In many academic studies only about one-quarter (or less) of the total variation in financial returns or performance is explained by the independent variables used in the study. The remainder of the variation remains unexplained, thus making the results of such studies problematic because the exclusion of relevant variables can bias the results.⁸³ However, if the same result is found using different data samples and varying time periods in numerous studies, the conclusions are likely to be more reliable.

Premember Returns to Shareholders

Positive abnormal or excess shareholder returns may be explained by such factors as improved efficiency, pricing power, and tax benefits. They are abnormal in that they exceed what an investor would normally expect to earn for accepting a certain level of risk. If an investor expects to earn a 10% return on a stock but actually earns 25% due to a takeover, the abnormal or excess return to the shareholder would be 15%.⁸⁴

⁸¹(Bargeron et al., 2014; Circon et al., 2014). Positive abnormal acquirer financial returns around the announcement date of a deal may indeed be good predictors of the wealth creation potential of takeovers when acquirer managers and investors agree on the attractiveness of the deal. However, a lack of a consensus can result in great acquirer share price volatility making it difficult for investors to value the deal accurately.

⁸²Listing status refers to whether the acquirer and the target are listed on public stock exchanges or are privately held firms. Whether a deal involves listed or unlisted firms often makes a substantial difference in the financial returns to shareholders, since the vast majority of firms engaging in takeovers involve a private acquirer, a private target, or both.

⁸³An independent variable that is statistically significant in a regression equation that explains a low percentage of the variation in the dependent variable can be a proxy for a variable that should have been included in the equation. Thus, the included variable is not the true determinant of, for example, acquirer returns but rather is simply correlated with the excluded variable, the true determinant of acquirer returns.

⁸⁴Abnormal returns are calculated by subtracting the actual return from a benchmark indicating investors’ required returns, often the capital asset pricing model or the S&P 500 stock index.

Returns High for Target Shareholders

Average abnormal returns to target shareholders during the 2000s averaged 25.1% as compared to 18.5% during the 1990s.⁸⁵ This upward trend may reflect a tendency by bidders to offer a substantial premium in friendly takeovers to preempt other possible bidders and the potential for revising the initial offer because of competing bids. Other contributing factors include the increasing sophistication of takeover defenses and federal and state laws requiring bidders to notify target shareholders of their intentions before completing the deal. Returns from hostile tender offers generally exceed those from friendly mergers, which are characterized by less contentious negotiated settlements and the absence of competing bids.

Sometimes returns to target shareholders on the announcement date can be negative. Why? Because investors are sensitive to the size of the actual offer price relative to the expected offer price.⁸⁶ When the announced offer price is significantly below expectations, investors express their disappointment by selling their shares. Selling pressure can be particularly intense when the run-up in share prices prior to the bid is fueled largely by speculators hoping to profit from a sizable jump in the stock. When it becomes clear that their expectations will not be realized, speculators try to lock in any profits they have by selling their shares.

Returns to Acquirer Shareholders (With Some Exceptions) Often Favorable

Recent research involving large samples involving tens of thousands of firms over lengthy time periods involving US, foreign, and cross-border deals (including public and private firms) shows that returns to acquirer shareholders are generally positive around the deal announcement date except for those involving large public firms and those public firms using stock to pay for the deal.⁸⁷ While it varies in these large-sample studies, deals involving private acquirers, private targets, or both comprise at least four-fifths or more of the sample. Unlike earlier results, these studies document that acquirer shareholders earn positive abnormal returns of about 1%–1.5%. While earlier studies show such returns to be zero or slightly negative, they focus almost exclusively on large publicly traded acquirers. They also fail to explain why the number and size of M&As continues to grow globally, implying that managers do not learn from past failures.

Earlier studies may understate average acquirer returns because they are based on relatively small samples of mostly public firms, employ problematic methodologies, fail to capture the preannouncement rise in acquirer share prices,⁸⁸ and fail to adjust for distortions of a few large transactions. Nor do they properly account for premerger pay-for-performance programs even though bidders with high pay-for-performance plans tend to pay lower premiums and realize higher announcement date financial returns than firms that do not have such plans.⁸⁹ Furthermore, commonly used sampling methods bias sample selection toward larger publicly traded firms making such samples unrepresentative of the general populations of firms involved in M&As.⁹⁰

⁸⁵See Table 11 in Netter et al. (2011).

⁸⁶Ang and Ismail (2015).

⁸⁷Yilmaz and Tanyeri (2016), Erel et al. (2012), Netter et al. (2011), and Ellis et al. (2011).

⁸⁸Cornett et al. (2011) and Cai et al. (2011).

⁸⁹Krolikowski (2016).

⁹⁰Moeller et al. (2005) and Jansen and Stuart (2014).

A more significant shortcoming of measuring the success or failure of deals using financial returns around the announcement date is that they do not view M&As in the context of a larger integrated business strategy.⁹¹ Such event studies assume that investors at the time of the deal's announcement can accurately assess potential synergy, even though often investors lack access to the necessary information to make an informed decision. Google was widely criticized as having overpaid in 2006 when it acquired YouTube for \$1.65 billion. Google's business strategy was to increase usage of its search engine and websites to attract advertising revenue. Today, YouTube is widely recognized as the most active site featuring videos on the internet and has attracted substantial additional web activity for its parent. Viewed independently from the Google business strategy, YouTube may not exhibit attractive financial returns, but as part of a larger strategy, it appears to have been wildly successful. Moreover, event studies do not take into account the potential beneficial impact of defensive acquisitions.⁹² Facebook's eye-popping \$21.8 billion acquisition in 2014 of WhatsApp with its \$20 million in annual revenue was in part justified because it kept this rapidly growing mobile messaging business out of the hands of Google.

Disney was severely criticized as overpaying when it acquired Pixar for \$7.3 billion in 2006, Marvel Entertainment in 2009 for \$4 billion, and Lucasfilm for \$4 billion in 2012. Disney's business strategy has been to nurture strong brands and grow creative content. The acquisition of the wildly successful film animation studio Pixar reinvigorated Disney's animation and production studio business and prevented Pixar from being acquired by a rival. Marvel Entertainment provided the firm with such iconic brands as Iron Man, Spider-Man, the X-Men, Captain America, the Fantastic Four, and Thor. Lucasfilm added the Star Wars franchise to Disney's growing film library. When combined with Disney's creative skills and global distribution, these brands have helped push Disney earnings to record levels.

Postmerger Returns to Shareholders

The objective of examining postmerger accounting or other performance measures such as cash flow and operating profit, usually during the 3- to 5-year period following closing, is to assess how performance changed. The evidence, however, is conflicting about the long-term impact of M&A activity. In a review of 26 studies of postmerger performance during the 3–5 years after the merger, Martynova and Renneboog (2008a) found that 14 showed a decline in operating returns, 7 provided positive (but statistically insignificant) changes in profitability, and 5 showed a positive and statistically significant increase in profitability.⁹³ The inability to determine the long-term impact of M&As appears to be affected by methodological issues and the failure to distinguish among alternative situations in which M&As occur. The longer the postmerger period analyzed, the greater the likelihood that

⁹¹Barkema and Schijven (2008).

⁹²Bidders may rationally overpay when the cost of overpaying is less than the cost incurred in losing the target to a competitor (Akdogu, 2011).

⁹³The disagreement about postmerger returns may be the result of sample and time selections, methodology employed in the studies, or factors unrelated to the merger, such as a slowing economy (Fama, 1998). Dutta et al. (2009) do not find evidence of any systematic long-term deterioration in acquirer financial performance and attribute findings of such deterioration to the choice of benchmarks, differing methodologies, and statistical techniques.

other factors, wholly unrelated to the merger, will affect financial returns. Moreover, these longer-term studies are not able to compare how well the acquirer would have done without the acquisition.

Acquirer Returns Vary by Characteristics of Acquirer, Target, and Deal

Abnormal returns to acquirer shareholders are largely situational, varying according to the size of the acquirer, the type and size of the target, the form of payment, firm-specific characteristics, and investor sentiment (Table 1.4).

TABLE 1.4 Acquirer Returns Differ by Characteristics of the Acquirer, Target, and Deal as Well as Investor Sentiment

Characteristic	Empirical support
Type of target: acquirer returns - On US buyouts are often positive when the targets are privately owned (or are subsidiaries of public companies) and slightly negative when the targets are large publicly traded firms (i.e., so-called “listing effect”), regardless of the country - On cross-border deals generally positive except for those involving large public acquirers that are often zero to negative	Jansen and Stuart (2014) Netter et al. (2011) Capron and Shen (2007) Faccio et al. (2006) Draper and Paudyal (2006) Moeller et al. (2005) Barbopoulos et al. (2013) Erel et al. (2012) Ellis et al. (2011) Yilmaz and Tanyeri (2016)
Form of payment: acquirer returns - On equity-financed acquisitions of large public firms often negative and <i>less than</i> cash-financed deals in the United States - On equity-financed acquisitions of public or private firms frequently <i>more than</i> all-cash-financed deals in EU countries - On equity-financed deals involving private firms (or subsidiaries of public firms) often exceed significantly cash deals - On cross-border deals financed with equity often negative	Fu et al. (2013) Schleifer and Vishny (2003), Megginson et al. (2003) Martynova and Renneboog (2008a, 2008b) Netter et al. (2011) Officer et al. (2009) Chang (1998) Ellis et al. (2011) Vijh and Yang (2013) Offenberg (2009)
Acquirer/target size - Smaller acquirers often realize higher returns than larger acquirers - Relatively small deals often generate higher acquirer returns than larger ones - Acquirer returns may be lower when the size of the acquisition is large relative to the buyer (i.e., more than 30% of the buyer’s market value)	Gorton et al. (2009) ^a Moeller et al. (2005) Moeller et al. (2004) Hackbarth and Morellec (2008) Frick and Torres (2002) Rehm et al. (2012)
Firm characteristics: acquirer returns higher due to - Deal-making experience - Postmerger integration skills - Specific industry or proprietary knowledge	Golubov et al. (2015)
Investor sentiment: acquirer returns higher due to - Overly optimistic investors - Substantial media attention	Danbolt et al. (2015)

Smaller Acquirers Tend to Realize Higher M&A Returns

Managers at large firms tend to overpay more than those at smaller firms, since large-firm executives may have been involved in more deals and be overconfident. This is sometimes referred to as the “size effect.” Incentive systems at larger firms also may skew compensation to reflect more the overall size of the firm than its ongoing performance. Finally, managers of large firms may pursue larger, more risky investments (such as unrelated acquisitions) in an attempt to support the firm’s overvalued share price. In contrast, CEOs of small firms tend to own a larger percentage of the firm’s outstanding shares than those of larger firms. On average CEOs of small firms own 7.4% of their firm’s stock, while those of larger firms own on average 4.5%. Consequently, small-company CEOs may be more risk averse in negotiating M&As. Regardless of the reason, research shows that large public acquirers tend to destroy shareholder wealth, while small acquirers create wealth.⁹⁴

While the “size effect” has been widely documented in developed countries, large size can have significant benefits for M&As in countries characterized by weak corporate governance, (i.e., countries in which the laws and courts fail to protect shareholders’ rights). Realizing positive abnormal financial returns averaging 1.3% around the deal announcement date, large acquirers in such countries often are better able to insulate themselves from corrupt governments due to their sheer size, prestige, influence, and political connections. Reflecting their excellent political connections in weak governance environments, large acquirers often take less time to complete deals than in countries with more rigorous governance practices enabling a more rapid realization of anticipated synergies.⁹⁵

Acquirer Returns Often Positive for Privately Owned or Subsidiary Targets

US acquirers of private firms or subsidiaries of publicly traded firms often realize positive abnormal returns of 1.5%–2.6% around the announcement date.⁹⁶ Acquirers pay less for private firms or subsidiaries of public companies due to the limited availability of information and the limited number of bidders for such firms. That is, the market for private firms is relatively illiquid. Since these targets may be acquired at a discount from their true value, acquirers are able to realize a larger share of the combined value of the acquirer and target firms.

Relatively Small Deals May Generate Higher Returns

Acquirer announcement date financial returns tend to be three times larger for acquisitions involving small targets than for those involving large targets.⁹⁷ High-tech firms realize attractive returns by acquiring small, but related, target firms to fill gaps in their product

⁹⁴Regardless of how they were financed (i.e., stock or cash) or whether they were public or private targets, acquisitions made by smaller firms had announcement returns 1.55% higher than a comparable acquisition made by a larger firm (Moeller et al., 2004).

⁹⁵Humphery-Jenner and Powell (2014).

⁹⁶(Fuller et al., 2002; Moeller et al., 2004). Similar results were found in an exhaustive study of UK acquirers (Draper and Paudyal, 2006) making bids for private firms or subsidiaries of public firms, where the positive abnormal returns were attributed to the relative illiquidity of such businesses.

⁹⁷Vijh and Yang (2013) define small and large targets as firms in the bottom quartile of firms trading on the New York Stock Exchange.

offerings.⁹⁸ Larger deals tend to be riskier for acquirers⁹⁹ and experience consistently lower postmerger performance, possibly reflecting the challenges of integrating large target firms and realizing projected synergies. There are exceptions: firms making large acquisitions show less negative or more positive returns in slower-growing than in faster-growing sectors.¹⁰⁰ In slow-growth industries, integration may be less disruptive than in faster-growing industries, which may experience a slower pace of new product introductions and upgrade efforts. Furthermore, small firms are less likely than larger firms to receive overpriced stock offers since they often are less attractive to larger firms, which are more prone to use overvalued stock.¹⁰¹ Why? Because small deals often do not provide the incremental revenue and profit to jump-start growth for the larger firms. Therefore, purchases of smaller firms at reasonable prices provide a greater likelihood of realizing attractive financial returns.

Payment Impacts Acquirer Returns

Announcement date returns to acquirer shareholders often are negative when the acquirer and the target are publicly traded and the form of payment consists mostly of stock. For publicly traded firms, acquirers tend to issue stock when they believe it is overvalued, because they can issue fewer new shares resulting in less earnings dilution. Investors treat such decisions as signals that the stock is overvalued and sell their shares when the new equity issue is announced, causing the firm's share price to decline. However, the majority of the decline in acquirer shares on the announcement date may be related more to merger arbitrage activity than to investors believing the shares are overvalued. About 60% of the sharp decline in acquirer shares on the announcement date may reflect short selling as arbs buy the target's shares and short the acquirer's.¹⁰²

Other factors contributing to negative acquirer returns in stock for stock deals may reflect a tendency of acquirers using overvalued stock to overpay for target firms and the extent of the overpayment prevents such firms from recovering the premium paid through synergy.¹⁰³ Acquirers that use cash to purchase the target firm are less likely to overpay and exhibit better long-term performance than do those using stock.¹⁰⁴ However, equity-financed transactions in the European Union often display higher acquirer returns than those using cash, due to the existence of large block shareholders, whose active monitoring tends to improve the acquired firm's performance. Such shareholders are less common in the United States.¹⁰⁵

Why would target shareholders accept overvalued acquirer shares? Target firms may accept such payment terms because in share exchanges the requirement to pay capital gains taxes may be deferred until the target shareholders sell their shares,¹⁰⁶ the takeover may be

⁹⁸For the 10-year period ending in 2000, high-tech companies, averaging 39% annual total return to shareholders, acquired targets whose average size was about 1% of the market value of the acquiring firms (Frick and Torres, 2002).

⁹⁹Hackbarth and Morellec (2008) and Alexandridis et al. (2013).

¹⁰⁰Rehm et al. (2012).

¹⁰¹Vijh and Yang (2013).

¹⁰²Liu and Wu (2014).

¹⁰³Fu et al. (2013).

¹⁰⁴Akbulut (2013), Schleifer and Vishny (2003), and Megginson et al. (2003).

¹⁰⁵Martynova and Renneboog (2008a).

¹⁰⁶See Chapter 12 for a more detailed discussion of the tax advantages of share exchanges.

too big for the acquirer to finance with cash, overvaluation may not be obvious, or the use of acquirer shares may reduce the leverage of the combined firms. The latter factor recognizes that the postmerger risk associated with acquirer shares reflects the combined leverage of both the target and acquiring firms. Overvalued acquirer shares may be justified if their issuance will result in a reduction in the leverage (i.e., a lower debt to total capital ratio) of the combined firms.¹⁰⁷ The resulting risk reduction may reduce or eliminate the overvaluation of the acquirer shares.

Announcement-period gains to acquirer shareholders tend to dissipate within 3–5 years, even when the acquisition was successful, when stock is used to acquire a large public firm.¹⁰⁸ These findings imply that shareholders, selling around the announcement dates, may realize the largest gains from either tender offers or mergers.

A tendency for target firms to manage premerger earnings also may explain their underperformance in the years immediately following a takeover, even when acquirers use cash rather than equity. Targets may deliberately overaccrue revenue and underaccrue expenses during the year prior to takeovers in order to boost reported earnings used by the acquirer to value the target firm.¹⁰⁹ In cash transactions, the full cost of such earnings management is borne by acquirer shareholders who may see their shares decline in value as GAAP is accurately applied in future years, while target shareholders having received cash at closing are unhurt.¹¹⁰

Firm-Specific Characteristics May Outweigh Deal-Specific Factors

Acquirer characteristics may explain to a greater extent than deal-specific factors (e.g., form and timing of payment) the variation in financial returns to acquiring firms.¹¹¹ While a growing literature using increasingly larger and more diverse samples over the past three decades has identified a number of determinants of acquirer performance, the overall variation in acquirer returns remains largely unexplained. Most studies explain a small percentage of such variation as measured by the adjusted R^2 of the regression models used in these studies. An example of a firm-specific factor is the firm's organizational deal making skill and knowledge possibly residing in an in-house corporate development team charged with screening deals, performing due diligence, and undertaking most of the analysis underlying acquisition decisions. Other factors could include a firm's time-tested postmerger integration process, specific industry or proprietary knowledge, or accumulated experience. Successful acquirers tend to internalize the M&A process such that continuing success is not dependent on the leadership at the top and the deal structure employed.

¹⁰⁷Vermaelen and Xu (2014).

¹⁰⁸Alexandridis et al. (2013) and Black et al. (2007).

¹⁰⁹Revenue accruals represent revenue that has been earned but not yet received such as sales to customers made on credit. Such revenue may be inflated if not reduced by an amount that the firm can reasonably expect not to collect. Expense accrual refers to costs incurred by the firm but not yet paid such as commissions, wages, and benefits. Firms can report actual expenses paid in the current period rather than to account fully for future expense obligations.

¹¹⁰Campa and Hajbaba (2016).

¹¹¹Golubov et al. (2015).

Investor Sentiment

Abnormal returns to acquirer shareholders tend to be higher when investors are optimistic around the announcement date of the deal resulting in an overestimation of potential synergies and an underestimation of risk.¹¹² The impact of investor sentiment varies by sophistication of bidder shareholders, whether the bidder is public or private, and the size of the target firm compared to the bidder. This optimism tends to be greatest for firms with few large, sophisticated institutional investors (or blockholders) and mostly smaller, less knowledgeable shareholders. Investor sentiment also is impacted significantly when deals receive extensive media attention around the announcement date. This is often true for large publicly traded firms and when smaller firms acquire much larger firms.

Payoffs for Bondholders

M&As have little impact on abnormal returns to acquirer or to target bondholders, except in special situations. The limited impact on bondholder wealth is due to the relationship between leverage and operating performance.¹¹³ How M&As affect bondholder wealth reflects, in part, the extent to which an increase in leverage that raises the potential for default is offset by the discipline imposed on management to improve operating performance.¹¹⁴ Other things being equal, increasing leverage will lower current bondholder wealth, while improving operating performance will improve bondholder wealth. Target firm bondholders, whose debt is below investment grade, experience positive abnormal returns if the acquirer has a higher credit rating.¹¹⁵ Much of the improvement in the target firm comes well before the announcement of a takeover and is more likely attributable to insider information than market anticipation.¹¹⁶ Furthermore, when loan covenant agreements for firms that are subject to takeovers include poison puts that allow bondholders to sell their bonds back to the company at a predetermined price, bondholders experience positive abnormal returns when a change of control takes place.¹¹⁷ Target firms whose boards support a buyout offer may tender for such bonds because they increase the acquirer's takeover cost and threaten deal completion. Such actions can result in significant excess returns to those tendering their bonds.¹¹⁸

¹¹²Danbolt et al. (2015).

¹¹³Renneboog and Szilagyi (2007).

¹¹⁴The empirical evidence is ambiguous. A study by Billett et al. (2004) shows slightly negative abnormal returns to acquirer bondholders regardless of the acquirer's bond rating. However, they also find that target firm holders of below-investment-grade bonds earn average excess returns of 4.3% or higher around the merger announcement date, when the target firm's credit rating is less than the acquirers' and when the merger is expected to decrease the target's risk or leverage. A study of European deals finds positive returns to acquirer bondholders of 0.56% around the announcement date of the deal (Renneboog et al., 2007).

¹¹⁵Kedia and Zhou (2011, 2014).

¹¹⁶Kedia and Zhou (2014).

¹¹⁷Billett et al. (2010).

¹¹⁸Billett and Yang (2016).

Another special case occurs when financial institutions hold both equity and debt positions in a firm. Sometimes called “dual holders,” such institutions have an incentive to accept smaller equity premiums when the value of the debt position is likely to increase by an amount greater than the equity premium. Why? A takeover resulting in a lower debt to equity ratio often causes the value of the target’s debt to appreciate significantly if the firm was previously viewed as highly leveraged prior to the takeover bid. Consequently, “dual holders” stand to benefit more if the deal closes than if it does not because the acquirer balks at the size of the equity premium demanded by the target firm.¹¹⁹

Acquirers with large cash balances are found to experience lower announcement date returns to bondholders, an effect that has been widely documented for acquirer shareholders. While large cash balances could be viewed as positive for bondholders since they serve as a cushion against default, evidence shows that they tend to encourage value-destroying takeovers because management tends to overpay in the presence of such balances.¹²⁰

Payoffs for Society

Most empirical studies show that M&As result in improved operating efficiencies and lower product prices than would have been the case without the deal. Gains in aggregate shareholder value (i.e., financial returns to both acquirer and target firm shareholders) are attributed more to the improved operating efficiency of the combined firms than to increased market or pricing power.¹²¹ That is, many M&As create value when more efficient firms acquire less efficient ones.¹²² After a takeover, acquirers have a strong incentive to improve the target’s operating efficiency to recover any premium paid. Acquirers improve the target’s efficiency by automating labor-intensive activities, with layoffs concentrated among nonproduction workers. Thus, what ultimately drives increases in the combined firm’s share price is improved productivity measured by output per unit of input resulting from the acquisition of the less efficient target firm.¹²³

SOME THINGS TO REMEMBER

M&As represent only one way of executing business plans. Alternatives include “go it alone” strategies and the various forms of business alliances. Which method is chosen depends on management’s desire for control, willingness to accept risk, and the range of opportunities present at a particular moment in time. M&As generally reward significantly target shareholders and, to a lesser extent, acquirer shareholders, with some exceptions.

¹¹⁹Bodnaruk et al. (2016).

¹²⁰Poldolski et al. (2016).

¹²¹Shahrur (2005), Ghosh (2004), and Akhigbe et al. (2000).

¹²²Maksimovic and Phillips (2001) and Maksimovic et al. (2013).

¹²³Li (2013).

CHAPTER DISCUSSION QUESTIONS

- 1.1 Discuss why mergers and acquisitions occur.
- 1.2 What is the role of the investment banker in the M&A process?
- 1.3 In your judgment, what are the motivations for two M&As currently in the news?
- 1.4 What are the arguments for and against corporate diversification through acquisition? Which do you support, and why?
- 1.5 What are the primary differences between operating synergy and financial synergy?
- 1.6 At a time when natural gas and oil prices were at record levels, oil and natural gas producer Andarko Petroleum announced the acquisition of two competitors, Kerr-McGee Corp. and Western Gas Resources, for \$16.4 billion and \$4.7 billion in cash, respectively. The acquired assets complemented Andarko's operations, providing the scale and focus necessary to cut overlapping expenses and concentrate resources in adjacent properties. What do you believe were the primary forces driving Andarko's acquisition? How will greater scale and focus help Andarko cut costs? What are the assumptions implicit in your answer to the first question?
- 1.7 Mattel, a major US toy manufacturer, virtually gave away The Learning Company (TLC), a maker of software for toys, to rid itself of a disastrous acquisition. Mattel, which had paid \$3.5 billion for TLC, sold the unit to an affiliate of Gores Technology Group for rights to a share of future profits. Was this a related or unrelated diversification for Mattel? Explain your answer. How might your answer to the first question have influenced the outcome?
- 1.8 AOL acquired Time Warner in a deal valued at \$160 billion. Time Warner was at the time the world's largest media company, whose major business segments included cable networks, magazine publishing, book publishing, direct marketing, recorded music and music publishing, and film and TV production and broadcasting. AOL viewed itself as the world leader in providing interactive services, web brands, Internet technologies, and electronic commerce services. Would you classify this business combination as a vertical, horizontal, or conglomerate transaction? Explain your answer.
- 1.9 Pfizer, a leading pharmaceutical company, acquired drug maker Pharmacia for \$60 billion, betting that size is what mattered in the new millennium. Pfizer was finding it difficult to sustain the double-digit earnings growth demanded by investors due to the skyrocketing costs of developing and commercializing new drugs. Expiring patents on a number of so-called blockbuster drugs intensified pressure to bring new drugs to market. In your judgment, what were the primary motivations for Pfizer's desire to acquire Pharmacia? Categorize these in terms of the primary motivations for M&As discussed in this chapter.
- 1.10 Dow Chemical, a leading chemical manufacturer, acquired Rohm and Haas Company, a maker of paints, coatings, and electronic materials, for \$15.3 billion. While Dow has competed profitably in the plastics business for years, this business has proven to have thin margins and to be highly cyclical. As a result of the acquisition, Dow would be able to offer less-cyclical and higher-margin products. Would you consider this related or unrelated diversification? Explain your answer. Would you consider this a cost-effective way for the Dow shareholders to achieve better diversification of their investment portfolios?

Answers to these Chapter Discussion Questions are available in the Online Instructor's Manual for instructors using this book (<https://textbooks.elsevier.com/web/Manuals.aspx?isbn=9780128016091>).

END OF CHAPTER CASE STUDY: CHARTER COMMUNICATIONS ACQUIRES TIME WARNER CABLE AMID INDUSTRY TURMOIL

Case Study Objectives: To Illustrate

- The role of changing technologies in forcing rapid industry consolidation
- How the pace of consolidation often is the greatest in industries with high fixed expenses
- Why successful consolidation requires both vision and aggressive cost cutting
- Why business strategies must change to reflect changing competitive conditions

No successful business strategy can remain static. Significant and sustained changes in a firm's external environment will ensure that efforts to "stay the course" will result eventually in business failure. The US cable industry is a prime example of how changing technologies are making obsolete the industry's traditional business model of monthly subscriptions to access "bundles" of channels. This model worked for decades, but now cable customers can "cut the cord" and move to online video.

Online video content usage has exploded in popularity at the expense of TV viewing. At the end of 2015, ratings company Nielsen reported TV viewing fell by 8% from year-earlier levels while online streaming-to-TV surged by more than 50% during the same period. Traditional TV content is now available on an ever-widening array of video services such as Netflix, Hulu, and YouTube. Once having established accounts with these channels, a user is able to stream to their television content on Netflix, Amazon Instant Video, Hulu Plus, HBO Go, Pandora, etc., through products such as Roku. The Roku feed puts choice and control in the consumer's hands. How? By providing access to a wide variety of online content enabling users to pay only for what they want to watch rather than being forced to pay for bundles of channels and content from traditional cable companies that they often do not want. Reflecting what consumers see as excessive pricing, limited choice, and deteriorating customer service, the move away from traditional cable TV subscriptions is accelerating. In response, the cable industry is rushing to shift from the traditional business model to one in which they become internet and video service providers.

While going online doesn't mean free, since streaming service still costs money, the cost to the consumer often is lower than monthly cable subscriptions and online streaming enables users to pay only for what they actually want. At the time of this writing, Hulu runs \$8 per month, Netflix is \$9 per month, and Amazon is \$99 per year. The new HBO Now costs \$15 per month, and Sling TV—which has an assortment of "cable" channels, including AMC and ESPN—starts at \$20 per month. In addition, some shows are not part of unlimited streaming plans, requiring you to pay for individual episodes or seasons.

Making money as a content distributor (e.g., cable companies) or as a content provider (e.g., TV networks) was always a numbers game. The traditional cable business model has stood largely intact for more than 30 years. Cable companies represented an alternative gateway to a wide variety of TV network content. Cable companies made money by covering their fixed network costs

by locking as many customers as possible into long-term subscriptions to “bundles of channels.” They charged more for the most popular bundles. Content providers covered the fixed expenses associated with developing programming by selling content to the cable and TV networks with the largest viewing audiences. Content providers could maximize their profit by reselling the same content to as many viewers as possible.

The now legendary 74-year-old John Malone was a formative figure in the cable industry. His vision for the cable industry when it was in its infancy was to create a subscription business generating predictable and growing revenue stream by making every household in America a cable customer. The industry would have high barriers to entry because of its huge capital requirements. While subject to regulation as a utility, the cable business could justify raising prices by bundling services sold to its largely captive audience that in the early years had few alternatives to cable.

Malone realized his vision by taking control of Tele-Communications Inc. (TCI) in his early 30s and through a series of acquisitions grew it into the nation’s largest cable company. In 1998, he sold TCI for \$48 billion to AT&T, which later sold its cable business to Comcast. But the cable-TV market that Mr. Malone and others raced to build at a breakneck pace is now mature and beginning to show signs of decline. The strategic imperative for traditional cable firms is to expeditiously move from their traditional model to one in which they are profitable providers of online video and broadband services. And their strategy for achieving this transformation is through acquisition.

While the cable industry has always been subject to a high degree of acquisition activity, it has historically been used mostly as a mechanism for achieving and sustaining a high level of revenue and profit growth. More recently, cable firms have been engaging in acquisitions as much for survival as for growth. Acquisitions for the cable companies represent a much more rapid way of obtaining increased geographic coverage, customer contracts, as well as network and content assets than growth by reinvesting in their existing business. The major risk of acquisitions is overpaying for acquired assets and not being able to generate the minimum required return to attract and retain investors.

In 2013, Charter Communications Inc. (Charter) made several offers for Time Warner Cable (TWC) but was repeatedly rejected. In 2014, it made an unsuccessful hostile bid but was thwarted by TWC accepting a richer Comcast bid. Charter’s aggressive tactics seem to reflect the instincts of cable mogul John Malone. He has substantial influence on Charter’s strategy through Liberty Broadband Corporation’s (Liberty) substantial equity stake in Charter. Malone is the controlling shareholder in Liberty.

When Comcast’s deal was thwarted by regulators, the highly leveraged Charter took a less aggressive approach getting Mr. Malone more involved in the initial phases of the deal. He called TWC’s CEO Rob Marcus initially indicating that Charter wanted a friendly deal. Charter deliberately avoided making what would be perceived by TWC as an excessively low offer so as not to alienate TWC’s CEO and board. Charter’s offer of \$195 per TWC share was also structured to give TWC shareholders more choice: \$110 in cash and \$95 in stock or \$115 in cash and the remainder in stock. The deal involved a breakup fee. If regulators block the deal, Charter could owe Time Warner Cable about \$2 billion, or Time Warner Cable would be responsible for the breakup fee if it had accepted an offer from a rival suitor.

Timing and persistence paid off. Charter announced on May 26, 2015, that it had reached an agreement to acquire TWC for \$55 billion cash and stock deal excluding assumed TWC debt, a 14% premium to TWC’s closing price on May 22. The merger also includes a smaller cable company,

Bright House Networks, which Charter had previously agreed to buy. Liberty, the John Malone company holding a stake in Charter, bought \$5 billion in new stock to help finance the takeover.

Including debt and equity, the transaction value (also called enterprise value) of TWC was \$78.7 billion. The deal enables Charter to quadruple its number of cable subscribers, with much of the increase coming in such key cities as New York, Los Angeles, and Dallas. The combined businesses will have more than 24 million cable customers, second only to Comcast's 27 million. In addition, the combined firms will have greater leverage in negotiating contracts with television networks wanting to distribute their content to the new firm's cable customers. TWC shares rose 7.3% on the deal's announcement date, or about one-half of the offer price premium. Charter's shares gained 2.5%.

In the wake of the failure of market leader Comcast to get approval to acquire TWC, why did Charter believe it could get approval? There is little market overlap between Time Warner, Charter, and Bright House and the combined businesses will still not be as big as Comcast's broadband/cable business. By some estimates, a tie-up between Comcast and TWC would have given the combined firms almost two-thirds of the broadband market. Moreover, Charter is not as vertically integrated as Comcast that produces considerable amounts of its own content. The Federal Communication Commission's clearer definition of so-called net neutrality rules, which essentially ban discrimination against businesses wishing to access the internet through gateway services such as cable, makes it more difficult for a cable firm to hamper access to potential competitors. Finally, the emergence of online video alternatives to cable promotes increased competition for the traditional cable firms.

In May 2016, Charter received regulatory approval to acquire Time Warner subject to certain conditions being satisfied. These include requiring Charter to expand broadband service in areas that are currently underserved and to provide affordable internet service to at least 525,000 low-income households.

To be successful in the coming years, cable operators will need to lean heavily on their broadband businesses to generate profit growth while limiting shrinkage in their TV business. That means investing in broadband infrastructure, streaming video services, and other technologies. Consequently, the demands on cash flow will accelerate.

The impact of the consolidation among cable providers on content providers is ominous. The Charter/TWC deal shrinks the number of major internet and cable TV distributors in the United States to just four: Comcast, Charter, Verizon, and AT&T/DirecTV. With fewer outlets to sell their shows, TV and cable network content providers have less leverage to demand high fees and the inclusion of their niche channels in packages of services offered to cable customers. This is likely to hurt revenue at content providers such as Discovery, AMC Networks, Scripps Networks Interactive, and even Viacom. Their only recourse may be for the networks to merge or be acquired by cable and internet distributors themselves.

While content distributors may currently have the upper hand in their dealings with content providers, their advantage may be short lived as Amazon, Facebook, and Apple could enter the business of providing streaming video on demand. This would enable the major TV networks to seek partners from firms such as Facebook or Apple when they launch their own internet-based video service. The cable companies turned online video and broadband suppliers must remain vigilant and aware of changing circumstances in the industry. A clear vision of where they want to compete and on what basis they want to compete will help sustain their advantage over content suppliers. However, as technological and regulatory change occurs, they must be willing to vary their business models to accommodate changes in their external environment.

Discussion Questions

1. Using the motives for M&As described in this chapter, which do you think apply to Charter's acquisition of Time Warner Cable? Discuss the logic underlying each motive you identify. Be specific.
2. What are the key implicit assumptions underlying Charter's bid to take over Time Warner Cable? Do you believe these assumptions were realistic? Why/why not?
3. Speculate as to why Charter offered Time Warner Cable a choice of various combinations of stock and cash. How might the composition of the offer price affect its attractiveness to TWC shareholders? Be specific.
4. Charter's share price declined by 2.5% while Time Warner's share price jumped by 7.3%, about one-half of the offer price premium. Speculate as to why the stock prices of the two firms acted as they did immediately following the announcement of an agreement between the two firms to merge.
5. What factors contributed to cable industry consolidation? Be specific. Explain how each factor identified impacted industry competitors.

Answers to these questions are found in the Online Instructor's Manual available to instructors using this book (<https://textbooks.elsevier.com/web/Manuals.aspx?isbn=9780128016091>).

ADDITIONAL CASE STUDY RECOMMENDATIONS (SEARCH HARVARD BUSINESS SCHOOL PUBLISHING SITE BY NAME OF CASE: hbsp.harvard.edu)

Hindalco's Acquisition of Novelis: The Making of a Giant, Aastha Sachdeva, Madhur Deep, R. Srinivasan, Revision Date: January 1, 2010, Product Number: IMB303-PDF-ENG, *Source*: Indian Institute of Management, Bangalore, hbsp.harvard.edu.

Subjects Covered: Acquirer and Target Motives, Cross-Border Deals, Value Creation and Value Destruction, Aligning Strategic Intent, Cross-Cultural Relations.

Big (Double) Deal: Anadarko's Acquisition of Kerr-McGee and Western Gas Resources, Clayton Christensen, Curtis B. Rising, Publication Date: October 10, 2009,

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Subjects Covered: Takeovers, Synergy, Premiums, Integration.

The Regulatory Environment

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I am not a product of my circumstances. I am a product of my decisions. —**Stephen Covey**

INSIDE MERGERS AND ACQUISITIONS: COMCAST'S ATTEMPTED 2015 TAKEOVER OF TIME WARNER UNRAVELS IN THE FACE OF VIGOROUS OPPOSITION

KEY POINTS

- Public opposition can sway regulatory decisions.
- Criteria applied to regulatory rulings can vary from one deal to another.
- Timing often is everything in gaining regulatory approval.

It would appear that some things in life are not meant to be. Comcast's aborted takeover of Time Warner Cable (TWC) appears to be one of these things. On April 25, 2015, Comcast CEO Brian Roberts and his board decided to withdraw their offer to takeover TWC for \$45.2 billion amidst stiff opposition from regulatory agencies and public outcry.

Announced 14 months earlier, The Comcast-TWC deal had promised to reshape the media landscape—forcing TV channel owners and other pay TV operators to contemplate their own mergers. The proposed takeover of TWC reflected Comcast's belief that it had to get bigger to gain negotiating leverage over cable networks in the distribution of their content. From the outset, the proposed merger ignited a firestorm of controversy from the public, dissatisfied with perceived price gouging and poor customer service. Media content providers, including Netflix and Dish Network, lobbied regulators relentlessly arguing that the combination would enable Comcast to discriminate against content providers. When told by regulators in no uncertain terms they would fight the deal, Comcast decided to call off the merger. Ending the deal was made more palatable due to the absence of a breakup fee, money that the acquirer would have to pay the target firm if the deal were not consummated.

What ultimately caused the deal to unravel? In the end, the coup de grace was the threat of delay. It was clear to the companies that the Federal Communications Commission (FCC) was prepared to call for an administrative judge to hear the case and months or years could have passed before any ruling would be determined. Proposed mergers do not get better with age as customers, suppliers, employees, and shareholders abandon the firms amid the uncertain outcome.

The Department of Justice (DoJ) and FCC while pursuing separate investigations collaborated frequently. Both of them reached a similar conclusion that the merger would make Comcast a "gatekeeper" in a position to determine which content relying on a broadband connection users could access via the internet. Postmerger, Comcast would control more than one-half of the broadband market and would be in a position, so the regulators argued, to determine who would get access to its customers. In doing so, Comcast could impact the emergence of new video service and limit the growth of firms that could become future competitors.

Some observers compared the regulatory reaction to the Comcast and TWC tie-up to AT&T's \$39 billion bid to buy T-Mobile in 2011, the last big telecom merger killed by the DoJ. While AT&T and T-Mobile were competitors in large geographic areas, Comcast and TWC did not compete directly. Therefore, assessing the impact was more complex. In the case of

AT&T and T-Mobile, the substantial increase in market concentration as measured by market share would have enabled the combined firms to raise prices more readily in the absence of a large competitor or engage in nonprice competition such as bundling more services offered at higher prices. In buying T-Mobile, AT&T simply eliminated a competitor, whereas Comcast argued that since it didn't compete with TWC in any geographic markets, the combination of the two firms would result in greater innovation and lower prices and could help improve TWC's notoriously bad customer service.

Regulators chose to focus on the impact of the combination of the broadband market. The FCC increased its definition of broadband speeds from 4 to 25 mbps. The issue became choice and availability. Comcast admitted that they would be the only choice following the merger for 25 mbps or higher for about 63% of households in that range.

Also, Comcast's timing was poor as the announcement came at a time when there was growing support for the FCC's neutrality rules. Net neutrality is the principle that Internet service providers (ISPs) should enable access to all content and applications regardless of the source, and without favoring or blocking particular products or websites. After the FCC approved its rules in February 2015, regulators used the new regulations to hammer the proposed Comcast/TWC combination. Reflecting the furore over Comcast's emerging dominance of the broadband market, over 800,000 individual comments were submitted to the FCC, mostly arguing that the combination should not be allowed. Historically, regulators rarely if ever have approved a merger in the face of such opposition.

CHAPTER OVERVIEW

Most deals requiring regulatory review due ultimately receive approval, although often with concessions made by the parties involved. Why do regulators find some deals acceptable and not others? This chapter addresses this question and others by focusing on the key elements of the regulatory process and its implications for mergers and acquisitions (M&As). The labyrinth of environmental, labor, benefit, and foreign laws that affect M&As is also discussed. The chapter concludes with a series of discussion questions, an end of chapter case study, and recommendations for other case studies illustrating the material discussed in this chapter. [Table 2.1](#) provides a summary of applicable legislation. A review of this chapter is available (including practice questions and answers) in the file folder entitled Student Study Guide contained on the companion site to this book (<https://www.elsevier.com/books-and-journals/book-companion/9780128016091>).

UNDERSTANDING FEDERAL SECURITIES LAWS

Whenever the acquirer or target has publicly traded securities, the firms are subject to the substantial reporting requirements of the current federal securities laws.¹ Passed in the 1930s, these laws reflected the loss of confidence in the securities markets following the 1929 stock market crash.

¹Note that a private company can be subject to the same reporting requirements if it merges with a public shell company in a reverse merger.

TABLE 2.1 Laws Affecting M&A

Law	Intent
<i>FEDERAL SECURITIES LAWS</i>	
Securities Act (1933)	Prevents the public offering of securities without a registration statement; defines minimum data requirements and noncompliance penalties
Securities Exchange Act (1934)	Established the SEC to regulate securities trading. Empowers the SEC to revoke the registration of a security if the issuer is in violation of any provision of the 1934 act
Section 13	Defines content and frequency of SEC filings as well as events triggering them
Section 14	Defines disclosure requirements for proxy solicitation
Section 16(a)	Defines what insider trading is and who is an insider
Section 16(b)	Defines investor rights with respect to insider trading
Williams Act (1968)	Regulates tender offers
Section 13D	Defines disclosure requirements
Sarbanes–Oxley Act (2002)	Initiates reform of regulations governing financial disclosure, governance, auditing, analyst reports, and insider trading
Jumpstart Our Business Startups Act or JOBS Act (2012)	Intended to reduce reporting requirements for so-called “emerging companies”
<i>FEDERAL ANTITRUST LAWS</i>	
Sherman Act (1890)	Made “restraint of trade” illegal; establishes criminal penalties for behaviors that limit competition unreasonably
Section 1	Makes mergers creating monopolies illegal
Section 2	Applies to firms already dominant in their served markets to prevent them from “unfairly” restraining trade
Clayton Act (1914)	Outlawed such practices as price discrimination, exclusive contracts, and tie-in contracts, and created civil penalties for illegally restraining trade
Celler–Kefauver Act of 1950	Amended the Clayton Act to cover asset as well as stock purchases
Federal Trade Commission Act (1914)	Established a federal antitrust enforcement agency; made it illegal to engage in deceptive business practices
Hart–Scott–Rodino Antitrust Improvement Act (1976)	Requires a waiting period before a transaction can be completed and sets regulatory data submission requirements
Title I	Defines what must be filed
Title II	Defines who must file and when
Title III	Enables state attorneys general to file triple damage suits on behalf of injured parties

TABLE 2.1 Laws Affecting M&A (*cont.*)

Law	Intent
<i>OTHER LEGISLATION AFFECTING M&AS</i>	
Dodd–Frank Wall Street Reform and Consumer Protection Act (2010)	Reforms executive compensation; introduces new hedge/private equity fund registration requirements; increases Federal Reserve and SEC regulatory authority; gives the government authority to liquidate systemically risky firms; enables government regulation of consumer financial products; and makes it illegal for federal employees and regulators to engage in insider trading
State antitakeover laws	Define conditions under which a change in corporate ownership can take place; may differ by state
State antitrust laws	Similar to federal antitrust laws; states may sue to block mergers, even those not challenged by federal regulators
Exon–Florio amendment to the Defense Protection Act of 1950	Establishes authority to review the impact of foreign direct investment (including M&As) on national security
US Foreign Corrupt Practices Act	Prohibits payments to foreign government officials in exchange for obtaining new business or retaining existing contracts
Regulation Fair Disclosure (FD)	All material disclosures of nonpublic information made by public corporations must be disclosed to the general public
Industry-specific regulations	Banking, communications, railroads, defense, insurance, and public utilities
Environmental laws (federal and state)	Define disclosure requirements
Labor and benefit laws (federal and state)	Define disclosure requirements
Applicable foreign laws	Cross-border transactions subject to jurisdictions of countries in which the bidder and target firms have operations

M&A, Merger and acquisition; SEC, Securities and Exchange Commission.

Securities Act of 1933

This legislation requires that securities offered to the public be registered with the government to protect investors by making issuers disclose all material facts regarding the issue. Registration requires, but does not guarantee, that the facts represented in the registration statement and prospectuses are accurate. The law makes providing inaccurate or misleading statements in the sale of securities to the public punishable with a fine, imprisonment, or both. The registration process requires a description of the company's properties and business, a description of the securities, information about management, and financial statements certified by public accountants.

Securities Exchange Act of 1934

The Securities Exchange Act extends disclosure requirements stipulated in the Securities Act of 1933 to include securities already trading (so-called seasoned or secondary issues) on the national exchanges. The Act also established the Securities and Exchange Commission (SEC), whose purpose is to protect investors from fraud by requiring full and accurate financial disclosure by firms offering stocks, bonds, and other securities to the public. In 1964, coverage was expanded to include securities traded on the Over-the-Counter (OTC) Market. The act also covers proxy solicitations (i.e., mailings to shareholders requesting their vote on a particular issue) by a company or shareholders. The 2010 Dodd–Frank Wall Street Reform and Consumer Protections Act (Dodd–Frank Act) strengthened the SEC enforcement powers by allowing the commission to impose financial penalties against any person, rather than against just entities.

Reporting Requirements

Companies required to file annual and other periodic reports with the SEC are those for which any of the following are true: the firm has assets of more than \$10 million and whose securities are held by more than 499 shareholders, it is listed on any of the major US or international stock exchanges, or its shares are quoted on the OTC Bulletin Board. Even if both parties to a transaction are privately owned, an M&A transaction is subject to federal securities laws if a portion of the purchase price is going to be financed by an initial public offering of securities.

Section 13: Periodic Reports

Form 10K documents the firm's financial activities during the preceding year. The four key financial statements that must be included are the income statement, the balance sheet, the statement of retained earnings, and the statement of cash flows. Form 10K also includes a relatively detailed description of the business, the markets served, major events and their impact on the business, key competitors, and competitive market conditions. Form 10Q is a highly succinct quarterly update of such information. If an acquisition or divestiture is deemed significant,² Form 8K must be submitted to the SEC within 15 days of the event. Form 8K describes the assets acquired or disposed, the type and amount of consideration (i.e., payment) given or received, and the identity of the person (or persons) for whom the assets were acquired. In an acquisition, Form 8K also must identify who is providing the funds used to finance the purchase and the financial statements of the acquired business.

Section 14: Proxy Solicitations

Where proxy contests deal with corporate control, the act requires materials containing the names and interests of all participants to be filed with the SEC in advance of voting. If the deal involves either acquirer or target shareholder approval, any materials distributed to shareholders must conform to the SEC rules for proxy materials.

²Acquisitions and divestitures are usually deemed significant if the equity interest in the acquired assets or the amount paid or received exceeds 10% of the total book value of the assets of the registrant and its subsidiaries.

Insider Trading Regulations

Insider trading involves individuals who buy or sell securities based on knowledge that is not available to the general public. Despite the successful prosecution of 95 insider trading cases between 2009 and 2014 including the record \$1.2 billion fine paid by hedge fund SAC Capital in 2014, there is widespread evidence that insider trading is rampant.³ Historically, insider trading has been covered under the Securities and Exchange Act of 1934. Section 16(a) of the act defines “insiders” as corporate officers, directors, and any person owning 10% or more of any class of securities of a company. The Sarbanes–Oxley Act (SOA) of 2002 amended Section 16(a) of the 1934 act by requiring that insiders disclose changes in ownership within 2 business days of the transaction, with the SEC posting the filing on the Internet within 1 business day after the filing is received.

The SEC is responsible for investigating insider trading. Regulation 10b-5, issued by the SEC, prohibits the commission of fraud in relation to securities transactions. Regulation 14e-3 prohibits trading securities in connection with a tender offer (i.e., an offer to buy securities) based on information that is not available to the general public. Individuals found guilty of engaging in insider trading may be subject to substantial penalties and forfeiture of any profits.⁴ In 2010, the Dodd–Frank Act granted the Commodity Futures Trading Commission authority to investigate insider trading in commodities used in interstate commerce and made it illegal for federal employees to engage in insider trading. The Act also allows the SEC to compensate those providing original information on insider trading activities (so-called whistleblowers) up to 30% of the damages assessed in the successful prosecution of insider trading cases.

The effectiveness of insider trading legislation is limited, due to the difficulty in defining such activity. While the rate at which insiders buy target firm shares slows prior to takeover announcement dates, they reduce the pace at which they sell shares by even more, such that their actual holdings increase.⁵ Such activity is most common in deals where there is less uncertainty about their completion, that is, friendly deals and those with a single bidder. The magnitude of the increase in the dollar value of insider share holdings is about 50% higher than levels normally found in the 6 months prior to announcement dates.⁶

In an effort to limit their exposure to litigation, many corporations voluntarily restrict when insiders can trade in the firm’s securities. Many corporate policies specify certain time periods during which insiders are allowed to trade their stock. During so-called blackout periods, insiders are forbidden to trade their shares without corporate approval. Firms often permit those designated as insiders to trade during short time periods after the quarterly earnings announcement dates, with many requiring their insiders to obtain prior approval even when they trade during the allowed periods. However, despite these restrictions, employees interested in engaging in such practices continue to find ways to circumvent such restrictions.⁷

³Barrett et al. (2011).

⁴According to the Insider Trading Sanctions Act of 1984, those convicted of engaging in insider trading are required to give back their illegal profits and to pay a penalty three times the amount of such profits. A 1988 US Supreme Court ruling gives investors the right to claim damages from a firm that falsely denied it was involved in negotiations that subsequently resulted in a merger.

⁵If insiders normally buy 100 shares and sell 50 shares each month, the normal increase in their holdings would be 50. However, if their purchases drop to 90 and sales to 30 each month, their holdings rise by 60 shares.

⁶Agrawal and Nasser (2012).

⁷Lee et al. (2015).

While most insider trading deals with using nonpublic information to profit from equities, there is also evidence that insiders use nonpublic information to profit from trading in bonds. Bonds issued by firms that are a takeover target often are subject to abnormally large trading volumes just prior to the announcement of the deal, with their prices increasing (decreasing) before they are acquired by firms with better (worse) credit ratings.⁸

Longer sentences may eventually deter insider trading. According to Reuters, those engaged in insider trading are receiving stiffer sentences. Those convicted received an average sentence of 17.3 months for the 5 years ending in 2012 compared to an average of 13.1 months during the prior 5-year period. The average length of sentences could continue to increase due to stiffer sentencing guidelines. In 2012, federal sentencing guidelines for those convicted of insider trading provided for minimum sentences ranging from 15 to 21 months depending on the severity of the crime.

Government efforts to rein in insider trading received a blow on December 10, 2014, when the US Court of Appeals for the Second Circuit in Manhattan dismissed two of the government's signature insider trading convictions. The judge ruled that the government had not proven that the accused securities traders having received indirectly confidential information leaked by insiders (tipplers) were aware that the insiders would benefit from the leaked information. In the past, government prosecutors had argued that mere friendship was enough to prove that the tipper benefitted from passing on an illegal tip to a friend. The judge's ruling establishes a higher standard by requiring that the government also prove that the tipper expected to benefit from sharing confidential information. Not only could this ruling overturn earlier government convictions, but it could also force the SEC to provide clarity as to what constitutes a violation of insider trading laws, something that it has been unable to do in the past. The ruling will stand as the US Supreme Court refused to review the case on October 5, 2015.

On December 7, 2016, the Supreme Court partly offset the 2014 Court of Appeals' ruling by deciding that prosecutors in insider trading cases do not always have to show that money or something of value changed hands. The Supreme Court concluded offering information to a relative is the same as trading on the information by the tipper followed by a gift of the proceeds generated. Simply proving a tipster and trader were related was enough to initiate a lawsuit alleging insider trading. This ruling is narrow in that it does not address gray areas involving trading among friends and professional acquaintances.

Jumpstart Our Business Startups Act (JOBS Act)

Passed on April 12, 2012, the JOBS Act is intended to reduce reporting requirements for so-called "emerging companies," those with less than \$1 billion in annual revenue in their most recent fiscal year and fewer than 2000 shareholders. To qualify for the lighter disclosure requirements, the firm must have issued new securities after December 8, 2011. For qualifying firms, the SEC requires only 2 years of audited financial statements in its IPO registration documents, a less detailed disclosure of executive compensation, and no requirement for SOA Section 404(b), which deals with internal controls and financial reporting.

The allowance for lighter disclosure requirements is justified in part on the notion that investors using the internet will pick the best investments reflecting the "wisdom of crowds."

⁸Kedia and Zhou (2014).

There is reason to be skeptical that small investors will be protected despite having access to limited information because they often are poorly diversified, subject to a “herd” mentality, and often lack sufficient sophistication.

There is evidence that the JOBS Act contributed to increasing US IPO activity, especially among small firms. The majority of the increase cannot be explained by improving stock market or industry conditions. It seems that the new legislation has facilitated access to public markets for emerging firms seeking additional financing, “cash-out” opportunities for founding investors, or to become acquisition targets.⁹

SEC Enforcement Effectiveness

Despite all the media fanfare, sound, and fury that often accompany SEC investigations, some have questioned how effective the Commission actually is in executing its mandate to protect the public from securities fraud. The SEC’s Division of Enforcement conducts investigations into possible violations of federal securities laws, and prosecutes the Commission’s civil suits in federal courts as well as its administrative proceedings. In civil suits, the Commission seeks injunctions or orders prohibiting certain behavior and anyone violating an injunction is subject to fines or imprisonment for contempt.

Data reported annually by the Commission suggests that over time it has been highly effective as both the number of enforcement actions (i.e., those taken to ensure compliance with prevailing laws) undertaken and the amount of fines assessed have tended to increase significantly over time. However, empirical evidence suggests that SEC data may be seriously flawed due to double and even triple counting some of its cases and overstating the actual dollar amount of fines collected. Adjusting for these distortions, enforcement activity between 2002 and 2014 appears to have been relatively steady.¹⁰

The Williams Act: Regulation of Tender Offers

Passed in 1968, the Williams Act consists of a series of amendments to the Securities Act of 1934 intended to protect target shareholders from fast takeovers in which they do not have enough time to assess adequately the value of an acquirer’s offer. This protection was achieved by requiring more disclosure by the bidding company, establishing a minimum period during which a tender offer must remain open, and authorizing targets to sue bidding firms. The disclosure requirements of the Williams Act apply to anyone, including the target, asking shareholders to accept or reject a takeover bid. The major sections of the Williams Act as they affect M&As are in Sections 13(D) and 14(D). The Williams Act requirements apply to all types of tender offers, including those negotiated with the target firm (i.e., negotiated or friendly tender offers), those undertaken by a firm to repurchase its own stock (i.e., self-tender offers), and those that are unwanted by the target firm (i.e., hostile tender offers).¹¹

⁹Dambra et al. (2015).

¹⁰Velikonja (2016).

¹¹The Williams Act is vague as to what is a tender offer so as not to construe any purchase by one firm of another’s shares in the open market as a tender offer. The courts have ruled that a tender offer is characterized by either of the following conditions: (1) a bidder announcing publicly the intent to purchase a substantial block of another firm’s stock to gain control or (2) the actual purchase of a substantial portion of another firm’s shares in the open market or through a privately negotiated block purchase of the firm’s shares.

Sections 13(D) and 13(G): Ownership Disclosure Requirements

Section 13(D) of the Williams Act is intended to regulate “substantial share” or large acquisitions and provides an early warning for a target company’s shareholders and management of a pending bid. Any person or firm acquiring 5% or more of the stock of a public firm must file a Schedule 13(D) with the SEC within 10 days of reaching that percentage threshold. Section 13(D) also requires that derivatives, such as options, warrants, or rights convertible into shares within 60 days, must be included in determining whether the threshold has been reached. Schedule 13(D) requires the inclusion of the identities of the acquirer, their occupation and associations, sources of financing, and the purpose of the acquisition. If the purpose of buying the stock is to take control of the target firm, the acquirer must reveal its business plan for the target firm. The plans could include the breakup of the firm, suspending dividends, a recapitalization of the firm, the intention to merge it with another firm, or simply the accumulation for investment purposes only.

Under Section 13(G), any stock accumulated by related parties, such as affiliates, brokers, or investment bankers working on behalf of the person or firm, is counted toward the 5% threshold. This prevents an acquirer from avoiding filing by accumulating more than 5% of the target’s stock through a series of related parties. Institutional investors, such as registered brokers and dealers, banks, and insurance companies, can file a Schedule 13(G)—a shortened version of Schedule 13(D)—if the securities were acquired in the normal course of business.

The permitted reporting delay under Section 13(D) of up to 10 days allows for potential abuse of the disclosure requirement. In late 2010, activist hedge fund investor William Ackman and real estate company Vornado Realty Trust surprised Wall Street when they disclosed that they had acquired nearly 27% of megaretailer J.C. Penney’s outstanding shares. Once the investors exceeded the 5% reporting threshold, they rapidly accumulated tens of millions of shares during the ensuing 10-day period, driving J.C. Penney’s share price up 45%. In mid-2014, William Ackman again made headlines by having amassed a 9.7% stake in drug company Allergan becoming its largest shareholder before having to publicly disclose this information. The investment was undertaken as part of an effort to acquire Allergan by competitor Valeant Pharmaceuticals and raised questions about whether Ackman had violated insider trading laws by benefitting from his knowledge of the takeover attempt before it was made public.

The 10-day delay gives activists the ability to acquire substantial ownership positions in firms before they can take any actions to strengthen their negotiating positions or ward off an unwanted takeover. When the activists’ positions become publicly known, the target firm’s share prices soar, ensuring the activists a sizeable profit. Activists point out that this is needed to provide them with an incentive to incur the costs of making such investments and the risk that they will not be supported by the target firm’s shareholders. In an effort to improve transparency to the investing public, Britain, Hong Kong, and Germany require investors to disclose their positions in 4 days or less.

Section 14(D): Rules Governing the Tender Offer Process

Although Section 14(D) of the Williams Act relates to public tender offers only, it applies to acquisitions of any size. The 5% notification threshold also applies.

Obligations of the acquirer. An acquirer must disclose its intentions, business plans, and any agreements between the acquirer and the target firm in a Schedule 14(D)-1.

The schedule is called a *tender offer statement*. The commencement date of the tender offer is defined as the date on which the tender offer is published, advertised, or submitted to the target. Schedule 14(D)-1 must contain the identity of the target company and the type of securities involved; the identity of the person, partnership, syndicate, or corporation that is filing; and any past contracts between the bidder and the target company. The schedule also must include the source of the funds used to finance the tender offer, its purpose, and any other information material to the transaction.

Obligations of the target firm. The management of the target company cannot advise its shareholders how to respond to a tender offer until it has filed a Schedule 14(D)-9 with the SEC within 10 days after the tender offer's commencement date. This schedule is called a *tender offer solicitation/recommendation statement*.

Shareholder rights: 14(D)-4 to 14(D)-7. The tender offer must be left open for a minimum of 20 trading days. The acquiring firm must accept all shares that are tendered during this period. The firm making the tender offer may get an extension of the 20-day period if it believes that there is a better chance of getting the shares it needs. The firm must purchase the shares tendered at the offer price, at least on a pro rata or proportional basis, unless the firm does not receive the total number of shares it requested under the tender offer. The tender offer also may be contingent on attaining the approval of the DoJ and the Federal Trade Commission (FTC). Shareholders have the right to withdraw shares tendered previously as long as the tender offer remains open. The law also requires that when a new bid for the target is made from another party, the target firm's shareholders must have an additional 10 days to consider the bid.

The "best price" rule: 14(D)-10. To avoid discrimination, the "best price" rule requires that all shareholders holding the same class of security be paid the same price in a tender offer. Consequently, if a bidder increases what it is offering to pay for the remaining target firm shares, it must pay the higher price to those who have already tendered their shares.

Court rulings in the mid-1990s indicated that executive compensation such as golden parachutes, retention bonuses, and accelerated vesting rights triggered whenever a change in control occurred should be counted as part of the compensation they received for their shares. These rulings significantly reduced the use of tender offers, due to concerns that all shareholders would have to receive payment for their shares comparable to what executives had received following a change in control. The "best price" rule was clarified on October 18, 2006, to exclude executive compensation following a change in control from the price paid for their shares. The rule changes make it clear that the "best price" rule applies only to the consideration (i.e., cash, securities, or both) offered and paid for securities tendered by shareholders.¹² This clarification contributed to the recovery in the use of tender offers in recent years. Having fallen to 3.2% of total deals in 2006, tender offers accounted for about one-fifth of deals in recent years.

¹²Acquirers often initiate two-tiered tender offers, in which target shareholders receive a higher price if they tender their shares in the first tier than those submitting shares in the second tier. The "best price" rule simply means that all shareholders tendering their shares in the first tier must be paid the price offered for those shares in the first tier, and those tendering shares in the second tier are paid the price offered for second-tier shares unless precluded by state law.

The Sarbanes–Oxley Act of 2002

The SOA was signed in the wake of the egregious scandals at such corporate giants as Enron, MCI WorldCom, ImClone, Qwest, Adelphia, and Tyco and has implications ranging from financial disclosure to auditing practices to corporate governance. Section 302 of the act requires quarterly certification of financial statements and disclosure controls and procedures for CEOs and CFOs. Section 404 requires most public companies to certify annually that their internal control system is operating successfully and to report material weaknesses in internal controls to analysts when making earnings forecasts.¹³ The legislation, in concert with new listing requirements at public stock exchanges, requires a greater number of directors on the board who do not work for the company (i.e., so-called independent directors). The act also requires board audit committees to have at least one financial expert, while the full committee must review financial statements every quarter after the CEO and chief financial officer certify them. The SOA also provides for greater transparency or visibility into a firm's financial statements and greater accountability. However, the flagrant practices of some financial service firms (e.g., AIG, Bear Stearns, and Lehman Brothers) in recent years cast doubt on how effective the SOA has been in achieving its transparency and accountability objectives.

The costs associated with implementing SOA have been substantial. As noted in a number of studies (see Chapter 13), there is growing evidence that the monitoring costs imposed by Sarbanes–Oxley have been a factor in many small firms going private since the introduction of the legislation. The overall costs of corporate boards soared post-SOA due to sharply higher director compensation.¹⁴ However, shareholders of large firms that are required to overhaul their existing governance systems under Sarbanes–Oxley may in some cases benefit as new shareholder protections are put in place.¹⁵ Moreover, the run-up in target share prices before they are publicly announced has decreased significantly since the SOA's introduction, perhaps reflecting improved accountability and regulatory oversight of bidder managers and boards involved in deals.¹⁶

New York Stock Exchange listing requirements far exceed SOA's auditor-independence requirements. Companies must have board audit committees consisting of at least three independent directors and a written charter describing its responsibilities in detail. Moreover, the majority of all board members must be independent, and nonmanagement directors must meet periodically without management. Board compensation and nominating committees must consist of independent directors. Shareholders must be able to vote on all stock option plans.

¹³An unintended consequence of the law's requirement that firms make public material weaknesses in internal controls is the reduced coverage of such firms by financial analysts in the year following such announcements (Clinton et al., 2014). Less coverage could result in reduced awareness among investors of potential problems with the firm's earnings quality. This could be mitigated somewhat as investor interest in such firms also is likely to decline in line with waning analyst coverage. Chen et al. (2014a, 2014b) find that firms receiving less analyst coverage can contribute to a firm's CEO receiving "excessive" compensation, managers making value-destroying acquisitions, and managers engaging more aggressively in managing reported earnings.

¹⁴Linck et al. (2009).

¹⁵Chaochharia and Grinstein (2007) conclude that large firms that are the least compliant with the rules around the announcement dates of certain rule implementations are more likely to display significantly positive abnormal financial returns. In contrast, small firms that are less compliant earn negative abnormal returns.

¹⁶Brigida and Madura (2012).

The SOA also created a quasi-public oversight agency, the Public Company Accounting Oversight Board (PCAOB). The PCAOB is charged with registering auditors, defining specific processes and procedures for compliance audits, quality control, and enforcing compliance with specific SOA mandates.

UNDERSTANDING ANTITRUST LEGISLATION

Federal antitrust laws exist to prevent individual corporations from assuming so much market power that they can limit their output and raise prices without concern for any significant competitor reaction. The DOJ and the FTC have the primary responsibility for enforcing federal antitrust laws. The FTC was established in the Federal Trade Commission Act of 1914 to enforce existing antitrust laws, such as the Sherman, Clayton, and Federal Trade Commission acts. The challenge for regulators is to apply prevailing laws in such a way as to discourage monopolistic practices without reducing gains in operational efficiency that may accompany business combinations.

National laws usually do not affect firms outside their domestic political boundaries. There are two exceptions: antitrust laws and laws applying to the bribery of foreign government officials.¹⁷ Outside the United States, antitrust regulation laws are described as competitiveness or merger control laws, which are intended to minimize or eliminate anticompetitive behavior. The EU antitrust regulators were able to thwart the attempted takeover of Honeywell by General Electric—two US corporations with operations in the European Union. Remarkably, this occurred following the approval of the proposed takeover by US antitrust authorities. In 2014, European antitrust authorities blocked United Parcel Services' bid to acquire Dutch shipping company TNT because of concerns about reduced competition in the continent-wide delivery of small packages. The other exception, the Foreign Corrupt Practices Act, is discussed later in this chapter.

The Sherman Act

Passed in 1890, the Sherman Act makes illegal all contracts, combinations, and conspiracies that restrain trade “unreasonably.” Examples include agreements to fix prices, rig bids, allocate customers among competitors, or monopolize any part of interstate commerce. Section I of the Sherman Act prohibits new business combinations resulting in monopolies or in a significant concentration of pricing power in a single firm. Section II applies to firms that already are dominant in their targeted markets. The act applies to all transactions and businesses involved in interstate commerce or, if the activities are local, all transactions and business “affecting” interstate commerce. Most states have comparable statutes.

The Clayton Act

Passed in 1914, the Clayton Act was created to outlaw certain practices not prohibited by the Sherman Act and to help government stop a monopoly before it developed. Section 5 of

¹⁷Truitt (2006).

the act made price discrimination between customers illegal, unless it could be justified by cost savings associated with bulk purchases. Tying of contracts—in which a firm refuses to sell certain important products to a customer unless the customer agrees to buy other products from the firm—also was prohibited. Section 7 prohibits one company from buying the stock of another company if their combination results in reduced competition. Interlocking directorates also were made illegal when the directors were on the boards of competing firms.

Unlike the Sherman Act, which contains criminal penalties, the Clayton Act is a civil statute. The Clayton Act allows private parties that were injured by the antitrust violation to sue in federal court for three times their actual damages. State attorneys general also may bring civil suits. If the plaintiff wins, the costs must be borne by the party that violated the prevailing antitrust law, in addition to the criminal penalties imposed under the Sherman Act. Acquirers soon learned how to circumvent the original statutes of the Clayton Act of 1914, which applied to the purchase of stock. They simply would acquire the assets, rather than the stock, of a target firm. Under the Celler–Kefauver Act of 1950, the Clayton Act was amended to give the FTC the power to prohibit asset as well as stock purchases.

The Federal Trade Commission Act of 1914

This act created the FTC, consisting of five full-time commissioners appointed by the president for a 7-year term and supported by a staff of economists, lawyers, and accountants to assist in the enforcement of antitrust laws.

The Hart–Scott–Rodino (HSR) Antitrust Improvements Act of 1976

Acquisitions involving companies of a specific size cannot be completed until certain information is supplied to the federal government and a specified waiting period has elapsed. The premerger notification allows the FTC and the DOJ sufficient time to challenge acquisitions believed to be anticompetitive before they are completed. Once the merger has taken place, it is often difficult to break it up. Since both the FTC and the DOJ share jurisdiction over merger review transactions requiring review are assigned on a case-by-case basis depending on which agency has more expertise with the industry involved. [Table 2.2](#) provides a summary of 2016 prenotification filing requirements.

Title I: What Must Be Filed?

Title I of the act gives the DOJ the power to request internal corporate records if it suspects potential antitrust violations. Information requirements include background data on the “ultimate parent entity”¹⁸ of the acquiring and target parents, a description of the deal, and all background studies relating to the transaction.

Title II: Who Must File and When?

Title II addresses the conditions under which filings must take place. In 2016, to comply with the size-of-transaction test, transactions in which the buyer purchases voting securities or assets valued in excess of \$78.2 million must be reported under the HSR Act. However,

¹⁸The ultimate parent entity is the firm at the top of the chain of ownership if the actual buyer is a subsidiary.

TABLE 2.2 Regulatory Prenotification Filing Requirements for 2016

	Williams Act	Hart–Scott–Rodino Act
Required filing	1. Schedule 13(D) within 10 days of acquiring 5% stock ownership in another firm 2. Ownership includes stock held by affiliates or agents of the bidder 3. Schedule 14(D)-1 for tender offers 4. Disclosure required even if 5% accumulation not followed by a tender offer	HSR filing is necessary when^a: 1. Size-of-transaction test: The buyer purchases assets or securities >\$78.2 million 2. Size-of-person test^a: Buyer or seller has annual sales or assets ≥\$156.3 million and any other party has sales or assets ≥\$15.6 million 3. If the acquisition value >\$312.6 million, a filing is required regardless of whether (2) is met Thresholds in (1)–(3) are adjusted annually by the increase in gross domestic product
File with whom	Schedule 13(D) 1. 6 copies to SEC 2. 1 copy via registered mail to target's executive office 3. 1 copy via registered mail to each public exchange on which target stock is traded Schedule 14(D)-1 1. 10 copies to SEC 2. 1 copy hand-delivered to target's executive offices 3. 1 copy hand-delivered to other bidders 4. 1 copy mailed to each public exchange on which the target stock is traded (each exchange also must be phoned)	1. Premerger Notification Office of the Federal Trade Commission 2. Director of Operations of the DoJ Antitrust Division
Time period	1. Tender offers must stay open a minimum of 20 business days 2. Begins on date of publication, advertisement, or submission of materials to target 3. Unless the tender offer has been closed, shareholders may withdraw tendered shares up to 60 days after the initial offer	1. Review / waiting period: 30 days (15 days for cash tender offers) 2. Target must file within 15 days of bidder's filing 3. Period begins for all cash offers when bidder files; for cash/stock bids, period begins when both bidder and target have filed 4. Regulators can request a 20-day extension

^aThe “size-of-person” test measures the size of the “ultimate parent entity” of the buyer and seller. The ultimate parent entity is the entity that controls the buyer and seller and is not itself controlled by anyone else.

DoJ, Department of Justice; SEC, Securities and Exchange Commission.

according to the size-of-person (a reference to the acquirer and target firms) test, transactions valued at less than this figure may still require filing if the acquirer or the target firm has annual net sales or total assets of at least \$156.3 million and the other party has annual net sales or total assets of at least \$15.6 million. These thresholds are adjusted upward by the annual rate of increase in gross domestic product. A filing is required if the transaction value exceeds \$312.6 million without regard to whether the size-of-person test is met.

Bidding firms must execute an HSR filing at the same time as they make an offer to a target firm. The target firm also is required to file within 15 days following the bidder's filing. Filings

consist of information on the operations of the two companies and their financial statements. The waiting period begins when both the acquirer and the target have filed. Either the FTC or the DoJ may request a 20-day extension of the waiting period for transactions involving securities and 10 days for cash tender offers. If the acquiring firm believes there is little likelihood of anticompetitive effects, it can request early termination. In practice, only about 20% of transactions require HSR filings; of these only about 4% are challenged by the regulators.¹⁹

If the regulatory authorities suspect anticompetitive effects, they will file a lawsuit to obtain a court injunction to prevent completion of the proposed transaction. Although it is rare for either the bidder or the target to contest the lawsuit, because of the expense involved, and even rarer for the government to lose, it does happen.²⁰ If fully litigated, a government lawsuit can result in substantial legal expenses as well as a significant cost in management time. Even if the FTC's lawsuit is overturned, the benefits of the merger often have disappeared by the time the lawsuit has been decided. Potential customers and suppliers are less likely to sign lengthy contracts with the target firm during the period of trial. New investment in the target is likely to be limited, and employees and communities where the target's operations are located would be subject to uncertainty. As such, both regulators and acquirers try to avoid litigation.

How Does HSR Affect State Antitrust Regulators?

Title III expands the powers of state attorneys general to initiate triple damage suits on behalf of individuals in their states injured by violations of the antitrust laws.

Procedural Rules

When the DoJ files an antitrust suit, it is adjudicated in the federal court system. When the FTC initiates the action, it is heard before an administrative law judge at the FTC, whose ruling is subject to review by FTC commissioners. Criminal actions are reserved for the DoJ, which may seek fines or imprisonment for violators. Individuals and companies also may file antitrust lawsuits. The FTC reviews complaints that have been recommended by its staff and approved by the commission. The commission then votes whether to accept or reject the hearing examiner's findings. The decision of the commission then can be appealed in the federal circuit courts. As an alternative to litigation, a company may seek to negotiate a voluntary settlement of its differences with the FTC. Such settlements usually are negotiated during the review process and are called consent decrees. The FTC then files a complaint in the federal court along with the proposed consent decree. The federal court judge routinely approves the consent decree.

¹⁹In 2007, there were 2201 HSR filings with the FTC (about 20% of total transactions), compared to 1768 in 2006 (Barnett, 2008). Of these, about 4% typically are challenged and about 2% require second requests for information. About 97% of the 37,701 M&A deals filed with the FTC between 1991 and 2004 were approved without further scrutiny (Business Week, 2008).

²⁰Regulators filed a suit on February 27, 2004, to block Oracle's \$26 per-share hostile bid for PeopleSoft on antitrust grounds. On September 9, 2004, a US District Court judge denied a request by US antitrust authorities that he issue an injunction against the deal, arguing that the government failed to prove that large businesses can turn to only three suppliers (i.e., Oracle, PeopleSoft, and SAP) for business applications software.

The Consent Decree

A typical consent decree may consist of both structural and behavioral remedies. Structural remedies generally require the party or parties seeking regulatory approval to in some way change the structure of their businesses. This usually involves the sale of assets or businesses in areas where they compete directly. Structural remedies differ from behavioral remedies, which are designed to regulate the future conduct of the relevant party or parties (e.g., by regulating the prices which a party may charge). Behavioral remedies may require significant monitoring by regulators to ensure compliance.

In late 2015, General Electric won US and EU antitrust approval to buy French-based Alstom's electric power generation equipment unit by agreeing to a *structural remedy* involving the sale of Alstom's subsidiary that provides aftermarket parts and services. Regulators reasoned that this divestiture would give customers a viable alternative to GE in buying spare parts and maintenance services. As a condition of approving the January 2011 acquisition of NBCUniversal (NBCU) by Comcast, Comcast agreed to several *behavioral remedies* that would impact its future conduct of the combined businesses. Comcast committed to arbitrate disputes with other cable systems concerning their access to NBCU's cable channels. In addition, Comcast assured regulators that it would adhere to so-called "net neutrality" conditions by licensing its content to competing Internet sites at competitive rates.

If a potential acquisition is likely to be challenged by the regulatory authorities, an acquirer may seek to negotiate a consent decree in advance of the deal. In the absence of a consent decree, a buyer often requires that an agreement of purchase and sale includes a provision allowing the acquirer to back out of the transaction if it is challenged by the FTC or the DoJ on antitrust grounds. Consent decrees do seem to limit potential increases in business pricing power following a merger by creating viable competitors.²¹

Antitrust Merger Guidelines for Horizontal Mergers

Understanding an industry begins with understanding its market structure. Market structure may be defined in terms of the number of firms in an industry; their concentration, cost, demand, and technological conditions; and ease of entry and exit. Intended to clarify the provisions of the Sherman and Clayton acts, the DoJ issued in 1968 largely quantitative guidelines, presented in terms of specific market share percentages and concentration ratios, indicating the types of M&As it would oppose. Concentration ratios were defined in terms of the market shares of the industry's top four or eight firms. Because of their rigidity, the guidelines have been revised to reflect the role of both quantitative and qualitative data. Qualitative data include factors such as the enhanced efficiency that might result from a combination of firms, the financial viability of potential merger candidates, and the ability of US firms to compete globally.

In 1992, both the FTC and the DoJ announced a new set of guidelines indicating that they would challenge mergers creating or enhancing market power, even if there are measurable efficiency benefits. *Market power* is defined as a situation in which the combined firms will be

²¹In a report evaluating the results of 35 divestiture orders entered between 1990 and 1994, the FTC concluded that the use of consent decrees to limit market power resulting from a business combination has proven to be successful by creating viable competitors (Federal Trade Commission, 1999b).

able profitably to maintain prices above competitive levels for a significant period. The 1992 guidelines were revised in 1997 to reflect the regulatory authorities' willingness to recognize that improvements in efficiency over the long term could more than offset the effects of increases in market power. On August 19, 2010, the guidelines were updated to give regulators more leeway to challenge mergers than previously. However, they also raised the thresholds for determining if a merger would cause anticompetitive concentration.

The 2010 guidelines express a clear commitment to more aggressive horizontal merger enforcement, rely much less on formulas than the earlier guidelines, and reflect heightened concern about unilateral effects (i.e., firms achieving such market power that they can unilaterally raise prices above competitive levels). The new guidelines also closely resemble the EU's antitrust guidelines.²² In general, horizontal mergers are most likely to be challenged by regulators. Vertical mergers—those involving customer-supplier relationships—are considered much less likely to result in anticompetitive effects, unless they deprive other firms access to an important resource.

Concern about potential antitrust violations can force selling firms in horizontal mergers to accept a lower purchase price than could have been received from other bidders. In late 2014, US discount retailer Family Dollar rejected a \$9 billion offer from competitor Dollar General that was intended to break up an earlier agreement between Family Dollar and a smaller rival Dollar Tree that had offered \$8.5 billion. Family Dollar's board unanimously rejected the higher bid over concern about receiving approval from the antitrust regulators.

As part of the review process, regulators consider customers and the prospect for price discrimination, market definition, market share and concentration, unilateral effects, coordinated effects, ease of entry, realized efficiencies, potential for business failure, and partial acquisitions. These factors are considered next.

Targeted Customers and the Potential for Price Discrimination

Price discrimination occurs when sellers can improve profits by raising prices to some targeted customers but not to others. For such discrimination to exist there must be evidence that certain customers are charged higher prices even though the cost of doing business with them is no higher than selling to other customers, who are charged lower prices. Furthermore, customers charged higher prices must have few alternative sources of supply.

Market Definition

Markets are defined by regulators solely in terms of the customers' ability and willingness to substitute one product for another in response to a price increase. The market may be geographically defined, with scope limited by such factors as transportation costs, tariff and nontariff barriers, exchange rate volatility, and so on.

Market Share and Concentration

The number of firms in the market and their respective market shares determine market concentration. Such ratios measure how much of the total output of an industry is produced by the "*n*" largest firms in the industry. To account for the distribution of firm size in an industry, the FTC measures concentration using the Herfindahl-Hirschman Index (HHI),

²²Horton (2011).

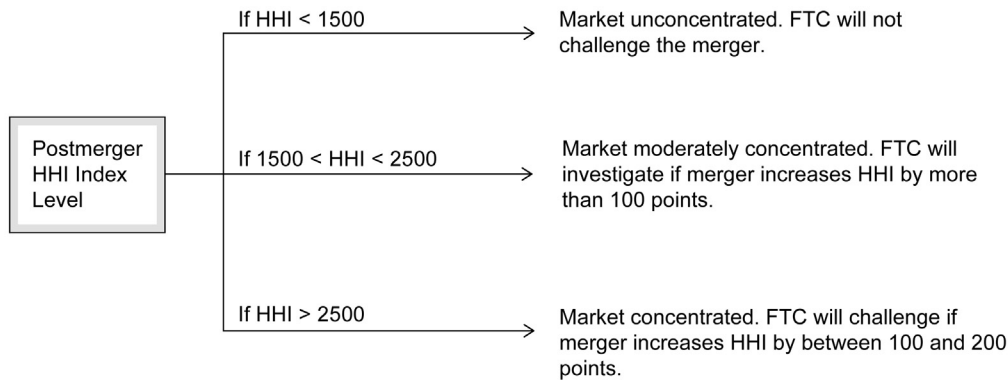


FIGURE 2.1 FTC actions at various market share concentration levels. FTC Merger Guidelines, www.ftc.gov. FTC, Federal Trade Commission, *HHI*, Herfindahl–Hirschman Index.

which is calculated by summing the squares of the market shares for each firm competing in the market. For example, a market consisting of 5 firms with market shares of 30, 25, 20, 15, and 10%, respectively, would have an HHI of 2250 ($30^2 + 25^2 + 20^2 + 15^2 + 10^2$). Note that an industry consisting of 5 competitors with market shares of 70, 10, 5, 5, and 5%, respectively, will have a much higher HHI score of 5075, because the process of squaring the market shares gives the greatest weight to the firm with the largest market shares.

The HHI ranges from 10,000 for an almost pure monopoly to approximately 0 in the case of a highly competitive market. The index gives more weight to the market shares of larger firms to reflect their relatively greater pricing power. The FTC developed a scoring system, described in Fig. 2.1, as one factor in determining if the FTC will challenge a proposed deal.

Almost one-third of industries in the United States in 2015 are considered highly concentrated under current federal antitrust standards. This compares to approximately one-fourth in 1996.²³ In many cases, this increased concentration is driven by technological innovation and the need for consolidation in the face of intensifying global competition. Mergers offer economies of scale and scope that increase efficiency and innovation and in some instances preserve jobs at firms too weak to remain competitive on their own. However, the dark side of increased concentration is the potential for the surviving competitors to increase prices. Glaring examples of this concentration include the US wireless industry that is currently dominated by four national carriers. However, AT&T and Verizon hold substantially larger market share than their financially weaker rivals T-Mobile and Sprint. In the food industry, Kroger and Walmart dominate their competition. In 1996, there were more than 40 publicly traded grocery firms; today, there are 18. Other industries showing a dramatic reduction in the number of competitors include appliance, air travel, and beverage.

Unilateral Effects

A merger between two firms selling differentiated products may reduce competition by enabling the merged firms to profit by unilaterally raising the price of one or both products

²³Francis and Knutson (2015).

above the premerger level. Furthermore, a merger between two competing sellers prevents buyers from negotiating lower prices by playing one seller against the other. Finally, in markets involving undifferentiated products, a firm, having merged with a large competitor, may restrict output in order to raise prices.

Coordinated Effects

After a merger with a competitor, a firm may coordinate its output and pricing decisions with the remaining firms in the industry. Such actions could include a simple understanding of what a firm would do or not do under certain circumstances. If the firm with dominant market share was to reduce output, others may follow suit, with the implied intent of raising product prices.

Ease of Entry

Ease of entry is defined as entry that would be timely, likely to occur, and sufficient to counter the competitive effects of a combination of firms that temporarily increases market concentration. Barriers to entry—such as proprietary technology or knowledge, patents, government regulations, exclusive ownership of natural resources, or huge investment requirements—can limit the number of new competitors that enter a market. Excessive entry barriers may hinder innovation because of a reduced need to do so due to the limited threat of competition.²⁴ However, defining what is excessive is highly subjective.

Efficiencies

Increases in efficiency that result from a merger or acquisition can enhance the combined firms' ability to compete and result in lower prices, improved quality, better service, or innovation. However, efficiencies are difficult to measure and verify, because they will be realized only after the merger has taken place. An example of verifiable efficiency improvements would be a reduction in the average fixed cost per unit of output due to economies of scale.

Alternative to Imminent Failure

Regulators also consider the likelihood that a firm would fail if not allowed to merge with another firm. The regulators must weigh the potential cost of the failing firm, such as a loss of jobs, against any potential increase in market power resulting from a merger.

Partial Acquisitions

Regulators may also review acquisitions of minority positions involving competing firms if it is determined that the partial acquisition results in the effective control of the target firm. A partial acquisition can lessen competition by giving the acquirer the ability to influence the competitive conduct of the target firm, in that the acquirer may have the right to appoint members of the board of directors. Furthermore, the minority investment also may blunt competition if the acquirer gains access to nonpublicly available competitive information.

Antitrust Guidelines for Vertical Mergers

Vertical mergers may become a concern if an acquisition by a supplier of a customer prevents the supplier's competitors from having access to the customer. Alternatively, the acquisition

²⁴Park and Sonenshine (2012).

by a customer of a supplier could become a concern if it prevents the customer's competitors from having access to the supplier. Vertical mergers are more likely to result in regulatory review when firms that are dominant in their respective markets integrate vertically.²⁵

Antitrust Guidelines for Collaborative Efforts

Collaborative efforts are horizontal agreements among competitors, including joint ventures, strategic alliances, and other competitor agreements. Regulators are less likely to find a collaborative effort to be anticompetitive if (1) the participants have continued to compete through separate, independent operations or through participation in other collaborative efforts; (2) the financial interest in the effort by each participant is relatively small; (3) each participant's ability to control the effort is limited; (4) effective safeguards prevent information sharing; and (5) the duration of the collaborative effort is short.

Trends in Enforcement Efforts

Enforcement efforts ebb and flow with changes in presidential administrations and political and economic philosophies. During much of the decade ending in 2010, business combinations among direct competitors tended to be less restrictive as they were viewed as a means of achieving greater operating efficiency. In recent years, enforcement efforts have become more aggressive, especially in such concentrated industries as telecommunications, airlines, and media.

Just the threat of regulatory intervention appears to have been a major factor in deterring the proposed tie-ups between Sprint and T-Mobile and 21st Century Fox and Time Warner in 2014. In neither instance, did the Justice Department or the FCC announce a formal position on either deal. The Sprint–T-Mobile deal would have reduced the number of wireless competitors from four to three and the Fox–Time Warner combination would have joined the two largest movie studios and two of the five largest television producers. In 2015 and 2016, other potential tie-ups that were abandoned due to regulatory investigations included the Comcast/TWC, Applied Materials/Tokyo Electron, GE/Electrolux, and Bumble Bee/Chicken of the Sea deals.

The impact of failing to receive regulatory approval can be very costly for acquirers. In mid-2016, oil services providers Halliburton and Baker Hughes called off their planned \$35 billion merger. The decision was made after a lengthy regulatory review in which the US Justice Department decided to block the deal. Halliburton had to pay Baker Hughes a \$3.5 billion termination fee, one of the largest on record, to exit the merger agreement. The amount was included in the merger agreement to reassure Baker Hughes that Halliburton expected the deal to close.

Impact of Antitrust Actions on Firm Value

Empirical studies of the announcement of decisions by regulators to investigate potential violations of antitrust laws on the value of firms confirm that initially the share prices of the firms involved in the investigation can drop only to recover if the concessions required to

²⁵Kedia et al. (2011).

gain approval are perceived by investors as minimal.²⁶ Other studies show that the impact of legislative changes or regulatory policy reform on a firm's share price can be as large as or larger than announced enforcement actions around a deal's announcement date for firms in different sectors of the economy. Why? Financial services firms tend to be more regulated than nonfinancial firms with regulators often having more discretion in regulatory enforcement. Research seems to indicate that investors view new merger control legislation establishing clearer guidelines as positive, because such laws reduce the discretion (and implicitly the perceived arbitrariness) given to regulators.²⁷

THE IMPLICATIONS FOR M&A OF THE DODD-FRANK WALL STREET REFORM AND CONSUMER PROTECTION ACT

Comprehensive in scope, the Dodd-Frank Act (the Act) substantially changed federal regulation of financial services firms as well as some nonfinancial public companies. The Act's objectives included restoring public confidence in the financial system and preventing future financial crises that threaten the viability of financial markets. Its provisions range from giving shareholders a say on executive compensation to greater transparency in the derivatives markets to new powers granted to the Federal Deposit Insurance Corporation (FDIC) to liquidate financial firms whose failure would threaten the US financial system (i.e., systemic risk).

While the implications of the legislation are far reaching, the focus in this book is on those aspects of the Act impacting corporate governance directly, the environment in which M&As and other restructuring activities take place, and participants in the restructuring process. The Act's provisions having the greatest impact on the subject matter addressed in this book are summarized in [Table 2.3](#) according to the categories governance and executive compensation, systemic regulation and emergency powers, capital markets, and financial institutions. These provisions are discussed in more detail in the chapters in which they are most applicable. All statements made pertaining to the Dodd-Frank Act are accurate as of April 2017. However, changes are likely with the election of Donald Trump as the US president. The scope of the changes is unclear at this time.

STATE REGULATIONS AFFECTING MERGERS AND ACQUISITIONS

State regulations affecting takeovers often differ from one state to another, making compliance with all applicable regulations a challenge.

State Antitakeover Laws

With 64% of all Fortune 500 companies as of 2016 incorporated in Delaware, the state's corporate law has a substantial influence on publicly traded firms. The next most popular state is Nevada with 14%. Delaware corporate law generally defers to the judgment of business

²⁶Gunter and van Dijk (2016).

²⁷Carletti et al. (2015).

TABLE 2.3 Selected Dodd–Frank Act Provisions

Provision	Requirements
GOVERNANCE AND EXECUTIVE COMPENSATION^a	
Say on pay	In a nonbinding vote on the board, shareholders may vote on executive compensation packages every 2 or 3 years
Say on golden parachutes	Proxy statements seeking shareholder approval of acquisitions, mergers, or sale of substantially all of the company's assets must disclose any agreements with executive officers of the target or acquiring firm with regard to present, deferred, or contingent compensation
Institutional investor disclosure	Institutional managers (e.g., mutual funds, pension funds) must disclose annually their position on pay and on golden parachutes voting records
Clawbacks	Public companies are required to develop and disclose mechanisms for recovering incentive-based compensation paid during the 3 years prior to earnings restatements
Broker discretionary voting	Public stock exchanges are required to prohibit brokers from voting shares without direction from owners in the election of directors, executive compensation, or any other significant matter as determined by the SEC
Compensation committee independence	SEC to define rules requiring stock exchanges to prohibit listing any issuer that does not comply with independence requirements governing compensation of committee members and consultants
SYSTEMIC REGULATION AND EMERGENCY POWERS	
Financial Stability Oversight Council	To mitigate systemic risk, the Council, which consists of 10 voting members and is chaired by the Secretary of the Treasury, monitors US financial markets to identify domestic or foreign banks and some nonbank firms whose default or bankruptcy would risk the financial stability of the United States
New Federal Reserve (Fed) bank and nonbank holding company supervision requirements	Bank and nonbank holding companies with consolidated assets exceeding \$50 billion must: • Submit plans for their rapid and orderly dissolution in the event of failure • Provide periodic reports about the nature of their credit exposure • Limit their credit exposure to any unaffiliated company to 25% of its capital • Conduct semiannual "stress tests" to determine capital adequacy • Provide advance notice of intent to purchase voting shares in financial services firms
Limitations on leverage	For bank holding companies whose assets exceed \$50 billion, the Fed may require the firm to maintain a debt-to-equity ratio of no more than 15-to-1

(Continued)

TABLE 2.3 Selected Dodd–Frank Act Provisions (*cont.*)

Provision	Requirements
Limits on size	The size of any single bank cannot exceed 10% of deposits nationwide. The limitation does not apply for mergers involving troubled banks
Capital requirements	Bank capital requirements are to be left to the regulatory agencies and should reflect the perceived risk of bank or nonbank institutions
Savings and loan regulations	Fed gains supervisory authority over all savings and loan holding companies and their subsidiaries
Federal Deposit Insurance Corporation (FDIC)	The FDIC may guarantee obligations of solvent insured depository institutions if the Fed and the Systemic Risk Council determine that financial markets are illiquid (i.e., investors cannot sell assets without incurring an unusual and significant loss)
Orderly Liquidation Authority	The FDIC may seize and liquidate a financial services firm whose failure threatens the financial stability of the United States, to ensure the speedy disposition of the firm's assets and to ensure that losses are borne by shareholders and bondholders while losses of public funds are limited ^b
CAPITAL MARKETS	
Office of Credit Ratings	Proposes rules for internal controls, independence, transparency, and penalties for poor performance, making it easier for investors to sue for “unrealistic” ratings. Office to conduct annual audits of rating agencies
Securitization	Issuers of asset-backed securities must retain an interest of at least 5% of the collateral underlying any security sold to third parties
Hedge and private equity fund registration	Advisers to private equity and hedge funds with \$100 million or more in assets under management must register with the SEC as investment advisers; those with less than \$100 million will be subject to state registration. Registered advisors to provide reports and be subject to periodic examinations
Clearing and trading of over-the-counter (OTC) derivatives	Commodity Futures Trading Commission (CFTC) and SEC to mandate central clearing of certain OTC derivatives on a central exchange and the real-time public reporting of volume and pricing data as well as the parties to the transaction
FINANCIAL INSTITUTIONS	
Volcker Rule	Prohibits insured depository institutions and their holding companies from buying and selling securities with their own money (so-called proprietary trading) or sponsoring or investing in hedge funds or private equity funds. Underwriting and market-making activities are exempt. Proprietary trading may occur outside the United States as long as the bank does not own or control the entity. <i>Sponsoring private funds</i> is defined as serving as a general partner or in some way gaining control of such funds

TABLE 2.3 Selected Dodd–Frank Act Provisions (*cont.*)

Provision	Requirements
Consumer Financial Protection Bureau	Creates an agency to write rules governing all financial institutions offering consumer financial products, including banks, mortgage lenders, and credit card companies as well as “payday” lenders. The authority applies to banks and credit unions with assets over \$10 billion and all mortgage-related businesses. While institutions with less than \$10 billion will have to comply, they will be supervised by their current regulators
Federal Insurance Office	Monitors all aspects of the insurance industry (other than health insurance and long-term care), coordinates international insurance matters, consults with states regarding insurance issues of national importance, and recommends insurers that should be treated as systemically important

^aSee Chapter 3 for more details.

^bSee Chapter 17 for more details.

SEC, Securities and Exchange Commission.

managers and board directors in accordance with the so-called “business judgment rule.” The “business judgment rule” acknowledges that the daily operation of a business is inherently risky and controversial, and, as such, states that the board of directors should be allowed to make decisions without fear of being prosecuted. The rule further assumes that it is unfair to expect that those managing a company make the right decisions all the time. If the courts believe a board acted rationally in making a decision, there should be no legal repercussions against managers and directors. The major exception is in change of control situations. In such situations, managers are subject to an enhanced business judgment test. This requires a target board to show that there are reasonable grounds to believe that a danger to corporate viability exists and that the adoption of certain defensive measures is reasonable. While Delaware law is the norm for many companies, firms incorporated in other states often are subject to corporate law that may differ significantly from Delaware law. What follows is a discussion of commonalities across the states.

States regulate corporate charters. *Corporate charters* define the powers of the firm and the rights and responsibilities of its shareholders, boards of directors, and managers. However, states are not allowed to pass any laws that impose restrictions on interstate commerce or conflict in any way with federal laws. State laws affecting M&As tend to apply only to firms incorporated in the state or that conduct a substantial amount of their business within the state. These laws often contain *fair price provisions*, requiring that all target shareholders of a successful tender offer receive the same price as those tendering their shares. In an attempt to prevent highly leveraged transactions, some state laws include *business combination provisions*, which may specifically rule out the sale of the target’s assets for a specific period.²⁸

Other common characteristics of state antitakeover laws include cash-out and share-control provisions. *Cash-out provisions* require a bidder whose purchases of stock exceed a stipulated amount to buy the remainder of the target stock on the same terms granted those shareholders

²⁸By precluding such actions, these provisions limit LBOs from using asset sales to reduce indebtedness.

whose stock was purchased at an earlier date. By forcing the acquiring firm to purchase 100% of the stock, potential bidders lacking substantial financial resources effectively are eliminated from bidding on the target. *Share-control provisions* require that a bidder obtains prior approval from stockholders holding large blocks of target stock once the bidder's purchases of stock exceed some threshold level. The latter provision can be troublesome to an acquiring company when the holders of the large blocks of stock tend to support target management.

State Antitrust and Securities Laws

As part of the HSR Act of 1976, the states were granted increased antitrust power. The state laws are often similar to federal laws. Under federal law, states have the right to sue to block mergers, even if the DOJ or FTC does not challenge them. State "blue sky" laws are designed to protect individuals from investing in fraudulent security offerings. State restrictions can be more onerous than federal ones.

RESTRICTIONS ON DIRECT INVESTMENT IN THE UNITED STATES

The Committee on Foreign Investment in the United States (CFIUS) operates under the authority granted by Congress in the Exon-Florio amendment (Section 721 of the Defense Production Act of 1950). CFIUS includes representatives from many government agencies to ensure that all national security issues are identified and considered in the review of foreign acquisitions of US businesses. The president can block the acquisition of a US corporation based on recommendations made by CFIUS if there is credible evidence that the foreign entity exercising control might take action that threatens national security.²⁹

THE US FOREIGN CORRUPT PRACTICES ACT

The Foreign Corrupt Practices Act of 1977 prohibits individuals, firms, and foreign subsidiaries of US firms from paying anything of value to foreign government officials in exchange for obtaining new business or retaining existing contracts. Even though many nations have laws prohibiting bribery of public officials, enforcement tends to be lax. Of the 38 countries that signed the 1997 Anti-Bribery Convention of the Organization for Economic Cooperation and Development, more than one-half of the signatories have little or no enforcement mechanisms for preventing the bribery of foreign officials, according to a 2010 study by Transparency International. The US law permits "facilitation payments" to foreign government officials if relatively small amounts of money are required to expedite goods through foreign custom inspections or to gain approval for exports. Such payments are considered legal according to US law and the laws of countries in which such payments are considered routine.³⁰

²⁹In 2008, CFIUS was amended to cover investments involving critical infrastructure. The intention is to cover cross-border transactions involving energy, technology, shipping, and transportation. Some argue that it may also apply to large US financial institutions, in that they represent an important component of the US monetary system.

³⁰Truitt (2006).

FAIR DISCLOSURE (REGULATION FD)

The US SEC adopted this regulation on August 15, 2000, to address concerns about the selective release of information by publicly traded firms. Regulation FD requires that a publicly traded firm that discloses material nonpublic information to certain parties, such as stock analysts and individual shareholders, must release that information to the general public.

Critics of the regulation expressed concern that less information about a firm's share price would be provided by managers concerned about litigation. In fact, there are indications that there has been an increase in voluntary disclosure. However, the greater availability of information may have done little to dampen earnings' "surprises" and to lower stock price volatility. Studies provide conflicting results, with one study reporting an increase in share price volatility and another showing no change following the implementation of Regulation FD.³¹

Consistent with the trend toward increased voluntary disclosure of information, the fraction of US acquirers disclosing synergy estimates when announcing a deal has increased from 7% in 1995 to 27% of total transactions in 2008, with much of the increase coming since the introduction of Regulation FD. Some researchers argue that public disclosure of synergy can help the acquirer communicate the potential value of the deal to investors lacking the same level of information available to the firm's board and management, enabling investors to make more informed decisions.³² In particular, synergy disclosure can result in significantly higher acquirer announcement date financial returns by allaying investor fears that the offer price is excessive.³³ Others contend that disclosing such information is self-serving, since it helps the acquirer's board and management gain shareholder support for the transaction.³⁴

Recent evidence suggests that acquirers may use press releases to manipulate deals in other ways. That is, acquirers in stock deals increase the number of stories after the start of merger negotiations but before the public announcement that an agreement had been reached. This media blitz may be an effort to generate a temporary increase in their share price to reduce the number of acquirer shares that must be issued for each target share outstanding. This minimizes potential dilution of acquirer shareholders.³⁵ For example, assume the target is to receive \$100 per share in terms of acquirer stock, valued at \$50 per share at the time of the agreement. Therefore, the acquirer would have to issue two shares of its stock for each acquirer share. However, if the acquirer's stock price increases to \$105 per share, only 0.9524 acquirer share (\$100/\$105) would have to be issued for each target share.

³¹All studies show an increase in voluntary disclosure by firms (Bailey et al., 2003; Dutordoir et al., 2014; Heflin et al., 2001). However, Bailey et al. (2003) report an increase in the variation of analysts' forecasts but no change in the volatility of share prices following the introduction of Regulation FD. In contrast, Heflin et al. (2001) find no change in the variation of analysts' forecast but a decrease in share price volatility.

³²Dutordoir et al. (2014).

³³Dutordoir et al. (2014).

³⁴Ismail (2011).

³⁵Ahern and Sosyura (2014).

SPECIFIC INDUSTRY REGULATION

In addition to the DoJ and the FTC, a variety of other agencies monitor activities (including M&As) in certain industries, such as commercial banking, railroads, defense, and cable TV.

Banking

Currently, three agencies review banking mergers. The Office of the Comptroller of the Currency has responsibility for transactions in which the acquirer is a national bank. The FDIC oversees mergers where the acquiring bank or the bank resulting from combining the acquirer and the target will be a federally insured state-chartered bank that operates outside the Federal Reserve System. The third agency is the Board of Governors of the Federal Reserve System (the Fed). It has the authority to regulate mergers in which the acquirer or the resulting bank will be a state bank that is also a member of the Federal Reserve System.

The Dodd–Frank legislation eliminated the Office of Thrift Supervision and transferred the responsibility for regulating savings and loan associations, credit unions, and savings banks (collectively referred to as *thrift institutions*) to other regulators. Specifically, the Fed will supervise savings and loan holding companies and their subsidiaries, the FDIC will gain supervisory authority of all state savings banks, and the Office of the Comptroller of the Currency will supervise all federal savings banks.

M&A transactions involving financial institutions resulting in substantial additional leverage or in increased industry concentration will also come under the scrutiny of the Financial Stability Oversight Council created by the Dodd–Frank Act to monitor systemic risk. The council is empowered, among other things, to limit bank holding companies with \$50 billion or more in assets or a nonbank financial company that is regulated by the Federal Reserve from merging with, acquiring, or consolidating with another firm. The council may require the holding company to divest certain assets if the company is deemed to constitute a threat to the financial stability of US financial markets. Under the new legislation, the size of any single bank or nonbank cannot exceed 10% of deposits nationwide. However, this constraint may be relaxed for mergers involving failing banks.

Communications

The FCC is charged with regulating interstate and international communication by radio, television, wire, satellite, and cable. It is responsible for the enforcement of such legislation as the Telecommunications Act of 1996, intended to reduce regulation while promoting lower prices and higher quality services.

Under the authority of Title II of the Communications Act of 1934, the FCC established new rules in early 2015 that have significant implications for M&As involving firms doing business on the internet. The so-called “net neutrality rules” were enacted to ensure that internet networks are equally available to all types of legal content providers. ISPs, mostly large cable or telephone companies, are prohibited from discriminating against content providers by blocking or slowing down data transmission speeds and seeking payments in exchange for faster access on their internet networks. The latter practice is called “paid prioritization.”

The net neutrality rules reclassify ISPs, including wireless data providers such as DirecTV (now owned by AT&T), as public utilities subject to regulations ensuring consumers get fair access to their services. Since paid prioritization deals are banned, critics argue that, without the ability to charge users for premium services, ISPs will have less incentive to innovate. Premium services could include items such as appliances connected to the Internet to alert owners of problems and smartphone-controlled residential doors and windows.

Efforts to consolidate media companies such as Comcast and TWC were stopped in mid-2015 due to the resulting increased broadband market share the combined firms would enjoy. AT&T and DirecTV were given the approval to merge in late 2015 but only after they made certain concessions to ensure the combined businesses would be in compliance with the net neutrality rules.

Whether net neutrality rules as formulated at the time of this writing will change under the new Trump administration in 2017 remains unknown. Republicans will have a majority of the FCC commissioners as well as control of both houses of Congress. However, laws requiring administrative agencies such as the FCC to justify their decisions by proving that circumstances have changed will make reversing course on net neutrality quickly difficult. Nonetheless, the assumption underlying any acquisition whose value depends on the enforcement of current rules must be carefully considered in view of possible changes.

Railroads

The Surface Transportation Board (STB), the successor to the Interstate Commerce Commission (ICC), governs mergers of railroads. Under the ICC Termination Act of 1995, the STB determines if a merger should be approved by assessing the impact on public transportation, the areas currently served by the carriers involved in the proposed transaction, and the burden of the total fixed charges resulting from completing the transaction.

Defense

During the 1990s, the US defense industry underwent consolidation, consistent with the Department of Defense's (DoD's) philosophy that it is preferable to have three or four highly viable defense contractors than a dozen weaker firms. Although defense industry mergers are technically subject to current antitrust regulations, the DoJ and FTC have assumed a secondary role to the DoD. As noted previously, efforts by a foreign entity to acquire national security-related assets must be reviewed by the Council on Foreign Investment in the United States.

Other Regulated Industries

Historically, the insurance industry was regulated largely at the state level. Under the Dodd-Frank Act, the Federal Insurance Office was created within the US Treasury to monitor all nonhealthcare-related aspects of the insurance industry. As a "systemic" regulator, its approval will be required for all acquisitions of insurance companies whose size and interlocking business relationships could have repercussions on the US financial system. The acquisition of more than 10% of a US airline's shares outstanding is subject to approval of the

Federal Aviation Administration. Public utilities are highly regulated at the state level. Like insurance companies, their acquisition requires state government approval.

ENVIRONMENTAL LAWS

Failure to comply adequately with environmental laws can result in enormous potential liabilities to all parties involved in a transaction. These laws require full disclosure of the existence of hazardous materials and the extent to which they are being released into the environment. Such laws include the Clean Water Act (1974), the Toxic Substances Control Act of 1978, the Resource Conservation and Recovery Act (1976), and the Comprehensive Environmental Response, Compensation, and Liability Act (Superfund) of 1980. Additional reporting requirements were imposed in 1986 with the passage of the Emergency Planning and Community Right to Know Act (EPCRA). In addition to EPCRA, several states also passed “right-to-know” laws such as California’s Proposition 65.

LABOR AND BENEFIT LAWS

A diligent buyer also must ensure that the target is in compliance with the labyrinth of labor and benefit laws. These laws govern such areas as employment discrimination, immigration law, sexual harassment, age discrimination, drug testing, and wage and hour laws. Labor and benefit laws include the Family Medical Leave Act, the Americans with Disabilities Act, and the Worker Adjustment and Retraining Notification Act (WARN). WARN governs notification before plant closings and requirements to retrain workers.

Employee benefit plans frequently represent one of the biggest areas of liability to a buyer. The greatest liabilities often are found in defined pension benefit plans, postretirement medical plans, life insurance benefits, and deferred compensation plans. Such liabilities arise when the reserve shown on the seller’s balance sheet does not accurately indicate the true extent of the future liability. The potential liability from improperly structured benefit plans grows with each new round of legislation, starting with the passage of the Employee Retirement Income and Security Act of 1974. Laws affecting employee retirement and pensions were strengthened by additional legislation, including the Multi-Employer Pension Plan Amendments Act of 1980, the Retirement Equity Act of 1984, the Single Employer Pension Plan Amendments Act of 1986, the Tax Reform Act of 1986, and the Omnibus Budget Reconciliation acts of 1987, 1989, 1990, and 1993. Buyers and sellers also must be aware of the Unemployment Compensation Act of 1992, the Retirement Protection Act of 1994, and Statements 87, 88, and 106 of the Financial Accounting Standards Board.³⁶

The Pension Protection Act of 2006 places a potentially increasing burden on acquirers of targets with underfunded pension plans. The legislation requires employers with defined benefit plans to make sufficient contributions to meet a 100% funding target and erase funding shortfalls over 7 years. Furthermore, the legislation requires employers with so-called “at-risk” plans to accelerate contributions. At-risk plans are those whose pension fund assets cover less than 70% of future pension obligations.

³⁶Sherman (2006).

CROSS-BORDER TRANSACTIONS

Transactions involving firms in different countries are complicated by having to deal with multiple regulatory jurisdictions in specific countries or regions such as the European Union. More antitrust agencies mean more international scrutiny, potentially conflicting philosophies, and substantially longer delays in completing all types of business combinations. Antitrust law also can restrict the formation of other types of business combinations, such as joint ventures, when the resulting entity is viewed as limiting competition.

These factors can impose significant costs to acquirer and target shareholders. For example, there is evidence that EU intervention in M&A deals during the two decades ending in 2010 reduced the combined US acquirer and target firms' shareholder value by about \$8 billion on or about the announcement date that a proposed deal would be subject to European regulatory review. The loss of shareholder value could reflect the cost of legal compliance and information disclosure, restructuring the current business operation due to the antitrust remedies requested by European regulators, greater uncertainty that the deal would not close, and potential delay or loss of synergistic benefits resulting from the merger.³⁷

International agreements have been reached in an attempt to rationalize the global regulatory process. For example, changes in European antitrust laws in 2013 are among the most recent and far-reaching revisions affecting cross-border deals. The review process, outlined in Article 101 of the Treaty on the Functioning of the European Union (TFEU), which prohibits anticompetitive practices in 27 countries, has been greatly simplified. Certain types of agreements, such as technology transfers, between firms whose combined market share is less than 20% between competitors and less than 30% between noncompetitors are exempt from TFEU review. The objectives of these revisions are to stimulate research and development investment, the diffusion of intellectual property, and competition.

Such agreements are only as effective as each country's willingness to stand by their commitments. Despite warnings from the EU's Internal Market regulators about the risk of protectionism and the potential incompatibility with EU treaties, the French government intervened in late 2014 in a bidding war to acquire French engineering firm Alstom between US-based multinational General Electric and a combined bid by Germany's Siemens and Japan's Mitsubishi. Having built France's power grid and high-speed TGV trains, Alstom was viewed as an important strategic asset by the French government. GE eventually won the day by agreeing to the French government owning a 20% stake in the business and having veto power over business strategy. Furthermore, GE committed to increasing employment at the Alstom operations in France. This type of government intervention can be abused. For example, in 2005, the French government declared dairy maker Danone a strategically important company to shield it from a possible takeover by US-based PepsiCo.

When regulations differ among countries, not only the cost of takeovers but also the pattern of M&As is affected as businesses engage in "regulatory arbitrage." Firms may be encouraged to acquire targets in countries with less stringent antitrust, environmental, and labor laws than those prevailing in their own countries. There is empirical evidence that the

³⁷Deshpande et al. (2016).

investors of firms in countries with stronger regulations are rewarded when such firms acquire targets in countries with comparatively benign regulations.

SOME THINGS TO REMEMBER

Current laws require that securities offered to the public must be registered with the government and that target firm shareholders receive enough information and time to assess adequately the value of an acquirer's offer. Federal antitrust laws exist to prevent individual corporations from assuming too much market power. Numerous state regulations affect M&As such as state antitakeover and antitrust laws. A number of industries are also subject to regulatory approval at the federal and state levels. Finally, gaining regulatory approval in cross-border transactions can be nightmarish because of the potential for the inconsistent application of antitrust laws as well as differing reporting requirements, fee structures, and legal jurisdictions.

DISCUSSION QUESTIONS

- 2.1 What factors do US antitrust regulators consider before challenging a transaction?
- 2.2 What are the obligations of the acquirer and target firms according to the Williams Act?
- 2.3 Discuss the pros and cons of federal antitrust laws.
- 2.4 When is a person or firm required to submit a Schedule 13(D) to the SEC? What is the purpose of such a filing?
- 2.5 Give examples of the types of actions that may be required by the parties to a proposed merger subject to an FTC consent decree.
- 2.6 Ameritech and SBC Communications received permission from the FCC to combine to form the nation's largest local telephone company. The FCC gave its approval, subject to conditions requiring that the companies open their markets to rivals and enter new markets to compete with established local phone companies, in an effort to reduce the cost of local phone calls and give smaller communities access to appropriate phone service. SBC had considerable difficulty in complying with its agreement with the FCC. Over an 18-month period, SBC paid the US government \$38.5 million for failing to provide rivals with adequate access to its network. The government noted that SBC failed to make available its network in a timely manner, meet installation deadlines, and notify competitors when their orders were filled. Comment on the fairness and effectiveness of using the imposition of heavy fines to promote government-imposed outcomes rather than free market-determined outcomes.
- 2.7 In an effort to gain approval of their proposed merger from the FTC, top executives from Exxon Corporation and Mobil Corporation argued that they needed to merge because of the increasingly competitive world oil market. Falling oil prices during much of the late 1990s put a squeeze on oil industry profits. Moreover, giant state-owned oil companies pose a competitive threat because of their access to huge amounts of capital. To offset these factors, Exxon and Mobil argued that they had to combine to

achieve substantial cost savings. Why were the Exxon and Mobil executives emphasizing efficiencies as a justification for this merger?

- 2.8 How important is properly defining the market segment in which the acquirer and target companies compete in determining the potential increase in market power if the two firms are permitted to combine? Explain your answer.
- 2.9 Comment on whether antitrust policy can be used as an effective means of encouraging innovation. Explain your answer.
- 2.10 The Sarbanes–Oxley Act has been very controversial. Discuss the arguments for and against the act. Which side do you find more convincing, and why?

Answers to these Chapter Discussion Questions are available in the Online Instructor's Guide for instructors using this book (<https://textbooks.elsevier.com/web/Manuals.aspx?isbn=9780128016091>).

END OF CHAPTER CASE STUDY: REGULATORS APPROVE MERGER OF AT&T AND DIRECTV BUT NOT COMCAST AND TIME WARNER CABLE (TWC)

Case Study Objectives: To Illustrate

- Common ways in which regulators and acquirers compromise
- How the FCC's net neutrality regulations reshape media industry behavior
- How deals among competitors can be treated differently by regulators even when they are comparable in size

For years, AT&T had been flirting with the idea of acquiring satellite pay TV company DirecTV. But such a deal would have resulted in increased market concentration that may have precluded getting regulatory approval, and this concern caused AT&T to hold back. Regulators are charged with protecting the public interest by stimulating healthy competition and innovation. Two large firms attempting to merge in the same industry is generally a “red flag” for regulators concerned about the potential for limiting competition and for higher prices charged to consumers.

When Comcast announced that it had an agreement to merge with TWC in February 2014, AT&T saw an opening to get regulatory approval for a deal involving DirecTV. The Comcast/TWC merger would have made Comcast the dominant cable company and broadband provider in the industry. AT&T reasoned it could argue that Comcast needed a strong competitor. AT&T in combination with DirecTV would be much stronger financially than DirecTV on its own and constituted a formidable counterweight to a Comcast/TWC tie-up.

AT&T's interest in DirecTV's satellite service is not simply about finding more pay TV customers in a market that is fast maturing; it's about bundling and getting more money from the same customers. By adding DirecTV's 20 million pay TV subscribers into its diversified product portfolio consisting of wireless, phone, fiber-optic broadband, and cable TV, AT&T hoped to create more attractive bundled packages for which they could charge premium prices to boost revenue and profit.

The firm's previous growth engine had been wireless mobile services, but now that market is maturing and AT&T needs to find new ways to boost revenue that has been growing slightly more than 1% annually in recent years. While the firm has lost landline subscribers, that decline in revenue was

offset by new tablet subscribers. Currently, AT&T customers who have U-Verse “triple-play” service, which includes landline phone, broadband internet, and cable TV, spend about \$170 each month, not including wireless service. With its satellite TV revenue alone, DirecTV generates about \$102 per user.

AT&T is the nation’s largest telecommunications company by revenue and second largest wireless company by subscribers. The DirecTV deal gives AT&T, with 2014 revenue of \$133 billion, a greater national presence to expand video delivery and another \$33 billion in yearly revenue. But it also pairs the carrier with a business that is past its prime as Americans increasingly disconnect from pay TV and watch TV on a variety of mobile devices. DirecTV has suffered from years of sluggish subscriber growth in its core satellite business and lacks any broadband infrastructure needed for streaming television. As the biggest provider of pay TV the deal would also give AT&T more bargaining power with content firms.

AT&T envisions future bundled services including mobile, TV programming, and other services like home security. But the firm is limited to only 22 states where it offers its U-Verse fiber-optic service. AT&T wants to build a better bundle of services, combining mobile, TV programming, and other services and eventually wireless TV. It has 11 million U-verse customers, but only 5.7 million of them get TV. With DirecTV—the second-largest pay TV provider in the United States, behind only Comcast—AT&T instantly becomes a national player in providing pay TV.

But the competitive landscape changed dramatically in 2015. In less than 6 months, regulators disallowed the proposed merger of Comcast and TWC while approving the mergers of Charter Communications (Charter) and TWC as well as AT&T and DirecTV. All three proposed mergers were valued between \$45 and \$55 billion. What made one proposed merger unacceptable and the others okay?

Comcast has been the “800-lb gorilla” in the cable industry in recent years. When the firm sought to take control of foundering TWC, alarm bells sounded among content providers and the public and in turn regulatory agencies. Regulators were also concerned about the absence of a strong third competitor behind Comcast and AT&T. Prior to acquiring TWC, Charter was a weak player in the industry. This gave them an edge in getting support from the regulators who say the combination of Charter and the financially ailing TWC provides potentially the strong third competitor they thought was necessary to protect consumer interests.

The more intriguing discussion is why Comcast/TWC failed to get approval while AT&T and DirecTV did. The competitive issues surrounding the two deals were different in significant ways. Comcast struck a deal to buy another provider of pay TV and internet service in TWC, but the transaction would not eliminate a competitor in their served markets. In contrast, AT&T’s U-Verse service competed with DirecTV in certain geographic markets. Therefore, AT&T’s acquisition of DirecTV would remove a competitor in the U-Verse markets since the satellite TV service would be owned and marketed by AT&T. Usually this would require the new company to divest assets to create another competitor in areas in which they overlapped in order to get regulatory approval.

What seems to have killed the Comcast/TWC merger was that the combined firms would dominate the broadband services market potentially enabling the new firm to engage in a variety of anticompetitive practices. By some estimates, the new firm would have about 60% market share in broadband services in the United States. Comcast also owned substantial content acquired in its deal for NBCU in 2013. As such, they theoretically had much greater incentive to promote their own content over that owned by others. Neither AT&T nor DirecTV has significant proprietary content and have less incentive to discriminate.

While regulators were more favorably disposed to approve the AT&T/DirecTV merger, they were going to require significant concessions from AT&T before doing so. AT&T was going to be in for difficult bargaining over issues concerning the FCC's net neutrality rules that AT&T believed were inimical to product innovation in the telecommunications industry. AT&T and other ISPs had vigorously opposed the FCC's net neutrality rules intended to give legal content providers equal access to the internet. Under the rules, ISPs could not discriminate against content by blocking or slowing transmission speeds and seeking payments in exchange for faster lanes on their internet networks.

In the end, the perceived benefits of the deal persuaded AT&T to make a number of concessions to get approval to take control of DirecTV that it valued at more than \$48 billion. While the merger approval did not require such structural remedies as divesting certain assets in geographic areas in which the two firms competed, it did require far-reaching behavioral remedies. Behavioral remedies require the combining firms to adopt a set of future practices designed to lessen potentially anticompetitive policies.

As a condition for FCC approval, AT&T agreed to extend its broadband service to an additional 12.5 million people, many of whom were in low-income areas not currently served by the firm. This would require AT&T to make substantial new investments to expand geographically its high-speed broadband network, effectively increasing the nation's fiber-optic network by 40% and adding billions of dollars in new assets to the firm's balance sheet. The FCC insisted on this investment since an internal study found that 55 million Americans—17% of the population—still lack access to internet service with sufficient speed to watch video or accomplish other data-intensive tasks. Increasing the availability of high-speed Internet connections has been a priority for the FCC.

AT&T also agreed not to discriminate against unaffiliated content providers. The major area of concern was in the fast-growing market for online video content. AT&T cannot exclude its own or affiliated video services and content from monthly data caps it imposes on its broadband internet customers. Technically, this amounts to a net neutrality violation since it treats some types of data differently than others. Therefore, AT&T could not cap data transmission for other broadband providers while not capping users of its own broadband services. AT&T said it would not slow data transmission from certain websites or prevent access by other websites to the internet. In addition, it would not take payments to give some content providers faster transmission of their content than others.

The conditions for approval fell short of what some critics had wanted. Netflix had urged the FCC to forbid explicitly AT&T from charging access fees to content providers that connect to its network. This is what Charter had agreed to in its merger with TWC in late 2015. Consumer groups have opposed AT&T's purchase of DirecTV from the outset expressing concern that the merger would not lead to lower rates for consumers or encourage competition. Consumer organizations and a trade group representing small cable operators repeatedly called for strengthening consumer protections. These groups also demanded that AT&T be required to offer stand-alone internet service, rather than it being part of a bundle. The American Cable Association, which represents small operators, had asked the FCC to consider safeguards against fast-rising fees charged by cable sports channels. AT&T inherits four regional sports networks now owned by DirecTV. While praised for requiring an expansion of low-cost internet service to low-income residents, consumer groups complained that the service being offered did not meet the FCC's own standards for high-speed service.

Discussion Questions

1. The net neutrality principle states that all legal content providers should have equal access to the internet and that no provider can gain faster access to the internet by paying a premium price. ISPs that are now regulated by the FCC as public utilities argue that net neutrality reduces the incentive for firms to innovate because they cannot charge for premium services that might require faster network speeds than other services. In your opinion is innovation helped or hurt by net neutrality rules? How are all content providers forced potentially to pay more to ISPs for online access as a result of net neutrality rules? Explain your answers.
2. Should regulators in your opinion have extracted more concessions from AT&T before granting approval to merge with DirecTV? Explain your answer.
3. As a regulator, would you have approved the takeover of DirecTV by AT&T? Explain your answer.
4. Free markets discriminate among consumers based on price: those that can afford a product or service can get it and those that can't don't. Net neutrality offers everyone equal access to the internet. Of these two options, which do you believe is most fair? Explain your answer.
5. Whose interests do you believe antitrust regulators represent? What trade-offs do antitrust regulators face in making decisions that impact the groups whose interests they represent? Be specific.

Solutions to these case study questions are found in the Online Instructor's Manual available to instructors using this book (<https://textbooks.elsevier.com/web/Manuals.aspx?isbn=9780128016091>).

ADDITIONAL CASE STUDY RECOMMENDATIONS (SEARCH HARVARD BUSINESS SCHOOL PUBLISHING SITE BY NAME OF CASE: hbsp.harvard.edu)

MCI Communications Corp., Bruce C. Greenwald, Wilda L. White, June 1, 1998, *Source*: HBS Premier Case Collection, Product Number: 284057-PDF-ENG, hbsp.harvard.edu.

Subjects covered: Antitrust law, managing uncertainty, financing.

Bank of America-Merrill Lynch, Guhan Subramanian, Nithyasri Sharma, Revision Date: 2012, Product Number: 910026-PDF-ENG, *Source*: Harvard Business School, hbsp.

harvard.edu.

Subjects covered: Government intervention, negotiation.

Northrop versus TRW, Carliss Y. Baldwin, James Quinn, Revision Date: January 10, 2008, Product Number: 903115-PDF-ENG, *Source*: Harvard Business School, HBSP. Harvard.edu.

Subjects covered: Takeover tactics, takeover defenses, takeover laws.

The Corporate Takeover Market

Common Takeover Tactics, Antitakeover Defenses, Corporate Governance

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Treat a person as he is, and he will remain as he is. Treat him as he could be, and he will become what he should be.—**Jimmy Johnson**

INSIDE MERGERS AND ACQUISITIONS: STRATEGY MATTERS IN TAKEOVER BATTLES

KEY POINTS

- Successful takeovers include a strategy for bringing the target's board to the negotiating table and the discipline to walk away when the target's demands are viewed as excessive.
- Friendly takeovers often are preferred to hostile attempts but sometimes result in overpaying for the target.
- Paying too much severely limits the acquirer's ability to earn its cost of capital.

Good takeover strategies don't always ensure success, especially when things turn hostile. But a bad strategy dramatically increases the risk of calamity. This was aptly demonstrated in the years following ConAgra Food's (ConAgra) acquisition of Ralcorp Holdings (Ralcorp) in early 2013. By mid-2015, ConAgra, under considerable pressure to divest or spin-off Ralcorp from activist investors, announced it would be seeking ways to do so.

The Ralcorp takeover made ConAgra one of the largest packaged food companies in North America. The transaction also positioned ConAgra as the largest private label packaged food business in North America.¹ What ConAgra had hoped is that diversifying from its own consumer brands to faster-growing private label brands would provide a well-balanced business portfolio allowing the firm to better weather cyclical downturns in the economy. What actually happened is that investors saw ConAgra as a hybrid company consisting of second- and third-tier branded products such as Hunt's ketchup and Orville Redenbacher's popcorn and private label foods sold under supermarket names. Other food companies selling either branded products or private-label items were easier to value.

ConAgra, initially rebuffed in its all-cash \$84 bid in March 2011 to get a friendly deal, decided to threaten to walk away if Ralcorp did not negotiate immediately. Normally, so-called hostile deals (i.e., those not supported by the target's board and management) are difficult, particularly when a target has strong takeover defenses. Ralcorp had both a staggered board making it difficult to change the composition of the board and a poison pill that would if triggered substantially raise the cost of the deal. Such deals are made even more difficult when the acquirer lacks a coherent takeover strategy. Such strategies often involve an offer made directly to the target's shareholders (i.e., a hostile tender offer), a proxy contest to change the composition of the board (even though it could take several years because of the staggered board) to rescind the poison pill, and litigation to compel the board to remove the pill. These tactics in combination are intended to pressure the board to the negotiating table.

Despite its threat, ConAgra did not walk away and a year later announced a friendly deal on November 27, 2012, with Ralcorp at \$94 per share, about 12% more than its initial bid. The

¹Private label sales are products manufactured or packaged for sale under the name of the retailer rather than that of the manufacturer.

purchase price appeared at the time to be excessive especially since Ralcorp had spun off Post Cereals in early 2012 that at the time had a market value of \$17.50 per share. Since ConAgra was receiving fewer assets, the purchase price paid should have been lower reflecting the Post spin-off, possibly by as much as \$17.50 per share.

ConAgra's misfortune showed when it failed to convince investors that its "hybrid" strategy could create shareholder value as its underperformance resulted in write-downs of the value of its Ralcorp acquisition by more than \$2 billion. The implication was clear: it had dramatically overpaid for Ralcorp. The legacy of overpaying has been that ConAgra shares since the closing in January 2013 have dropped by more than 3% while other food products companies showed average gains of more than 10%. At the end of 2016, ConAgra shares traded at a 30% discount to the median multiple for similar-sized North American food manufacturers.

CHAPTER OVERVIEW

Corporate takeovers are a common way to transfer control of a firm from ineffective to effective management. The *corporate takeover market* in which control is transferred serves two important functions in a free market economy: the allocation of resources to sectors in which they can be used most efficiently and as a mechanism for disciplining failing corporate managers. By replacing such managers through hostile takeover attempts or proxy fights or the mere threat of such tactics, the corporate takeover market can help to promote good *corporate governance*, which in turn can improve a firm's financial performance. In recent years, so-called activist investors have assumed the role of the hostile takeover in pressuring a firm's management to pursue value-enhancing strategies.

Corporate governance refers to the rules and processes by which a business is controlled, regulated, or operated. Traditionally, the goal has been to protect shareholder rights. More recently, this has expanded to encompass additional corporate stakeholders, including customers, employees, the government, lenders, communities, regulators, and suppliers. For our purposes, corporate governance is about leadership and accountability, and it involves all those factors internal and external to the firm that interact to protect the rights of corporate stakeholders. That is, the long-held goal of the firm as maximizing shareholder value necessarily encompasses the protection of the rights of all key stakeholder groups.

Fig. 3.1 illustrates the range of factors affecting corporate governance, including the corporate takeover market. A chapter review (including practice questions) is available in the file folder entitled Student Study Guide contained on the companion site to this book (<https://www.elsevier.com/books-and-journals/book-companion/9780128016091>).

CORPORATE GOVERNANCE

Where capital markets are liquid, investors discipline bad managers by selling their shares (i.e., the market model). Where capital markets are illiquid, bad managers are disciplined by those owning large blocks of stock in the firm (i.e., the control model). Table 3.1 summarizes the characteristics of these two common models. The following sections describe those factors internal and external to the firm, including mergers and acquisitions (M&As), impacting corporate governance.

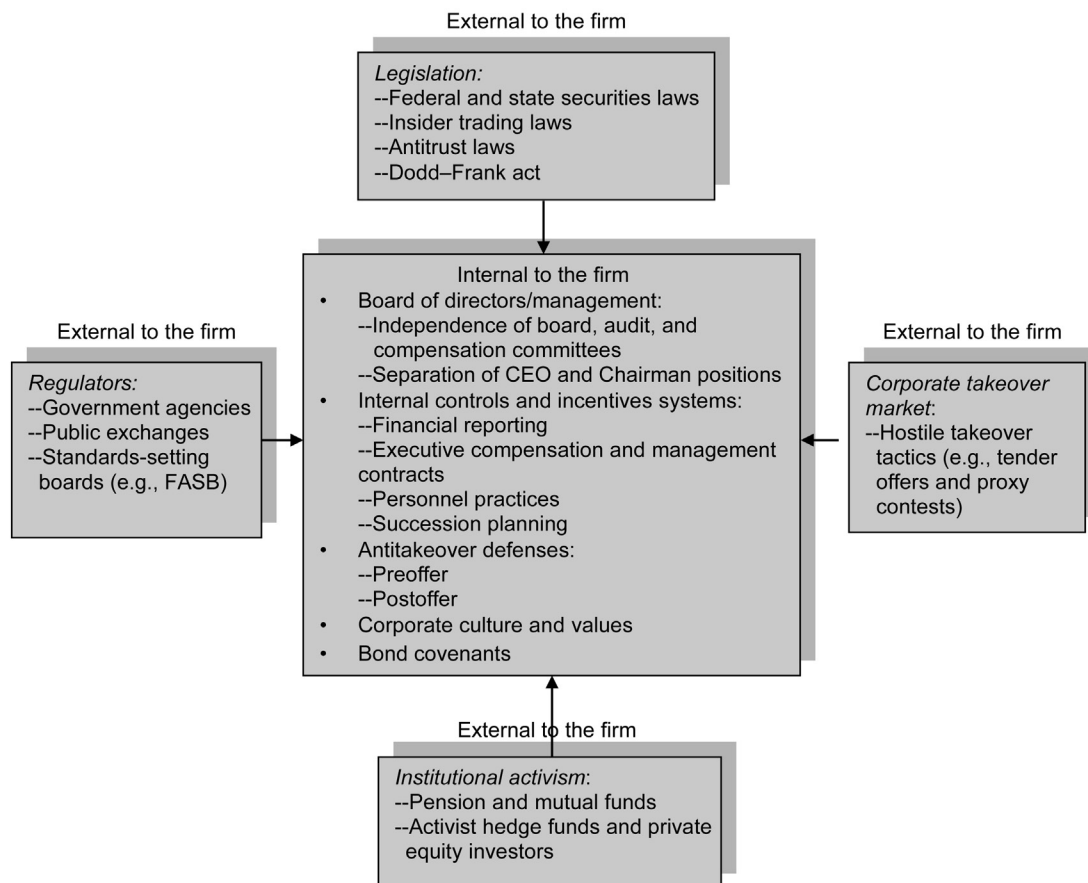


FIGURE 3.1 Factors affecting corporate governance. CEO, Chief Executive Officer; FASB, Financial Accounting Standards Board.

TABLE 3.1 Alternative Models of Corporate Governance

Market model applicable when	Control model applicable when
Capital markets are highly liquid	Capital markets are illiquid
Equity ownership is widely dispersed	Equity ownership is heavily concentrated
Board members are largely independent	Board members are largely “insiders”
Ownership and control are separate	Ownership and control overlap
Financial disclosure is high	Financial disclosure is limited
Shareholders focus more on short-term gains	Shareholders focus more on long-term gains

Factors Internal to the Firm

Corporate governance is affected by the effectiveness of the firm's board, internal controls and incentive systems, takeover defenses, and corporate culture. These factors are discussed next.

The Board of Directors/Management

Corporate board structures differ among countries and have evolved into two basic types: unitary (single) and two-tier (dual) structures. A *unitary board* is composed of both company managers and independent directors, which make decisions as a group. An independent director (sometimes called an outside director) is someone brought to the board from outside the firm. Such directors have not worked for the firm in the past, are not a current manager, do not stand to benefit financially beyond what is paid to other board directors, and are not a captive of the firm's current culture or way of doing business. A *two-tier board* consists of a management board composed only of company executives, including the chief executive officer, whose responsibilities are to run the firm's operations and a separate supervisory board composed only of independent directors. Overseeing the management board, the supervisory board is responsible for strategic decisions and often contains other stakeholders such as employees and environmental groups.

The United States and the United Kingdom are examples of countries having mandated unitary board structures, while Germany and Austria use the two-tiered board structure. In other countries such as France, firms are permitted to switch between the two types of structures. Which structure a firm chooses seems to reflect the extent to which shareholders see potential significant conflicts with management as to how the firm should be managed.

What follows is more descriptive of a unitary board structure. For such boards, the primary responsibilities are to advise the Chief Executive Officer (CEO) and to monitor firm performance. The board hires, fires, and sets CEO pay and is expected to oversee management, corporate strategy, and the firm's financial reports to shareholders. Some board members may be employees or founding family members; others may be affiliated with the firm through a banking relationship, a law firm retained by the firm, or someone who represents a customer or supplier. Such members may be subject to conflicts of interest causing them to act in ways not in the shareholders' best interests. For example, boards with directors working for banks that have made loans to the firm may be prone to favor diversifying acquisitions that are financed with stock rather than cash.² Such directors may believe that acquisitions that diversify the firm may smooth out fluctuations in consolidated cash flow and that using stock rather than cash to pay for them preserves the firm's ability to meet interest and principal payments on its existing debt. However, the use of the stock may dilute the acquiring shareholders' ownership interest in the combined firms.

Such potential conflicts of interest have led some observers to argue that boards should be composed primarily of independent directors and different individuals should hold the CEO and board chairman positions. The presumption is that independent directors improve firm performance due to their objectivity and outside experience. Boards with significant numbers of independent directors also are likely to be more attractive to foreign investors concerned

²Hilscher and Sisli-Ciamarra (2013).

about the challenges of monitoring firm performance from outside the country. The presence of the independent directors may reduce monitoring costs as they are viewed as better able to limit the self-serving actions of insiders.³ Moreover, the longer outside directors serve on a board, the greater their contribution to improving firm performance, because they are better able to understand the firm's operations and to provide better-quality advice.⁴

Studies do indeed show that firm performance can be improved by more independent boards and by separating the CEO and Chairman of the Board positions.⁵ Perhaps underscoring the potential conflict of interest when CEOs are also Board Chairman, CEOs who serve as Chairman on average earn 20% more than those reporting to a Board Chairman who is an independent director.⁶ Another factor impacting the quality of board decisions is the gender makeup of the board. Perhaps reflecting less hubris among female than among male directors, boards with more women directors tend to make less frequent acquisitions and to pay smaller premiums for target firms.⁷

Despite the potential improvement in governance resulting from separating the Chairman and CEO positions, shareholders have proven largely comfortable with the combined role of these two positions. According to the proxy advisory firm Institutional Shareholder Services, only 6% of the 372 proposals to separate the roles at S&P 500 companies during the decade ending in 2015 were approved by shareholders.

While it continues to be common for one person to hold dual roles as CEO and Chairman, the number of independent directors on boards has been increasing over the years. In the early 1990s, about 40% of boards were composed of senior corporate managers or individuals affiliated with the corporation. In recent years, more than 90% of boards have only one or two nonindependent directors.⁸ Despite this trend, more independent boards are not a panacea. There is little evidence that underperforming managers are more likely to be removed today than in the past.⁹ Moreover, having more independent directors does not seem to lead to lower CEO pay.¹⁰ Furthermore, less independent boards are associated with higher announcement date financial returns when nonindependent board members possess significant information about the target firm.¹¹ In such instances, the advisory role of the board is more important than its performance monitoring function.

With more than one-fifth of the board directors in Fortune 500 companies in 2013 on more than one board, the demands on directors' time can be substantial. The most talented independent directors, often on multiple boards, are most likely to spend the bulk of their

³Miletkov et al. (2014).

⁴Kim et al. (2014)

⁵Armstrong et al. (2015) find that firm value is positively influenced by outsider-dominated boards. Dahya et al. (2016) document that in the United Kingdom where outside directors are more common acquirers whose boards are dominated by outside directors show higher returns when targets are public than when they are private. Why? Because outside director effectiveness may be better when access to information is greater as often is the case with private targets.

⁶Francis and Lublin (2016).

⁷Levi et al. (2014).

⁸Gordon (2007).

⁹Davidoff et al. (2014).

¹⁰Guthrie et al. (2012).

¹¹Schmidt (2015).

time on those boards of firms held in the highest esteem by their peers and investors. This suggests that they may be less effective on other boards on which they serve. Why? They have an incentive to devote most of their time and energy on boards that add to their reputations.¹²

The oft-used adage that information is power is certainly true in the board room. Well-connected CEOs often have access to information not readily available to others giving them greater control over board agendas and the ability to achieve consensus among board members. Access to better information also makes it more difficult to remove underperforming CEOs who claim they have a more accurate view of future competitive trends and that continued reliance on their business strategy will result in eventual success.¹³

Political connections matter. Acquirers whose board members or senior managers include former politicians and regulators are more likely to receive regulatory approval, realize higher announcement date returns, and exhibit superior postmerger operating performance than those that do not.¹⁴ Investors realize that such acquirers may receive more favorable treatment by regulators and be able to acquire more synergistic targets such as direct competitors. Former politicians and regulators can be helpful in navigating the regulatory process, gaining access to decision makers for purposes of lobbying, and receiving government contracts.

Today, boards average about 10 members, about one-half of their average size during the 1970s. There is evidence that smaller boards tend to be more effective, since each member can wield more influence, thereby effectively reducing the power of the CEO. Smaller boards also are more likely to replace a CEO due to poor performance. However, more complicated firms may benefit from larger boards capable of providing a broader range of advice to the CEO.¹⁵

Despite progress in recent years, boards often do not discipline underperforming CEOs as quickly as perhaps they should due to a variety of factors. Boards may be slow to dismiss such managers due to cronyism, concern about how it reflects on board members, or a concern about investor reaction. For publicly traded firms, dismissing high-profile CEOs attracts substantial investor attention. CEO termination reflects negatively on the board that hired the CEO, raising investor concerns about board competence. Such concerns could impact the firm's future cost of financing¹⁶ and may help explain why CEOs often seem to be compensated for M&A deals that create as well as destroy value.¹⁷

How board members themselves are selected may be problematic. The selection of board members may be more a function of their accumulated experience and public profile as CEOs than past job performance. For example, CEOs with substantial acquisition experience are more likely to be selected for a higher number of directorships with little regard to whether their past acquisitions created or destroyed shareholder value.¹⁸ When this is the case, the existence of independent board members with significant senior-level investment banking experience may be increasingly important. While acquiring firms having such directors have

¹²Masulis and Mobbs (2014).

¹³El-Khatib et al. (2015).

¹⁴Ferris et al. (2016).

¹⁵Coles et al. (2008).

¹⁶Dow (2013).

¹⁷Fich et al. (2014).

¹⁸Harford and Schonlau (2013).

a higher probability of making acquisitions, they also tend to exhibit higher announcement date financial returns, pay lower takeover premiums and advisory fees, and show superior long-term performance than firms that do not.¹⁹

Board members are compensated using different types of incentive payments, including stock, stock options, and fees paid to attend meetings. Directors on boards of larger, more complex firms tend to be paid more. Firms with greater growth opportunities pay a larger percentage of director compensation in the form of equity, presumably to better align director interests with those of the firm's shareholders.²⁰

In the final analysis, it is possible to place too much emphasis on the importance of form over substance in achieving effective governance. Form focuses on the size and distribution of the board between independent and nonindependent directors and whether the Chairman and CEO positions are held by different individuals. Substantive improvement in governance often comes more from the integrity of board members and senior managers and the willingness of board members to remain engaged in the ongoing activities of the business.

Internal Controls, Incentive Systems, and Management Contracts

These factors often are critical to aligning shareholder and manager interests. Internal controls help prevent fraud as well as encourage compliance with prevailing laws and regulations. Financial and legal auditing functions, as well as hiring and firing policies, within the firm are examples of internal controls. Compensation, consisting of base pay, bonuses, and stock options, underpins incentive systems used to manage the firm in the manner the board deems appropriate. Management contracts formally stipulate responsibilities, term of employment, basic compensation arrangements, change in control provisions, and severance packages.

The dark side of financial incentive systems is that they may create abuses as well as positive incentives. For example, equity-based incentive systems can encourage managers and directors to engage in unethical activity. For instance, systems in which managers and directors are rewarded for improvements in a firm's share price have been associated with efforts to more aggressively avoid the payment of taxes. And efforts to do so can cause managers to undertake risky strategies in excess of what shareholders want.²¹

To rectify management abuses, the Dodd-Frank Act of 2010 gives shareholders of public firms the right to vote on executive compensation. Under the new rules, such votes must occur at least once every 3 years. The Dodd-Frank Act also requires publicly traded firms to develop mechanisms for recovering compensation based on executive misconduct.

Managerial and shareholder interests can be aligned in other ways. Option strike prices (i.e., prices at which options can be converted into company shares) can be linked to the firm's share price performance relative to the stock market, ensuring that increases in the stock market do not benefit managers whose companies are underperforming. Another way is for managers to own a significant portion of the firm's outstanding stock or for the manager's ownership of the firm's stock to comprise a substantial share of his or her personal wealth.

¹⁹Huang et al. (2014).

²⁰Nguyen (2014).

²¹Armstrong et al. (2015).

Aggressive incentive programs tend to improve acquirer abnormal financial returns around acquisition announcement dates for public targets and have had an even greater positive impact after the introduction of Sarbanes–Oxley in 2002 that makes senior management more accountable for their actions. With a greater focus on good governance, senior managers may be more inclined to make decisions based more on common sense than hubris. Senior managers at firms with high pay-for-performance incentive plans tend to pay 23.3% lower average merger premiums to public target firm shareholders than firms with more modest incentive plans.²²

An alternative to concentrating ownership in management is for one or more shareholders who are not managers to accumulate a large block of voting shares. So-called “blockholders” may be more aggressive in monitoring management and more receptive to takeovers, thereby increasing the risk to managers that they will be ousted for poor performance.

While management contracts can guarantee pay for failure,²³ there is evidence they can contribute to shareholder wealth creation by better aligning CEO interests with shareholders. Why? Because they enable firms to attract and retain the best talent and encourage the pursuit of high-return (albeit high-risk), value-enhancing investments, since such contracts generally align their compensation with the long-term performance of the firm and specify severance packages. Management contracts have become increasingly popular over the years, especially for firms that are underperforming their peers or are takeover targets,²⁴ with the percentage of S&P 500 CEOs with employment contracts increasing from 29% in 1990 to 50% in 2005. Acquirers whose CEOs have employment contracts outperform their counterparts without one in terms of financial returns by 1.3 percentage points on average when deals are announced and show greater long-term profitability. Acquirer CEOs with contracts may bargain more aggressively with target firms resulting in lower purchase price premiums paid because their total compensation depends on the long-term performance of the firm. They may also be willing to bid for risky firms.²⁵ Risky firms may attract fewer bidders thereby also contributing to lower purchase premiums.

Antitakeover Defenses

A firm’s board and management may employ defenses to negotiate a higher purchase price with a bidder or to solidify their current position within the firm. The range of defensive actions is detailed later in this chapter.

Corporate Culture and Values

Good governance also depends on an employee culture instilled with appropriate values and behaviors. Setting the right tone comes from the board of directors’ and senior management’s willingness to behave in a manner consistent with what they demand from other employees. A firm’s culture is often viewed by management as a valuable corporate asset, and, as such, their desire to preserve the culture can impact investment policy. For example, firms whose cultures breed substantial trust between employees and management tend to increase

²²Krolikowski (2016).

²³Bebchuk and Fried (2003, 2004).

²⁴Rau and Xu (2013).

²⁵Zhao (2013).

cooperation and the exchange of specialized knowledge. Such firms tend to make acquisitions that are on average one-third the size of those made by other firms enabling their culture to be dominant in defining the behavior of the employees of the combined firms.²⁶

Bond Covenants

Legally binding on both the bond issuer and the bond holder, covenants forbid the issuer from undertaking certain activities, such as dividend payments, or require the issuer to meet specific requirements, such as periodic information reporting. Strong covenants can motivate managers to pursue relatively low-risk investments, such as capital expenditures, and avoid higher-risk investments, such as research and development spending.²⁷

Factors External to the Firm

Federal and state legislation, the court system, regulators, institutional activists, and the corporate takeover market all play an important role in maintaining good corporate governance practices.

Legislation and the Legal System

The 1933 and 1934 Securities Acts underlie US securities legislation and created the Securities and Exchange Commission (SEC), charged with writing and enforcing securities' regulations. The US Congress has since transferred some enforcement tasks to public stock exchanges operating under SEC oversight.²⁸ Under the Sarbanes–Oxley Act of 2002, the SEC oversees the Public Company Accounting Oversight Board, whose task is to develop and enforce auditing standards. State legislation also has a significant impact on governance practices by requiring corporate charters to define the responsibilities of boards and managers with respect to shareholders. The net effect of stronger investor protections, such as laws and regulations that increase investor access to consistent and accurate financial information, is to limit the ability of managers and controlling shareholders to misuse corporate resources.²⁹

While such legislation can enhance shareholder value at firms whose governance practices are problematic, there is little evidence that such firms perform long term at the level of companies whose governance practices are viewed as superior by investors. Why? New legislation and regulations tend to be targeted to specific areas within the firm. Areas untouched by such legislation or regulation tend not to change unless the firm undergoes a pervasive change in its culture.

Regulators

The SEC, Federal Trade Commission, and Department of Justice can discipline firms through formal investigations and lawsuits. In 2003, the SEC approved new listing standards that would put many lucrative, stock-based pay plans to a shareholder vote. The 2010

²⁶Bargeron et al. (2015).

²⁷King and Wen (2011).

²⁸The SEC itself has delegated certain responsibilities for setting accounting standards to the not-for-profit Financial Accounting Standards Board (FASB).

²⁹Burkhart et al. (1997).

Dodd–Frank Act requires listed firms to have fully independent compensation committees. The Act also promotes more detailed salary transparency for key managers. However, there is evidence that the drive for transparency is helping to fuel spiraling salaries due to the way in which boards set CEO compensation. Boards look at CEO salaries at comparable firms, often pegging such salaries at levels above those offered by peer firms in an attempt to attract or retain the best talent.³⁰

Institutional Activists

Pension funds, hedge funds, private equity investors, and mutual funds have become increasingly influential in affecting the policies of companies in which they invest. Activist investors target about one in seven publicly traded firms worldwide and tend to be most prevalent in countries whose laws provide good investor protection.³¹ According to research firm Activist Insight, the growth in institutional activism in 2016 occurred in Western Europe, with about one-third of the 97 companies worldwide (vs. 67 in 2015) targeted by activists centered in the United Kingdom.

Shareholders of public firms may submit proposals to be voted on at annual meetings, but such proposals are not binding. The firm's board can accept or reject the proposal even if approved by a majority of shareholders. Only 30% of proposals receiving majority support are implemented within 1 year of the vote.³² Nonbinding proposals approved by shareholders pertaining to takeover defenses, executive compensation, etc., are more likely to be implemented if there is an activist investor likely to threaten a proxy fight.³³ When nonbinding votes are too close to call, there is evidence that firm value can increase by as much as 1.8% on the day of the vote if it passes and as much as 2.8% if it is later adopted by the firm's board. The impact on shareholder value is even greater for firms with a substantial number of takeover defenses in place.³⁴

Activist hedge funds during the 2008–14 period demonstrated announcement date financial returns of 7% on equity positions taken in target firms, consistent with those returns observed in earlier periods. The most successful hedge funds were those willing to take minority positions in large targets mired in complicated situations. Such firms had a demonstrated track record of either changing the composition of the target's board or getting the incumbent board to change strategic direction by using proxy contests, lawsuits, pressuring target boards using the media, overcoming strong defenses, and replacing board members.³⁵ These firms also had substantial financial clout in terms of assets under management making it clear to target firm boards that they had the financial clout to initiate a buyout if needed.

The Corporate Takeover Market

Changes in corporate control can occur because of a hostile or friendly takeover or because of a proxy contest initiated by activist shareholders. When a firm's internal management controls are weak, the takeover market acts as a "court of last resort" to discipline bad

³⁰Elson and Ferrere (2013).

³¹Kim et al. (2015).

³²Ertimur et al. (2010).

³³Levit and Malenko (2012).

³⁴Cunat et al. (2012).

³⁵Krishnan et al. (2016).

management behavior.³⁶ Strong internal governance mechanisms, by contrast, lessen the role of the takeover threat as a disciplinary factor. However, the disciplining effect of a takeover threat on a firm's management can be reinforced when it is paired with a large shareholding by an institutional investor.³⁷ Larger firms are more likely to be the target of disciplinary takeovers than smaller firms, and their CEOs are more likely to be replaced following a series of poor acquisitions.³⁸ Public firms, whose management and boards tend to engage in frequent acquisitions, often overpaying, are likely to become takeover targets as their firm's performance suffers from their undisciplined takeover and bidding practices.³⁹

Several theories attempt to explain why managers resist a takeover attempt. The *management entrenchment theory* suggests that managers use takeover defenses to ensure their longevity with the firm. While relatively rare in the United States, hostile takeovers (i.e., those not supported by the target firm's management and boards) or the threat of such takeovers have historically been useful for maintaining good corporate governance by removing bad managers and installing better ones. Indeed, there is evidence of frequent management turnover even if a takeover attempt is defeated, since takeover targets are often poor financial performers. An alternative viewpoint is the *shareholder interest's theory*, which suggests that management resistance to takeovers is a good bargaining strategy to increase the purchase price to the benefit of the target's shareholders.⁴⁰

Proxy contests are attempts by a group of activist shareholders to gain representation on a firm's board or to change management proposals by gaining the support of other shareholders. While those that address issues other than board representation do not bind the board, boards are becoming more responsive—perhaps reflecting fallout from the Enron-type scandals in 2001 and 2002.⁴¹ Even unsuccessful proxy contests often lead to a change in management, a restructuring of the firm, or investor expectations that the firm ultimately will be acquired.

UNDERSTANDING ALTERNATIVE TAKEOVER TACTICS

Implementing a friendly takeover is described briefly in the following section and in considerable detail in Chapter 5. Hostile-takeover tactics are described extensively in the following sections.

Friendly Takeovers Are Most Common

In friendly takeovers, a negotiated settlement is possible without the acquirer's resorting to aggressive tactics. The potential acquirer initiates an informal dialogue with the target's

³⁶Kini et al. (2004).

³⁷Cremers and Nair (2005).

³⁸Offenberg (2009).

³⁹Rahman et al. (2016).

⁴⁰Schwert (2000).

⁴¹According to Ertimur et al. (2010), boards implemented 41% of nonbinding shareholder proposals for majority voting in 2004, versus only 22% in 1997. A board was more likely to adopt a shareholder proposal if a competitor had adopted a similar plan.

top management, and the acquirer and target reach an agreement on the key issues early in the process, such as the long-term business strategy, how they will operate in the short term, and who will be in key executive positions. Often, a *standstill agreement* is negotiated in which the acquirer agrees not to make any further investments in the target's stock for a specific period. This compels the acquirer to pursue the acquisition on friendly terms, at least for the period covered by the agreement, and permits negotiations without the threat of more aggressive tactics, such as those discussed in the following sections.

Hostile Takeovers Are More a Threat Than a Reality

If initial efforts to take control of a target firm are rejected, an acquirer may choose to adopt more aggressive tactics, including the bear hug, the proxy contest, and the tender offer. However, relatively few deals reach this stage. Why? Arguably, firms are more efficient today than in the 1980s when highly diversified firms offered the likes of such corporate raiders as Carl Icahn and T. Boone Pickens opportunities to reap huge profits by breaking up such firms and selling them in pieces. Furthermore, the proliferation of corporate takeover defenses has made hostile takeovers more problematic and expensive. However, the threat of an unsolicited offer turning hostile increases the likelihood that target firm's management will ultimately negotiate a settlement. Spurred by a few large transactions, their share of total deal value in 2014 did rise to about 8% from less than 3% the prior year. Nonetheless, hostile takeovers continue to be relatively rare making headlines often because they are so infrequent and therefore newsworthy.

The Bear Hug: Limiting the Target's Options

A *bear hug* is an offer to buy the target's shares at a substantial premium to its current share price and often entails mailing a letter containing the proposal to the target's CEO and board without warning and demanding a rapid decision. It usually involves a public announcement to put pressure on the board. Directors voting against the proposal may be subject to shareholder lawsuits alleging they are not working in the best interests of their shareholders. Once the bid is made public, the company is likely to attract additional bidders. Institutional investors⁴² and arbitrageurs (arbs) add to the pressure by lobbying the board to accept the offer. By accumulating target shares, they make purchases of blocks of stock by the bidder easier, for they often are quite willing to sell their shares.

Proxy Contests in Support of a Takeover

Activist shareholders often initiate a proxy fight to remove management due to poor performance, to promote the spin-off of a business unit or the outright sale of the firm, or to force a cash distribution to shareholders.⁴³ Proxy fights enable such shareholders to replace board

⁴²Institutional investors include insurance companies, retirement or pension funds, hedge funds, banks, and mutual funds and account, on average, for more than two-thirds of the shareholdings of publicly traded firms (Bogle, 2007).

⁴³Faleye (2004).

members with those more willing to support their positions. Proxy contests are a means of gaining control without owning 50.1% of the voting stock, or they can be used to eliminate takeover defenses, as a precursor of a tender offer, or to oust recalcitrant target-firm board members. In late 2010, Air Products & Chemicals, after being rejected several times by Airgas Inc., succeeded in placing three of its own nominees on the Airgas board and, in doing so, voted to remove the chairman of Airgas, who had led the resistance to the Air Products' offer. Notably, despite their success in electing their own nominees to the board and removing the CEO, Air Products still was unable to convince the Airgas board to accept their offer and eventually withdrew their bid. In a rare show of shareholder solidarity, activist fund Starboard Capital in late 2014 replaced all 12 of Darden Restaurant's board members with its nominees following the Darden board's failure to spin off certain assets.

Implementing a Proxy Contest

When the bidder is also a shareholder, the proxy process may begin with the bidder's attempting to call a special shareholders meeting. Alternatively, the bidder may put a proposal to replace the board at a regularly scheduled shareholders meeting. Before the meeting, the bidder opens an aggressive public relations campaign, with direct solicitations sent to shareholders and full-page advertisements in the press to convince shareholders to support the bidder's proposals. The target often responds with its own campaign. Once shareholders receive the proxies, they may choose to sign and send them directly to a designated collection point such as a brokerage house or a bank.

SEC regulations cover proxy solicitations under Section 14(A) of the Securities Exchange Act of 1934. All materials distributed to shareholders must be submitted to the SEC for review at least 10 days before they are distributed. The party attempting to solicit proxies from the target's shareholders must file a *proxy statement* and Schedule 14(A) with the SEC and mail it to the target's shareholders. Proxy statements may be obtained from the companies involved and on the SEC's website and they are excellent sources of information about a proposed transaction.

The Impact of Proxy Contests on Shareholder Value

Despite a low success rate, proxy fights often result in positive abnormal returns to target shareholders regardless of the outcome.⁴⁴ The reasons include the eventual change in management at firms embroiled in proxy fights, the tendency for new management to restructure the firm, investor expectations of a future change in control, and special cash payouts made by firms with excess cash holdings. However, when management wins by a wide margin, shareholder value often declines, since little changes in how the firm is managed.⁴⁵

An SEC rule change in late 2015 may result in shareholder proxy votes involving M&As having a greater potential impact on shareholder value. Why? Referred to as unbundling under Exchange Act Rule 14a-4(a)(3), the new rule requires a separate shareholder vote for each change in governance resulting from the deal. Previously the SEC had taken the position that only one vote was required on the merger: the target's shareholders could simply

⁴⁴In studies of proxy battles during the 1980s through the mid-1990s, abnormal returns ranged from 6 to 19%, even if the activist shareholders were unsuccessful in the proxy contest (Faleye, 2004; Mulherin and Poulsen, 1998).

⁴⁵Listokin (2009).

vote to support or reject the merger. Now, the requirement to have a separate vote on governance matters means that shareholders can support a merger without approving governance changes such as takeover defenses (discussed in detail later in this chapter) that may reduce shareholder value.

The Hostile Tender Offer

A *hostile tender offer* circumvents the target's board and management to reach the target's shareholders directly with an offer to purchase their shares. While boards often discourage unwanted bids initially, they are more likely to relent to a hostile tender offer.⁴⁶ Such offers are undertaken for several reasons: (1) as a last resort if the bidder cannot get the target's board and management to relent, (2) to preempt another firm from making a bid for the target, and (3) to close a transaction quickly if the bidder believes that time is critical. A common hostile-takeover strategy involves the bidder's acquiring a controlling interest in the target and later completing the combination through a merger. This strategy is described in detail later in this chapter.

Pretender Offer Tactics: Toehold Bidding Strategies

Toehold investments involve a potential bidder taking a less than controlling interest in a target firm. Bidders may purchase stock before a formal bid to accumulate shares at a price lower than the eventual offer price. Such purchases are secretive to avoid increasing the average price paid. For public firms, investments exceeding 5% of the target's shares must be made public. Another advantage to the bidder is the potential leverage achieved with the voting rights associated with the stock it has purchased. The bidder also can sell this stock if the takeover attempt is unsuccessful. Once a toehold position has been established, the bidder may attempt to call a special stockholders meeting to replace the board of directors or remove takeover defenses.⁴⁷

While rare in friendly takeovers, these actions are commonplace in hostile transactions, comprising about one-half of all such takeovers. In friendly deals, bidders are concerned about alienating a target firm's board with such actions; however, in hostile situations, the target firm would have rejected the initial bid under any circumstances. The frequency of toehold bidding has declined since the early 1990s in line with the widespread adoption of takeover defenses such as poison pills and a decline in the frequency of hostile deals.⁴⁸ Acquirers with a toehold investment in the target firm prior to a takeover represent about 5.4% of public firms and 1.4% of private firms. The average toehold investment size is about 31% of the target's shares (higher in hostile deals and lower in friendly ones) and about 20% for investments made by private equity firms.

⁴⁶In a study of 1018 tender offers in the United States between 1962 and 2001, Bhagat et al. (2005) found that target boards resisted tender offers about one-fifth of the time. In a study of 49 countries, Rossi and Volpin found that only about 1% of 45,686 M&A deals between 1990 and 2002 were opposed by target firm boards.

⁴⁷The conditions under which such a meeting can be called are determined by the firm's articles of incorporation, governed by the laws of the state in which the firm is incorporated. A copy of a firm's articles of incorporation can usually be obtained from the Office of the Secretary of State of the state in which the firm is incorporated.

⁴⁸Betton et al. (2009).

Toehold strategies may also be undertaken when a potential bidder lacks access to enough accurate information about a target to determine potential and in turn a realistic offer price for the target. The value of a toehold investment is greatest when one potential bidder has access to significantly less information than competing bidders more familiar with the target firm. For example, about 14% of firms employing a toehold strategy are from another country than the target and about 43% operate in an industry different from that of the target. However, the incentive for one bidder to make a toehold investment in advance of the bidding process is less if other potential bidders are having similar difficulty in obtaining accurate information. Furthermore, the value of the toehold investment as a means of gaining information is less when the number of potential bidders is large, as some bidders with poor information may make excessive offers for the target based on hubris rather than an accurate assessment of potential synergy.⁴⁹

Toehold strategies tend to reduce the likelihood that other firms will bid for the target. If a bidding contest does occur, a bidder making a toehold investment is more likely to be successful in closing the deal, given the voting rights obtained with its toehold target stock purchase.⁵⁰

Implementing a Tender Offer

Tender offers can be for cash, stock, debt, or some combination. Unlike mergers, tender offers frequently use cash as the form of payment. Securities transactions involve a longer period to complete because of the need to register with the SEC, to comply with state registration requirements, and, if the issue is large, to obtain shareholder approval. If the offer involves a share-for-share exchange, it is referred to as an *exchange offer*. Whether cash or securities, the offer made to target shareholders may be extended for a specific period and may be unrestricted (any-or-all offer) or restricted to a certain percentage or number of the target's shares.

Tender offers restricted to purchasing less than 100% of the target's outstanding shares may be oversubscribed. Because the Williams Act of 1968 requires equal treatment of all shareholders tendering shares, the bidder may either purchase all of the target stock that is tendered or purchase only a portion of the tendered stock. For example, if the bidder has extended a tender offer for 70% of the target's outstanding shares and 90% of the target's stock actually is offered, then the bidder may choose to prorate the purchase of stock by buying only 63% (i.e., 0.7×0.9) of the tendered stock by each shareholder. If the bidder chooses to revise the tender offer, the waiting period is automatically extended. If another bid is made, the waiting period must also be extended another 10 days. Once initiated, tender offers for publicly traded firms are usually successful, although the success rate is lower if they are contested.⁵¹

Federal securities laws impose reporting, disclosure, and antifraud requirements on acquirers initiating tender offers. Once the tender offer has been made, the acquirer cannot purchase any target shares other than the number specified in the offer. Section 14(D) of the Williams Act requires that any individual or entity making a tender offer resulting in owning

⁴⁹Povel and Sertsios (2014).

⁵⁰Bessler et al. (2015).

⁵¹According to FactSet Mergerstat, the success rate of total attempted tender offers between 1980 and 2000 was more than 80%, with the success rate for uncontested offers more than 90% and for contested offers (i.e., by the target's board) slightly more than 50%.

more than 5% of any class of equity must file a Schedule 14(D)-1 and all solicitation materials with the SEC.

Multitiered Offers

A bid can be either a one- or two-tiered offer. In a *one-tier offer*, the acquirer announces the same offer to all target shareholders, which provides the potential to purchase control of the target quickly and discourage other possible bidders from attempting to disrupt the deal. In a *two-tiered offer*, the acquirer offers to buy a number of shares at one price and more at a lower price at a later date. The form of payment in the second tier may be less attractive, consisting of securities rather than cash. The intent of the two-tiered approach is to give target shareholders an incentive to tender their shares early in the process to receive a more attractive price. Since those shareholders tendering their shares in the first tier enable the acquirer to obtain a controlling interest, their shares are worth more than those who may choose to sell in the second tier.

Once the bidding firm accumulates enough shares to gain control of the target (usually 50.1%), the bidder may initiate a so-called *back-end merger* by calling a special shareholders meeting seeking approval for a merger, in which minority shareholders are required to accede to the majority vote. Alternatively, the bidder may operate the target firm as a partially owned subsidiary, later merging it into a newly created wholly owned subsidiary. Many state statutes require equal treatment for all tendering shareholders as part of two-tier offers and give target shareholders *appraisal rights*⁵² that allow those not tendering shares in the first or second tier to ask the state court to determine a “fair value” for the shares.⁵³ State statutes may also contain *fair-price provisions*, in which all target shareholders, including those in the second tier, receive the same price and redemption rights, enabling target shareholders in the second tier to redeem their shares at a price similar to that paid in the first tier.

There are disadvantages to owning less than 100% of the target’s voting stock. These include the potential for dissatisfied minority shareholders owning significant blocks of stock to disrupt efforts to implement important management decisions and the cost incurred in providing financial statements to both majority and minority shareholders.

OTHER TACTICAL CONSIDERATIONS

Successful takeovers depend on the size of the offer price premium, the board’s composition, and the makeup, sentiment, and investment horizon of the target’s current shareholders. Other factors include the provisions of the target’s bylaws and the potential for the target to implement additional takeover defenses.

⁵²In 2015, Delaware’s Court of Chancery (the nation’s busiest for M&A lawsuits) had 43 appraisal lawsuits filed valued at \$2.3 trillion, up from 16 worth \$129 billion the prior year. The majority of the plaintiffs settle for a small increase in the value of their target shares, a few with large increases, and some are awarded the merger price. While appraisal rights can be abused by opportunistic target shareholders in an effort to gain more than fair value for their shares, such instances appear to be relatively rare (Kalodimos and Lundberg, 2017).

⁵³The minority shares may be subject to a “minority discount,” since they are worth less to the bidder than those acquired in the process of gaining control.

The Importance of Premium, Board Composition, and Investor Sentiment

The target's board will find it more difficult to reject offers exhibiting substantial premiums to the target's current share price. The composition of the target's board also influences what the board does because one dominated by independent directors may be more likely to negotiate the best price for shareholders by soliciting competing bids than to protect itself and current management. The final outcome of a hostile takeover also is dependent on the composition of the target's ownership, how shareholders feel about management's performance, and how long they intend to hold the stock. Firms held predominately by short-term investors (i.e., less than 4 months) are more likely to receive a bid and exhibit a lower average premium of as much as 3% when acquired. Researchers speculate that firms held by short-term investors have a weaker bargaining position with the bidder due to the limited loyalty of such shareholders.⁵⁴

To assess these factors, an acquirer compiles (to the extent possible) lists of stock ownership by category: management, officers, employees, and institutions such as pension and mutual funds. This information can be used to estimate the target's *float*—total outstanding shares less shares held by insiders. The larger the share of stock held by insiders such as corporate officers, family members, and employees, the smaller the number of shares that are likely to be easily purchased by the bidder, since these types of shareholders are less likely to sell their shares.

Finally, an astute bidder will always analyze the target firm's bylaws for provisions potentially adding to the cost of a takeover.⁵⁵ Such provisions could include a staggered board, the inability to remove directors without cause, or supermajority voting requirements for approval of mergers. These and other measures are detailed later in this chapter.

Contract Considerations

To heighten the chance of a successful takeover, the bidder will include provisions in a *letter of intent* (LOI) to discourage the target firm from backing out of any preliminary agreements. The LOI is a preliminary agreement between two companies intending to merge stipulating areas of agreement between the parties as well as their rights and limitations. It may contain a number of features protecting the buyer; among the most common is the *no-shop agreement*, prohibiting the target from seeking other bids or making public information not currently readily available.

Contracts often grant the target and acquirer the right to withdraw from the agreement. This usually requires the payment of *breakup or termination fees*, sums paid to the acquirer or target to compensate for their expenses. Expenses could include legal and advisory expenses, management time, and the costs associated with opportunities that may have been lost to the bidder while involved in trying to close this deal.⁵⁶ Termination fees are used more frequently on the target side than on that of the acquirer because targets have greater incentives to break contracts and seek other bidders. Such fees give the target firm some leverage with the bidder. Averaging

⁵⁴Gaspara and Massa (2005).

⁵⁵Unlike charters, which are recorded in the Office of the Secretary of State in the state in which the firm is incorporated, corporate bylaws generally are held by the firm along with other corporate records and may be available through the firm's website or by requesting a copy directly from the firm.

⁵⁶Hotchkiss et al. (2005) found a target termination or breakup fee included in the initial agreement in 55% of all deals, while in 21% of the deals both target and acquirer termination fees were included.

about 3% of the purchase price and found in about two-thirds of all M&A deals, such fees tend to result in an approximately 4% higher premium paid to target firms. The higher premium represents the amount paid by the bidder for “insurance” that it will be compensated for expenses incurred if the transaction is not completed and for motivating the target to complete the deal.⁵⁷ Low- or moderate-sized fees do not discourage postannouncement competing bids.⁵⁸

Breakup fees paid by the bidder to the target firm are called *reverse breakup fees*, and they have become more common in recent years as buyers, finding it difficult to finance transactions, have opted to back out of signed agreements. The *stock lockup*, an option granted to the bidder to buy the target firm’s stock at the first bidder’s initial offer, is another form of protection for the bidder. It is triggered whenever the target firm accepts a competing bid. Because the target may choose to sell to a higher bidder, the stock lockup arrangement usually ensures that the initial bidder will make a profit on its purchase of the target’s stock. The initial bidder also may require that the seller agrees to a *crown jewel lockup*, in which the initial bidder has an option to buy important strategic assets of the seller, if the seller chooses to sell to another party.

DEVELOPING A BIDDING STRATEGY

The tactics used in a bidding strategy represent a series of decision points, with objectives and options well understood before a takeover is initiated. A poorly thought-out strategy can result in unsuccessful bidding for the target firm, which can be costly to CEOs, who may lose their jobs.⁵⁹ CEOs who demonstrate restraint by being unwilling to increase an offer price or withdraw an offer when the bidding becomes too expensive are less likely to be replaced than those who are less disciplined bidders.⁶⁰ Common bidding-strategy objectives include winning control of the target, minimizing the control premium, minimizing transaction costs, and facilitating postacquisition integration.

If minimizing the purchase price and transaction costs while maximizing cooperation between the two parties is critical, the bidder may choose the “friendly” approach. This minimizes the loss of key personnel, customers, and suppliers while control is changing hands. Friendly takeovers avoid an auction environment, which may raise the target’s purchase price. Moreover, amicable deals facilitate premerger integration planning and increase the likelihood that the combined firms will be integrated quickly. If the target is unwilling to reach a negotiated settlement, the acquirer is faced with the choice of abandoning the effort or resorting to more aggressive tactics. Such tactics are likely to be less effective because of the extra time they give the target’s management to put additional takeover defenses in place. In reality, the risk of loss of surprise may not be very great because of the prenotification requirements of current US law.

Reading Fig. 3.2 from left to right, we see that the bidder initiates contact informally through an intermediary (sometimes called a *casual pass*) or through a more formal inquiry. If rejected, the bidder’s options are either to walk away or to become more aggressive. In

⁵⁷Officer (2003).

⁵⁸Jeon and Ligonb (2011).

⁵⁹In a sample of 714 acquisitions between 1990 and 1998, Lehn and Zhao (2006) found that 47% of acquiring firm CEOs were replaced within 5 years. Moreover, top executives are more likely to be replaced at firms that have made poor acquisitions some time during the previous 5 years.

⁶⁰Jacobsen (2014).

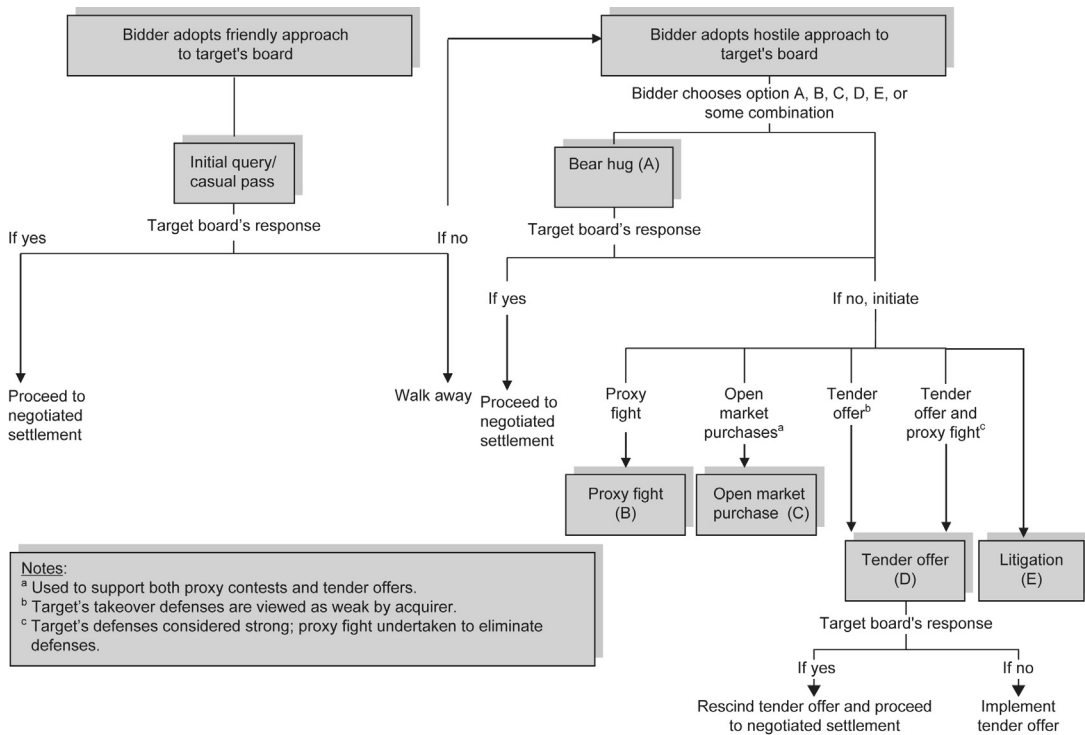


FIGURE 3.2 Alternative takeover tactics to negotiated settlement tender offer.

the latter case, the bidder may undertake a simple bear hug, hoping that pressure from large institutional shareholders and arbs will nudge the target toward a negotiated settlement. If that fails, the bidder may accumulate enough shares in the open market from institutional investors to call a special shareholders meeting or initiate a proxy battle to install new board members receptive to a takeover or to dismember the target's defenses. While generally less expensive than tender offers (which include a premium to the target's current share price), proxy campaigns are expensive, with an average cost of \$6 million, not including possible litigation costs.⁶¹ If the target's defenses are weak, the bidder may forego a proxy contest and initiate a tender offer for the target's stock. If the target's defenses appear formidable, the bidder may implement a proxy contest and a tender offer concurrently; however, the exorbitant cost makes this option uncommon.

Litigation often is used to pressure the target's board to relent to the bidder's proposal or remove defenses and is most effective if the firm's defenses appear to be especially onerous. The bidder may initiate litigation that accuses the target's board of not giving the bidder's offer sufficient review, or the bidder may argue that the target's defenses are not in the best interests of the target's shareholders. Table 3.2 summarizes common bidder objectives and the advantages and disadvantages of the various tactics that may be employed to achieve these objectives.

⁶¹Gantchev (2013).

TABLE 3.2 Advantages and Disadvantages of Alternative Takeover Tactics

Common bidder strategy objectives		
• Gain control of target firm • Minimize the size of the control premium • Minimize transactions costs • Facilitate postacquisition integration		
Tactics	Advantages	Disadvantages
Casual Pass (i.e., informal inquiry)	• May learn target is receptive to deal	• Gives advance warning
Bear Hug Offer (i.e., letter to target board forcefully proposing takeover)	• Raises pressure on target to negotiate a deal	• Gives advance warning
Open Market Purchases (i.e., acquirer buys target shares on public market)	• May lower cost of transaction • Creates profit if target agrees to buy back bidder's toehold position • May discourage other bidders	• Can result in a less than controlling interest • Limits on amount one can purchase without disclosure • Some shareholders could hold out for higher price • Could suffer losses if takeover attempt fails • Could alienate target management and make a friendly takeover more difficult
Proxy Contest (i.e., effort to obtain target shareholder support to change target board)	• Less expensive than tender offer • May obviate need for tender offer	• Relatively low probability of success if target stock widely held • Adds to transactions costs
Hostile Tender Offer (i.e., direct offer to target shareholders to buy shares not supported by target's board or management)	• Pressures target shareholders to sell stock • Bidder not bound to purchase tendered shares unless desired number of shares tendered	• Tends to be most expensive tactic • Disrupts postmerger integration due to potential loss of key target managers, customers, and suppliers
Litigation (i.e., lawsuits accusing target board of improper conduct)	• Puts pressure on target board	• Expense

ACTIVIST INVESTORS: GAINING INFLUENCE WITHOUT CONTROL

The objective of hostile takeovers is for the acquirer to achieve control. However, the cost and complexity of implementing such deals has resulted in hostile tender offers declining in popularity. Those seeking to change corporate behavior are increasingly doing so by exercising their rights as corporate shareholders. An increasingly important threat to corporate boards and management is the activist investor. Companies often view such investors the way they did hostile takeovers in the 1980s, with trepidation.

Unlike hostile takeovers, the activist investor has no interest in gaining control of the firm. Rather, their objective is to purchase enough of its outstanding equity to gain the attention of other investors by making their claims well known, often in what turns out to be a public

spectacle. Once this has been achieved, the investor will promote a particular agenda designed to change a firm's behavior, which if successful they hope will increase the firm's market value.

Companies continually monitor their share price for signs of an activist, are prone to hire advisers when an activist investor appears, and are more willing to make important concessions early to head off an all-out public battle for control. They have become more proactive by determining where they might be vulnerable and how they might minimize their exposure. For example, firms may choose to spin off or divest underperforming businesses or to increase dividend payments to reduce excess cash on the balance sheet or to borrow to undertake share buybacks. Company management is now more inclined to talk to activists in an effort to keep the discussions out of the media so as not to impact the firm's reputation or share price. The intent is to keep the discussions civil and constructive.

Activist investors who succeed in achieving their objectives commonly do so by gaining a seat(s) on the board of the target company.⁶² Board representation gives such investors access to proprietary information and an opportunity to express disparate opinions at board meetings. Allowing such representation is a compromise position enabling the target to avoid highly public and potentially rancorous proxy fights with the activist investor. The agreement in late 2014 between legendary activist investor Karl Icahn and rental car company Hertz Global Holdings illustrates how boards are increasingly reaching negotiated settlements with activist investors. After publicly expressing his lack of confidence in the firm's board and management, Mr. Icahn was able to place three of his representatives on the board who would take over from three existing directors who were scheduled to retire. Hertz also agreed to raise the threshold that would trigger its shareholder rights plan intended to raise the cost of an unwanted takeover to 20 from 10%. This enables activist investors to increase their stake in the firm without fear of triggering the poison pill. Poison pills are described in more detail later in this chapter.

Unlike their predecessors, active investors in recent years are less interested in short-term gains and more interested in agitating for a specific long-term change: a change in business strategy, an increase in dividends, or a change in the composition of the firm's board. While some efforts are successful, others go horribly wrong. In 2013, TPG-Axon was able to push out Sand Ridge Energy CEO, Tom Ward. In contrast, William Ackman lost hundreds of millions of his investors' dollars in attempting to remove Target Corporation's CEO. He ended up selling his stake at a loss of almost \$500 million.

Critics argue that activist investors seek to limit shareholder rights by noting their potential adverse impact on firm value when they force a board and management to focus on short-term decisions, often at the expense of long-term performance. For example, forcing a board to pay dividends to reduce cash on the balance sheet or to borrow to repurchase shares may limit the firm's ability to pursue future high-growth opportunities.

The empirical evidence does not seem to support these claims. In a study of more than 2000 activist investments in firms between 1994 and 1997, researchers found that, on average, firms' operating performance measured by return on assets improved relative to that of their industry peers during the 5 years following the activist's investment.⁶³

⁶²Benoit and Monga (2015).

⁶³Bebchuk et al. (2013).

TABLE 3.3 Alternative Preoffer and Postoffer Takeover Defenses

Preoffer defenses	Postoffer defenses
Poison Pills^a: Flip-over rights plans Flip-in rights plans Blank check preferred stock plans Shark Repellents (Implemented by Changing Bylaws or Charter): Strengthening the board's defenses Staggered or classified board elections "For cause" provisions Limiting shareholder actions with respect to: Calling special meetings Consent solicitations Advance notice provisions Supermajority rules Other shark repellents Antigreenmail provisions Fair-price provisions Dual class recapitalization Reincorporation Golden Parachutes (Change of Control payments)	Greenmail (bidder's investment purchased at a premium to what bidder paid as inducement to refrain from any further activity) Standstill Agreements (often used in conjunction with an agreement to buy bidder's investment) White knights Employee stock ownership plans Leveraged recapitalization Share repurchase or buyback plans Corporate restructuring Litigation

^aWhile many different types of poison pills are used, only the most common forms are discussed in this text. Note also that the distinction between preoffer and postoffer defenses is becoming murky as increasingly poison pill plans are put in place immediately following the announcement of a bid. Pills can be adopted without a shareholder vote because they are issued as a dividend and the board has the exclusive authority to issue dividends.

UNDERSTANDING ALTERNATIVE TAKEOVER DEFENSES

Takeover defenses are designed to slow down an unwanted offer or to force a suitor to raise the bid to get the target's board to rescind the defense. They can be grouped into two categories: those put in place before receiving an offer (preoffer) and those implemented after receipt of an offer (postoffer). Table 3.3 shows the most commonly used preoffer and postoffer defenses.

Preoffer Defenses

Preoffer defenses are used to delay a change in control, giving the target firm time to erect additional defenses after the unsolicited offer has been received. Such defenses generally fall

into three categories: poison pills,⁶⁴ shark repellents, and golden parachutes. Table 3.4 summarizes the advantages and disadvantages of preoffer defenses.

Poison Pills

A poison pill involves a board issuing rights to current shareholders, with the exception of an unwanted investor, to buy the firm's shares at an exercise price well below their current market value. Because they are issued as a dividend and the board usually has the exclusive authority to declare dividends, a pill can be adopted without a shareholder vote and implemented either before or after a hostile bid. If a specified percentage (usually 10%–20%) of the target's common stock is acquired by a hostile investor, each right entitles the holder to purchase common stock or some fraction of participating preferred stock⁶⁵ of the target firm (*a flip-in pill*). If a merger, consolidation, sale of at least some percentage (usually 50%) of the target's assets, or announced tender offer occurs, the rights holder may purchase acquirer common shares (*a flip-over pill*). Both the flip-in and flip-over pills entitle their holders on paying the exercise price to buy shares having a market value on the date the pill is triggered equal to some multiple (often two times) of the right's exercise price.⁶⁶ Rights are redeemable at any time by the board, usually at \$.01 per right, expire after some period (sometimes up to 10 years), and trade on public exchanges.

The flip-in pill discourages hostile investors from buying a minority stake in the firm because it dilutes their ownership interest in the firm as more target shares are issued. For example, if the hostile investor buys a 20% interest in the firm and the number of target shares doubles, the investor's ownership stake is reduced to 10%. Furthermore, the value of the investor's investment also decreases as other shareholders buy more shares at a deeply discounted price. Efforts by the hostile investor to sell shares at what he or she paid are thwarted by the willingness of other shareholders, having acquired shares at a much lower price, to sell below the price paid by the hostile investor. Finally, the total cost of completing the takeover increases as the number of shares that must be acquired in a cash offer or the number of acquirer shares issued in a share exchange increases, diluting current acquirer shareholders. Similarly, the flip-over poison pill dilutes the acquirer's current shareholders and depresses the value of their investment as more acquirer shares are issued at below their current market value.

Netflix adopted a poison pill, having both flip-in and flip-over rights, on November 2, 2012, in response to a 9.98% investment stake in the firm by investor Carl Icahn. Each shareholder, except Icahn, received a right for each common share held as of November 12, 2012, to buy one one-thousandth of a new preferred share at an exercise price of \$350 per right if an investor acquires more than 10% of the firm without board approval. If triggered, each flip-in right entitled its holder to purchase by paying the right's exercise price a number of shares of Netflix common stock having a market value of twice the exercise price (i.e., \$700). At the time

⁶⁴Poison pills could be viewed as postoffer defenses, since they can be implemented after an offer has been made.

⁶⁵The fraction of a preferred share is intended to give the shareholder about the same dividend, voting, and liquidation rights as would one common share and should approximate the value of one common share.

⁶⁶The exercise price is determined by estimating the long-term trading value of the company's common shares during the life of the plan. The greater the exercise price relative to the market value of the firm's share price, the greater the number of new shares a rights holder can buy once he or she pays the exercise price.

TABLE 3.4 Advantages and Disadvantages of Preoffer Takeover Defenses

Type of defense	Advantages for target firm	Disadvantages for target firm
POISON PILLS: RAISING THE COST OF ACQUISITIONS		
Flip-Over Pills (rights to buy stock in the acquirer, activated with 100% change in ownership)	Dilutes ownership position of current acquirer shareholders Rights redeemable by buying them back from shareholders at nominal price	Ineffective in preventing acquisition of less than 100% of target (bidders could buy controlling interest only and buy remainder after rights expire) Subject to hostile tender contingent on target board's redemption of pill Makes issuer less attractive to white knights
Flip-In Pills (rights to buy target stock, activated when acquirer purchases less than 100% change in ownership)	Dilutes target stock regardless of amount purchased by potential acquirer Not given to investor who activated the rights Rights redeemable at any point prior to triggering event	Not permissible in some states due to discriminatory nature No poison pill provides any protection against proxy contests
SHARK REPELLENTS: STRENGTHENING THE BOARD'S DEFENSES		
Staggered or Boards	Delays assumption of control by a majority shareholder	May be circumvented by increasing size of board, unless prevented by charter or bylaws
Limitations on When Directors Can Be Removed	"For cause" provisions narrow range of reasons for removal	Can be circumvented unless supported by a supermajority requirement for repeal
SHARK REPELLENTS: LIMITING SHAREHOLDER ACTIONS		
Limitations on Calling Special Meetings	Limits ability to use special meetings to add board seats, remove or elect new members	States may require a special meeting if a certain percentage of shareholders requests a meeting
Limiting Consent Solicitations	Limits ability of dissatisfied shareholders to expedite a proxy contest process	May be subject to court challenge
Advance Notice Provisions	Gives board time to select its own slate of candidates and to decide an appropriate response	May be subject to court challenge
Supermajority Provisions	May be applied selectively to events such as hostile takeovers	Can be circumvented unless a supermajority of shareholders is required to change provision
OTHER SHARK REPELLENTS		
Antigreenmail Provision	Eliminates profit opportunity for raiders	Eliminates greenmail as a takeover defense
Fair-Price Provisions	Increases the cost of a two-tiered tender offer	Raises the cost to a White knight, unless waived by typically 95% of shareholders

(Continued)

TABLE 3.4 Advantages and Disadvantages of Preoffer Takeover Defenses (*cont.*)

Type of defense	Advantages for target firm	Disadvantages for target firm
Dual Class Recapitalization/ Supervoting Stock	Concentrates control by giving “friendly” shareholders more voting power than others	Difficult to implement because requires shareholder approval and only useful when voting power can be given to promanagement shareholders
Reincorporation	Takes advantage of most favorable state antitakeover statutes	Requires shareholder approval; time consuming to implement unless subsidiary established before takeover solicitation
Golden Parachutes	Emboldens target management to negotiate for a higher premium and raises the cost of a takeover to the hostile bidder	Negative public perception; makes termination of top management expensive; cost not tax deductible; subject to nonbinding shareholder vote

of the issue, Netflix common stock traded at \$76 per share. Each right would be convertible into 9.2 common shares [i.e., $(2 \times \$350)/\$76$] if the pill was triggered. If the firm was merged into another firm or it was to sell more than 50% of its assets, each flip-over right would entitle the holder to buy a number of common shares of the acquirer at the then-market value at twice the exercise price following payment of the \$350 exercise price.

Poison pill proponents argue that it prevents a raider from acquiring a substantial portion of the firm’s stock without board permission. Since the board generally has the power to rescind the pill, bidders are compelled to negotiate with the target’s board, which could result in a higher offer price. Pill defenses may be most effective when used with staggered board defenses, because a raider would be unable to remove the pill without winning two successive elections. This increases the likelihood of the target’s remaining independent.⁶⁷ Detractors argue that pill defenses simply entrench management and encourage disaffected shareholders to litigate.

Recent legal precedents further strengthen a target’s takeover defenses. The unsolicited offer by Air Products for Airgas on February 2, 2010, has been one of the longest running hostile bids in US history. After having revised up its offer twice, Air Products sought to bring this process to a close when it asked the Delaware Chancery Court to invalidate Airgas’s poison pill. On February 15, 2011, the court ruled that the board has the right to prevent shareholders from voting on the takeover offer as long as it is acting in good faith. In the wake of the court’s ruling, Air Products withdrew its bid.

The outcome of the court’s ruling has implications for future hostile takeovers. The ruling upholds Delaware’s long tradition of respecting managerial discretion as long as the board is found to be acting in good faith and abiding by its fiduciary responsibilities to the firm’s shareholders. The ruling allows target firm boards to use a poison pill as long as the board deems justified, and it is far reaching because Delaware law governs most US publicly traded firms.

⁶⁷Bebchuk et al. (2002).

In mid-2014, the Delaware state court blocked efforts by hedge fund mogul Daniel Loeb to overturn a crucial corporate defense at legendary auction house, Sothebys. Loeb had argued that the Sotheby's poison pill plan unfairly discriminated against his firm and inhibited his ability to wage his proxy campaign. The pill specifically limited him to no more than 10% of Sotheby's shares while letting passive (long-term) investors hold as much as 20% of Sotheby's shares without triggering the pill. The ruling justifies the use of such defenses to limit the ownership stake in the company of a specific investor. Sotheby had argued, and the court concurred, that it had adopted the two-tiered poison pill to protect shareholders from coercive takeover tactics. In legitimizing the two-tiered pill, the courts may have limited the future effectiveness of activist investors in some situations.

Shark Repellents

Shark repellents are takeover defenses achieved by amending either a *corporate charter* or the *corporation bylaws*.⁶⁸ They predate poison pills as a defense, and their success in slowing down takeovers and making them more expensive has been mixed. Today, shark repellents have largely become supplements to poison pill defenses. Their primary role is to make it more difficult to gain control of the board through a proxy fight at an annual or special meeting. In practice, shark repellents necessitate a shareholder vote because they require amendments to the firm's charter. Although there are many variations of shark repellents, the most typical are staggered board elections, restrictions on shareholder actions, antigreenmail provisions, differential voting rights (DVR) shares, and debt-based defenses.

Strengthening the Board's Defenses

Corporate directors are elected at annual shareholder meetings by a vote of the holders of a majority of shares who are present and entitled to vote. The mechanism for electing directors differs among corporations, with voting shares being cast either through a straight vote or cumulatively. With *straight voting*, shareholders may cast all their votes for each member of the board of directors, thereby virtually ensuring that the majority shareholder(s) will elect all of the directors. For example, assume that a corporation has 4 directors up for election and has 2 shareholders, 1 owning 80 shares (i.e., the majority shareholder) and 1 owning 20 shares (i.e., the minority shareholder). With each share having one vote, the majority shareholder will always elect the director for whom he or she casts his or her votes. In *cumulative voting* systems, the number of votes each shareholder has equals the number of shares owned times the number of directors to be elected. The shareholder may cast all of these votes for a single candidate or for any two or more candidates. With cumulative voting, all directors are elected at the same time. Using the same example, the majority shareholder will have 320 votes (80×4), and the minority shareholder will have 80 votes (20×4). If the minority shareholder casts all of his or her votes for himself or herself, he or she is assured

⁶⁸The charter gives the corporation its legal existence and consists of the articles of incorporation, a document filed with a state government by the founders of a corporation, and a certificate of incorporation, a document received from the state once the articles have been approved. The corporation's powers thus derive from the laws of the state and from the provisions of the charter. Rules governing the internal management of the corporation are described in the corporation's bylaws, which are determined by the corporation's founders.

of a seat, since the majority shareholder cannot outvote the minority shareholder for all four board seats.⁶⁹

In states where cumulative voting is mandatory, companies sometimes distribute the election of directors over a number of years to make it harder for a dissatisfied minority shareholder to gain control of the board. This makes it more difficult for the minority shareholder to elect a director when there is cumulative voting because there are fewer directors to be elected at one time. This so-called *staggered* or *classified board election* involves dividing the firm's directors into a number of different classes. Only one class is up for reelection each year. A 12-member board may have directors divided into 4 classes, with each director elected for a 4-year period. In the first year, the three directors in what might be called "Class 1" are up for election; in the second year, "Class 2" directors are up for election; and so on. This means that a shareholder, even one who holds the majority of the stock, would have to wait for three election cycles to gain control of the board. Moreover, the size of the board is limited by the firm's bylaws to preclude the dissatisfied shareholder from adding board seats to take control of the board.

For cause provisions specify the conditions (e.g., fraud, noncompliance with prevailing regulations) for removing a member of the board of directors. This narrows the range of permissible reasons and limits the flexibility of dissident shareholders in contesting board seats.

Limiting Shareholder Actions

The board can also reinforce its control by restricting shareholders' ability to gain control of the firm by bypassing the board. Limits can be set on their ability to call special meetings, engage in consent solicitations, and use supermajority rules (explained later). Firms frequently rely on the conditions under which directors can be removed (i.e., the "for cause" provision discussed earlier) and a limitation on the number of board seats as defined in the firm's bylaws or charter.

Limiting the circumstances under which shareholders can call special meetings effectively limits their opportunity to introduce a new slate of directors or to push for a rescission of certain defenses such as a poison pill. A firm's bylaws often require that a new slate of directors can be nominated only at its annual meeting and restrict the ability of shareholders to call special meetings. This forces shareholders wishing to replace directors who are up for reelection only one opportunity to do so at the annual meeting. In 2016, newspaper publisher Gannett's failure to meet a deadline for nominating directors at rival Tribune's annual meeting meant it could not pressure the current board into accepting the firm's hostile offer for Tribune. Why? It would be unable to mount a proxy battle to replace the Tribune's board until the firm's 2017 annual meeting. Gannett was reduced to conducting an advertising campaign asking Tribune shareholders to withhold their votes for directors up for reelection.

In some states, shareholders may take action—without a special shareholders meeting—to add to the number of seats on the board, remove specific board members, or elect new

⁶⁹While there are many possible combinations, if the majority shareholder was to cast 81 votes for each of 3 seats, he or she would have only 77 votes remaining (i.e., 320 (243) for the last seat. As the number of directors increases, it becomes easier for the minority shareholder to win a seat (or seats), since the majority shareholder's votes must be spread over more directors to block the minority shareholder.

members. These states allow dissatisfied shareholders to obtain support for their proposals simply by obtaining the written consent of shareholders under what is known as *consent solicitation*, a process that still must abide by the disclosure requirements applicable to proxy contests. Shareholders may vote simply by responding to a mailing thereby circumventing the delays inherent in setting up a meeting to conduct a shareholder vote.⁷⁰ Corporate bylaws may include *advance notice provisions* requiring shareholder proposals and board nominations to be announced well in advance, sometimes as long as 2 months, of an actual vote, to buy time for management. *Supermajority rules* require a higher level of approval than is standard to amend the charter for transactions such as a merger or acquisition. Such rules are triggered when an “interested party” acquires a specific percentage of the ownership shares (e.g., 5%–10%). Supermajority rules may require that as much as 80% of the shareholders must approve a proposed merger or a simple majority of all shareholders except the potential acquirer.

Other Shark Repellents

Other shark repellent defenses include antigreenmail provisions, fair-price provisions, DVR shares, reincorporation, and golden parachutes. These are discussed next.

Antigreenmail Provisions

During the 1980s, bidders profited by taking an equity position in a firm, threatening takeover, and subsequently selling their shares back to the firm at a premium over what they paid for them. The practice was dubbed “greenmail.” Many firms have since adopted charter amendments, called *antigreenmail provisions*, restricting the firm’s ability to repurchase shares at a premium.

Fair-Price Provisions

Requirements that any acquirer pay minority shareholders at least a fair market price for their stock are called *fair-price provisions*. The fair market price may be expressed as some historical multiple of the company’s earnings or as a specific price equal to the maximum price paid when the buyer acquired shares in the company.⁷¹

Dual Class Recapitalization

A firm may create more than one class of stock to separate the performance of individual operating subsidiaries, compensate subsidiary operating management, maintain control, or prevent hostile takeovers. The process of creating another class of stock is called a *dual class recapitalization* and involves separating shareholder voting rights from cash flow rights. Voting rights indicate the degree of influence or control shareholders have over how a firm is managed, while cash flow rights are rights to receive dividends. Shares with different voting rights, DVR shares, may have multiple voting rights (so-called supervoting shares), fractional

⁷⁰Whereas the winning vote in a proxy fight is determined as a percentage of the number of votes actually cast, the winning vote in a consent solicitation is determined as a percentage of the number of shares outstanding. A dissatisfied shareholder may find it easier to win a proxy contest because many shareholders simply do not vote.

⁷¹In two-tiered tender offers, the fair-price provision forces the bidder to pay target shareholders who tender their stock in the second tier the same terms offered to those tendering their stock in the first tier.

voting rights, or no voting rights. DVR shares may have 10–100 times the voting rights of another class of stock or a fraction of a voting right per share (e.g., a shareholder might be required to hold 100 DVR shares to cast 1 vote). Shares without voting rights but having cash flow rights may pay a dividend higher than those with voting rights. Once approved by shareholders, the new class of stock is issued as a pro rata stock dividend or an exchange offer in which the new class of stock is offered for one currently outstanding.

Dual class structures tend to concentrate voting power as supervoting shares are issued as a pro rata dividend; later, shareholders are given the option of exchanging their supervoting shares for shares offering higher dividends, with managers retaining their supervoting shares. In dual class structures, the largest shareholder owns, on average, about 23% of the firm's equity and about 58% of the voting rights.⁷² How this increased concentration of voting rights impacts the value of the firm is unclear. Some studies find that firm value is reduced as controlling shareholders erect excessive takeover defenses, create agency conflicts, and avoid higher-risk, value-enhancing investments.⁷³ Other studies document an increase in firm value when the firm moves from a single to a dual class capital structure as controlling shareholders have more time to focus on longer-term strategies, are subject to less short-term pressure, and are more inclined to pursue higher-risk growth opportunities.⁷⁴ The various arguments supporting these different conclusions are discussed in more detail in the subsequent text.

Supervoting shares enable controlling shareholders to diversify their net worth by selling a portion of their equity in the firm without losing control. As such, insiders may be more inclined to pursue higher-risk, higher-return investments to improve corporate performance.⁷⁵ Dual class IPOs may be particularly appropriate for firms in which the founding family or founding entrepreneur(s) are widely viewed as critical to the firm's long-term performance.⁷⁶ Examples include Mark Zuckerberg of Facebook and Larry Page and Sergey Brin of Google. Facebook in 2013 and Google in 2014 each issued a new class of nonvoting shares to be used for equity-based employee compensation and for financing new acquisitions out of concern about diluting the founders' future voting power. In mid-2016, Facebook issued as a dividend 2 shares of new supervoting (Class "C") shares to current holders of Class "A" nonvoting shares and Class "B" supervoting shares (10 votes each). This enabled Zuckerberg to sell nonvoting shares to finance philanthropic projects without surrendering control over the firm.

Dual class structures can create agency costs when the controlling shareholders receive benefits not available to noncontrolling shareholders. Such benefits could include the sale of the firm's assets to others with whom the controlling shareholders have a business relationship at a discount from their fair market value. Other benefits accruing to controlling shareholders include the sale of the firm's products at a discount to businesses owned by the controlling shareholders or requiring the firm to pay higher than market prices to suppliers with whom the controlling shareholders have business ties. Ideally, responsible boards would intervene to prevent insiders from disadvantaging other shareholders in such situations. However, there is evidence that when control tends to be disproportionately concentrated, insiders tend

⁷²Baulkaran (2014).

⁷³Gompers et al. (2010).

⁷⁴Jordan et al. (2016).

⁷⁵Baugess et al. (2012) and Ferreira et al. (2010a, 2010b).

⁷⁶Chemmanur et al. (2014).

to put in place weaker boards allowing the insiders to entrench themselves despite their receiving benefits at the expense of other shareholders.⁷⁷

When agency problems arise at dual class structure firms, the remedy is to “unify” or convert the structure to “one share, one vote.” The elimination of the dual class structure dilutes the voting power of controlling shareholders (whose high vote shares lose their multiple voting rights) making the firm vulnerable to shareholders seeking a change in the control of the firm through proxy contests. In these instances, the firm’s market value often increases following the elimination of the dual class structure.⁷⁸

The major US public stock exchanges allow firms to list on the exchanges with dual class shares and set no restrictions on voting rights of new public stock issues. However, firms may not take steps to reduce the voting rights of existing shareholders in any way.⁷⁹

Reincorporation

A potential target may change the state or country within which it is incorporated to one where the laws are more favorable for implementing takeover defenses by creating a subsidiary in the new state and later merging with the parent. Several factors need to be considered in selecting a location for incorporation, such as how the courts have ruled in lawsuits alleging breach of corporate director fiduciary responsibility in takeovers as well as the laws pertaining to certain takeover tactics and defenses. Reincorporation requires shareholder approval.

Golden Parachutes (Change-of-Control Payouts)

Employee severance packages, triggered whenever a change in control takes place, are called *golden parachutes*. These arrangements typically cover only a few dozen employees, who are terminated following the change in control. They are designed to raise the bidder’s cost of the acquisition rather than to gain time for the target board. Such severance packages also may serve the interests of shareholders by making senior management more willing to accept an acquisition.⁸⁰ There is evidence that golden parachutes benefit target shareholders by increasing the likelihood deals will be completed, but often at a lower purchase price premium.⁸¹

Golden parachutes are often associated with a reduction in firm value around their adoption date, although the incentives they create for CEOs can produce ambiguous results: they may increase the likelihood of a takeover but destroy firm value by encouraging CEOs to accept deals not in the best interests of the firm’s shareholders. For example, the target’s CEO may accept overvalued acquirer shares to close the deal and trigger payout of the golden parachute even though they realize that such shares are likely to decline in value.⁸²

Actual payouts to management, such as accelerated equity awards, pensions, and other deferred compensation following a change in control, may significantly exceed the value of

⁷⁷Baran and Forst (2015).

⁷⁸Lauterbach and Pajuste (2015).

⁷⁹Howell (2014).

⁸⁰Fich et al. (2016).

⁸¹Fich et al. (2013).

⁸²Bebchuk et al. (2014).

TABLE 3.5 Advantages and Disadvantages of Postoffer Takeover Defenses

Type of defense	Advantages for target firm	Disadvantages for target firm
Greenmail	Encourages raider to go away (usually accompanied by a standstill agreement)	Reduces risk to raider of losing money on a takeover attempt; unfairly discriminates against nonparticipating shareholders; generates litigation; triggers unfavorable tax issues and bad publicity
Standstill agreement	Prevents raider from returning for a specific time period	Increases amount of greenmail paid to get raider to sign standstill; provides only temporary reprieve
White knights	May be a preferable to the hostile bidder	Involves loss of target's independence
ESOPs	Alternative to white knight and highly effective if used in conjunction with certain states' antitakeover laws	Employee support not guaranteed; ESOP cannot overpay for stock because transaction could be disallowed by federal law
Recapitalizations	Makes target less attractive to bidder and may increase target shareholder value if incumbent management motivated to improve performance	Increased leverage reduces target's borrowing capacity
Share buyback plans	Reduces number of target shares available for purchase by bidder, arbs, and others who may sell to bidder	Cannot self-tender without SEC filing once hostile tender under way; reduction in the shares outstanding may facilitate bidder's gaining control
Corporate restructuring	Going private may be an attractive alternative to bidder's offer for target shareholders and for incumbent management	Going private, sale of attractive assets, making defensive acquisitions, or liquidation may reduce target's shareholder value versus bidder's offer
Litigation	May buy time for target to build defenses and increases takeover cost to the bidder	May have negative impact on target shareholder returns

arb, Arbitrageur; ESOP, employee stock ownership plan; SEC, Securities and Exchange Commission.

the so-called golden parachutes. Tax considerations and recent legislation affect corporate decisions to implement such compensation packages.⁸³

Postoffer Defenses

Once an unwanted suitor has approached a firm, a variety of additional defenses can be introduced. These include greenmail to dissuade the bidder from continuing the pursuit; defenses designed to make the target less attractive, such as restructuring and recapitalization strategies; and efforts to place an increasing share of the company's ownership in friendly hands by establishing employee stock ownership plans (ESOPs) or seeking white knights. [Table 3.5](#) summarizes the advantages and disadvantages of these postoffer defenses.

⁸³The 1986 Tax Act imposed penalties on these types of plans if they create payments that exceed three times the employee's average pay over the previous 5 years and treats them as income and thus not tax-deductible by the paying corporation. More recently, the Dodd-Frank bill of 2010 gives shareholders the opportunity to express their disapproval of golden parachutes through a nonbinding vote.

Greenmail

Greenmail (introduced earlier) is the practice of paying a potential acquirer to leave you alone. It consists of a payment to buy back shares at a premium price in exchange for the acquirer's agreement not to initiate a hostile takeover. In exchange for the payment, the potential acquirer is required to sign a *standstill agreement*, which specifies the amount of stock, if any, the investor can own and the circumstances under which the raider can sell such stock.⁸⁴

White Knights and White Squires

A target may seek a *white knight*: another firm that is considered a more appropriate suitor. The white knight must be willing to acquire the target on terms more favorable than those of other bidders. Fearing a bidding war, the white knight often demands some protection in the form of a lockup. This may involve giving the white knight options to buy stock in the target that has not yet been issued at a fixed price or to acquire specific target assets at a fair price. Such lockups usually make the target less attractive to other bidders. If a bidding war does ensue, the knight may exercise the stock options and sell the shares at a profit to the acquiring company.

So-called *white squires* are investors willing to support a firm's board and management in the event of an unwanted takeover attempt. Unlike a white knight, which agrees to acquire the entire firm, the white squire is willing to purchase a large block of stock often at a favorable price and attractive dividend yield, and for a seat on the board. Such strategies may not be in the best interests of shareholders as they may serve only to entrench management.⁸⁵ In an effort to discourage an unwanted bid from newspaper rival Gannett Corporation, Tribune Publishing sold a 12.92% stake in 2016 to billionaire entrepreneur Patrick Soon-Shiong, which is permitted under Delaware corporate law, where Tribune is incorporated.

Employee Stock Ownership Plans

ESOPs are trusts that hold a firm's stock as an investment for its employees' retirement program. They can be quickly set up, with the firm either issuing shares directly to the ESOP or having an ESOP purchase shares on the open market. The stock held by an ESOP is likely to be voted in support of management in the event of a hostile takeover attempt (see Chapter 1 for more detail).

Leveraged Recapitalization

A firm may recapitalize by assuming substantial amounts of new debt either to buy back stock or to finance a dividend payment to shareholders. While debt often is viewed as a means of forcing managers to focus on a more efficient use of the firm's operating cash flow, it also tends to allow managers to entrench themselves by financing outsized payments to shareholders.⁸⁶ The additional debt reduces the firm's borrowing capacity and leaves it in a

⁸⁴Courts view greenmail as discriminatory because not all shareholders are offered the opportunity to sell their stock back to the target firm at an above-market price. Nevertheless, courts in some states (e.g., Delaware) have found it appropriate if done for valid business reasons. Valid business reasons could include the need for the firm to stay focused on implementing its business strategy. Courts in other states (e.g., California) have favored shareholder lawsuits, contending that greenmail breaches fiduciary responsibility.

⁸⁵Chen et al. (2016).

⁸⁶Chang et al. (2015).

highly leveraged position, making it less attractive to a bidder that may have wanted to use that capacity to help finance a takeover. Moreover, the payment of a dividend or a stock buyback may persuade shareholders to support the target's management in a proxy contest or hostile tender offer.⁸⁷ Recapitalization may require shareholder approval, depending on the company's charter and the laws of the state in which it is incorporated.⁸⁸

Share Repurchase or Buyback Plans

A firm may repurchase shares when it believes it has few attractive investment alternatives,⁸⁹ to reward shareholders, signal undervaluation, fund ESOPs, adjust capital structure, and defend against takeovers.⁹⁰ When used as a takeover defense, share buybacks reduce the number of shares that could be purchased by the potential buyer or by arbs who will sell to the highest bidder. What remains are shares held by those who are less likely to sell, namely individual investors.⁹¹ So for a hostile tender offer to succeed in purchasing the remaining shares, the premium offered would have to be higher, thereby discouraging some prospective bidders. While there is considerable evidence that buyback strategies are an effective takeover deterrent,⁹² the buyback may reduce the number of shares outstanding. This makes it easier for the bidder to gain control because fewer shares have to be purchased to achieve a controlling interest. In addition, share repurchase announcements may actually increase the probability that a firm will be taken over, especially if the firm appears vulnerable to a takeover due to weak defenses or poor governance. Why? Because such firms' share prices often underperform before buybacks and share buyback announcements call attention to their potential undervaluation.⁹³ This is particularly true of smaller firms engaging in share repurchases.⁹⁴

Corporate Restructuring

Restructuring may involve taking the company private, selling attractive assets, undertaking a major acquisition, or even liquidating the company. "Going private" typically involves the management team's purchase of the bulk of a firm's publicly traded shares. This

⁸⁷The primary differences between a leveraged recapitalization and a leveraged buyout are that the firm remains a public company and that management does not take a significant equity stake in the firm in a leveraged recapitalization.

⁸⁸Shareholders will benefit from the receipt of a dividend or from capital gains resulting from a stock repurchase. The increased interest expense shelters some of the firm's taxable income and may encourage management to improve the firm's performance. Thus, current shareholders may benefit more from this takeover defense than from a hostile takeover of the firm.

⁸⁹Boudry et al. (2013).

⁹⁰According to Billett and Xue (2007), firms frequently increase their share repurchase activities when confronted with an imminent takeover threat.

⁹¹Share buybacks make firm ownership less concentrated as large shareholders such as institutional investors, perhaps showing a greater preference for liquidity, appear to be more likely to participate in buybacks than individual shareholders (Golbe and Nyman, 2013).

⁹²Potential acquirers are less likely to pursue firms with substantial excess cash, which could be used to adopt highly aggressive share repurchase programs (Faleye, 2004; Pinkowitz, 2002).

⁹³Huang (2015).

⁹⁴Lin et al. (2014).

may create a win-win situation for shareholders, who receive a premium for their stock, and management, who retain control. Alternatively, the target may make itself less attractive by divesting assets the bidder wants, with the proceeds financing share buybacks or payment of a special stockholder dividend. A target company also may undertake a so-called *defensive acquisition* to draw down any excess cash balances and to exhaust its current borrowing capacity. A firm may choose to liquidate the company, pay off outstanding obligations to creditors, and distribute the remaining proceeds to shareholders as a *liquidating dividend*. This makes sense only if the liquidating dividend exceeds what the shareholders would have received from the bidder.

Litigation

Lawsuits are extremely common during M&As. More than 90% of large deals experience at least one lawsuit and typically take the form of class actions. In 2013, deals valued at more than \$100 million experienced an average of seven shareholder lawsuits, an all-time high, up from about two per deal in 2012.⁹⁵ Shareholder-filed lawsuits challenged 93% of corporate mergers in 2014, up from 44% in 2007.⁹⁶ Lawsuits may involve alleged antitrust concerns, violations of federal securities laws, undervaluation of the target, inadequate disclosure by the bidder as required by the Williams Act, and fraudulent behavior. Targets often seek a court injunction to stop a takeover until the court has decided the merits of the allegations. By preventing a bidder from buying more stock, the target firm is buying more time to erect additional defenses.

While litigation is seldom successful in preventing a takeover, it may uncover additional information about the bidder through the ensuing discovery, or fact-finding, process that leads to more substantive lawsuits. The majority of lawsuits are settled before going to court, resulting in additional information disclosed and fees awarded to plaintiff attorneys. Bidders may sue targets to obtain shareholder mailing lists or to have arguably unreasonable takeover defenses removed. While the probability of completing deals embroiled in litigation falls by about 8%, the takeover premium for those deals that are completed increases by about 30%.⁹⁷

THE IMPACT OF TAKEOVER DEFENSES ON SHAREHOLDER VALUE

Empirical evidence suggests that on average takeover defenses have a slightly negative impact on firm value, while those instituted prior to an IPO or during the early stages of the firm's development can increase shareholder value.

Takeover Defenses and Target Firm Shareholder Financial Returns

Early empirical studies provide inconsistent results. Some empirical studies suggest that takeover defenses in general have virtually no statistically significant impact on shareholder returns.⁹⁸

⁹⁵Davidoff and Cain (2014).

⁹⁶Hoffman (2015).

⁹⁷Krishnan et al. (2012).

⁹⁸Field and Karpoff (2002).

Other studies point to poison pills having a positive impact.⁹⁹ Studies that find a positive return seem to support the idea that existing management acts in the best interests of shareholders (the shareholders' interests hypothesis), while those studies that find a negative return seem to support the notion that current management acts in its own interests (the management entrenchment hypothesis). Overall, the earlier research suggests that takeover defenses have a slightly negative impact on target shareholder returns.¹⁰⁰

Recent research provides more consistent evidence that takeover defenses destroy shareholder value.¹⁰¹ For instance, the creation of a detailed "management entrenchment index" revealed that during the 1990s, firms scoring lower on the index (i.e., exhibiting lower levels of entrenchment) had larger positive abnormal returns than firms with higher scores.¹⁰² However, the close correlation between a firm's entrenchment and abnormal returns disappeared in the 2000s, since investors had already bid up the prices of those firms that had removed takeover defenses in the 1990s and penalized those that had not.¹⁰³ Another large study concludes that managers at firms protected by takeover defenses are less subject to takeover and are more likely to engage in "empire-building" acquisitions that destroy firm value.¹⁰⁴ Firm value also may be reduced because managers shielded from the threat of a hostile buyout may be under less pressure to innovate.¹⁰⁵ Still another study found that firms moving from staggered board elections to annual elections of directors experience a cumulative abnormal return of 1.8%, reflecting investor expectations that the firm is more likely to be subject to a takeover. More recently, a study found a close positive correlation between the number of takeover defenses in place and director compensation. This suggests that directors who propose such defenses directly benefit to the extent they are insulated from activists and hostile takeovers.¹⁰⁶

The negative impact of takeover defenses on firm value appears to be most pronounced after judicial approval of such defenses in the 1985 landmark Delaware Supreme Court decision of *Moran v. Household*. The court case validated the use of poison pills giving boards of directors the sole right to adopt such measures. The court ruling further granted boards broader powers to adopt other types of takeover defenses as long as they were reasonable and wide legal discretion to reject unsolicited takeover bids. Following the ruling, firms experienced an

⁹⁹Comment and William Schwert (1995) found that poison pills have a positive impact on shareholder returns if investors believe a takeover is imminent or that the firm's management would use such a defense to improve the purchase price during negotiation. Several studies suggest that investors will react positively to the announcement of the adoption of takeover defenses if the firm's management interests are viewed as aligned with those of shareholders and will react negatively if management is viewed as seeking to entrench itself (Malekzadeh et al., 1998).

¹⁰⁰Comment and William Schwert (1995) conducted a comprehensive review of previous studies and found that most takeover defenses resulted in a slightly negative decline in shareholder returns of about 0.5%.

¹⁰¹Cohen and Wang (2013).

¹⁰²Bebchuk and Fried (2003) created a management entrenchment index in an effort to assess which of 24 provisions tracked by the Investor Responsibility Research Center (IRRC) had the greatest impact on shareholder value. The index, which is negatively correlated with firm value between 1990 and 2003, includes staggered boards, limits to shareholder bylaw amendments, supermajority requirements for mergers, supermajority requirements for charter amendments, poison pills, and golden parachutes.

¹⁰³Bebchuk et al. (2010).

¹⁰⁴Masulis et al. (2007).

¹⁰⁵Atanassov (2013).

¹⁰⁶Souther (2016).

average 5% reduction in their market value immediately following the announcement that they had adopted a poison pill. Even in the absence of a poison pill, firms adopting other measures restricting shareholder rights exhibited a decline in firm value of averaging 1.7%.¹⁰⁷

The *Moran v. Household* essentially reinforced another Delaware Court ruling involving *Unocal v. Mesa Petroleum* also in 1985 legitimizing a two-tiered tender offer in which shareholders tendering their shares in the first round could potentially receive more than those choosing not to tender their shares. The net effect of these two court cases was to weaken the disciplinary impact on boards and management of hostile takeover threats by giving boards the wide legal authority to reject unsolicited takeover bids. While these court cases apply directly to firms incorporated in Delaware (about one-half of US firms), Delaware court decisions shape laws in other states. In fact, many states have adopted Delaware's poison pill statutes and not a single state has invalidated the use of poison pills. In 1995, additional Delaware court rulings validated additional types of poison pills. These cases include *Unitrin, Inc. v. American General Corp.* and *Moore Corp. v. Wallace Computer Services Inc.*

It is widely believed that these cases and the proliferation of poison pills contributed to management entrenchment. However, there is evidence that poison pills since these cases were litigated have contributed to increased takeover premiums but have had little impact on the number of deals that were not completed.¹⁰⁸ Takeover defenses in general may not reduce deal completion rates, but they can reduce the likelihood of a bid. That is, formidable defenses discourage opportunistic bidders seeking buyouts at "bargain" prices. Therefore, the bids that are received by target firms with defenses in place are likely to be higher than they would have been had the firm been defenseless.¹⁰⁹ The degree of target resistance to a takeover attempt enables the target firm shareholders to realize higher takeover premiums than might have otherwise been the case.¹¹⁰ Target defenses can prove particularly effective at raising negotiated takeover premiums when the target's management is being advised by a top-tier investment bank.¹¹¹

Takeover defenses may also allow a firm's senior management to communicate potentially negative information to investors on a more timely basis due to their feeling somewhat protected from takeover threats. The gradual release of negative information can allow the firm's share price to adjust in a more orderly manner rather than to crash when the accumulated information is released to surprised shareholders.¹¹²

Studies also show that staggered boards can be effective in helping a firm lower its cost of debt¹¹³ and enable management to focus on longer-term value-enhancing investments such as R&D.¹¹⁴ For complex firms, staggered boards may allow for more aggressive monitoring of firm performance by board members offsetting the negative impact of management

¹⁰⁷Cremers et al. (2004).

¹⁰⁸Heron and Lie (2015).

¹⁰⁹Goktan and Kieschnick (2012).

¹¹⁰Dimopoulos and Sacchetto (2014) estimate that in about three-fourths of deals involving only one bidder, the acquisition price paid is determined largely by the degree of target resistance.

¹¹¹Ertugrul (2015).

¹¹²Bhargava et al. (2017).

¹¹³Chen (2012) argues that by reducing concern over takeovers, managers are less inclined to engage in high-risk strategies and engage in more detailed financial disclosure. Both activities aid bondholders.

¹¹⁴Duru et al. (2013).

entrenchment on firm value. Directors may be more willing to provide more independent and perhaps controversial advice without fear of being replaced by investors with a more short-term focus.¹¹⁵

Despite many firms having eliminated staggered boards in recent years, the number of firms with such defenses remains high. According to FactSet Research Systems, the number of S&P 500 firms with staggered boards declined by more than 50% from 2000 to 2014. However, of the more than 3000 publicly traded firms tracked by FactSet, more than one-half still have staggered boards as of late 2014.

How investors react to the announcement of a leveraged recapitalization depends on how they assess the motives of the firm's board and management. The shares of firms managed by poor performing managers often display decidedly negative financial returns when announcements are made that the firm is about to undertake substantial additional leverage in the wake of a takeover attempt. Financial returns can be even more negative if the potential acquirer later withdraws the offer. Investors reason that they are now stuck with both bad management and a highly leveraged firm. Shareholders of target firms with high-performing managers are likely to realize less negative and often positive financial returns if the offer is withdrawn as investors anticipate that existing management will enhance value by more than the premium offered by the potential acquirer.¹¹⁶

Takeover Defenses and Public Offerings

There is evidence that takeover defenses create firm value at the very point the firm is formed (i.e., an IPO) if they help the firm attract, retain, and motivate effective managers and employees and to sustain business relationships. Furthermore, such defenses give the new firm time to implement its business plan fully and to invest in upgrading the skills of employees.¹¹⁷ The firm's IPO value is likely to be higher when it has strong takeover defenses and large customers, dependent suppliers, and strategic partners.¹¹⁸ Why? Because takeover defenses tend to strengthen the firm's business relationships with its customers, suppliers, and other strategic partners since they increase the likelihood that commitments negotiated with the firm will be sustained. This "bonding" effect encourages such stakeholders to invest in their relationships with the firm: customers may increase their purchases, suppliers improve their manufacturing capabilities, and strategic partners devote more resources to the relationship.

SOME THINGS TO REMEMBER

Corporate takeovers facilitate the allocation of resources and promote good governance by disciplining underperforming managers. Other factors external to the firm—such as federal and state legislation, the court system, regulators, and institutional activism—also

¹¹⁵Ahn and Shrestha (2013).

¹¹⁶Jandik and Lallemant (2015).

¹¹⁷Stout (2002) and Coates (2001).

¹¹⁸Johnson et al. (2015).

serve important roles in maintaining good governance practices. Governance also is affected by the professionalism of the firm's board of directors as well as by the effectiveness of the firm's internal controls and incentive systems, takeover defenses, and corporate culture.

DISCUSSION QUESTIONS

- 3.1 What are the management entrenchment and the shareholders' interests' hypotheses? Which seems more realistic in your judgment? Explain your answer.
- 3.2 What are the advantages and disadvantages of the friendly versus hostile approaches to a corporate takeover? Be specific.
- 3.3 What are the primary advantages and disadvantages of commonly used takeover defenses?
- 3.4 How may golden parachutes for senior management help a target firm's shareholders? Are such severance packages justified in your judgment? Explain your answer.
- 3.5 How might recapitalization as a takeover defense help or hurt a target firm's shareholders?
- 3.6 Anheuser-Busch (AB) rejected InBev's all-cash offer price of \$65 per share, saying it undervalued the company, despite the offer representing a 35% premium to AB's preannouncement share price. InBev refused to raise its offer while repeating its strong preference for a friendly takeover. Speculate as to why InBev refused to raise its initial offer price. Why do you believe that InBev continued to prefer a friendly takeover? What do you think InBev should have done to raise pressure on the AB board to accept the offer?
- 3.7 What do you believe are the primary factors a target firm's board should consider when evaluating a bid from a potential acquirer?
- 3.8 If you were the CEO of a target firm, what strategy would you recommend to convince institutional shareholders to support your position in a proxy battle with the bidding firm?
- 3.9 Anheuser-Busch reduced its antitakeover defenses in 2006, when it removed its staggered board structure. Two years earlier, it did not renew its poison pill provision. Speculate as to why the board acquiesced in these instances. Explain how these events may have affected the firm's vulnerability to a takeover.
- 3.10 In response to Microsoft's efforts to acquire the firm, the Yahoo! board adopted a "change-in-control" compensation plan. The plan stated that if a Yahoo! employee's job is terminated by Yahoo! without cause (i.e., the employee is performing his or her duties appropriately) or if an employee leaves voluntarily due to a change in position or responsibilities within 2 years after Microsoft acquires a controlling interest in Yahoo!, the employee will receive 1 year's salary. Yahoo! notes that the adoption of the severance plan is an effort to ensure that employees are treated fairly if Microsoft wins control. Microsoft views the tactic as an effort to discourage a takeover. With whom do you agree, and why?

Answers to these Chapter Discussion Questions are available in the Online Instructor's Manual for instructors using this book (<https://textbooks.elsevier.com/web/Manuals.aspx?isbn=9780128016091>).

END OF CHAPTER CASE STUDY: MYLAN THWARTED IN HOSTILE TAKEOVER OF PERRIGO

Case Study Objectives: To Illustrate How

- Institutional investors can impact corporate decisions
- Current strategies can limit future options
- Poor governance undermines shareholder value
- Hubris can derail good decision making

Things looked good for Mylan NV, a leading generic pharmaceutical drug maker, midday on November 13, 2015, as the early results of the firm's campaign to acquire Perrigo appeared promising. The votes of more and more index fund shares supported Mylan's proposed takeover of Perrigo Co., a maker of store-branded generic drugs. This date marked the last day Perrigo shareholders could tender their shares, a process that had begun with Mylan's initiation of a tender offer for a simple majority of Perrigo's outstanding common shares on September 15, 2015. Acceptance of Mylan's bid, initially valued at \$26 billion and consisting of \$75 in cash and 2.3 new Mylan shares for each Perrigo outstanding, appeared to be in reach. In contrast, the Perrigo board of directors and management was nervous, as they had received support from the majority of their investors in Israel but were alarmed at the number of index fund votes in support of the takeover.

But the heady feeling among Mylan's board of directors and senior management was soon to turn grim. By evening, Mylan's position appeared to weaken when a tally of votes by the national stock clearinghouse, Deposit Trust Corporation, showed that Mylan was short by about 18 million shares of the number needed to gain a controlling interest in Perrigo. Had they won control of the firm, Mylan reasoned they could implement a backend merger at a later date to "squeeze out" the shareholders who had been unwilling to tender their shares.

Nearly all the major mutual funds supported Perrigo, with only Vanguard Group supporting Mylan. Other major mutual fund groups did not even vote, including Blackrock, State Street Global Advisers, and Fidelity Investments. Despite an aggressive marketing campaign to garner investor support, Mylan failed to convince enough investors that they would be better off owning shares in a combined Mylan/Perrigo company. In the end, Mylan was able to garner only 40% of Perrigo's outstanding common shares.

Even though Mylan had promised to make certain changes to its questionable governance practices immediately following its acquisition of Perrigo, the declining value of its shares made the Mylan shares less attractive. Teva Pharmaceuticals' bid to acquire Mylan earlier in 2015 had inflated the value of Mylan's shares to reflect most of the anticipated premium. Mylan was using the inflated value of its shares to make a bid for Perrigo. When Teva later withdrew its offer, Mylan shares plummeted, reducing the premium to Perrigo's share price from 34% when the offer was first made to less than 3%. Ultimately, concerns about the diminishing premium and Mylan's poor governance practices could not be overcome. Analysts on Wall Street also expressed a sigh of relief as they believed that the Mylan offer price overvalued Perrigo.

In April 2015, generic drug leader Teva Pharmaceuticals had tried to acquire Mylan. Within months, Mylan attempted to buy Perrigo, but the latter successfully fended off Mylan 8 months

later. Mylan, one of the world's largest generic drug firms, was always facing an uphill fight to acquire Perrigo, the leading manufacturer of drugstore-brand products. Why? Because it is difficult to acquire a firm whose board and management do not want to sell. Historically, hostile takeovers eventually end either with the target firm relenting following the acquirer's willingness to raise the offer price or with the target able to find another suitor to buy it instead. However, Mylan, perhaps out of senior management's hubris, thought it would be relatively easy to acquire Perrigo. To understand why we need to look at past corporate actions taken by Perrigo and how such action limited the firm's options in defending against Mylan's unsolicited offer.

In 2013, Perrigo implemented a corporate inversion in which it reincorporated in Ireland in an effort to move from the United States to a more favorable tax environment. However, Ireland's corporate antitakeover laws tend to be much weaker than elsewhere. Mylan reasoned that it could bypass Perrigo's board and management and make their offer for the firm directly to its shareholders and that there was little Perrigo's board and management could do due to lax antitakeover laws. While on paper this looked like a good idea, in practice it turned out to be far more challenging.

While Perrigo could not utilize more traditional antitakeover defenses that were largely prohibited by Irish takeover law, it was able to exploit Mylan's problematic governance practices. Mylan disclosed on October 30, 2015, less than 2 weeks before the tender period was to close, that it was under investigation by the US SEC that was probing potential conflicts of interest with the firm's board members. Not only did Mylan wait a full 7 weeks into tender period to make any disclosure about this SEC subpoena, but also it buried the disclosure in a footnote on Page 53 of a Friday-afternoon SEC filing that never explained the specific subject of the SEC's inquiry. Furthermore, Mylan's own shareholders were suing the firm for not properly disclosing its highly restrictive antitakeover defenses when it sought a vote for its prior inversion transaction, the process by which Mylan had reincorporated in the Netherlands (for more information on inversions see Chapter 12). In another display of disregard for its shareholders, Mylan used an obscure part of Dutch law allowing a target firm to put control of the firm into a foundation. While such control would be temporary, it effectively allowed management to circumvent a shareholder vote on the Teva acquisition attempt.

Perrigo's board after repeatedly rejecting Mylan's offer encouraged its shareholders to reject the Mylan tender offer by noting that it "substantially undervalues our Company and did not adequately compensate shareholders for our exceptional standalone growth prospects." The Perrigo board also pointed out that shareholders had realized a 970% total return since 2007, which dwarfed the total return to Mylan shareholders during the same time period. They argued that continuing the firm's current business strategy would be more lucrative than selling to Mylan.

Perhaps Perrigo's most effective argument against the Mylan offer was its assertion that the poor governance practices of Mylan would undermine the long-term value of shares that would be received by those tendering their Perrigo shares. Adding support to Perrigo's claims was the fact that Mylan had consistently received the worst possible governance score from ISS, a leading independent proxy advisory firm. In response to Perrigo's allegations, Mylan threatened to delist Perrigo shares if it gained majority control making any such shares outstanding highly illiquid. Perrigo countered that these were just scare tactics and represented another illustration of Mylan's disregard for shareholder rights.

Despite these challenges, in early November Mylan stated in a press release that it was “highly confident” it would succeed in the takeover. Mylan initially stated that it expected to open a tender offer for as much as 80% of Perrigo’s outstanding shares but later reduced that figure to 51% of outstanding common shares, enough to gain a controlling interest. The reduction in this threshold figure from 80% to slightly more than 50% reflected a more realistic assessment of Mylan’s prospects.

The deal did not appear to make sense from the outset. Why? It did not involve the more commonly used “friendly approach” in which the acquirer seeks to get support from the target’s board and management. Moreover, Mylan would not have realized a spike in earnings per share as a result of the deal as the number of new shares issued would offset the addition of Perrigo’s earnings. Furthermore, Mylan’s acquisition of Perrigo would not have expanded Mylan’s share of the overall generic prescription market, as Perrigo dominated only a subsegment of the market for cheaper drugstore brand versions of drugs such as Advil and Neosporin. Why then did Mylan want Perrigo? Acquiring Perrigo would make Mylan a more diversified health care firm helping to offset increasing competition in the generic drug market.

Decisions made years earlier had left Perrigo vulnerable to takeover. Perrigo surrendered highly effective defenses when it moved its legal domicile to Ireland. Prior to its corporate inversion, Perrigo had been incorporated in Michigan. Michigan is generally considered to have strong antitakeover laws, including a business combination law limiting parties that have acquired 10% or more of the shares of a firm from acquiring the remaining shares for 5 years. Because it would take so many years to gain a controlling interest, most acquirers would be encouraged to look for targets not headquartered in Michigan. Also, under Michigan law, the board of directors is allowed to consider the interest of other stakeholder groups such as employees when deciding to accept a takeover bid. If a combination would threaten substantial layoffs at the target firm, the takeover could be disallowed under state statutes.

As a US-based firm, Perrigo had several defensive measures in place including a staggered board allowing only one-third of its directors to be up for election in any year. The firm’s bylaws also allowed it to adopt a poison pill defense either before or after a bid had been made. The pill meant that the firm could ward off any unwanted suitor unless the board would rescind the pill. The staggered board meant that any effort to change the composition of the board would take at least 2 years to replace the majority of board members with those willing to rescind the poison pill.

Now incorporated in Ireland, Perrigo has been stripped of these defensive measures as they are prohibited by the Irish laws applying to takeovers. Consequently, Perrigo was forced to rely primarily on other means to dissuade its shareholders from tendering their shares. The absence of significant takeover defenses had been a motivating factor in Mylan’s initiating a hostile tender offer for the firm.

Once Mylan withdrew its offer, Perrigo’s shares fell 6% to \$146.90 in a single day, while Mylan’s shares jumped 13% to \$48.78 per share. The wild swings in the share prices of these two firms reflected the unwinding of speculative bets. That is, investors who had purchased Perrigo shares in anticipation of their rising to or near the offer price sold their holdings and investors who anticipated a drop in Mylan’s share price covered their short positions.

Mylan had been at the center of a three-way fight while pressing its bid for Perrigo and fending off its own takeover bid from Teva. Ironically, neither deal materialized as Teva withdrew its bid and Perrigo shareholders voted against the Mylan tender offer. Millions of dollars in fees paid to investment bankers, accountants, lawyers, and consultants were paid despite nothing having been accomplished. Mylan's management and board had been distracted from the ongoing strategic and operating management of the business. During this time, other attractive investment opportunities may have been missed resulting in significant cost to the firm's shareholders in terms of potential foregone profits. In the end, perhaps driven by hubris, Mylan's management and board continued to demonstrate that they were poor stewards of shareholder wealth.

Discussion Questions

1. What was Perrigo's main defense against Mylan? Why was so much reliance given to this tactic? Speculate as to why shareholders accepted Perrigo's board and management's arguments.
2. How did corporate inversions undertaken by each firm impact the outcome of the hostile takeover attempt? Be specific.
3. Identify the takeover tactics and defenses employed by Mylan and Perrigo, respectively. Explain why each may have been used.
4. What does the reaction of investors to the breakup of the deal tell you about what they were thinking?
5. Under what circumstances does the combination of a poison pill and a staggered board make sense for the target firm's shareholders? Be specific.
6. Using the information in this case study, discuss the arguments for and against encouraging hostile corporate takeovers. Why might a hostile takeover of Mylan be justified?
7. Explain why a friendly approach often is preferred to a hostile takeover. Be specific.
8. Explain what caused the share prices of both firms to fluctuate wildly when the results of the tender offer solicitation were made public. Be specific.
9. Explain how a backend merger works and what it means to "squeeze out" the remaining Perrigo investors.
10. Both Mylan and Perrigo fought aggressively to ward off unwanted suitors. As such, both could be accused of trying to entrench senior management and their boards of directors. Do you believe that the actions of both firms were consistent with the best interests of their shareholders? Explain your answer.

Answers to these questions are found in the Online Instructor's Manual available to instructors using this book (<https://textbooks.elsevier.com/web/Manuals.aspx?isbn=9780128016091>).

**ADDITIONAL CASE STUDY RECOMMENDATION
(SEARCH HARVARD BUSINESS SCHOOL
PUBLISHING SITE BY NAME OF CASE:
hbsp.harvard.edu)**

Circon, Brian J. Hall, Ghuan Subramanian, Christopher Rose, Revised Publication Date: August 5, 2004, Product Number: 307031-PDF-ENG, hbsp.harvard.edu.

Subjects covered: Hostile Takeovers, Poison Pills, Staggered Board, Corporate Governance, Executive Incentives, Board Fiduciary Responsibilities.

Fashion Faux Pas: Gucci & LVMH, Michael Moddett, Kannan Ramaswamy, Publication Date: May 17, 2002, Product Number: TB0161-PDF-ENG, hbsp.harvard.edu.

Subjects covered: Global Takeover, How Takeover Laws Differ Across Countries, Creeping Acquisitions, Takeover Defenses, Takeover Tactics, Purchase Premium.

Ben & Jerry's Homemade, Michael J. Schill, Publication Date: September 13, 2002, *Source*: Darden School of Business, Product Number: UV0273-PDF-ENG, hbsp.harvard.edu.

Subjects covered: Takeover Tactics, Takeover Defenses, Corporate Governance.

Strategy and Governance at Yahoo! Inc., Krishna G. Palepu, Suraj Srinivasan, David Lane, Ian McKown Cornell, Publication Date: October 13, 2011, Product Number:

112040-PDF-ENG, *Source*: Harvard Business School, hbsp.harvard.edu.

Subjects covered: Governance, Offer Evaluation, Management Decision Making, Evaluating Strategic Options, Business Strategy.

Northrop versus TRW, Carliss Y. Baldwin, James Quinn, Revision Date: January 10, 2008, Product Number: 903115-PDF-ENG, *Source*: Harvard Business School, hbsp.harvard.edu.

Subjects covered: Takeover tactics, takeover defenses, takeover laws.

Cinergy and Duke Energy 2005: Think Big, Boris Groysberg, Nitin Nohria, Colleen Kaftan, Geoff Marietta, Publication Date: December 20, 2007, Product Number: 408096-PDF-ENG, *Source*: Harvard Business School, hbsp.harvard.edu.

Subjects covered: Hostile Takeovers, Takeover Tactics.

MCI Takeover Battle: Verizon Versus Qwest, Malcolm P. Baker, James Quinn, Revision Date: October 5, 2012, Product Number: 206045-PDF-ENG, *Source*: Harvard Business School, hbsp.harvard.edu.

Subjects covered: Bidding Strategies, Corporate Governance, Strategy.

PART II

THE MERGERS AND ACQUISITIONS PROCESS

Phases 1–10



"And I'm happy to say, that since the merger..."

Amid investigations into its business practices, Valeant Pharmaceuticals' share price fell by almost 90% from a peak of \$251.92 on July 26, 2015, to \$28.98 on March 21, 2016, the day the firm's CEO was fired. The firm duped investors with a flawed business strategy of eye-popping price increases on proprietary drugs (critical to large patient populations) for which there were few substitutes to stoke the more than 400% rise in its share price since early 2012. The strategy was implemented by gaining control of such drugs through acquisition and was doomed from the start. Why? The number of firms Valeant could acquire was limited and it was only a matter of time before the firm would experience a backlash to its outsized drug price increases.

Part II discusses how business strategies are developed and how management may choose to implement such strategies. Mergers and acquisitions (M&As) are not business strategies but rather a means of implementing business strategies. Business strategies define a firm's vision and long-term objectives and how it expects to achieve these ends. M&As simply represent one means of implementing the business strategy. The firm may choose from a range of alternative implementation strategies, including "going it alone," partnering, or acquiring another firm. Valeant could have executed its strategy by developing drugs through R&D (going it alone), partnering, or M&A (its actual choice).

Chapters 4–6 discuss the 10 phases typical of an M&A process. While not all M&As unfold in exactly the same way, the process outlined in this section serves as a road map for executing deals. This process is sufficiently flexible to be applicable to alternatives to M&As, such as business alliances. The process for implementing an M&A could be employed by a firm seeking to divest a business, since the selling process involves the identification of potential buyers, approaching such buyers, and negotiating a completed deal. Highly effective sellers often readily understand how prospective buyers think and attempt to tailor the marketing of the business to satisfy the highest-priority needs of potential buyers. Thus, a successful seller often is one who has been a successful buyer.

Chapter 4 focuses on how to develop a business strategy and, if an acquisition is the best way of realizing that strategy, how to develop an acquisition plan. Chapter 5 deals with identifying, making initial contact with the potential target, and developing the necessary legal documents prior to beginning due diligence and formal negotiations. While initial valuations provide a starting point, the actual purchase price is determined during the negotiation period. Chapter 6 discusses the role of preintegration planning and the common obstacles arising during the postclosing integration effort and how to overcome such challenges.

Planning: Developing Business and Acquisition Plans

Phases 1 and 2 of the Acquisition Process

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If you don't know where you are going, any road will get you there. —Lewis Carroll, Alice's Adventures in Wonderland

INSIDE MERGERS AND ACQUISITIONS: TURMOIL AMONG MEDIA COMPANIES

KEY POINTS

- Industry leaders often have a unique vision of the future of their business and are highly adept at implementing their business strategies.
- Leadership positions can be sustained only if the leading firms continuously “reinvent” themselves to stay ahead of changing competitive conditions.
- Companies imitating others may be successful if they are able to execute their strategies better than the competition.

Traditional companies are those that tend to conform to the conventional way of doing business. Nontraditional firms are those that eschew conventional wisdom. What follows is a discussion of two different groups of firms in what could be loosely defined as the “media” industry and how they react differently to a rapidly changing competitive landscape. Traditional media firms tend to view the future through a rearview mirror feeling most comfortable with what they know. In contrast, nontraditional firms less constrained by the past are more inclined to look far into the future to identify the “next big thing.”

Media companies are arguably those that disseminate proprietary and nonproprietary content through multiple distribution channels generating revenue from subscriber fees and charging businesses to advertise to their subscriber/customer base. Traditionally media firms have included cable TV, wireless carriers, newspapers, radio, and movie production companies, as well as blogs and websites. Social networking company, Facebook, and online search behemoth, Google, position themselves as partners to the traditional media firms giving them access to their huge global audiences.

Far from being just partners, Facebook and Google have become the largest global media companies when measured by advertising revenues and increasingly represent competitors to traditional media firms. Their focus has been to build a large and diverse user base that makes them increasingly attractive to business advertisers. Their meteoric growth has catapulted them to the top of firms ranked by market value. With well over a billion users, each firm has seen their advertising revenue explode, because they offer by far the largest audience for businesses wishing to get their message out to large but targeted audiences. The ongoing shift by consumers to accessing content through mobile devices ranging from smartphones to tablets to laptops is allowing Facebook and Google to capture an ever-increasing share of global mobile advertising revenues.

Traditional media companies have been slow to respond to the ongoing shift of customers to accessing content by using a variety of mobile devices. Telecom companies like Comcast, AT&T, and Verizon were primarily content distributors and not content providers since they produced relatively little of their own content. The disastrous acquisition of Time Warner Communications by AOL for \$165 billion in 2000 in an attempt to marry content and distribution made telecom firms hesitant to develop proprietary content. Their concern was that they would compete with their own content-producing advertising customers. Also, as was

demonstrated with the AOL–Time Warner tie-up, corporate cultures between content providers and distributors can be very different, potentially creating an integration nightmare.

While Facebook is not widely considered a content company, it is increasingly looking like one. For example, Facebook’s Instant Article’s feature introduced in mid-2015 has the potential to change the web if the company can persuade publishers through revenue sharing to abandon publishing stories on their own websites in favor of publishing them as content on Facebook. *The New York Times*, *The Guardian*, *BuzzFeed*, and *National Geographic* were among the first “partners” to sign up for the Facebook service. Under the terms of the deal, entire news stories from those partners will appear inside Facebook’s mobile app and be able to be read on the app, as opposed to the traditional practice of news publishers posting an excerpt and a link to their website.

With parallels to Amazon.com and its partners and Walmart and its vendors, the growing dependence by content providers on Facebook and Google means that they are ceding bargaining power to potential competitors. What makes this dependence perilous for media companies is that Facebook and Google are constantly tweaking their algorithms that dictate which items gain prominence in their search results. Content providers willing to pay more get greater visibility in front of those most likely to be interested in their content. While still in its infancy, Facebook’s search engine will be able to make its indexing of content more efficient in the future. Critics argue that Google through its highly regarded search engine has been publishing and prioritizing its own content for some time on Google search websites over external content. Whether this will pass antitrust muster is another question.¹

Fearing that they are lagging the shift by consumers to mobile devices and that their core businesses are in peril, the large media companies are resurrecting the strategy adopted by AOL in its ill-fated takeover of Time Warner. Comcast was among the first to revive this strategy when it completed its takeover of NBCUniversal by buying the remaining 49% it did not already own from General Electric in 2013. The total paid for all of NBCUniversal exceeded \$30 billion. In 2015, wireless and cable TV giant AT&T completed its acquisition of DirecTV for \$48 billion and cable provider Charter Communications catapulted itself into the second position in the mature cable industry by acquiring Time Warner Cable for an eye-popping \$55 billion.²

The traditional media firms, struggling to protect their mature cable and wireless businesses, see their futures in a remarkably similar way: as both providers and distributors of premium content. Their strategies are very similar in that they are acquiring or developing proprietary premium content (including video streaming) that can be bundled and sold to their customer base across a variety of mobile devices. Cable TV and wireless firms also hope to tap into the explosion of advertising on mobile devices. The firm likely to be most successful among those pursuing “me too” strategies will be the one who can execute the best.

¹In mid-2015, the European Union accused Google of violating antitrust laws after years of investigation by allegedly prioritizing its own products and services in Google searches.

²See the sections “Inside Mergers and Acquisitions: Comcast’s Attempted 2015 Takeover of Time Warner Unravels in the Face of Vigorous Opposition” and “End of Chapter Case Study: Regulators Approve Merger of AT&T and DirecTV but Not Comcast and Time Warner Cable” in Chapter 2 for a detailed discussion of these deals.

In contrast, nontraditional media companies Google and Facebook seem more willing to continuously redefine themselves: Google moving well beyond its core search business and Facebook beyond its social networking roots. Both traditional and nontraditional media firms have spent aggressively in making acquisitions believing that this would be the best way to keep up with the rapidly changing competitive landscape. The danger to both traditional and nontraditional media firms is that they will overpay for acquisitions and be unable to earn the financial returns their investors require.

CHAPTER OVERVIEW

History is littered with businesses that failed because they did not satisfy an important and sustainable customer need better than their competitors. Bad ideas even if well executed are still bad ideas. The same logic extends to mergers and acquisitions (M&As). A poorly designed business strategy is among the reasons commonly given when M&A fail to satisfy expectations. Too often, the overarching role planning should take in conceptualizing and implementing business combinations is ignored.

Some companies view M&A as a business growth strategy. Here, in accord with the view of many successful acquirers,³ M&As are not considered a business strategy but rather a means of implementing a business strategy. While firms may accelerate overall growth in the short run through acquisition, the higher growth rate often is not sustainable without a business plan—which serves as a road map for identifying additional acquisitions to fuel future growth. For example, Verizon's acquisitions of AOL in 2015 and Yahoo in 2016 were driven by its announced strategy of building up its online business advertising revenue. In an effort to become the nation's largest paid TV firm in the United States, AT&T reached an agreement to acquire Time Warner in late 2016.

This chapter focuses on the first two phases of the acquisition process—building the business and acquisition plans—and on the tools commonly used to evaluate, display, and communicate information to key constituencies both inside the corporation (e.g., board of directors and management) and outside (e.g., lenders and stockholders). Phases 3–10 are discussed in Chapter 5. Subsequent chapters detail the remaining phases of the M&A process. A review of this chapter (including practice questions and answers) is available in the file folder entitled Student Study Guide and a listing of Common Industry Information Sources is contained on the companion site to this book (<https://www.elsevier.com/books-and-journals/book-companion/9780128016091>).

THE ROLE OF PLANNING IN MERGERS AND ACQUISITIONS

The acquisition process envisioned here can be separated into two stages. The *planning* stage comprises developing business and acquisition plans. The *implementation* stage (discussed in Chapter 5) includes the search, screening, contacting the target, negotiation, integration planning, closing, integration, and evaluation activities.

³Palter and Srinivasan (2006).

Key Business Planning Concepts

A planning-based acquisition process starts with both a business plan or business model and a merger/acquisition plan, which drive all subsequent phases of the acquisition process. The *business plan* articulates a mission or vision for the firm and a *business strategy* for realizing that mission for all of the firm's stakeholders. *Stakeholders* are constituent groups, such as customers, shareholders, employees, suppliers, lenders, regulators, and communities. While the objective of the firm is to maximize shareholder value, this is most likely to be achieved when the interests of all major stakeholder groups are considered. Overlooking the interests of one group can easily derail the most well-thought-out strategies. The business strategy is oriented to the long term and usually cuts across organizational lines to affect many different functional areas. Typically, it is broadly defined and provides relatively little detail.

With respect to business strategy, it is important to distinguish between corporate-level and business-level strategies. *Corporate-level strategies* are set by the management of a diversified or multiproduct firm and generally cross business unit organizational lines. They entail decisions about financing the growth of certain businesses, operating others to generate cash, divesting some units, and pursuing diversification. *Business-level strategies* are set by the management of a specific operating unit within the corporate organizational structure. They may involve a unit's attempting to achieve a low-cost position in the markets it serves, differentiating its product offering, or narrowing its focus to a specific market niche.

The *implementation strategy* refers to the way in which the firm chooses to execute the business strategy. It is usually far more detailed than the business strategy. The *merger/acquisition plan* is a specific type of implementation strategy and describes in detail the motivation for the acquisition and how and when it will be achieved. For example, social media firm Twitter's revenue-generating business strategy is to attract advertisers by providing more granular data to achieve more effective target marketing. Its merger/acquisition plan would include identifying, contacting, negotiating, and completing deals enabling the implementation of its business strategy. For example, the firm acquired a five-person artificial intelligence start-up called Whetlab in late 2015 to accelerate its own internal "machine learning" efforts. The acquisition enabled Twitter to obtain the team's talent and patent-pending software. This acquisition followed a similar acquisition in late 2014 of start-up Madbits. Machine learning focuses on the development of software allowing computer programs to teach themselves to change when exposed to new data. Such computer programs could be used to identify emerging trends among the millions of comments made on Twitter before they are readily observable by marketing analysts.

Functional strategies describe in detail how each major function within the firm (e.g., manufacturing, marketing, and human resources) will support the business strategy. *Contingency plans* are actions that are taken as an alternative to the firm's current business strategy. The selection of which alternative action to pursue may be contingent on the occurrence of certain events called *trigger points* (e.g., failure to realize revenue targets or cost savings). When the trigger points are reached, the firm faces a number of alternatives, sometimes referred to as *real options*. These include abandoning, delaying, or accelerating an investment strategy. Unlike the strategic options discussed later in this chapter, real options are decisions that can be made after an investment has been made.

THE MERGER AND ACQUISITION PROCESS

An M&A process is the series of activities culminating in the transfer of ownership from the seller to the buyer. Some individuals shudder at following a structured process because they believe it may delay responding to opportunities, both anticipated and unanticipated. Anticipated opportunities are those identified as a result of the business planning process: understanding the firm's external operating environment, assessing internal resources, reviewing a range of options, and articulating a clear vision of the future of the business and a realistic strategy for achieving that vision. Unanticipated opportunities may emerge as new information becomes available. Having a well-designed business plan does not delay pursuing opportunities; rather, it provides a way to evaluate the opportunity, rapidly and substantively, by determining the extent to which the opportunity supports realization of the business plan.

Fig. 4.1 illustrates the 10 phases of the M&A process described in this and subsequent chapters. These phases fall into two distinct sets of activities: prepurchase and postpurchase

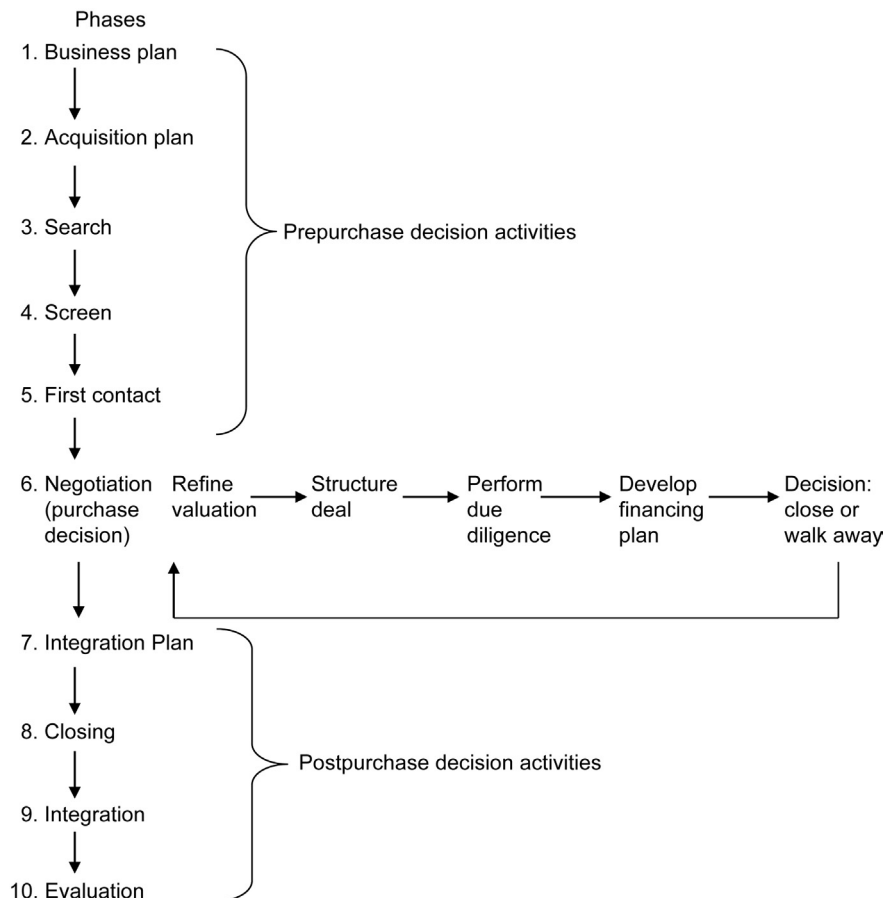


FIGURE 4.1 Flow diagram for the acquisition process.

decision activities. Negotiation, with its four largely concurrent and interrelated activities, is the crucial phase of the acquisition process. The decision to purchase or walk away is determined as a result of continuous iteration through the four activities comprising the negotiation phase.

The phases of the M&A process are summarized as follows:

Phase 1: Business Plan—Develop a strategic plan for the entire business.

Phase 2: Acquisitions Plan—Develop the acquisition plan supporting the business plan.

Phase 3: Search—Search actively for acquisition candidates.

Phase 4: Screen—Screen and prioritize potential candidates.

Phase 5: First Contact—Initiate contact with the target.

Phase 6: Negotiation—Refine valuation, structure the deal, perform due diligence, and develop the financing plan.

Phase 7: Integration Plan—Develop a plan for integrating the acquired business.

Phase 8: Closing—Obtain the necessary approvals, resolve postclosing issues, and execute the closing.

Phase 9: Integration—Implement the postclosing integration.

Phase 10: Evaluation—Conduct the postclosing evaluation of acquisition.

PHASE 1: BUILDING THE BUSINESS PLAN

A well-designed business plan results from eight key activities, summarized next. The process of developing a business plan can be facilitated by addressing a number of detailed questions corresponding to each of these activities.⁴

The first activity is the *external analysis* to determine where to compete [i.e., which industry or market(s)] and how to compete [i.e., how the firm can most effectively compete in its chosen market(s)]. This is followed by the *internal analysis*, or self-assessment, of the firm's strengths and weaknesses relative to its competition. The combination of these two activities—the external and internal analyses—is often called *SWOT analysis* because it determines the strengths, weaknesses, opportunities, and threats of a business. Once this analysis is completed, management has a clearer understanding of emerging opportunities and threats to the firm and of the firm's primary internal strengths and weaknesses. Information gleaned from the external and internal analyses drives the development of business, implementation, and functional strategies.

The third activity is to define a *mission or vision statement* that summarizes where and how the firm has chosen to compete, based on the external analysis, as well as management's basic operating beliefs and values. Fourth, *objectives* are set, and quantitative measures of financial and nonfinancial performance are developed. Having completed these steps, the firm is ready to *select a business strategy* likely to achieve the objectives in an acceptable period of time, subject to constraints identified in the self-assessment. The business strategy defines, in general

⁴Extensive checklists can be found in Porter (1985). Answering these types of questions requires gathering substantial economic, industry, and market information.

terms, how the business intends to compete (i.e., through cost leadership, differentiation, or increased focus).

Next, an *implementation strategy* is selected that articulates how to implement the business strategy from among a range of reasonable options. The firm may choose to act independently, partner with others, or acquire/merge with another firm. This is followed by development of a *functional strategy* that defines the roles, responsibilities, and resource requirements of each major functional area within the firm needed to support the business strategy.

The final activity is to establish *strategic controls* to monitor actual performance to plan, implement incentive systems, and take corrective actions as necessary. Bonus plans and other incentive mechanisms to motivate all employees to achieve their individual objectives on or ahead of schedule are put in place. When significant deviations from the implementation plan occur, the firm may take corrective actions (e.g., cutting output or costs) included in certain contingency plans. Let's look at each of these eight activities in greater detail.

External Analysis

The external analysis involves developing an understanding of the business's customers and their needs, the market/industry competitive dynamics or factors determining profitability and cash flow, and emerging trends that affect customer needs and industry competition. This analysis begins with answering two basic questions: where to compete and how to compete. The output of the external analysis is the identification of growth opportunities and competitive threats.

Determining Where to Compete

Critical to building a business plan is deciding where a firm should compete. It begins with identifying the firm's current and potential customers and their primary needs, and it is based on the process of *market segmentation*, which involves identifying customers with common characteristics and needs. For example, a firm may segment markets until it finds customers whose buying decisions are based on price, quality, or service. In determining where to compete, the firm is identifying where it will concentrate its resources. Frequently, firms lose sight of what has made them successful in the past, in a vain hope of accelerating earnings growth. In 2011, Cisco Systems Inc. sold or closed its consumer business, eliminating hundreds of millions of dollars spent on acquisitions. The company stated publicly that it had strayed from its core market, making networking equipment for business customers.

Whether it is made up of individual consumers or other firms, collections of customers comprise *markets*. A collection of markets is said to comprise an *industry*—for example, the automotive industry includes the new and used car markets as well as the after-market for replacement parts. Markets may be further subdivided by examining cars by makes and model years. The automotive industry could also be defined regionally (e.g., New England, North America, Europe) or by country. Each subdivision, whether by product or geographic area, defines a new market within the automotive industry.

Another example is the cloud computing industry that consists of firms providing customers remote access in three discrete markets: software, infrastructure, and platform services. The software services market consists of such firms as Salesforce and Workday providing customers on-demand licensing of their software applications for a fee. The infrastructure

services market allows companies to rent on demand operating systems, servers, and storage services from such competitors as Microsoft, Google, and Amazon.com. The platform market, consisting of the likes of Google, Amazon.com, and Salesforce, offers templates for customers to create software to meet their specific needs.

How a firm selects target industries/markets depends on the firm's selection criteria and how it ranks the relative importance of each criterion in its decision-making process. Examples of selection criteria include market size and growth rate, profitability, cyclicity, price sensitivity of customers, amount of regulation, degree of unionization, and existence of entry and exit barriers. While the selection process generally involves the collection of substantial amounts of data, the ultimate decision often reflects the risk tolerance and imagination of the firm's board and senior management.

Determining How to Compete

Determining how to compete requires a clear understanding of the factors that are critical for competing successfully in the targeted market. This outward-looking analysis applies to the primary factors governing the firm's external environment. Understanding the market/industry competitive dynamics (i.e., how profits and cash flow are determined) and knowing the areas in which the firm must excel in comparison to the competition (e.g., high-quality or low-cost products) are crucial if the firm is to compete effectively in its chosen market.

Market profiling entails collecting sufficient data to assess and characterize accurately a firm's competitive environment within its chosen markets. Using Michael Porter's well-known "Five Forces" framework, the market or industry environment can be described in terms of competitive dynamics, such as the firm's customers, suppliers, current competitors, potential competitors, and product substitutes.⁵ The determinants of the intensity of competition in an industry include competition among existing firms, the threat of entry of new firms, and the threat of substitute products. While the degree of competition determines the potential to earn abnormal profits (i.e., those in excess of what would be expected for the degree of assumed risk), the actual profits are influenced by the relative bargaining power of the industry's customers and suppliers. See the section "End of Chapter Case Study: Life Technologies Undertakes a Strategic Review" in Chapter 9 for an illustration of how the "Five Forces" model can be used to understand an industry's competitive dynamics.

This framework may be modified to include other factors that determine actual industry profitability and cash flow, such as the severity of government regulation, and the impact of global influences such as fluctuating exchange rates. Labor costs may also be included. While they represent a relatively small percentage of total expenses in many areas of manufacturing, they frequently constitute the largest expense in the nonmanufacturing sector. The analysis should also include factors such as the bargaining power of labor. [Fig. 4.2](#) brings together these competitive dynamics. The data required to analyze industry competitive dynamics include the types of products and services; market share (in terms of dollars and units); pricing metrics; selling and distribution channels and associated costs; type, location, and age of the production facilities; product quality metrics; customer service metrics; compensation by major labor category; research and development (R&D) expenditures; supplier performance

⁵Porter (1985).

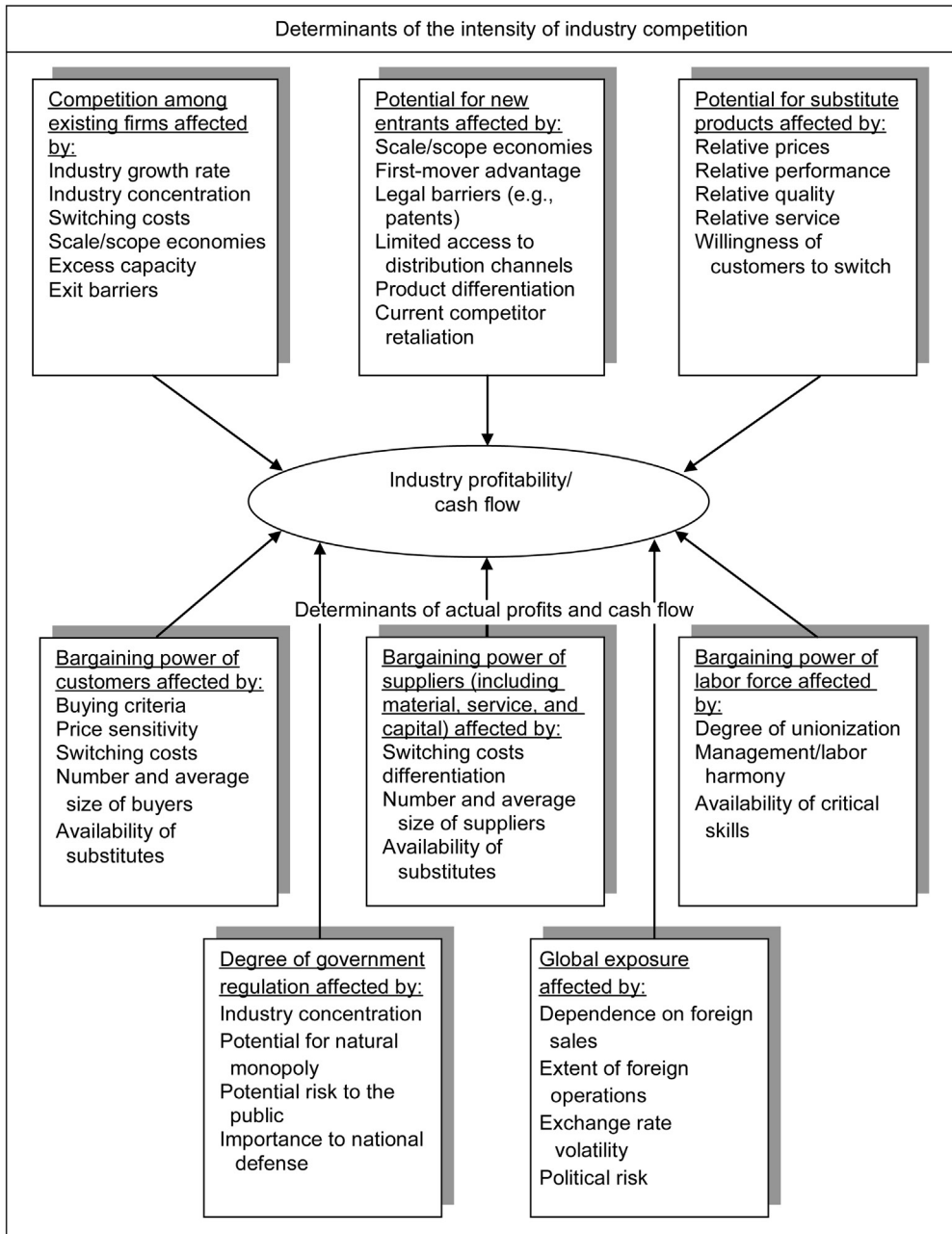


FIGURE 4.2 Defining market/industry competitive dynamics. *Source: Adapted from Palepu et al. (2004).*

metrics; and financial performance (in terms of growth and profitability). These data must be collected on all significant competitors in the firm's chosen markets.

Determinants of the Intensity of Industry Competition

The overall intensity of industry competition reflects different factors in several categories. The first category includes the industry growth rate, industry concentration, degree of differentiation and switching costs, scale and scope economies, excess capacity, and exit barriers, which all affect the intensity of competition among current industry competitors. If an industry is growing rapidly, existing firms have less need to compete for market share. If an industry is highly concentrated, firms can more easily coordinate their pricing activities; in contrast, this is more difficult in a highly fragmented industry, in which price competition is likely to be very intense.

Even when an industry is concentrated, firms may compete largely on the basis of price when their product/service offerings are largely undifferentiated to gain market share. To illustrate, consider the rapid migration of businesses to the "cloud" in which small and large firms rent technology inexpensively over the Internet instead of buying hardware and software outright. This market is dominated currently by Google, Amazon.com, and Microsoft. With their service offerings perceived by potential clients as similar, these three firms are competing by discounting prices aggressively in an attempt to gain more customers.

If the cost of switching from one supplier to another is minimal because of low perceived differentiation, customers are likely to switch based on relatively small differences in price. In industries in which production volume is important, companies may compete aggressively for market share to realize economies of scale. Moreover, firms in industries exhibiting substantial excess capacity often reduce prices to fill unused capacity. Finally, competition may be intensified in industries in which it is difficult for firms to exit due to high exit barriers such as large unfunded pension liabilities and single-purpose assets.

The second category is the potential for new entrants offering products similar to those provided by current competitors in the industry. Competitors within an industry characterized by low barriers to entry have limited pricing power. Attempts to raise prices resulting in abnormally large profits will attract new competitors, thereby adding to the industry's productive capacity. In contrast, high entry barriers may give existing competitors significant pricing power. Barriers to new entrants include situations in which the large-scale operations of existing competitors give them a potential cost advantage due to economies of scale. The "first-mover advantage"—that is, being an early competitor in an industry—may also create entry barriers because first movers achieve widespread brand recognition, establish industry standards, develop exclusive relationships with key suppliers and distributors, establish large installed user bases, and amass huge customer databases. Finally, legal constraints, such as copyrights and patents, may inhibit the entry of new firms.

Examples of how barriers to entry impact competition abound. Google's use of accumulated and indexed search information enables it to provide superior customized searches; its immense database of customer buying patterns makes Amazon.com better able to provide targeted advertising. These capabilities enable both firms to attract more visitors (and in turn advertising revenue) making it exceedingly difficult for start-ups to compete. With hardware and software revenues falling due to the accelerating migration of businesses to the cloud,

IBM has belatedly attempted to establish a presence in providing cloud computing services. Despite substantial investments and acquisitions to gain the capabilities to compete in this space, IBM has been unable to build the technical know-how and customer base to compete profitably with existing competitors. Although it had a lengthy history of successfully competing for government contracts, the US Central Intelligence Agency awarded a large cloud computing contract to Amazon.com in 2013. As an early competitor in this market, Amazon.com was able to gain strong brand recognition and to achieve substantial economies of scale giving it a significant competitive edge over IBM that the CIA concluded was a “high-risk choice.”

High entry barriers may also stifle innovation. New ideas often emerge from start-up firms lacking the capital to overcome substantial entry barriers to achieve an economically viable market share. Small potential market entrants may seek to be acquired by current industry competitors rather than to be marginalized or pushed into bankruptcy.⁶ Consequently, the leading competitors in the industry are able to incorporate innovations via acquisitions either into their own products or services or to prevent them from being used to their detriment.

The third category includes the potential for substituting products and services. The selling price of one product compared to that of a close substitute—called the *relative price*—determines the threat of substitution, along with the performance of competing products, perceived quality, and the willingness of the customer to switch. Potential substitutes could come from current or potential competitors and include those that are substantially similar to existing products and those performing the same function—for example, a tablet computer rather than a hardcover book.

Recent moves by Apple Inc. illustrate how the intensity of industry competition can fundamentally change a firm’s strategy. Apple, the company that turned digital music into a mainstream phenomenon, made its largest acquisition ever in late 2014 when it acquired Beats Electronics, known for its highly popular headphones and music streaming service, for \$3 billion in cash. When Apple founder Steve Jobs introduced the firm’s iTunes Store, the objective was to displace major record companies by allowing customers to buy any tunes they wanted one at a time. This was in marked contrast to the major record companies who, at the time, were interested only in selling CDs containing a number of tunes, many of which the customer did not want. The iTunes Store opened in 2003 and dominated digital music sales for a decade.

While Jobs had resisted music subscription services believing consumers did not want to rent songs, Spotify and Pandora, which allow people to stream music freely with ads or with a paid subscription, have demonstrated that more than one-half of the world’s population having smartphones would readily download apps for streaming music. In an effort to adapt to changing consumer buying patterns and intensified competition, Apple intends to operate the Beats brand as a standalone business, offering Beats’ streaming music service and premium headphones along with iTunes sale of individual songs and albums and streaming radio service. While Beats has a substantially smaller subscriber base than such rivals as Spotify, the firm provides considerable branding power and the expertise of the firm’s founders Jimmy Iovine and Dr. Dre.

⁶Norback et al. (2014).

Further evidence of changes in Apple's business strategy due to the intensity of industry competition and changing market trends arose in late 2014 when the firm announced an alliance with former rival IBM to develop more than 100 business applications for Apple's iPhone and iPad tablet computers. Historically, former Apple CEO Steve Jobs did little to hide his scorn for selling to businesses. However, his successor, Tim Cook, has assumed a much friendlier approach to corporate buyers. As part of the alliance, IBM's employees will serve as a sales force for selling Apple products and for providing on-site service. The alliance targets a growing market in which people desire to have a single device for both business and personal use.

Determinants of Actual Profits and Cash Flow

The bargaining powers of customers, suppliers, and the labor force are all important factors that affect profits and cash flow. Others include the degree of government regulation and global exposure. The relative bargaining power of buyers depends on their primary buying criteria (i.e., price, quality/reliability, service, convenience, or some combination), price sensitivity or elasticity, switching costs, and their number and size as compared to the number and size of suppliers.

A customer whose primary buying criterion is product quality and reliability may be willing to pay a premium for a BMW because it is perceived to have higher relative quality. Customers are more likely to be highly price sensitive in industries characterized by largely undifferentiated products and low switching costs. Buyers are likely to have considerable bargaining power when there are relatively few large buyers relative to the number of suppliers. The relative leverage of suppliers reflects the ease with which customers can switch suppliers, perceived differentiation, their number, and how critical they are to the customer.

Switching costs are highest when customers must pay penalties to exit long-term supply contracts or when new suppliers would have to undergo an intensive learning process to meet the customers' requirements. Moreover, reliance on a single or a small number of suppliers shifts pricing power from the buyer to the seller. Examples include Intel's global dominance of the microchip market and Microsoft's worldwide supremacy in the market for personal computer operating systems.

Work stoppages create opportunities for competitors to gain market share. Customers are forced to satisfy their product and service needs elsewhere. Although the loss of customers may be temporary, it may become permanent if the customer finds that another firm's product or service is superior. Frequent work stoppages also may have long-term impacts on productivity and production costs as a result of a less motivated labor force and increased labor turnover. Governments may choose to regulate industries that are heavily concentrated, are natural monopolies (e.g., electric utilities), or provide a potential risk to the public. Regulatory compliance adds significantly to an industry's operating costs. Regulations also create barriers to both entering and exiting an industry. Global exposure is the extent to which participation in an industry necessitates having a multinational presence. The automotive industry is widely viewed as a global industry in which participation requires having assembly plants and distribution networks in major markets worldwide. Global exposure introduces the firm to the impact of currency risk on profit repatriation and political risk such as the confiscation of the firm's properties.

Internal Analysis

The primary output of internal analysis is to determine the firm's strengths and weaknesses. What are they compared to the competition? Can the firm's critical strengths be easily duplicated and surpassed by the competition? Can they be used to gain advantage in the firm's chosen market? Can competitors exploit the firm's key weaknesses? These questions must be answered as objectively as possible for the information to be useful in formulating a viable strategy.

Ultimately, competing successfully means doing a better job than the competitors of satisfying the needs of the firm's targeted customers. A self-assessment identifies those strengths or competencies—so-called *success factors*—necessary to compete successfully in the firm's chosen or targeted market. These may include high market share compared to that of the competition, product line breadth, cost-effective sales distribution channels, age and geographic location of production facilities, relative product quality, price competitiveness, R&D effectiveness, customer service effectiveness, corporate culture, and profitability.

Recall that the combination of the external and internal analyses just detailed can be summarized as a SWOT analysis to determine the strengths and weaknesses of a business as well as the opportunities and threats confronting a business. The results of a SWOT analysis can be displayed on a SWOT matrix. Based on the results of this analysis, firms can select how to prioritize opportunities and threats and how to focus corporate resources to exploit selected opportunities or to reduce their vulnerability to perceived threats. This information helps management set a direction in terms of where and how the firm intends to compete, which is then communicated to the firm's stakeholders in the form of a mission/statement and a set of quantifiable financial and nonfinancial objectives.

Table 4.1 illustrates a hypothetical SWOT analysis for Facebook. It is not intended to be a comprehensive list of perceived strengths, weaknesses, opportunities, and threats. Rather, it is provided only for illustrative purposes. Facebook's management using similar information may have opted to acquire mobile message service WhatsApp for an eye-popping \$21.8 billion in early 2014 to adapt to the shift of internet users to mobile devices and to preclude competitors such as Google from acquiring this explosively growing mobile messaging firm.

Mark Zuckerberg has stated his vision for Facebook is to make the world more open and connected.⁷ How? By giving people the power to share whatever they want and to be connected to whatever they want no matter where they are. While Facebook dominates the social network space in which users are able to share everything they want others to know, Facebook also wants to dominate how people communicate. The opportunity is to build the best and most ubiquitous mobile product, a platform where every app that is created can support social interaction and enable people to share, and to build Facebook into one of the world's most valuable companies. The threat is that others such as Google may acquire the business propelling them to the forefront of the mobile communications space.

The acquisition of WhatsApp in early 2014 illustrates Mark Zuckerberg's understanding that people want to communicate in different ways: sometimes broadly through Facebook and sometimes narrowly through WhatsApp's mobile messaging capability. However, Facebook's efforts to do so in recent years to penetrate the mobile messaging market have largely

⁷Carlson (2013).

TABLE 4.1 Hypothetical Facebook 2014 SWOT Matrix

Strengths	Weaknesses
1. Brand recognition 2. Global scale with 1.86 monthly active users as of December 31, 2016 3. User engagement (time spent online) 4. Extensive user database attractive to advertisers 5. Integrated website and applications widens user appeal 6. Ability to monetize increasing mobile traffic through Instagram	1. Privacy issues 2. Dependence on display ads that have lower user “click-through” rate 3. Dependence on advertising for more than 80% of revenue 4. Aging user demographics 5. Lack of website customization limits user personalization 6. Poor protection of user information
Opportunities	Threats
1. Increasing use of Facebook through mobile devices 2. Expansion in emerging nations 3. Diversify revenue sources 4. Continuing shift of traditional shift of advertising online 5. Adding new features and functions to enable customization 6. Expanded “graph search” advertising^a	1. Accelerating shift toward accessing internet through mobile devices, including wearable technology such as Google Glass 2. Alternative social networks (e.g., Twitter, Tumblr, LinkedIn, Pinterest, and Google+) compete for users and advertisers 3. Increasing user privacy concerns 4. Lack of website customization 5. Highly competitive ad market putting downward pressure on ad rates 6. Increased frequency of identity theft

^a *Graph Search is a search engine that allows Facebook users to look up anything shared with them throughout their history on Facebook. This expands the firm’s user database to enable advertisers to track changes in buying patterns and personal interests.*

failed. Facebook sorely needed a platform to make inroads in the mobile messaging market. Enter WhatsApp with its frenetic growth.

With the WhatsApp acquisition not yet closed, Facebook acquired start-up Oculus VR, the maker of virtual reality headsets, in mid-2014 for \$2 billion. In an effort to increase user engagement or time spent online (a current Facebook strength), the deal represents a bet that virtual reality can eventually turn social networking into an immersive, 3D experience. Perhaps as a response to Google Glass that enables access to the internet through high-tech eyewear (a potential threat to Facebook), the Oculus acquisition represents an investment for Facebook in wearable hardware that “reimagines” how people will one day interact with information and other types of content.

Defining the Mission/Vision Statement

In 2009, Apple Computer’s board and management changed the way they wished to be perceived by the world by changing their company name to Apple Inc. The change was intended to be transformative, reflecting the firm’s desire to change from being a computer hardware and software company to a higher-margin, faster-growing consumer electronics firm characterized by iPod- and iPhone-like products. In other words, the firm was establishing a new corporate mission. In 2011, Starbucks dropped the word *coffee* from its logo and

acquired upscale juice maker Evolution Fresh in an effort to transform itself from a chain of coffee shops into a consumer products firm selling products outside of its stores.

A mission/vision statement describes the corporation's purpose for being, what business it is in, and where it hopes to go. The mission statement should not be so general as to provide little practical direction. A good mission statement should include references to the firm's targeted markets, reflecting the fit between the corporation's primary strengths and competencies and its ability to satisfy customer needs better than the competition. It should define the product offering relatively broadly to allow for the introduction of new products that might be derived from the firm's core competencies. Distribution channels—how the firm chooses to distribute its products—should be identified, as should the customers targeted by the firm's products and services. The mission statement should state management beliefs with respect to the firm's primary stakeholders; these establish the underpinnings of how the firm intends to behave toward those stakeholders.

Too narrow a definition could be disastrous as it becomes difficult to ascertain opportunities and threats to the core business that do not fall neatly within the firm's mission. A mission statement should not be tied to a specific product or service the firm currently produces. If railroads had defined their missions more broadly as establishing a strong market share in the transportation industry rather than limiting their positions to the rail business, they may have retained the preeminent position they once enjoyed. That is, by defining their positions narrowly around existing products and services, railroads failed to see alternative forms of transportation emerging in time to be proactive.

For a mission/vision statement to energize a firm's employees, it must be widely understood and accepted. Senior management must continually communicate the mission statement so that everyone clearly understands. In turnaround situations, employees should be given an opportunity to commit to the desired behaviors communicated by top management. When CEO Marissa Mayer of Yahoo required employees working from remote locations to work onsite, she was asking for more effective employee engagement and communication. She understood that some disaffected employees would leave but that the firm's culture would be better off without those unwilling to conform to the culture she was attempting to create. Management also must be receptive, not dismissive of, to new ideas. Finally, management must be willing to celebrate successes by acknowledging what the firm has done well. But this does not mean lessening pressure to achieve the vision.

Setting Strategic or Long-Term Business Objectives

A business objective is what must be accomplished within a specific period. Good business objectives are measurable and have a set time frame in which to be realized. They include revenue growth rates, minimum acceptable financial returns, and market share; these and others are discussed in more detail later. A good business objective might state that the firm seeks to increase revenue from the current \$1 to \$5 billion by a given year. A poorly written objective would simply state the firm seeks to increase revenue substantially.

Common Business Objectives

Corporations typically adopt a number of common business objectives. For instance, the firm may seek to achieve a rate of *return* that will equal or exceed the return required by its shareholders, lenders, or the combination of the two (cost of capital) by a given year. The

firm may set a *size* objective, seeking to achieve some critical mass, defined in terms of sales volume, to realize economies of scale by a given year.

Several common objectives relate to *growth*. Accounting-related growth objectives include seeking to grow earnings per share (EPS), revenue, or assets at a specific rate of growth per year. Valuation-related growth objectives may be expressed in terms of the firm's price-to-earnings ratio, book value, cash flow, or revenue. *Diversification* objectives are those where the firm desires to sell current products in new markets, new products in current markets, or new products in new markets. For example, the firm may set an objective to derive 25% of its revenue from new products by a given year. It is also common for firms to set *flexibility* objectives, aiming to possess production facilities and distribution capabilities that can be shifted rapidly to exploit new opportunities as they arise. For example, major automotive companies have increasingly standardized parts across car and truck platforms to reduce the time required to introduce new products, giving them greater flexibility to facilitate a shift in production from one region to another. *Technology* objectives may reflect a firm's desire to possess capabilities in core technologies. Microchip and software manufacturers as well as defense contractors are good examples of industries in which keeping current with, and even getting ahead of, new technologies is a prerequisite for survival.

Selecting the Appropriate Corporate, Business, and Implementation Strategies

Each level of strategy serves a specific purpose. Implementation strategies, necessarily more detailed than corporate-level strategies, provide specific guidance for a firm's business units.

Corporate-Level Strategies

Corporate-level strategies may include all or some of the business units that are either wholly or partially owned by the corporation. A *growth strategy* focuses on accelerating the firm's consolidated revenue, profit, and cash flow growth and may be implemented in many different ways. For example, CEO Satya Nadella's corporate-level growth strategy for Microsoft is oriented around cloud computing, mobile platforms, content, and productivity software. In addition, the firm is increasingly interested in selling its software as a subscription, even if it is not used on the Windows operating system. The firm's 2014 acquisition of Mojang, the video game developer that created Minecraft, for \$2.5 billion illustrates how a single acquisition can contribute to multiple aspects of the firm's corporate growth strategy. The acquisition enabled Microsoft to own the top game on Xbox (making this valuable content proprietary to Microsoft) and also the leading paid app on iOS and Android in the United States (selling such content on different mobile operating systems). The acquisition ensures that Minecraft will also run on Microsoft's Windows Phone mobile operating system (making the firm's own mobile operating system more competitive).

A *diversification strategy* involves a decision at the corporate level to enter new businesses. These businesses may be related to the corporation's existing businesses or completely unrelated. Relatedness may be defined in terms of the degree to which a target firm's products and served markets are similar to those of the acquiring firm. An *operational restructuring strategy*, sometimes called a *turnaround* or *defensive strategy*, usually refers to the outright or partial sale of companies or product lines, downsizing by closing unprofitable or nonstrategic facilities, obtaining protection from creditors in bankruptcy court, or liquidation. A *financial restructuring*

strategy describes actions by the firm to change its total debt and equity structure. The motivation for this strategy may be better utilization of excess corporate cash balances through share-repurchase programs, reducing the firm's cost of capital by increasing leverage or increasing management's control by acquiring a company's shares through a management buyout.

Business-Level Strategies

A firm should choose the business strategy from among the range of reasonable options that enables it to achieve its stated objectives in an acceptable period, subject to resource constraints. These include limitations on the availability of management talent and funds. Business strategies fall into one of four basic categories: price or cost leadership, product differentiation, focus or niche strategies, and hybrid strategies.

Price or Cost Leadership

The price or cost leadership strategy reflects the influence of a series of tools, including the experience curve and product life cycle, introduced and popularized by the Boston Consulting Group (BCG). This strategy is designed to make a firm the cost leader in its market by constructing efficient production facilities, controlling overhead expenses tightly, and eliminating marginally profitable customer accounts.

The *experience curve* states that as the cumulative historical volume of a firm's output increases, cost per unit of output decreases geometrically as the firm becomes more efficient in producing that product. The firm with the largest historical output should also be the lowest-cost producer, so this theory suggests. This implies that the firm should enter markets as early as possible and reduce product prices aggressively to maximize market share. The experience curve seems to work best for largely commodity-type industries, in which scale economies can lead to reductions in per-unit production costs, such as PC or cellphone handset manufacturing. The strategy of continuously driving down production costs makes most sense for the existing industry market share leader, since it may be able to improve its cost advantage by pursuing market share more aggressively through price-cutting.

BCG's second major contribution is the *product life cycle*, which characterizes a product's evolution in four stages: embryonic, growth, maturity, and decline. Strong sales growth and low barriers to entry characterize the first two stages. Over time, however, entry becomes more costly as early entrants into the market accumulate market share and experience lower per-unit production costs as a result of the effects of the experience curve. New entrants have poorer cost positions thanks to their small market shares compared with earlier entrants, and they cannot catch up to the market leaders as overall market growth slows. During the later phases, characterized by slow market growth, falling product prices force marginal firms and unprofitable firms out of the market or force them to consolidate with other firms. Knowing the firm's stage of the product life cycle can help project future cash flow growth, which is necessary for valuation purposes. During the high growth phase, firms in the industry normally have high investment requirements and operating cash flow is normally negative. During the mature and declining growth phases, investment requirements are lower, and cash flow becomes positive.

Product Differentiation

Differentiation encompasses a range of strategies in which the product offered is perceived by customers to be slightly different from other product offerings in the marketplace. Brand

TABLE 4.2 Hybrid Strategies

	Cost leadership	Product differentiation
Niche focus approach	Cisco Systems WD-40	Coca-Cola McDonalds
Multimarket approach	Walmart Oracle	Google Microsoft

image is one way to accomplish differentiation. Another is to offer customers a range of features or functions. For example, many banks issue MasterCard or Visa credit cards, but each bank tries to differentiate its card by offering a higher credit line or a lower interest rate or annual fee or with awards programs. Apple Computer has used innovative technology to stay ahead of competitors selling MP3 players, most recently with cutting-edge capabilities of its newer iPads. Giving customers convenient access to diverse content on multiple devices through its embryonic video streaming service has the potential to distinguish AT&T from its competitors and to spur customer growth in the wake of its slowing wireless business and moribund landline operation.

Focus or Niche Strategies

Firms adopting focus or niche strategies tend to concentrate their efforts by selling a few products or services to a single market, and they compete primarily by understanding their customers' needs better than does the competition. In this strategy, the firm seeks to carve out a specific niche with respect to a certain group of customers, a narrow geographic area, or a particular use of a product. Examples include the major airlines, airplane manufacturers (e.g., Boeing), and major defense contractors (e.g., Lockheed-Martin).

Hybrid Strategies

Hybrid strategies involve some combination of the three strategies just discussed (Table 4.2). For example, Coca Cola pursues both a differentiated and a highly market-focused strategy. The company derives the bulk of its revenues by focusing on the worldwide soft drink market, and its main product is differentiated, in that consumers perceive it to have a distinctly refreshing taste. Fast-food industry giant McDonald's pursues a differentiated strategy, competing on the basis of providing fast food of a consistent quality in a clean, comfortable environment, at a reasonable price. The firm strives to contain costs by applying best practices across its restaurants and by using bulk purchases to hold down its food input costs.

Blue Ocean Strategy

Proponents of this strategy argue that instead of competing with others in your own industry, a firm should strive to create unique products for new markets and to profit from these new markets or "blue oceans."⁸ Apple Inc.'s record of introducing highly innovative and popular products is perhaps the best example of this strategy. The firm has a record of innovating

⁸Kim et al. (2015) argue that it is possible to pursue both a differentiated and a low-cost strategy at the same time by giving the customer only what they want at a reasonable price. This is in effect a strategy of giving the customer the best value for their money.

TABLE 4.3 Strategy Implementation

Basic options	Advantages	Disadvantages
Solo venture or build (organic growth)	• Control	• Capital/expense^a requirements • Speed
Partner (shared growth/ shared control) • Marketing/ distribution alliance • Joint venture • License • Franchise	• Limits capital and expense investment requirements • May be precursor to acquisition	• Lack of or limited control • Potential for diverging objectives • Potential for creating a competitor
Invest (e.g., minority investments in other firms)	• Limits initial capital/expense requirements	• High risk of failure • Lack of control • Time
Acquire or merge	• Speed • Control	• Capital/expense requirements • Potential earnings dilution
Swap assets	• Limits use of cash • No earnings dilution • Limits tax liability if basis in assets swapped remains unchanged	• Finding willing parties • Reaching agreement on assets to be exchanged

^a Expense investment refers to expenditures made on such things as application software development, database construction, research and development, training, and advertising to build brand recognition, which (unlike capital expenditures) usually are expensed in the year in which the monies are spent.

new products that consumers did not even know they wanted but who learned to find them “cool” and indispensable. Firms that compete in conventional or traditional markets are said to work in “red ocean” conditions, where businesses fight for a share of an existing market. In contrast, “blue ocean” opportunities offer the prospect of a market free of competitors. Why? They are unique and desirable.

Implementation Strategies

Once a firm has determined the appropriate business strategy, it must decide the best means of implementation. Typically, a firm has five choices: implement the strategy based solely on internal resources (the solo venture, go it alone, or build approach), partner with others, invest, acquire, or swap assets. There is little evidence that one strategy is consistently superior to another. In fact, failure rates among alternative strategies tend to be remarkably similar to those documented for M&As⁹; this should not be surprising in that if one strategy consistently outperformed alternative approaches, all firms would adopt a similar growth strategy. Table 4.3 compares the advantages and disadvantages of these options.

⁹Nielsen (2002) estimates the failure rate for new product introductions at well over 70%. Failure rates for alliances of all types exceed 60% (Klein, 2004).

In theory, choosing among alternative options should be based on discounting projected cash flows to the firm resulting from each option. In practice, many other considerations are at work such as intangible factors and the plausibility of underlying assumptions.

The Role of Intangible Factors

Although financial analyses are conducted to evaluate the various strategy implementation options, the ultimate choice may depend on the senior manager's risk profile, patience, and ego. The degree of control offered by the various alternatives is often the central issue senior management must confront as this choice is made. Although the solo venture and acquisition options offer the highest degree of control, they can be the most expensive, although for very different reasons. Typically, a build strategy will take considerably longer to realize key strategic objectives, and it may have a significantly lower current value than the alternatives—depending on the magnitude and timing of cash flows generated from the investments. Gaining control through acquisition can also be very expensive because of the substantial premium the acquirer normally has to pay to gain a controlling interest in another company. The joint venture may be a practical alternative to either a build or an acquire strategy; it gives a firm access to skills, product distribution channels, proprietary processes, and patents at a lower initial expense than might otherwise be required. Asset swaps may be an attractive alternative to the other options, but in most industries they are generally very difficult to establish unless the physical characteristics and use of the assets are substantially similar and the prospects for realizing economies of scale and scope are attractive.¹⁰

Analyzing Assumptions

Financial theory suggests that the option with the highest net present value is generally the preferred strategy. However, this may be problematic if the premise on which the strategy is based is questionable. Therefore, it is critical to understand the key assumptions underlying the chosen strategy as well as those underlying alternative strategies. This forces senior management to make choices based on a discussion of the reasonableness of the assumptions associated with each option rather than simply the numerical output of computer models.

Functional Strategies

Functional strategies focus on short-term results and generally are developed by functional areas. These strategies result in a series of concrete actions for each function or business group, depending on the company's organization. It is common to see separate plans with specific goals and actions for the marketing, manufacturing, R&D, engineering, and financial and human resources functions. Functional strategies should include clearly defined objectives, actions, timetables for achieving those actions, resources required, and identifying the individual responsible for ensuring that the actions are completed on time and within budget.

Specific functional strategies might read as follows:

¹⁰In 2016, French drug maker Sanofi agreed to transfer its animal healthcare business in exchange for \$5.2 billion and Boehringer Ingelheim's consumer healthcare business. In 2011, Starbucks assumed 100% ownership of restaurants in major Chinese provinces from its joint venture partner, Maxim's Caterers, in exchange for Maxim's assuming full ownership of the JV's restaurants in Hong Kong and Macau.

- Set up a product distribution network in the northeastern United States that is capable of handling a minimum of 1 million units of product annually by 12/31/20XX. (Individual responsible: Oliver Tran; estimated budget: \$5 million.)
- Develop and execute an advertising campaign to support the sales effort in the northeastern United States by 10/31/20XX. (Individual responsible: Maria Gomez; estimated budget: \$0.5 million.)
- Hire a logistics manager to administer the distribution network by 9/15/20XX. (Individual responsible: Patrick Petty; estimated budget: \$250,000.)
- Acquire a manufacturing company with sufficient capacity to meet the projected demand for the next 3 years by 6/30/20XX at a purchase price not to exceed \$250 million. (Individual responsible: Chang Lee.)

Perhaps an application software company is targeting the credit card industry. Here is an example of how the company's business mission, business strategy, implementation strategy, and functional strategies are related:

- *Mission:* To be recognized by our customers as the leader in providing accurate, high-speed, high-volume transactional software for processing credit card remittances by 20XX.
- *Business Strategy:* Upgrade our current software by adding the necessary features and functions to differentiate our product and service offering from our primary competitors and satisfy projected customer requirements through 20XX.
- *Implementation Strategy:* Purchase a software company at a price not to exceed \$400 million that is capable of developing "state-of-the-art" remittance processing software by 12/31/20XX. (Individual responsible: Daniel Stuckee.)
- *Functional Strategies to Support the Implementation Strategy* (Note each requires a completion date)
 - *R&D:* Identify and develop new applications for remittance processing software.
 - *Marketing and Sales:* Assess the impact of new product offerings on revenue generated from current and new customers.
 - *Human Resources:* Determine appropriate staffing requirements.
 - *Finance:* Identify and quantify potential cost savings generated from improved productivity as a result of replacing existing software with the newly acquired software and from the elimination of duplicate personnel in our combined companies. Evaluate the impact of the acquisition on our combined companies' financial statements.
 - *Legal:* Ensure that all target company customers have valid contracts and that these contracts are transferable without penalty. Also, ensure that we will have exclusive and unlimited rights to use the remittance processing software.
 - *Tax:* Assess the tax impact of the acquisition on our cash flow.

Strategic Controls

Strategic controls include both incentive and monitoring systems. *Incentive systems* include bonus, profit sharing, or other performance-based payments made to motivate both acquirer and target company employees to work to implement the business strategy for the combined

firms. Typically, these would have been agreed to during negotiation. Incentives often include *retention bonuses* for key employees of the target firm if they remain with the combined companies for a specific period following completion of the transaction. *Monitoring systems* are implemented to track the actual performance of the combined firms against the business plan. They may be accounting based and monitor financial measures such as revenue, profits, and cash flow, or they may be activity based and monitor variables that drive financial performance such as customer retention, average revenue per customer, employee turnover, and revenue per employee.

THE BUSINESS PLAN AS A COMMUNICATION DOCUMENT

The business plan is an effective means of communicating with key decision makers and stakeholders. A good business plan should be short, focused, and well documented. There are many ways to develop such a document. [Exhibit 4.1](#) outlines the key features that should be addressed in a good business plan—one that is so well reasoned and compelling that decision makers accept its recommendations. The executive summary may be the most important and difficult piece of the business plan to write. It must communicate succinctly and compellingly what is being proposed, why it is being proposed, how it is to be achieved, and by when. It must also identify the major resource requirements and risks associated with the critical assumptions underlying the plan. The executive summary is often the first and only portion of the business plan that is read by a time-constrained CEO, lender, or venture capitalist. As such, it may represent the first and last chance to catch the attention of the key decision maker. Supporting documentation should be referred to in the business plan text but presented in the appendices.

EXHIBIT 4.1 TYPICAL BUSINESS UNIT-LEVEL BUSINESS PLAN FORMAT

1. *Executive summary*: In one or two pages, describe what you are proposing to do, why, how it will be accomplished, by what date, critical assumptions, risks, and resource requirements.
2. *Industry/market definition*: Define the industry or market in which the firm competes in terms of size, growth rate, product offering, and other pertinent characteristics.
3. *External analysis*: Describe industry/market competitive dynamics in terms of the factors affecting customers, competitors, potential entrants, product or service substitutes, and suppliers and how they interact to determine profitability and cash flow (e.g., Porter five forces model; [Fig. 4.2](#)). Discuss the major opportunities and threats that exist because of the industry's competitive dynamics. Information accumulated in this section should be used to develop the assumptions underlying revenue and cost projections in building financial statements.
4. *Internal analysis*: Describe the company's strengths and weaknesses and how they compare with the competition. Identify those strengths and weaknesses critical to the firm's targeted customers, and explain why. These data can be used to develop cost and revenue assumptions underlying the businesses' projected financial statements.
5. *Business mission/vision statement*: Describe the purpose of the corporation, what it intends to achieve, and how it wishes to be perceived by its stakeholders. An automotive parts

manufacturer may envision itself as being perceived by the end of the decade as the leading supplier of high-quality components worldwide by its customers and as fair and honest by its employees, the communities in which it operates, and its suppliers.

6. *Quantified strategic objectives (including completion dates)*: Indicate both financial goals (e.g., rates of return, sales, cash flow, share price) and nonfinancial goals (e.g., market share; being perceived by customers or investors as number 1 in the targeted market in terms of market share, product quality, price, innovation).
7. *Business strategy*: Identify how the mission and objectives will be achieved (e.g., become a cost leader, adopt a differentiation strategy, focus on a specific market, or some combination of these strategies). Show how the chosen business strategy satisfies a key customer need or builds on a major strength possessed by the firm. A firm whose customers are highly price sensitive may pursue a cost leadership strategy to enable it to lower selling prices and increase market share and profitability. A firm with a well-established brand name may choose a differentiation strategy by adding features to its product that are perceived by its customers as valuable.
8. *Implementation strategy*: From a range of reasonable options (i.e., solo venture or “go it alone” strategy; partner via a joint venture or less formal business alliance, license, or minority investment; or acquire–merge), indicate which option would enable the firm to best implement its chosen business strategy. Indicate why the chosen implementation strategy is superior to alternative options. An acquisition strategy may be appropriate if the perceived “window of opportunity” is believed to be brief. A solo venture may be preferable if there are few attractive acquisition targets or the firm believes it has the resources to develop the needed processes or technologies.
9. *Functional strategies*: Identify plans and resources required by major functional areas, including manufacturing, engineering, sales and marketing, research and development, finance, legal, and human resources.
10. *Business plan financials and valuation*: Provide projected annual income, balance sheet, and cash flow statements for the firm, and estimate the firm’s value based on the projected cash flows. State key forecast assumptions underlying the projected financials and valuation.
11. *Risk assessment*: Evaluate the potential impact on valuation by changing selected key assumptions one at a time. Briefly identify contingency plans (i.e., alternative ways of achieving the firm’s mission or objectives) that would be undertaken if critical assumptions prove inaccurate. Identify specific events that would cause the firm to pursue a contingency plan. Such “trigger points” could include deviations in revenue growth of more than $x\%$ or the failure to acquire or develop a needed technology within a specific period.

PHASE 2: BUILDING THE MERGER–ACQUISITION IMPLEMENTATION PLAN

If a firm decides to execute its business strategy through an acquisition, it will need an acquisition plan. Here, the steps of the acquisition planning process are discussed, including detailed components of an acquisition plan.¹¹ The acquisition plan is a specific type of

¹¹Note that if the implementation of the firm’s business strategy required some other business combination, such as a joint venture or a business alliance, the same logic of the acquisition planning process described here would apply.

implementation strategy that focuses on tactical or short-term issues rather than on strategic or longer-term issues. It includes management objectives, a resource assessment, a market analysis, senior management’s guidance regarding management of the acquisition process, a timetable, and the name of the individual responsible for making it all happen. These and the criteria to use when searching acquisition targets are codified in the first part of the planning process; once a target has been identified, several additional steps must be taken, including contacting the target, developing a negotiation strategy, determining the initial offer price, and developing both financing and integration plans. These activities are discussed in Chapter 5.

Development of the acquisition plan should be directed by the “deal owner”—typically a high-performing manager. Senior management should, early in the process, appoint the deal owner to this full- or part-time position. It can be someone in the firm’s business development unit, for example, or a member of the firm’s business development team with substantial deal-making experience. Often, it is the individual who will be responsible for the operation and integration of the target, with an experienced deal maker playing a supporting role. The first steps in the acquisition planning process are undertaken prior to selecting the target firm and involve documenting the necessary plan elements before the search for an acquisition target can begin.

Not surprisingly, observing the outcome of previous deals in the same industry can be highly useful in planning an acquisition. Researchers have documented a strong positive relationship between premerger planning involving an analysis of past M&As in the same industry and postmerger performance. The correlation is particularly strong in cross-border deals where cultural differences are the greatest.¹²

Plan Objectives

The acquisition plan’s objectives should be consistent with the firm’s strategic objectives. Financial and nonfinancial objectives alike should support realization of the business plan objectives. Moreover, as is true with business plan objectives, the acquisition plan objectives should be quantified and include a date when such objectives are expected to be realized.

Financial objectives could include a minimum rate of return or operating profit, revenue, and cash flow targets to be achieved within a specified period. Minimum or required rates of return targets may be substantially higher than those specified in the business plan, which relate to the required return to shareholders or to total capital. The required return for the acquisition may reflect a substantially higher level of risk as a result of the perceived variability of the amount and timing of the expected cash flows resulting from the acquisition.

Nonfinancial objectives address the motivations for making the acquisition that support achieving the financial returns stipulated in the business plan. They could include obtaining rights to specific products, patents, copyrights, or brand names; providing growth opportunities in the same or related markets; developing new distribution channels in the same or related markets; obtaining additional production capacity in strategically located facilities; adding R&D capabilities; and acquiring access to proprietary technologies, processes, and skills.¹³ Because these objectives identify the factors that ultimately determine whether a firm

¹²Francis et al. (2014a, 2014b).

¹³DePamphilis (2001).

TABLE 4.4 Examples of Linkages Between Business and Acquisition Plan Objectives

Business plan objective	Acquisition plan objective
<i>Financial:</i> The firm will • Achieve rates of return that will equal or exceed its cost of equity or capital by 20XX • Maintain a debt/total capital ratio of $x\%$ <i>Size:</i> The firm will be the number 1 or 2 market share leader by 20XX • Achieve revenue of \$$x$ million by 20XX <i>Growth:</i> The firm will achieve through 20XX annual average • Revenue growth of $x\%$ • Earnings per share growth of $y\%$ • Operating cash flow growth of $z\%$ <i>Diversification:</i> The firm will reduce earnings variability by $x\%$ <i>Flexibility:</i> The firm will achieve flexibility in manufacturing and design <i>Technology:</i> The firm will be recognized by its customers as the industry's technology leader <i>Quality:</i> The firm will be recognized by its customers as the industry's quality leader <i>Service:</i> The firm will be recognized by its customers as the industry's service leader <i>Cost:</i> The firm will be recognized by its customers as the industry's low-cost provider <i>Innovation:</i> The firm will be recognized by its customers as the industry's innovation leader	<i>Financial returns:</i> The target firm should have • A minimum return on assets of $x\%$ • A debt/total capital ratio $\leq y\%$ • Unencumbered assets^a of \$$z$ million • Cash flow in excess of operating requirements of \$$x$ million <i>Size:</i> The target firm should be at least \$$x$ million in revenue <i>Growth:</i> The target firm should • Have annual revenue, earnings, and operating cash flow growth of at least x, y, and $z\%$, respectively • Provide new products and markets resulting in \$$z$ by 20XX • Possess excess annual production capacity of x million units <i>Diversification:</i> The target firm's earnings should be largely uncorrelated with the acquirer's earnings <i>Flexibility:</i> The target firm should use flexible manufacturing techniques <i>Technology:</i> The target firm should own important patents, copyrights, and other forms of intellectual property <i>Quality:</i> The target firm's product defects must be less than x per million units manufactured <i>Warranty record:</i> The target firm's customer claims per million units sold should not be greater than x <i>Labor costs:</i> The target firm should be nonunion and not subject to significant government regulation <i>R&D capabilities:</i> The target firm should have introduced new products accounting for at least $x\%$ of total revenue in the past 2 years

^a Unencumbered assets are those that are not being used as collateral underlying current loans. As such, they may be used to collateralize additional borrowing to finance an acquisition.

will achieve its desired financial returns, they may provide more guidance than financial targets. Table 4.4 illustrates how acquisition plan objectives can be linked with business plan objectives.

Resource/Capability Evaluation

Early in the acquisition process, it is important to determine the maximum amount of the firm's available resources senior management will commit to a deal. This information is used when the firm develops target selection criteria before undertaking a search for target firms.

Financial resources that are potentially available to the acquirer include those provided by internally generated cash flow in excess of normal operating requirements plus funds from the equity and debt markets. In cases where the target firm is known, the potential financing pool includes funds provided by the internal cash flow of the combined companies in excess of normal operating requirements, the capacity of the combined firms to issue equity or increase leverage, and proceeds from selling assets not required to execute the acquirer's business plan. Financial theory suggests that an acquiring firm will always be able to attract sufficient funding for an acquisition if it can demonstrate that it can earn its cost of capital. In practice, senior management's risk tolerance plays an important role in determining what the acquirer believes it can afford to spend on a merger or acquisition. Risk-averse managers may be inclined to commit only a small portion of the total financial resources that are potentially available to the firm.

Three basic types of risk confront senior management who are considering an acquisition. How these risks are perceived will determine how much of potential available resources management will be willing to commit to making an acquisition. *Operating risk* addresses the ability of the buyer to manage the acquired company. Generally, it is perceived to be higher for M&As in markets unrelated to the acquirer's core business. *Financial risk* refers to the buyer's willingness and ability to leverage a transaction as well as the willingness of shareholders to accept dilution of near-term EPS. To retain a specific credit rating, the acquiring company must maintain certain levels of financial ratios, such as debt-to-total capital and interest coverage. A firm's incremental debt capacity can be approximated by comparing the relevant financial ratios to those of comparable firms in the same industry that are rated by the credit rating agencies. The difference represents the amount the firm, in theory, could borrow without jeopardizing its current credit rating.¹⁴ Senior management could also gain insight into how much EPS dilution equity investors may be willing to tolerate through informal discussions with Wall Street analysts and an examination of comparable deals financed by issuing stock. *Overpayment risk* involves the dilution of EPS or a reduction in its growth rate resulting from paying significantly more than the economic value of the acquired company. The effects of overpayment on earnings dilution can last for years.¹⁵

Management Guidance

To ensure that the process is managed in a manner consistent with management's risk tolerance, management must provide guidance to those responsible for finding and valuing the target as well as negotiating the deal. Upfront participation by management will help dramatically in the successful implementation of the acquisition process. Senior management

¹⁴Suppose the combined acquirer and target firms' interest coverage ratio is 3 and the combined firms' debt-to-total capital ratio is 0.25. Assume further that other firms within the same industry with comparable interest coverage ratios have debt-to-total capital ratios of 0.5. Consequently, the combined acquirer and target firms could increase borrowing without jeopardizing their combined credit rating until their debt-to-total capital ratio equals 0.5.

¹⁵To illustrate the effects of overpayment risk, assume that the acquiring company's shareholders are satisfied with the company's projected increase in EPS of 20% annually for the next 5 years. The company announces it will be acquiring another firm and that "restructuring" expenses will slow EPS growth next year to 10%. Management argues that savings resulting from merging the two companies will raise the combined EPS growth rate to 30% in the second to fifth year of the forecast. The risk is that the savings cannot be realized in the time assumed by management and the slowdown in earnings extends well beyond the first year.

EXHIBIT 4.2 EXAMPLES OF MANAGEMENT GUIDANCE PROVIDED TO ACQUISITION TEAM

1. Determining the criteria used to evaluate prospective candidates (e.g., size, price range, current profitability, growth rate, geographic location, and cultural compatibility)
2. Specifying acceptable methods for finding candidates (e.g., soliciting board members; analyzing competitors; contacting brokers, investment bankers, lenders, law firms, and the trade press)
3. Establishing roles and responsibilities of the acquisition team, including the use of outside consultants, and defining the team's budget
4. Identifying acceptable sources of financing (e.g., equity issues, bank loans, unsecured bonds, seller financing, or asset sales)
5. Establishing preferences for an asset or stock purchase and form of payment
6. Setting a level of tolerance for goodwill (i.e., the excess of the purchase price over the fair market value net acquired assets: acquired assets less assumed liabilities)
7. Indicating the degree of openness to partial rather than full ownership
8. Specifying willingness to launch an unfriendly takeover
9. Setting affordability limits (which can be expressed as a maximum price to after-tax earnings, earnings before interest and taxes, or cash flow multiple or maximum dollar amount)
10. Indicating any desire for related or unrelated acquisitions

frequently avoids providing input early in the process, inevitably leading to miscommunication, confusion, and poor execution later in the process. [Exhibit 4.2](#) provides examples of the more common types of management guidance that might be found in an acquisition plan.

Timetable

A properly constructed timetable recognizes all of the key events that must take place in the acquisition process. Each event should have beginning and ending dates and milestones along the way and should identify who is responsible for ensuring that each milestone is achieved. The timetable of events should be aggressive but realistic. The timetable should be sufficiently aggressive to motivate all involved to work as expeditiously as possible to meet the plan's management objectives, while also avoiding overoptimism that may demotivate individuals if uncontrollable circumstances delay reaching certain milestones. [Exhibit 4.3](#) recaps the components of a typical acquisition planning process. The first two elements were discussed in detail in this chapter; the remaining items will be the subject of the next chapter.

SOME THINGS TO REMEMBER

The success of an acquisition depends on the focus, understanding, and discipline inherent in a thorough and viable business plan that addresses four overarching questions: Where should the firm compete? How should the firm compete? How can the firm satisfy customer

EXHIBIT 4.3 ACQUISITION PLAN FOR THE ACQUIRING FIRM

1. *Plan objectives:* Identify the specific purpose of the acquisition. This should include what specific goals are to be achieved (e.g., cost reduction, access to new customers, distribution channels or proprietary technology, expanded production capacity) and how the achievement of these goals will better enable the acquiring firm to implement its business strategy.
2. *Timetable:* Establish a timetable for completing the acquisition, including integration if the target firm is to be merged with the acquiring firm's operations.
3. *Resource/capability evaluation:* Evaluate the acquirer's financial and managerial capability to complete an acquisition. Identify affordability limits in terms of the maximum amount the acquirer should pay for an acquisition. Explain how this figure is determined.
4. *Management guidance:* Indicate the acquirer's preferences for a "friendly" acquisition; controlling interest; using stock, debt, cash, or some combination; and so on.
5. *Search plan:* Develop criteria for identifying target firms and explain plans for conducting the search, why the target ultimately selected was chosen, and how you will make initial contact with the target firm (see Chapter 5).
6. *Negotiation strategy:* Identify key buyer/seller issues. Recommend a deal structure (i.e., terms and conditions) addressing the primary needs of all parties involved. Comment on the characteristics of the deal structure. Such characteristics include the proposed acquisition vehicle (i.e., the legal structure used to acquire the target firm; see Chapter 11 for more detail), the postclosing organization (i.e., the legal framework used to manage the combined businesses following closing), and the form of payment (i.e., cash, stock, or some combination). Other characteristics include the form of acquisition (i.e., whether assets or stock are being acquired) and tax structure (i.e., whether it is a taxable or a nontaxable transaction; see Chapter 12 for more detail). Indicate how you might "close the gap" between the seller's price expectations and the offer price. These considerations will be discussed in more detail in Chapter 5.
7. *Determine initial offer price:* Provide projected 5-year income, balance sheet, and cash flow statements for the acquiring and target firms individually and for the consolidated acquirer and target firms with and without the effects of synergy. (Note that the projected forecast period can be longer than 5 years if deemed appropriate.) Develop a preliminary minimum and maximum purchase price range for the target. List key forecast assumptions. Identify an initial offer price, the composition (i.e., cash, stock, debt, or some combination) of the offer price, and why you believe this price is appropriate in terms of meeting the primary needs of both target and acquirer shareholders. The appropriateness of the offer price should reflect your preliminary thinking about the deal structure (see Chapters 11 and 12 for a detailed discussion of the deal-structuring process).
8. *Financing plan:* Determine if the proposed offer price can be financed without endangering the combined firm's creditworthiness or seriously eroding near-term profitability and cash flow. For publicly traded firms, pay particular attention to the near-term impact of the acquisition on the EPS of the combined firms (see Chapter 13).
9. *Integration plan:* Identify integration challenges and possible solutions (see Chapter 6 for a detailed discussion of how to develop integration strategies). For financial buyers, identify an "exit strategy." Highly leveraged transactions are discussed in more detail in Chapter 13.

needs better than the competition? Why is the chosen strategy preferable to other reasonable options? An acquisition is only one of many options available for implementing a business strategy. The decision to pursue an acquisition often rests on the desire to achieve control and a perception that the acquisition will result in achieving the desired objectives more rapidly than other options. Once a firm has decided that an acquisition is critical to realizing the strategic direction defined in the business plan, a merger/acquisition plan should be developed.

DISCUSSION QUESTIONS

- 4.1 How does planning facilitate the acquisition process?
- 4.2 What is the difference between a business plan and an acquisition plan?
- 4.3 What are the advantages and disadvantages of using an acquisition to implement a business strategy compared with a joint venture?
- 4.4 Why is it important to understand the assumptions underlying a business plan or an acquisition plan?
- 4.5 Why is it important to get senior management involved early in the acquisition process?
- 4.6 In your judgment, which of the elements of the acquisition plan discussed in this chapter are the most important, and why?
- 4.7 After having acquired the OfficeMax superstore chain, Boise Cascade announced the sale of its paper and timber products operations to reduce its dependence on this cyclical business. Reflecting its new emphasis on distribution, the company changed its name to OfficeMax, Inc. How would you describe the OfficeMax mission and business strategy implicit in these actions?
- 4.8 Dell Computer is one of the best known global technology companies. In your opinion, who are Dell's primary customers? Current and potential competitors? Suppliers? How would you assess Dell's bargaining power with respect to its customers and suppliers? What are Dell's strengths and weaknesses versus those of its current competitors?
- 4.9 Discuss the types of analyses inside General Electric that may have preceded its 2008 announcement that it would spin off its consumer and industrial business to its shareholders.
- 4.10 Ashland Chemical, the largest US chemical distributor, acquired chemical manufacturer Hercules Inc. for \$3.3 billion. This move followed Dow Chemical Company's purchase of Rohm & Haas. The justification for both acquisitions was to diversify earnings and offset higher oil costs. How will this business combination offset escalating oil costs?

Answers to these discussion questions are found on the online instructors' site available for this book (<https://textbooks.elsevier.com/web/Manuals.aspx?isbn=9780128016091>).

END OF CHAPTER CASE STUDY: YAHOO'S FALL FROM GRACE

Case Study Objectives: To Illustrate

- The tenuous nature of competitive advantage
- The connection between ineffective governance and shareholder wealth destruction
- How investor impatience can limit management and board options

Nowhere is the impact of creative destruction more apparent than on the internet. We can be sure that the growth of the internet will continue to spawn new innovations challenging the survivability of current competitors. The process of “creative destruction” in which current businesses give way to new businesses with new ways of doing things will continue to change the competitive landscape for years to come. Moreover, the pace of creative destruction is accelerating due to the quickening pace of technological change. The inescapable conclusion is that factors contributing to a firm’s competitive advantage today may be irrelevant tomorrow causing firms once dominant in their chosen markets to fall by the wayside. This is the story of one such firm, Yahoo, a former internet darling that failed to keep pace with the changing realities of the marketplace.

The internet is currently dominated by three behemoths: Amazon.com, Facebook, and Google. Each has satisfied a large and growing user need in cyberspace. Amazon.com has become the online retailer of choice in a space whose growth is fueled by the ongoing shift from brick and mortar to online retailing. Facebook dominates the exploding social media space by giving people the power to share whatever they want, with whomever they want, and whenever they want. Finally, internet search is controlled largely by Google’s juggernaut search engine as the demand for more timely and relevant information escalates. Notably, all three firms have rapidly made the shift from offering primarily desktop computer access to their websites to enabling mobile communication to make purchasing, socializing, and searching an anywhere, anytime event. At more than 90%, Facebook and Google make the bulk of their revenue from advertising in news feeds and mobile ads. Amazon.com generates the majority of its revenue from fees from its partners who sell products through the firm’s websites and from its own branded products and services.¹⁶

It is in the shadow of these three powerhouses that Yahoo has struggled to find its place on the internet. Largely locked out of selling products and services on the internet because of its diminutive size, the firm derived the bulk of its revenue and profits from advertising. But with online users flocking to Facebook, Google, and Amazon.com to satisfy their needs, Yahoo became less attractive for advertisers.

After more than a decade of mismanagement, Yahoo announced that it had reached an agreement on July 25, 2016, to sell its core internet operating assets to wireless telecom giant Verizon Inc. for \$4.8 billion in cash.¹⁷ The remaining assets would include investments in Chinese e-commerce firm Alibaba, Yahoo Japan, and a small patent portfolio. How did a firm that once dominated internet search and served as an online gateway for millions fall from grace? A look into the past helps to answer this question.

When Yahoo went public in 1996 in an initial public offering, the internet in many ways was still in its infancy. Consumers were quick to gravitate to Yahoo’s quirky brand and soon became reliant on the firm’s search capability to help them find interesting and meaningful content. Yahoo also

pioneered the “internet portal” concept offering consumers a single site to satisfy the majority of their online needs. The firm was known for its fierce independence and for a culture that was slow to adapt to technologies not invented by Yahoo. While still one of the most popular destinations on the internet, it was dwarfed by its major competitors. The firm’s annual revenue declined from \$7.3 billion in 2008 to about \$4.3 billion in 2015. While the firm did receive major cash infusions from the partial sale of its stake in Alibaba, the Chinese mega e-commerce business, its operating profits have been sliding inexorably lower in recent years. Most of its market value was a result of its investment made years ago in Alibaba.

The firm appeared directionless, with the board thrashing about trying to develop a successful business strategy. But to what end? Could the firm deliver the greatest shareholder value by reinvigorating its core assets with new products and services? Or did it make more sense to break up the firm by spinning off shares in its stakes in Alibaba and Yahoo Japan or specific operating units to shareholders or returning cash to shareholders by selling operating units and declaring a special cash distribution? Alternatively, should Yahoo spin off or sell its core operating units and retain its investments in Alibaba and Yahoo Japan?

These are questions best addressed in a coherent planning process, something Yahoo seems to have been lacking for years. The firm appeared more reactive than proactive to changes in its external environment and to have seriously overestimated its current core capabilities or its ability to acquire the competences needed to compete in the online environment. More importantly, the firm seemed almost schizophrenic in its view of the future and what constitutes a range of reasonable strategic options for delivering value to shareholders. Sometimes it would position the firm as a media business and other times a technology business, while more recently seeing greater value in breaking itself up and returning cash through special distributions or shares through spin-offs to shareholders. Not having a clear vision of what the firm should look like in the future made it almost impossible to develop a sound and consistent business strategy.

Yahoo failed to fully grasp that the internet was in a bubble in the late 1990s, that consumers wanted a highly efficient search capability, and that the world was shifting from desktop to mobile computing. Caught up in the internet stock market euphoria of the late 1990s, the firm used its inflated stock price as an acquisition currency resulting in overpaying for a series of acquisitions. Yahoo also was slow to recognize that consumers did not want a portal but rather an efficient search capability so as not to be tethered to a single gateway to internet content. Failure to update its search capability to accommodate changing consumer tastes allowed Google to leapfrog Yahoo. Finally, Yahoo’s bureaucratic infrastructure was slow to move to mobile from desktop access to internet search and content, while its competitors moved at breakneck speed to accommodate this important trend.

Yahoo’s assets at the end of 2015 consisted of a series of investments in other companies and in wholly owned and operated businesses. The firm’s most valuable investments included Alibaba and Yahoo Japan. At that time, the value of Yahoo’s stake in Alibaba was \$32.5 billion and its stake in Yahoo Japan was \$8.6 billion. The company’s net cash—or cash minus debt—was \$4.2 billion. This sums to \$45.3 billion and compares to the stock market’s then valuation of the firm of \$32.5 billion. Investors’ lower valuation of the firm reflected a lack of confidence in the board’s ability to enhance the value of its operating units.

The firm’s websites were one of its greatest assets. Yahoo claimed on its website that every day 43 million people come to its sites for the “best the web has to offer” and they on average return daily.¹⁸

The challenge has been to find a way to convert this traffic into an accelerating (rather than a declining) revenue stream. The Yahoo brand while highly recognizable may have been as much a hindrance to growing revenue as a boon due to its greater association by millennials with the past rather than the future of the internet.

Perhaps the greatest factor limiting Yahoo's turnaround in recent years has been a rapid succession of CEOs and muddled governance. The firm's governance issues included the failure to provide consistent leadership at the top, board oversight, lack of an enduring mission statement and successful business strategy, poor stewardship of the firm's financial resources, and an inability to align the firm's culture with longer-term objectives. Since 2008, the firm changed CEOs five times and experienced an unsolicited takeover attempt by Microsoft, a proxy contest, several public flare-ups with activist investors, as well as a loss of board members and key management personnel.

Historically, Yahoo had a reputation as a largely bureaucratic organization that stifled innovation and growth. In an effort to make the organization more nimble, on becoming CEO in 2012, Marissa Mayer recruited new people to key posts in the belief that a new and strong management team with fresh perspectives would break down the bureaucratic nature of Yahoo's culture. While she has had some successes in updating the firm's website and Yahoo Mail, what stands out to many investors about Marissa Mayer's 4-year tenure as CEO is one thing: spending. Yahoo employees enjoyed perks like free iPhones and food while Mayer has a penchant for throwing lavish parties that have been widely publicized gimmicks for boosting employee morale. SpringOwl, an asset management company, estimated in a December 13, 2015, critique that Yahoo's wasteful spending has cost the company around \$450 million in the past 4 years.¹⁹ Presumably these "missteps" were approved by the board casting doubt among investors about its effectiveness in promoting their interests.

The firm's board and management had been unable to settle on a clearly defined and credible vision that could be effectively communicated to consumers and businesses that describes where and how the firm chooses to compete. This has left consumers and businesses confused about what Yahoo is and why they should be using it. Yahoo in its 2015 vision statement viewed itself as "a guide focused on informing, connecting, and entertaining our users. By creating highly personalized experiences for our users, we (Yahoo) keep people connected to what matters most to them, across devices and around the world. In turn, we create value for advertisers by connecting them with the audiences that build their businesses."²⁰ This statement on its face seems to lack the specificity to provide clear direction for the firm and to forge a unified culture intent on achieving this undertaking. At its worst, it seems to allow the firm broad sway in making acquisitions and corporate investments.

The lack of a clear and crisp vision has contributed to a muddled business strategy punctuated by a number of time-consuming detours in an effort to turnaround the firm's operating performance. These ranged from an intense focus on media by making big investments on digital magazines to expensive video deals to a race to compete with Google in search. Another strand of the strategy was a series of seemingly disjointed acquisitions that appeared aimed more at bringing talent to the firm than at concentrating on a specific objective. Still another aspect of the firm's hapless strategy has been its emphasis on getting top TV talent to attract more site visitors, but this appears to have had little success as many of the deals done in 2014 were largely written off during 2015 due to lack of viability.

During the first 2 years as CEO, Ms. Mayer had been able to emerge largely unscathed despite these missteps because of investors' focus on the firm's stake in Alibaba. In recent years, much of Mayer's and the board's time seems to have been taken up in 2015 by what to do with the Alibaba investment. Throughout 2015, Yahoo's board and management were under considerable pressure to deliver value to shareholders and to do it soon. Or else face the prospect of a proxy fight for control of the board.

Private equity firm, Starboard Value, which has a track record of successfully forcing firms to change management, board members, and strategies, had been most active in seeking a complete restructure of Yahoo. On November 19, 2015, Starboard CEO Jeffrey Smith sent a letter to the board and management expressing its displeasure with Yahoo's performance and that it had a "dim view of the company's current strategy." Smith argued that a change in direction was needed and that changes in the board were required to end any further shareholder value destruction. In response to growing shareholder pressure, the Yahoo board and management in early 2016 ceased efforts to sell their investments in Alibaba and Yahoo Japan, which would have generated a huge tax liability for the firm's shareholders, deciding instead to retain these investments and sell off or spin off its core operating businesses. However, Yahoo's actions subsequent to the announcement of their new strategy seemed half-hearted, leaving investors questioning the board's commitment to making it happen. On March 24, 2016, Starboard Value's management lost patience with the Yahoo board announcing its intention of submitting its own slate of nine candidates in an effort to oust the entire Yahoo board, including Marissa Mayer. This forced the Yahoo board to redouble their efforts to sell off its core operating businesses.

Looking back, Yahoo's problems seem to lie in the inability of the board to exercise effective oversight over bloated staffing levels and frivolous spending, and its approval of underperforming acquisitions. We shall never know if Ms. Mayer's vision and strategy for the business could have been successful due to investor impatience. Investors wanted to either see improved operating performance or cash out. Activist investors moved aggressively to resolve the firm's floundering performance. While some progress had been made with mobile revenues increasing as a share of total revenue and increasing monthly visitors, the firm's competitive position relative to Google in search and Facebook in social media worsened. Investors simply lost confidence in the firm's ability to compete in markets subject to rapid technological change, viewing the firm as irrelevant in online advertising, search, social media, and commerce.

In the end, frustrated investors forced the dramatic restructuring of the business. What remains of the once-revered and growth-oriented internet operating business is a holding company with passive investments in other internet properties and technology patents. Exiting these investments, without triggering a huge tax liability, represents the next big challenge for the Yahoo board. With the sale of its operating units, the Yahoo's total market value of \$36.4 billion as of the end of July 2016 reflected its 15% stake in Alibaba Group and its 35.5% investment in joint venture Yahoo Japan. Therefore, considerable restructuring activity remains before Yahoo is completely liquidated.²¹

Discussion Questions

1. How would you describe the Yahoo corporate culture prior to Marissa Mayer becoming CEO? How might this have slowed her ability to transform the company?
2. How did the culture change after Mayer's appointment as CEO in 2012? Be specific.
3. Do you believe the expectations for Mayer were excessive when she became CEO in 2012? What would you have done differently if you were the CEO of Yahoo?
4. What corporate governance issues does Yahoo face? How do these issues impact Yahoo's strategy?
5. Discuss how Yahoo's "legacy" investments in Alibaba and Yahoo Japan constrained its ability to revitalize its core operating businesses. Be specific.
6. Discuss how the Yahoo brand represented both an asset and a potential liability for the firm in implementing new strategies. Be specific.

Answers to these questions are found in the Online Instructor's Manual available for instructors using this book (<https://textbooks.elsevier.com/web/Manuals.aspx?isbn=9780128016091>).

¹⁶While all three firms are profitable on a GAAP basis, Google and Facebook display substantially larger profit margins than Amazon.com.

¹⁷Closing the deal was hampered by the discovery in November 2016 of several hacks of more than 1 billion Yahoo email users' private accounts that had occurred in 2013 and 2014 and the potential reduction in the firm's value resulting from these incidents. Verizon argued the hacks resulted in a material loss of value and attempted to negotiate a lower purchase price. Yahoo countered that its value was unaffected as it did not experience any loss of email users during the years subsequent to the hacks. Further complicating the process, the SEC initiated an investigation of Yahoo's failure to make public sooner these potentially material events in late December 2016. Nonetheless, at the time of this writing, the firms were still negotiating this issue in early 2017 making the timing of the deal (or possible termination) closing uncertain.

¹⁸<https://advertising.yahoo.com/yahoo-sites/Homepage/index.htm>.

¹⁹<http://www.wsj.com/public/resources/documents/yahoopresentation.pdf>.

²⁰Yahoo Announces SEC Filing for Planned Spin-Off of Remaining Stake in Alibaba Group, Press Release, July 17, 2015.

²¹Various forms of split-offs represent possible strategies to exit its remaining investments to minimize potential tax liabilities. With Softbank owning 43% of its shares, Yahoo Tokyo shares trade only on Japan exchanges and tend to be relatively illiquid and unattractive for US shareholders. To get as much cash as possible for its shareholders, Yahoo could execute a cash-rich split-off with Yahoo Japan. Yahoo Japan would create a subsidiary and contribute cash and an operating business that has been active for at least 5 years in order to receive IRS approval for a tax-free deal. Yahoo Japan would then give this subsidiary to Yahoo in exchange for Yahoo's shares in Yahoo Japan. Creating such a deal is challenging as Yahoo Japan would need to give up an operating asset it does not want to Yahoo. Yahoo in turn would then have to divest the operating units received and distribute the proceeds to its shareholders. Since Alibaba is a far more liquid stock trading on the NYSE, Yahoo could offer its shareholders the option of exchanging their shares in Yahoo for Alibaba shares in a split-off exchange as a means of exiting the Alibaba investment. See Chapter 16 for more detail.

**ADDITIONAL CASE STUDY RECOMMENDATIONS
(SEARCH HARVARD BUSINESS SCHOOL PUBLISHING
SITE BY NAME OF CASE: hbsp.harvard.edu)**

High Noon at Universal Pipe: Sell Out or Risk Everything?, Arich A. Ullman, Publication Date: December 1, 2011, *Source*: North American Case Research Association, hbsp.harvard.edu.

Subjects covered: Five Forces Model, Industry Analysis, Management Decision Making.

Innovation Without Walls: Alliance Management at Eli Lilly and Company, Charles Dhanaraj, Marjorie Lyles, YuPeng Lai, Publication Date: April 25, 2007, Product Number: 907M15-PDF-ENG, *Source*: Ivey Publishing, hbsp.harvard.edu.

Subjects covered: Business Strategy, Analyzing Strategic Options, Managing alliances, International Business.

Polycom's Acquisition Process, Michael A. Roberto, Gina M. Carioggia, Publication Date: June 2, 2005, Product Number: 304040-PDF-ENG, *Source*: Harvard Business School, hbsp.harvard.com.

Subjects covered: Business and Acquisition Plan Development, Target Selection, Decision Making, Resource Management.

The Learning Co., James Henderson, Revision Date: December 7, 2004, Product Number: BAB050-PDF-ENG, *Source*: Babson College, hbsp.harvard.edu.

Subjects covered: Industry Analysis, Strategy Formulation, Mergers.

Implementation: Search Through Closing

Phases 3–10 of the Acquisition Process

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A man that is very good at making excuses is probably good at nothing else. — Ben Franklin

INSIDE M&A: STRUGGLING JOHNSON CONTROLS AND TYCO MERGE TO CREATE A MORE FOCUSED GLOBAL BUSINESS

KEY POINTS

- Having a clear business strategy makes target selection easier.
- Approaching the target firm at the appropriate time with a compelling vision for the combined firms increases the probability of reaching a deal.
- Friendly acquisitions often offer the greatest potential for synergy and shareholder wealth creation by promoting cooperation.

Continuing a long-term trend, many companies have been narrowing their product and market focus in an effort to make their businesses easier to manage and for investors to understand. The shares of more focused firms often tend to trade at a higher price-to-earnings multiple than those that are highly diversified. Tyco International Plc (Tyco) and Johnson Controls Inc. are recent examples of firms attempting to boost their share prices in this manner. Both firms were pursuing business strategies that involved attempting to achieve greater focus while leveraging their resources.

Tyco, at one time a high-flying conglomerate, had been restructuring its operations for years to become a global company offering security systems and fire suppression equipment. With annual sales of \$10 billion in 2015, Tyco is a shadow of its conglomerate days in the 1990s. The firm has been downsizing for years by selling or spinning off such business as electronic components and surgical equipment to become the world's largest “pure-play” fire protection and security systems company. Similarly, Johnson Controls, maker of systems to optimize energy use in buildings and car batteries and seat components, with annual sales of \$37 billion, seeking to reinvigorate earnings growth and to narrow its product offering, announced in 2015 that it would spin off Adient. Adient is its slow-growing automotive business, which at one time accounted for as much as two-thirds of Johnson Controls' annual revenue.

Despite these efforts, the share prices of both firms had underperformed the overall stock market in recent years making it clear to their boards of directors that more had to be done. On January 25, 2016, Johnson Controls announced that it had reached an agreement to merge with Tyco in a deal valued at about \$15 billion. The new firm will have \$32 billion in annual

revenue and earnings before interest, taxes, depreciation and amortization (EBITDA) of \$4.5 billion before synergies (but including the planned spin-off of Adient) on a proforma basis.¹

Tyco's CEO, George Oliver, initially contacted Mr. Alex Molinaroli, CEO of Johnson Controls, about structuring a smaller deal involving the Johnson Control's systems controls business. By October, discussions between the two firms had escalated to a merger involving the two firms. The two CEOs believe that together the firms could leverage their combined resources. How? By offering packages of products and services consisting of fire, security, heating and air conditioning, power solutions, and energy storage controls and systems to serve various end markets including large institutions, commercial buildings, retail, industrial, small business, and residential.

The expected benefits of the transaction included additional revenue growth by selling complementary products to each firm's customer groups, \$500 million in annual pretax cost savings, and \$150 million in annual tax savings resulting from moving the combined firm's headquarters from the United States to Ireland in what is known as a corporate inversion.² The \$500 million in operating synergies is to be achieved by increasing efficiencies, eliminating redundancies, integrating the global branch networks, and realizing the economies of scale associated with an over \$20-billion buildings' business.

On completion of the merger, the new firm will be renamed Johnson Controls Plc, with the firm's legal domicile and global headquarters in Cork, Ireland. Operational headquarters are in Milwaukee, WI, where Johnson Controls had its headquarters. Both Johnson Controls and Tyco shareholders will receive shares of Adient (Johnson Controls automotive business) following its spin-off in 2017.

CHAPTER OVERVIEW

Much can be learned from acquirers with a successful track record who have established a discipline that increases the likelihood that they will achieve their goals in future deals. As such, the chapter begins with a discussion of the characteristics of high-performing acquirers (HPAs) to provide a context for the subsequent discussion of Phases 3–10 of the acquisition process: search, screening, first contact, negotiation, integration planning, closing, postmerger integration, and evaluation.

Once a firm has a viable business plan (Phase 1), it must determine the appropriate implementation strategy (Phase 2). This chapter assumes the firm requires an acquisition to execute its business plan. A review of this chapter (including practice questions and answers) is contained in the file folder entitled Student Study Guide on the companion site to this book (<https://www.elsevier.com/books-and-journals/book-companion/9780128016091>). The companion site also contains a comprehensive due diligence question list.

¹Proforma basis refers to the illustration of how the two companies' financial statements would look hypothetically if combined.

²This deal is the 12th inversion undertaken by US firms since the US Department of the Treasury attempted to curb such deals through new regulations in September 2014. Johnson Controls and Tyco structured their deal to reap maximum tax benefits. With Johnson Controls investors owning less than 60% of the combined company, the firms side stepped regulations that might have made the deal less attractive. See Chapter 12 for more detail on inversions.

CHARACTERISTICS OF HIGH-PERFORMING ACQUIRERS

McKinsey & Company's 2015 Global Survey of merger and acquisition (M&A) practices and capabilities defines "HPAs" as respondents who describe themselves as having met or surpassed targets for both cost and revenue synergies in their transactions of the past 5 years. Typically, HPAs more frequently review their portfolio of new opportunities, move more quickly through deal negotiation and due diligence, and better manage cultural differences across organizations and the realization of synergy. However, most respondents feel they could do a better job in balancing incentives among different stakeholders in the process.³

While many firms report reviewing their investment opportunities for acquisitions, joint ventures, and divestitures at least once annually, HPAs tend to do so more often. More frequent reviews enable HPAs to stay abreast of changing market dynamics and to seize opportunities on a timelier basis. For example, with the pace of M&As reaching record levels in recent years, the attractiveness of firms cited previously as potential targets may change as their market valuations increase. If the opportunity arises, it is important to move quickly rather than to simply react after a competitor has already made an offer for the firm.

HPAs also differentiate themselves from their peers in how they manage deal negotiation and due diligence. Deal negotiation includes the elapsed time from a nondisclosure agreement to a binding offer. HPAs tend to move through these activities in less than 6 months while low performers tend to take longer. The longer it takes to get a binding offer, the greater the likelihood of an information leak and for uncertainty to grow among investors, employees, customers, and suppliers. Lengthy and highly intrusive due diligences can have similar impacts. Investor speculation can boost the target's share price and in turn the acquisition cost; employee anxiety about their futures within the combined firms can cause key employees to leave; and customers uncertain about future selling prices, product quality, and delivery times seek alternative suppliers.

Finally, HPAs tend to be more effective in managing cultural differences across the organizations and in setting and realizing synergy targets. Improperly handling cultural differences can result in a mass exodus of key employees, slumping productivity of those who remain, and a decline in customer service. The net effect of these impacts is to increase operating costs, contribute to customer attrition, and erode profits. Setting unrealistic synergy targets can result in the need to take corrective actions at a later date due to excessive layoffs or a too rapid integration of information technology (IT) and customer service functions, leading to growing customer dissatisfaction. Moreover, employees may become demotivated and leave if they feel they cannot perform to the expectations of the new owner. While this may contribute to realizing cost synergies in the short term, it can also increase costs in the longer term due to hiring and training costs associated with new employees.

Most survey respondents felt they could do a better job in balancing stakeholder incentives between the need to complete the deal on a timely basis and the desire to smoothly and efficiently integrate the businesses following closing. Those having a stake in the closing of the deal often are different from those who have to integrate the firms postclosing. Highly acquisitive firms often have extremely professional "in-house" M&A teams whose primary

³Doherty et al. (2015)

incentive is to get a deal, albeit within the terms demanded by senior management and the board. In contrast, the “deal owners” or the team expected to manage the business following closing has an incentive to build relationships with employees in the acquired firm to gain cooperation and information sharing. The two incentives can be at odds. The M&A team may seek to uncover as many “synergy opportunities” as possible to justify paying a higher price to close the deal. However, a higher purchase price makes realizing the desired financial return on invested assets that much more difficult for the postmerger management team. Why? They must realize even greater revenue gains and cost reductions to recover the premium paid. This may involve wholesale layoffs and, if possible, renegotiation of supplier and customer contracts to get better terms. While this may help profits in the short run, it can be deleterious to longer-term performance.

PHASE 3: THE SEARCH PROCESS

The first step in searching for acquisition candidates is to establish a small number of primary selection criteria, including the industry and the size of the transaction. Deal size is best defined in terms of the maximum purchase price a firm is willing to pay, expressed as a maximum price-to-earnings ratio, book, cash flow, or revenue ratio, or a maximum purchase price stated in terms of dollars. It also may be appropriate to limit the search to a specific geographic area.

Consider a private acute care hospital holding company that wants to buy a skilled nursing facility within 50 miles of its largest hospital in Allegheny County, PA. Management believes it cannot afford to pay more than \$45 million for the facility. Its primary selection criteria could include an industry (skilled nursing), a location (Allegheny County, PA), and a maximum price (five times cash flow, not to exceed \$45 million). Similarly, a Texas-based manufacturer of patio furniture with manufacturing operations in the southwestern United States seeks to expand its sales in California. The company decides to try to find a patio furniture manufacturer that it can purchase for no more than \$100 million. Its primary selection criteria could include an industry (outdoor furniture), a geographic location (California, Arizona, and Nevada), and a maximum purchase price (10 times operating earnings, not to exceed \$100 million).

The next step is to search available computerized databases using the selection criteria. Common databases and directory services include Disclosure, Dun & Bradstreet, Standard & Poor’s Corporate Register, and Capital IQ. Firms also may query their law, banking, and accounting firms to identify other candidates. Investment banks, brokers, and leveraged buy-out firms are also fertile sources of potential candidates, although they are likely to require an advisory or finder’s fee. Google Finance, Yahoo! Finance, Hoover’s, and EDGAR Online enable analysts to obtain data quickly about competitors and customers. These sites provide easy access to a variety of documents filed with the Securities and Exchange Commission. [Exhibit 5.1](#) provides a comprehensive listing of alternative information sources.

If confidentiality is not an issue, a firm may advertise its interest in acquiring a particular type of firm in the *Wall Street Journal* or the trade press. While likely to generate interest, it is less likely to produce high-quality prospects. Rather, it will probably result in a lot of responses from those interested in getting a free valuation of their own company or from

EXHIBIT 5.1 INFORMATION SOURCES ON INDIVIDUAL COMPANIES

SEC Filings (Public Companies Only)

10-K. Provides detailed information on a company's annual operations, business conditions, competitors, market conditions, legal proceedings, risk factors in holding the stock, and other, related information.

10-Q. Updates investors about the company's operations each quarter.

S-1. Filed when a company wants to register new stock. Can contain information about the company's operating history and business risks.

S-2. Filed when a company is completing a material transaction, such as a merger or acquisition. Provides substantial detail underlying the terms and conditions of the transaction, the events surrounding the transaction, and justification for the merger or acquisition.

8-K. Filed when a company faces a "material event," such as a merger.

Schedule 14A. A proxy statement. Gives details about the annual meeting and biographies of company officials and directors including stock ownership and pay.

Websites

www.aol.com

www.bizbuysell.com

www.capitaliq.com

www.dialog.com

www.edgar-online.com

<http://edgarscan.pwcglobal.com/serviets.edgarscan>

www.factset.com

<http://finance.yahoo.com>

www.freeedgar.com

www.hooversonline.com

www.lexisnexis.com

www.mergernetwork.com

www.mergers.net

www.onesource.com

www.quicken.com

www.sec.gov

www.washingtonresearchers.com

www.worldm-anetwork.com

Organizations

Value Line Investment Survey: Information on public companies

Directory of Corporate Affiliations: Corporate affiliations

LexisNexis: Database of general business and legal information

Thomas Register: Organizes firms by products and services

Frost & Sullivan: Industry research

Findex.com: Financial information
 Competitive Intelligence Professionals: Information about industries
 Dialog Corporation: Industry databases
 Wards Business Directory of US and public companies
 Predicasts: Provides databases through libraries
 Business Periodicals Index: Business and technical article index
 Dun & Bradstreet Directories: Information about private and public companies
 Experian: Information about private and public companies
 Nelson's Directory of Investment Research: Wall Street research reports
 Standard & Poor's Publications: Industry surveys and corporate records
 Harris Infosource: Information about manufacturing companies
Hoover's Handbook of Private Companies: Information on large private firms
 Washington Researchers: Information on public and private firms, markets, and industries
 The *Wall Street Journal* Transcripts: Wall Street research reports
 Directory of Corporate Affiliations (published by LexisNexis Group)

brokers claiming that their clients fit the buyer's criteria, as a ruse to convince you that you need the broker's services.⁴

Finding reliable information about privately owned firms is a major problem. Sources such as Dun & Bradstreet and Experian may only provide fragmentary data. Publicly available information may offer additional details. For example, surveys by trade associations or the US Census Bureau often include industry-specific average sales per employee. A private firm's sales can be estimated by multiplying this figure by an estimate of the firm's workforce, which may be obtained by searching the firm's product literature, website, or trade show speeches or even by counting the number of cars in the parking lot during each shift.

Credit rating agencies, independent firms that assign a rating to a firm's ability to repay its debt, provide an independent assessment of the viability of both publicly traded and privately owned firms. Information about rated firms may be available on the rating agency's website or through a paid subscription. Studies show that acquirers of target firms are less likely to overpay because of access to financial information used by the rating agencies. Rated targets receive lower premiums and generate higher acquirer postmerger returns than nonrated firms.⁵

The IPO market can expedite the search process by providing information about private firms, especially in the absence of any significant publicly available information. By scouring the prospectus accompanying an IPO, it is possible to gain insights into how other private firms similar to the one that had "gone public" operate as well as their potential growth prospects. Also, the resulting price to sales, profit, or cash flow multiples associated with the IPO can be applied to similar private firms in order to estimate their fair market value.⁶

⁴It is important to respond in writing if you receive a solicitation from a broker or finder, particularly if you reject their services. If at a later date you acquire the firm they claim to have represented, the broker or finder may sue your firm for compensation.

⁵Jory et al. (2016).

⁶Aktas et al. (2016)

Increasingly, companies—even midsize firms—are moving investment banking “in-house.” Rather than use brokers or so-called “finders”⁷ as part of their acquisition process, they are identifying potential targets, doing valuation, and performing due diligence on their own. This reflects efforts to save on investment banking fees, which can easily be more than \$5 million plus expenses on a \$500-million transaction.⁸

PHASE 4: THE SCREENING PROCESS

The screening process is a refinement of the initial search process. It begins by pruning the initial list of potential candidates created using the primary criteria discussed earlier. Because relatively few primary criteria are used, the initial list may be lengthy. It can be shortened using secondary selection criteria, but care should be taken to limit the number of these criteria. An excessively long list of selection criteria will severely limit the number of candidates that pass the screening process. The following selection criteria should be quantified whenever possible.

Market Segment: A lengthy list of candidates can be shortened by identifying a subsegment of a target market. For example, a manufacturer of flat rolled steel coils wishes to move up the value chain by acquiring a steel fabricated products company. While the primary search criterion could be for United States–based steel fabricating firms, a secondary criterion could stipulate segmenting the market further to target only those firms making steel tubing.

Product Line: The product line criterion identifies a specific product line within the target market segment. The same flat rolled steel coils manufacturer may decide to focus its search on companies manufacturing steel tubular products used for lawn and patio furniture.

Profitability: Profitability should be defined in terms of the percentage return on sales, assets, or total investment. This allows a more accurate comparison among candidates of different sizes. A firm with operating earnings of \$5 million on sales of \$100 million may be less attractive than a firm with \$3 million in operating income on sales of \$50 million because the latter firm may be more efficient.

Degree of Leverage: Debt-to-equity or debt-to-total capital ratios are used to measure the level of leverage or indebtedness. The acquiring company may not want to purchase a

⁷A *broker* has a fiduciary responsibility to either the potential buyer or the seller and is not permitted to represent both parties. Compensation is paid by the client to the broker. A *finder* is someone who introduces both parties but represents neither party. The finder has no fiduciary responsibility to either party and is compensated by either one or both parties.

⁸Actual fee formulas are most often based on the purchase price. The so-called Lehman formula was at one time a commonly used fee structure; in it, broker or finder fees would be equal to 5% of the first \$1 million of the purchase price, 4% of the second, 3% of the third, 2% of the fourth, and 1% of the remainder. Today, this formula is often ignored in favor of a negotiated fee structure consisting of a basic fee (or retainer) paid regardless of whether the deal is consummated, an additional closing fee paid on closing, and an “extraordinary” fee paid under unusual circumstances that may delay the eventual closing, such as gaining antitrust approval or achieving a hostile takeover. Fees vary widely, but 1% of the total purchase price plus reimbursement of expenses is often considered reasonable. For small deals, the Lehman formula may apply.

firm whose debt burden may cause the combined company's leverage ratios to jeopardize its credit rating.

Market Share: The acquiring firm may be interested only in firms that are number 1 or 2 in market share in the targeted industry or in firms whose market share is some multiple (e.g., $2 \times$ the next-largest competitor).⁹

Cultural Compatibility: Insights into a firm's corporate culture can be obtained from public statements about the target's vision for the future and its governance practices as well as its reputation as a responsible corporate citizen. Examining employee demographics reveals much about the diversity of a firm's workforce.¹⁰ Finally, an acquirer needs to determine whether it can adapt to the challenges of dealing with foreign firms such as different languages and customs.

Age of CEO or Controlling Shareholder: Like many things in life, timing often is everything. For public firms, CEOs are more inclined to support an offer to buy their firms if they are at or close to retirement age. Why? Because target firm CEOs are generally unlikely to find a position with the acquirer and have less to lose since they are about to retire.¹¹ For privately owned firms, the age of the founder or controlling shareholder often is an important determinant of when a firm is likely to be willing to sell. If there is not a likely successor, the firm may be more receptive to an offer to buy the firm.

Simply satisfying the search/screening process does not ensure that a firm will pursue an attractive candidate. The firm's approval process may require consensus among the firm's board members and senior managers and the decision to make contact with a potential target firm may become mired in internal politics. Board members may have different priorities or perceptions. Some may feel that they will be not be included in a merger in which the target and acquirer boards are merged. Disagreement among key managers also may arise if some feel that their positions may be threatened. Others may feel that they may personally benefit more from the acquisition of an alternative target firm. The determination of what takeover candidates a firm pursues may ultimately depend on the firm's ability to resolve these internal political issues to reach consensus among key decision makers. Such consensus often is critical to the successful integration of the acquiring and target firms. Without it, organizations may reject attractive opportunities.¹²

PHASE 5: FIRST CONTACT

Using both the primary and secondary selection criteria makes it possible to bring the search to a close and to begin the next part of the acquisition planning process, first contact. For each target firm, it is necessary to develop an approach strategy in which the potential

⁹Firms that have substantially greater market share than their competitors often are able to achieve lower-cost positions than their competitors because of economies of scale and experience curve effects.

¹⁰America Online's 2001 acquisition of Time Warner highlighted how difficult it can be to integrate a young, heterogeneous employee population with a much older, more homogeneous group. Also, as a much newer firm, AOL had a much less structured management style than was found in Time Warner's more staid environment.

¹¹Jenter and Lewellen (2015).

¹²Angwin et al. (2015).

acquirer develops a profile of each firm to be contacted in order to outline the reasons the target firm should consider an acquisition proposal. Such reasons could include the need for capital, a desire by the owner to “cash out,” and succession planning issues.

Research efforts should extend beyond publicly available information and include interviews with customers, suppliers, ex-employees, and trade associations in an effort to understand better the strengths, weaknesses, and objectives of potential target firms. Insights into management, ownership, performance, and business plans help provide a compelling rationale for the proposed acquisition and heighten the prospect of obtaining the target firm’s interest.

How initial contact is made depends on the size of the company, whether the potential acquirer has direct contacts with the target, whether the target is publicly or privately held, and the acquirer’s time frame for completing a transaction. The last factor can be extremely important. If time permits, there is no substitute for developing a personal relationship with the sellers—especially if the firm is privately held. Developing a rapport often makes it possible to acquire a company that is not thought to be for sale. Personal relationships must be formed only at the highest levels within a privately held target firm. Founders or their heirs often have a strong paternalistic view of their businesses, whether they are large or small. Such firms often have great flexibility in negotiating a deal that “feels right” rather than simply holding out for the highest possible price. In contrast, personal relationships can go only so far when negotiating with a public company that has a fiduciary responsibility to its shareholders to get the best price. If time is a critical factor, acquirers may not have the luxury of developing personal relationships with the seller. Under these circumstances, a more expeditious approach must be taken.

For small companies with which the buyer has no direct contacts, it may only be necessary to initiate contact through a vaguely worded letter expressing interest in a joint venture or marketing alliance. During the follow-up telephone call, be prepared to discuss a range of options with the seller. Preparation before the first telephone contact is essential. If possible, script your comments. Get to the point quickly but indirectly. Identify yourself, your company, and its strengths. Demonstrate your understanding of the contact’s business and how an informal partnership could make sense. Be able to explain the benefits of your proposal to the contact—quickly and succinctly. If the opportunity arises, propose a range of options, including an acquisition. Listen carefully to the contact’s reaction. If the contact is willing to entertain the notion of an acquisition, request a face-to-face meeting.¹³

Whenever possible, use a trusted intermediary to make contact, generally at the highest level possible in the target firm. In some instances, the appropriate contact is the most senior manager, but it could be a disaffected large shareholder. Intermediaries include members of the acquirer’s board of directors or the firm’s outside legal counsel, accounting firm, lender, broker/finder, or investment banker. Intermediaries can be less intimidating than if you take a direct approach. When firms have a common board member, empirical research suggests

¹³To ensure confidentiality, choose a meeting place that provides sufficient privacy. Create a written agenda for the meeting after soliciting input from all participants. The meeting should start with a review of your company and your perspective on the outlook for the industry. Encourage the potential target firm to provide information on its own operations and its outlook for the industry. Look for areas of consensus. After the meeting, send an email to the other party highlighting what you believe was accomplished, and then await their feedback.

that the likelihood of a deal closing is greater and the duration of the negotiation is usually shorter.¹⁴ Why? Direct or common connections enable both parties to gather information about the other party more easily that tends to promote trust. However, a high degree of familiarity between board members and senior management of the acquirer and target firms can lower announcement date acquirer financial returns if it causes cronyism resulting in less objective analysis and flawed decision making. There is evidence that in the presence of significant social ties there is a greater likelihood that the target's CEO and a larger fraction of the target's preacquisition board will remain on the board of the combined firms after the merger.¹⁵

For public companies, making contact at the highest level possible is extremely important. Discretion is critical because of the target's concern about being "put into play"—that is, circumstances suggest that it may be an attractive investment opportunity for other firms. Even rumors of an acquisition can have adverse consequences for the target, as customers and suppliers express concern about a change of ownership and key employees leave concerned about an uncertain future. Such a change could imply variation in product or service quality, reliability, and the level of service provided under product warranty or maintenance contracts. Suppliers worry about possible disruptions in their production schedules as the transition to the new owner takes place. Employees worry about possible layoffs or changes in compensation.¹⁶ Shareholders may experience a dizzying ride as arbitrageurs, buying on the rumor, bid up the price of the stock, only to bail out if denial of the rumor appears credible.

Discussing Value

Neither the buyer nor the seller has any incentive to be the first to provide an estimate of value. It is difficult to back away from a number put on the table by either party should new information emerge. Getting a range may be the best you can do. Discussing values for recent acquisitions of similar businesses is one way to get a range. Another is to agree to a formula for calculating the purchase price. The purchase price may be defined in terms of a price to current year operating earnings multiple, enabling both parties to perform due diligence to reach a consensus on the actual current year's earnings for the target firm. The firm's current year's earnings are then multiplied by the previously agreed-on price-to-earnings multiple to estimate the purchase price.

Preliminary Legal Transaction Documents

Typically, parties to M&A transactions negotiate a confidentiality agreement, a term sheet, and a letter of intent (LOI) early in the process. These are explained next.

Confidentiality Agreement

All parties to the deal usually want a confidentiality agreement (also called a nondisclosure agreement), which is generally mutually binding—that is, it covers all parties to the

¹⁴Renneboog and Zhao (2013).

¹⁵Ishii and Xuan (2014).

¹⁶Competitors will do what they can to fan these concerns in an effort to persuade current customers to switch and potential customers to defer buying decisions; key employees will be encouraged to defect to the competition.

transaction. In negotiating the agreement, the buyer requests as much audited historical data and supplemental information as the seller is willing to provide. The prudent seller requests similar information about the buyer to assess the buyer's financial credibility. The seller should determine the buyer's credibility as soon as possible so as not to waste time with a potential buyer incapable of raising the financing to complete the transaction. The agreement should cover only information that is not publicly available and should have a reasonable expiration date.¹⁷

Term Sheet

A term sheet outlines the primary areas of agreement and is often used as the basis for a more detailed LOI. A standard term sheet is two to four pages long and stipulates the total consideration or purchase price (often as a range), what is being acquired (i.e., assets or stock), limitations on the use of proprietary data, a no-shop provision preventing the seller from sharing the terms of the buyer's bid with other potential buyers, and a termination date. Many transactions skip the term sheet and go directly to negotiating an LOI.

Letter of Intent

Unlike the confidentiality agreement, not all parties to the deal may want an LOI. While the LOI can be useful in identifying areas of agreement and disagreement early in the process, the rights of all parties to the transaction, and certain protective provisions, it may delay the signing of a definitive purchase agreement and may also result in some legal risk to either the buyer or the seller if the deal is not consummated. Public companies that sign an LOI for a transaction that is likely to have a "material" impact on the buyer or seller may need to announce the LOI publicly to comply with securities law.

The LOI formally stipulates the reason for the agreement and major terms and conditions. It also indicates the responsibilities of both parties while the agreement is in force, a reasonable expiration date, and how all fees associated with the transaction will be paid. Major terms and conditions include a deal structure outline such as the payment of cash or stock for certain assets and the assumption of certain target company liabilities. The letter may also include an agreement that selected personnel of the target will not compete with the combined companies for some period should they leave. Another condition may indicate that a certain portion of the purchase price will be allocated to the noncompete agreement.¹⁸ The LOI also may place a portion of the purchase price in escrow. The proposed purchase price may be expressed as a specific dollar figure, as a range, or as a multiple of some measure of value, such as operating earnings or cash flow. The LOI also specifies the types of data to be exchanged and the duration and extent of the initial due diligence. It terminates if the buyer and seller do not reach agreement by a certain date. Legal, consulting, and asset transfer fees (i.e., payments made to governmental entities when ownership changes hands) may be paid for by the buyer or the seller, or they may be shared.

¹⁷The confidentiality agreement can be negotiated independently or as part of the term sheet or LOI.

¹⁸Such an allocation of the purchase price is in the interests of the buyer because the amount of the allocation can be amortized over the life of the agreement. As such, it can be taken as a tax-deductible expense. However, it may constitute taxable income for the seller.

A well-written LOI usually contains language limiting the extent to which the agreement binds the two parties. Price or other provisions are generally subject to closing conditions, such as the buyers having full access to all of the seller's books and records; having completed due diligence; having obtained financing; and having received approval from boards of directors, stockholders, and regulatory bodies. Other standard conditions include requiring signed employment contracts for key target firm executives and the completion of all necessary M&A documents. Failure to satisfy any of these conditions will invalidate the agreement. The LOI should also describe the due diligence process in some detail, stipulating how the buyer should access the seller's premises, the frequency and duration of such access, and how intrusive such activities should be.

PHASE 6: NEGOTIATION

The negotiation phase often is the most complex aspect of the acquisition process. It is during this phase that the actual purchase price paid for the acquired business is determined, and often it will be quite different from the initial target company valuation. In this section, the emphasis is on negotiation in the context of problem solving or interest-based bargaining, in which parties look at their underlying interests rather than simply stating positions and making demands. In most successful negotiations, parties to the transaction search jointly for solutions to problems. All parties must be willing to make concessions that satisfy their own needs as well as the highest-priority needs of the others involved in the negotiation.

The party to the negotiations with access to the most reliable information often has a definite advantage in the process. For this reason, acquirers hiring a target's former investment bankers appear to benefit from information they possess. Such acquirers tend to pay lower premiums and receive a larger portion of merger synergies, while target shareholders are less likely to receive competing bids and often earn lower abnormal financial returns. About 10% of acquirers hire target firm ex-investment bankers as advisors despite the potential for being sued for conflicts of interest.¹⁹

The negotiation phase consists of four iterative activities that may begin at different times but tend to overlap (Fig. 5.1). Due diligence starts as soon as the target is willing to allow it and, if permitted, runs throughout the negotiation process. Another activity is refining the preliminary valuation based on new data uncovered as part of due diligence, enabling the buyer to understand the target's value better. A third activity is deal structuring, which involves meeting the most important needs of both parties by addressing issues of risk and reward. The final activity, the financing plan, provides a reality check for the buyer by defining the maximum amount the buyer can expect to finance and, in turn, pay for the target company. These activities are detailed next.

Refining Valuation

The starting point for negotiation is to update the preliminary target company valuation based on new information. A buyer usually requests at least 3–5 years of historical financial

¹⁹Chang et al. (2016).

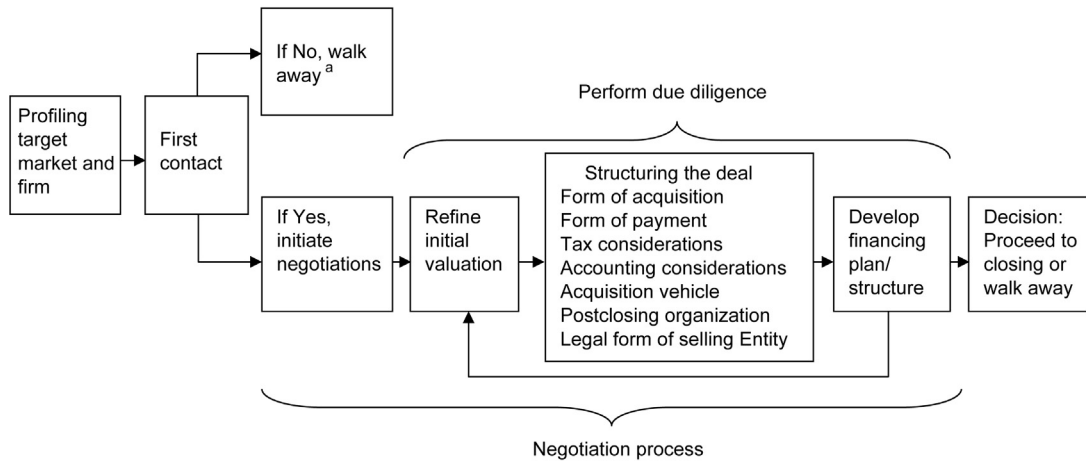


FIGURE 5.1 Viewing negotiation as a process. ^aAlternatively, the potential buyer could adopt a more hostile approach, such as initiating a tender offer to achieve a majority stake in the firm or a proxy contest to change the composition of the target’s board or to eliminate defenses.

data. While it is desirable to examine data audited in accordance with Generally Accepted Accounting Principles, such data may not be available for small, privately owned companies. Moreover, start-up firms are unlikely to have any significant historical data as well.

The historical data should be normalized, or adjusted for nonrecurring gains, losses, or expenses.²⁰ Such adjustments allow the buyer to smooth out irregularities to understand the dynamics of the business. Each major expense category should be expressed as a percentage of revenue. By observing year-to-year changes in these ratios, trends in the data are more discernible.

Deal Structuring

Deal structuring is the process of identifying and satisfying as many of the highest-priority objectives of the parties involved in the transaction as possible. The process begins with each party determining its own initial negotiating position, potential risks, options for managing risk, risk tolerance, and conditions under which either party will “walk away” from the negotiations. Deal structuring also entails understanding potential sources of disagreement—from simple arguments over basic facts to substantially more complex issues, such as the form of payment and legal, accounting, and tax structures. It also requires identifying conflicts of interest that can influence the outcome of discussions. For example, when a portion of the purchase price depends on the long-term performance of the acquired business, its management—often the former owner—may not behave in a manner that serves the acquirer’s best interests.

²⁰Nonrecurring gains or losses can result from the sale of land, equipment, product lines, patents, software, or copyrights. Nonrecurring expenses include severance payments, employee signing bonuses, and settlements of litigation.

Decisions made throughout the deal-structuring process influence various attributes of the deal, including how ownership is determined, how assets are transferred, how ownership is protected (i.e., governance), and how risk is apportioned among parties to the transaction. Other attributes include the type, number, and complexity of the documents required for closing; the types of approvals required; and the time needed to complete the transaction. These decisions will influence how the combined companies will be managed, the amount and timing of resources committed, and the magnitude and timing of current and future tax liabilities.

The deal-structuring process can be viewed as comprising a number of interdependent components, including the acquisition vehicle, postclosing organization, legal form of the selling entity, form of payment, form of acquisition, and tax and accounting considerations. The acquisition vehicle refers to the legal structure (e.g., corporation or partnership) used to acquire the target company. The postclosing organization is the organizational and legal framework (e.g., corporation or partnership) used to manage the combined businesses following the completion of the transaction. The legal form of the selling entity refers to whether the seller is a C or Subchapter S Corporation, a limited liability company, or a partnership.

The form of payment may consist of cash, common stock, debt, or some combination. Some portion of the payment may be deferred or be dependent on the future performance of the acquired entity. The form of acquisition reflects what is being acquired (e.g., stock or assets) and how ownership is being transferred. As a general rule, a transaction is taxable if remuneration paid to the target company's shareholders is primarily something other than the acquirer's stock, and it is nontaxable (i.e., tax deferred) if what they receive is largely acquirer stock. Finally, accounting considerations refer to the potential impact of financial reporting requirements on the earnings volatility of business combinations, due to the need to revalue acquired assets periodically to their fair market value as new information becomes available. Fair market value is what a willing buyer and seller, having access to the same information, would pay for an asset.²¹

Conducting Due Diligence

Due diligence is an exhaustive review of records and facilities and typically continues throughout the negotiation phase. Although some degree of protection is achieved through a well-written contract, legal documents should never be viewed as a substitute for conducting formal due diligence. Remedies for violating contract representations and warranties often require litigation, with the outcome uncertain. Due diligence may help to avoid the need for costly litigation by enabling the acquirer to identify and value target liabilities and to adjust the purchase price paid at closing accordingly. As such, reliance on contract remedies to recover M&A-related costs may be reduced because there are likely to be fewer surprises.²²

²¹Changes in the value of assets and liabilities can result in one-time gains or losses recorded on the income statement thereby contributing to swings in earnings. For a more detailed discussion of how to structure M&A transactions, see DePamphilis (2010b).

²²Even if the acquirer was to win its lawsuit, receiving remuneration for breach of contract may be impossible if the seller declares bankruptcy, disappears, or moves assets to offshore accounts.

TABLE 5.1 Convenient Information Sources for Conducting Due Diligence

Web address	Content
Securities and Exchange Commission www.sec.gov http://www.sec.gov/litigation.shtml	Financial information/security law violations Public filings for almost 10 years available through the Edgar database Enforcement actions
US Patent Office www.uspto.gov www.uspto.gov/patft/index.html	Intellectual property rights information Search patent database if you have the patent number
Federal Communications Commission www.fcc.gov http://www.fcc.gov/searchtools.html	Regulates various commercial practices General information Access to database of individuals sanctioned for illegal marketing practices
US and State Attorneys General Offices http://www.naag.org/ag/full_ag_table.php	Information on criminal activities Listing of state attorneys general
Better Business Bureau (BBB) http://search.bbb.org/search.html	Compiles consumer complaints database
Paid Services US Search (www.ussearch.com) KnowX (www.knowx.com)	Information on: Criminal violations Liens/bankruptcies Credit history Litigation

The failure to do an exhaustive due diligence can be disastrous. Technology giant, Hewlett-Packard, claimed in 2012 that it had been duped into overpaying for its acquisition of UK software maker Autonomy in October 2011. HP wrote off \$5 billion of the \$11.1 billion it had paid for the firm alleging the seller engaged in “outright misrepresentations” in the agreement of purchase and sale signed by the two parties. Similarly, shoddy due diligence failed to uncover certain potential liabilities when Facebook acquired virtual reality headset maker Oculus in 2014 for \$3 billion. ZeniMax Media sued Facebook for theft of trade secrets alleging Oculus had misused certain information when it hired former ZeniMax employees who had been covered under a nondisclosure agreement not to divulge ZeniMax’s intellectual property.

Table 5.1 lists convenient online sources of information that are helpful in conducting due diligence.²³ While due diligence is most often associated with buyers, both sellers and lenders will also conduct due diligence.²⁴

An expensive and exhausting process, due diligence is highly intrusive, and it places considerable demands on managers’ time and attention. Frequently, the buyer wants as much time as possible, while the seller will want to limit the length and scope. Due diligence rarely works to the advantage of the seller because a long and detailed due diligence is likely to uncover items the buyer will use as a reason to lower the purchase price. Consequently, sellers may seek to terminate due diligence before the buyer feels it is appropriate. If the target firm succeeds in reducing the amount of information disclosed to the target firm, it can expect to

²³ A detailed preliminary acquirer due diligence question list is provided on the companion site to this book.

²⁴ For a detailed discussion of the due diligence process and best practices, see Selim (2003).

be required to make more representations and warranties as to the accuracy of its claims and promises in the purchase and sale agreement.

There is evidence that acquirer and target firms choosing a common auditor to perform due diligence reduce potential conflicts of interest and deal uncertainty. When common auditors are used, both the acquiring and target firms split the auditor's fees thereby reducing the potential for the auditor to show favoritism to the party paying them the most. Auditing firms often have different ways of interpreting data and applying accounting rules. Auditors representing both parties can ensure that available data and accounting standards are applied consistently leading to a reduction in uncertainty. Finally, auditors auditing both parties face greater litigation risk as the common auditor may be sued for earnings misreporting by either the acquirer or the target. Arguably, the common auditor has a greater incentive to limit misreporting of information. There is, however, conflicting evidence under special circumstances where shared auditor deals (about 25% involving publicly traded firms) does appear to favor acquirers, specifically when both the acquirer and the target share an auditor from the same practice office and when the target is small. It is unclear whether this information "leak" is intentional or is simply passed inadvertently through informal conversations.²⁵

The Components of Due Diligence

Due diligence consists of three primary reviews; they often occur concurrently. The *strategic and operational review* conducted by senior operations and marketing management asks questions that focus on the seller's management team, operations, and sales and marketing strategies. Senior managers should confirm that the proposed deal indeed supports the realization of the firm's business strategy. The *financial review*, directed by financial and accounting personnel, focuses on the quality, timeliness, and completeness of the seller's financial statements. That is, CFOs generally agree that high-quality financial statements are those recorded in a consistent manner over time, are supported by actual cash flows, are not subject to frequent or significant one-time adjustments, and whose earnings are sustainable.²⁶ The financial review also confirms that the anticipated synergies are real and can be achieved within a reasonable time frame. A *legal review*, which is conducted by the buyer's legal counsel, deals with corporate records, financial matters, management and employee issues, tangible and intangible assets of the seller, and material contracts and obligations of the seller such as litigation and claims. Due diligence requires the creation of comprehensive checklists (see website accompanying this book for such a checklist). The interview process provides invaluable sources of information. By asking the same questions of a number of key managers, the acquirer is able to validate the accuracy of its conclusions.

Buyer, Seller, and Lender Due Diligence

Buyers use due diligence to validate assumptions underlying their preliminary valuation and to uncover new sources of value and risk. Key objectives include identifying and confirming sources of value or synergy and mitigating real or potential liability by looking for fatal flaws that reduce value. From the perspective of the buyer's attorney, the due

²⁵Dhaliwal et al. (2016).

²⁶Dichev et al. (2013).

diligence review represents an opportunity to learn about the target firm in order to allocate risk properly among the parties to the negotiation, to unearth issues that reduce the likelihood of closing, and to assist their client in drafting the reps and warranties for the acquisition agreement. Table 5.2 categorizes potential sources of value from synergy that may be uncovered or confirmed during due diligence and the impact these may have on operating performance.

Although the bulk of due diligence is performed by the buyer on the seller, the prudent seller should also perform due diligence on the buyer and on its own personnel and operations. By investigating the buyer, the seller can determine whether the buyer has the financial wherewithal to finance the purchase. As part of its internal due diligence, a seller often requires its managers to sign affidavits attesting (to the “best of their knowledge”) to the truthfulness of what is being represented in the contract that pertains to their areas of responsibility. In doing so, the seller hopes to mitigate liability stemming from inaccuracies in the seller’s representations and warranties made in the definitive agreement of purchase and sale.

If the acquirer is borrowing to buy a target firm, the lender(s) will want to perform their own due diligence independent of the buyer’s effort. Multiple lender investigations, often performed concurrently, can be quite burdensome to the target firm’s management and employees. Sellers should agree to these activities only if confident the transaction will be consummated.

The Rise of the Virtual Data Room

The proliferation of new technologies has impacted the way in which data is stored, accessed, and analyzed during the due diligence process. While smaller deals often still involve presentations and the exchange of data (sometimes indexed in boxes or filing cabinets) in conference rooms, more and more deals utilize the virtual data room (VDR). A VDR is an online site used for storage and distribution of documents during the due diligence process. It provides a convenient means of editing, indexing, and disseminating documents in a secure and confidential environment at any time and from any location. In some instances, the VDR has become a means of conducting data and document exchange throughout the entire deal. The VDR also provides an excellent “audit trail” or means of determining which parties accessed what data and when.

Data security is the number one challenge in using VDRs. The participants in the deal process must make sure that the data is as secure when stored in the “cloud” as it might be when overseen by a firm’s internal IT department.

Developing the Financing Plan

The last of the four negotiation phase activities is to develop the balance sheet, income, and cash flow statements for the combined firms. Unlike the financial projections of cash flow made to value the target, these statements should include the expected cost of financing the transaction. Developing the financing plan is a key input in determining the purchase price, because it places a limitation on the amount the buyer can offer the seller. The financing plan is appended to the acquirer’s business and acquisition plans and is used to obtain financing for the transaction (see Chapter 13).

TABLE 5.2 Identifying Potential Sources of Value

Potential source of value	Examples	Potential impact
OPERATING SYNERGY		
• Eliminating functional overlap	• Reduce duplicate overhead positions	• Improved margins
• Productivity improvement	• Increased output per employee	• Same
• Purchasing discounts	• Volume discounts on raw material purchases	• Same
• Working capital management	• Reduced days in receivables due to improved collection of accounts receivable	• Improved return on total assets
	• Fewer days in inventory due to improved inventory turns	• Same
• Facilities management		
• Economies of scale	• Increased production in underutilized facilities	• Same
• Economies of scope	• Data centers, R&D functions, call centers, and so on, support multiple product lines/operations	• Same
• Organizational realignment	• Reducing the number of layers of management	• Reduced bureaucratic inertia
FINANCIAL SYNERGY		
• Increased borrowing capacity	• Target has little debt and many unencumbered assets	• Increased access to financing
• Increased leverage	• Access to lower-cost source of funds	• Lower cost of capital
MARKETING/PRODUCT SYNERGY		
• Access to new distribution channels	• Increased sales opportunities	• Increased revenue
• Cross-selling opportunities	• Selling acquirer products to target customers and vice versa	• Same
• Research and development	• Cross-fertilization of ideas	• More innovation
• Product development	• Increased advertising budget	• Improved market share
CONTROL		
• Opportunity identification	• Acquirer identifies opportunities not seen by target's management	• New growth opportunities
• More proactive management style	• More decisive decision making	• Improved financial returns

Defining the Purchase Price

The three commonly used definitions of purchase price are total consideration, total purchase price/enterprise value, and net purchase price. Each serves a different purpose.

Total Consideration

In the purchase agreement, the total consideration consists of cash (C), stock (S), new debt issues (ND), or some combination of all three paid to the seller's shareholders. It is a term commonly used in legal documents to reflect the different types of remuneration received by target company shareholders. Note that the remuneration can include both financial and nonfinancial assets such as real estate. Nonfinancial compensation sometimes is referred to as payment in kind. The debt counted in the total consideration is what the target company shareholders receive as payment for their stock, along with any cash or acquiring company stock. Each component should be viewed in present value terms; therefore, the total consideration is itself expressed in present value terms (PV_{TC}). The present value of cash is its face value. The stock component of the total consideration is the present value (PV_S) of future dividends or net cash flows or the acquiring firm's stock price per share times the number of shares to be exchanged for each outstanding share of the seller's stock. New debt issued by the acquiring company as part of the compensation paid to shareholders can be expressed as the present value (PV_{ND}) of the cumulative interest payments plus principal discounted at some appropriate market rate of interest (see Chapter 7).

Total Purchase Price/Enterprise Value²⁷

The total purchase price (PV_{TPP}) or enterprise value of the target firm consists of the total consideration (PV_{TC}) plus the market value of the target firm's debt (PV_{AD}) assumed by the acquiring company. The enterprise value is sometimes expressed as the total purchase price plus net debt. Net debt includes the market value of debt assumed by the acquirer less cash and marketable securities on the books of the target firm. The enterprise value of the firm often is quoted in the media as the purchase price because it is most visible to those who are not familiar with the details. For example, the enterprise value paid for US cable business Cablevision in late 2015 by French telecommunications giant, Altice, was \$17.7 billion, consisting of \$8.1 billion in assumed Cablevision debt plus \$9.6 billion paid for Cablevision equity. It is important to analysts and shareholders alike, because it approximates the total investment²⁸ made by the acquiring firm. It is an approximation because it does not necessarily measure liabilities the acquirer is assuming that are not visible on the target firm's balance sheet. Nor does it reflect the potential for recovering a portion of the total consideration paid to target company shareholders by selling undervalued or redundant assets. These considerations are reflected in the net purchase price, discussed next.

²⁷In Chapter 7, enterprise value used for valuation purposes will be defined in more detail. The enterprise value here is discussed as it is normally defined in the popular media.

²⁸Total investment equals what the acquirer pays the shareholders plus assumed liabilities such as long-term debt.

Net Purchase Price

The net purchase price (PV_{NPP}) is the total purchase price plus other assumed target firm liabilities (PV_{OAL})²⁹ less the proceeds from the sale of discretionary or redundant target assets (PV_{DA})³⁰ on or off the balance sheet. PV_{OAL} are those assumed liabilities not fully reflected on the target firm's balance sheet or in the estimation of the economic value of the target firm. The net purchase price is the most comprehensive measure of the actual price paid for the target firm. It includes all known cash obligations assumed by the acquirer as well as any portion of the purchase price that is recovered through the sale of assets. The various definitions of price can be summarized as follows:

$$\text{Total consideration} = PV_{TC} = C + PV_S + PV_{ND}$$

$$\text{Total purchase price or enterprise value} = PV_{TPP} = PV_{TC} + PV_{AD}$$

$$\begin{aligned} \text{Net purchase price} &= PV_{NPP} = PV_{TPP} + PV_{OAL} - PV_{DA} \\ &= (C + PV_S + PV_{ND} + PV_{AD}) + PV_{OAL} - PV_{DA} \end{aligned}$$

Although the total consideration is most important to the target company's shareholders as a measure of what they receive in exchange for their stock, the acquirer's shareholders often focus on the total purchase price/enterprise value as the actual amount paid for the target's equity plus the value of assumed debt. However, the total purchase price tends to ignore other adjustments that should be made to determine actual or pending "out-of-pocket" cash spent by the acquirer. The net purchase price reflects adjustments to the total purchase price and is a much better indicator of whether the acquirer overpaid for the target firm. The application of the various definitions of the purchase price is addressed in more detail in Chapter 9.

PHASE 7: DEVELOPING THE INTEGRATION PLAN

Part of the premerger integration planning process involves the preclosing due diligence activity. One responsibility of the due diligence team is to identify ways in which assets, processes, and other resources can be combined to realize cost savings, productivity

²⁹If the target firm's balance sheet reserves reflected all known future obligations and there were no potential off-balance-sheet liabilities, there would be no need to adjust the purchase price for assumed liabilities other than for short- and long-term debts assumed by the acquiring company. Earnings would reflect the impact of known liabilities. Operating cash flows, reflecting both earnings and changes in balance sheet items, would also reflect future liabilities. Valuations based on a multiple of earnings, book value, or discounted cash flow would accurately reflect the value of the business. In practice, reserves are often inadequate to satisfy pending claims. Common examples include underfunded or underreserved employee pension and healthcare obligations and uncollectable receivables. To the extent that such factors represent a future use of cash, the present value of their future impact should be estimated.

³⁰*Discretionary assets* are those not required to operate the target and can be sold to recover some portion of the purchase price. Such assets include land valued at its historical cost. Other examples include cash balances in excess of normal working capital needs and product lines or operating units considered nonstrategic by the buyer. The sale of discretionary assets is not considered in the calculation of the value of the target because economic value is determined by future operating cash flows before consideration is given to how the transaction will be financed.

improvements, or other perceived synergies. This information is also essential for refining the valuation process by enabling planners to understand better the necessary sequencing of events and the resulting pace at which the expected synergies may be realized.

Contract-Related Issues

Integration planning also involves addressing human resource, customer, and supplier issues that overlap the change of ownership. These are transitional issues to resolve as part of the purchase agreement, and it is critical that the seller's responsibilities be negotiated before closing to make the actual transition as smooth as possible. For example, the agreement may stipulate how target company employees will be paid and how their benefit claims will be processed.³¹

A prudent buyer will want to include assurances in the purchase agreement to limit its postclosing risk. Most seller representations and warranties (i.e., claims or statements of fact) made to the buyer refer to the past and present conditions of the seller's business. They pertain to items such as the ownership of securities; real and intellectual property; current levels of receivables, inventory, and debt; pending lawsuits, worker disability, and customer warranty claims; and an assurance that the target's accounting practices are in accordance with GAAP. Although "reps and warranties" apply primarily to the past and current states of the seller's business, they do have ramifications for the future. If a seller claims there are no lawsuits pending and a lawsuit is filed shortly after closing, the buyer may seek to recover damages from the seller. The buyer also may insist that certain conditions be satisfied before closing can take place. Common closing conditions include employment contracts, agreements not to compete, financing, and regulatory and shareholder approval. Finally, the buyer will want to make the final closing contingent on receiving approval from the appropriate regulatory agencies and shareholders of both companies before any money changes hands.

Earning Trust

Decisions made before closing affect postclosing integration activity.³² Successfully integrating firms requires getting employees in both firms to work to achieve common

³¹Systems must be in place to ensure that employees of the acquired company continue to be paid without disruption. If the number of employees is small, this may be accommodated easily by loading the acquirer's payroll computer system with the necessary salary and personal information before closing or by having a third-party payroll processor perform these services. For larger operations or where employees are dispersed geographically, the target's employees may continue to be paid for a specific period using the target's existing payroll system. As for benefits, employee healthcare or disability claims tend to escalate just before a transaction closes as employees, whether they leave or stay with the new firm, file more health and disability claims for longer periods after downsizing. The sharp increase in such expenses can pose an unexpected financial burden for the acquirer and should be addressed in the merger agreement. For example, all claims incurred within a specific number of days before closing but not submitted by employees until after closing will be reimbursed by the seller. Alternatively, such claims may be paid from an escrow account containing a portion of the purchase price.

³²Benefits packages, employment contracts, and retention bonuses to keep key employees typically are negotiated before the closing. Contractual covenants and conditions also affect integration. Earnouts, which are payments made to the seller based on the acquired business's achieving certain profit or revenue targets, can limit the buyer's ability to integrate the target effectively into the acquirer's operations.

objectives. This comes about through building credibility and trust, not through superficial slogans and empty promises. Trust comes from cooperation, keeping commitments, and experiencing success.

Choosing the Integration Manager and Other Critical Decisions

The buyer should designate an integration manager who possesses excellent interpersonal and project management skills. The buyer must also determine what is critical to continuing the acquired company's success during the first 12–24 months after the closing. Critical activities include identifying key managers, vendors, and customers and determining what is needed to retain them. Preclosing integration planning activities should determine the operating standards required for continued operation of the businesses: executive compensation, labor contracts, billing procedures, product delivery times, and quality metrics. Finally, there must be a communication plan for all stakeholders that can be implemented immediately following closing; see Chapter 6 for more details.

PHASE 8: CLOSING

Closing entails obtaining all necessary shareholder, regulatory, and third-party consents (e.g., customer and vendor contracts) and also completing the definitive purchase agreement. These are discussed next.

Gaining the Necessary Approvals

The buyer's legal counsel is responsible for ensuring that the transaction is in compliance with securities, antitrust, and state corporation laws. Care must be exercised to ensure that all filings required by law have been made with the Federal Trade Commission and the Department of Justice. Finally, many deals require approval by the acquirer and target firm shareholders. See Chapter 11 for detail on when shareholder approval is required.

Assigning Customer and Vendor Contracts

In a purchase of assets, many customer and vendor contracts cannot be assigned to the buyer without receiving written approval from the other parties. While often a formality, both vendors and customers may attempt to negotiate more favorable terms. Licenses must be approved by the licensor, which can be a major impediment to a timely closing. A major software vendor demanded a substantial increase in royalty payments before agreeing to transfer the software license to the buyer. The vendor knew that the software was critical for the ongoing operation of the target company's data center. From the buyer's perspective, the exorbitant increase in the fee had an adverse impact on the economics of the transaction and nearly caused the deal to collapse.

Completing the Acquisition/Merger Agreement

The acquisition/merger or definitive agreement is the cornerstone of the closing documents. It indicates all of the rights and obligations of the parties both before and after the closing.

Deal Provisions

In an asset or stock purchase, deal provisions define the consideration or form of payment, how it will be paid, and the specific assets or shares to be acquired. In a merger, this section of the agreement defines the number (or fraction) of acquirer shares to be exchanged for each target share in a share exchange.

Price

The purchase price or total consideration may be fixed at the time of closing, subject to future adjustment, or it may be contingent on future performance. For asset transactions, it is common to exclude cash on the target's balance sheet; the price paid for noncurrent assets, such as plant and intangible assets, will be fixed, but the price for current assets will depend on their levels at closing following an audit.

Allocation of Price

The buyer often tries to allocate as much of the purchase price as possible to depreciable assets, such as fixed assets, customer lists, and noncompete agreements, enabling them to depreciate or amortize these upwardly revised assets and reduce future taxable income. However, such an allocation may constitute taxable income to the seller. Both parties should agree on how the purchase price should be allocated in an asset transaction before closing, eliminating the chance that conflicting positions will be taken for tax reporting purposes.

Payment Mechanism

Payment may be made at closing by wire transfer or cashier's check, or the buyer may defer the payment of a portion of the purchase price by issuing a promissory note to the seller. The buyer may agree to put the unpaid portion of the purchase price in escrow or through a holdback allowance, thereby facilitating the settlement of claims that might be made in the future.³³

Assumption of Liabilities

The seller retains those liabilities not assumed by the buyer. In instances such as environmental liabilities, unpaid taxes, and inadequately funded pension obligations, the courts may go after the buyer and the seller. In contrast, the buyer assumes all known and unknown liabilities in a merger or share purchase.

Representations and Warranties

Reps and warranties are claims made as "statements of fact" by buyers and sellers. As currently used, the terms are virtually indistinguishable from one another. They serve three purposes: disclosure, termination rights, and indemnification rights.

³³The escrow account involves the buyer putting a portion of the purchase price in an account held by a third party, while the holdback allowance generally does not.

Disclosure: Contract reps and warranties should provide for full disclosure of all information germane to the deal, typically covering the areas of greatest concern to both parties. These include financial statements, corporate organization and good standing, capitalization, absence of undisclosed liabilities, current litigation, contracts, title to assets, taxes and tax returns, no violation of laws or regulations, employee benefit plans, labor issues, and insurance coverage.

Termination rights: Reps and warranties serve to allocate risk by serving as a closing condition. At closing, representations such as those concerning the state of the business and financial affairs are again reviewed, such that they must still be accurate despite the lapse of time between the signing of the agreement and the actual closing. If there has been a material change in the target's business or financial affairs between signing and closing, the bidder has the right to terminate the transaction.

Indemnification rights: Often in transactions involving private firms, certain representations will extend beyond closing. As such, they serve as a basis for indemnification, that is, the buyers being compensated for costs incurred subsequent to closing. For example, a seller may represent that there are no lawsuits pending, which turns out to be untrue after closing when the buyer incurs significant costs to settle a legal dispute initiated before there was a change in control. Indemnification will be discussed in more detail later in this chapter.

Covenants

Covenants are agreements by the parties about actions they agree to take or refrain from taking between signing the definitive agreement and the closing. The seller may be required to continue conducting business in the usual and customary manner and to seek approval for all expenditures that may be considered out of the ordinary such as one-time dividend payments or sizeable increases in management compensation. In contrast to reps and warranties, covenants do not relate to a point in time (e.g., at signing or closing) but, rather, relate to future behavior between signing and closing. While they usually expire at closing, covenants sometimes survive closing. Typical examples include a buyer's covenant to register stock that it is issuing to the seller and to complete the dissolution of the firm following closing in an asset sale.

Covenants may be either negative (restrictive) or positive (requirement to do something). Negative covenants restrict a party from taking certain actions such as the payment of dividends or the sale of an asset without the permission of the buyer between signing and closing. Positive covenants may require the seller to continue to operate its business in a way that is consistent with its past practices. Many purchase agreements include virtually the same language in both representations and covenants.

Closing Conditions

The satisfaction of negotiated conditions determines whether a party to the agreement must consummate the deal. Among the most important of the closing conditions is the so-called *bring-down provision*, requiring that representations made at the signing are still true as of the closing date. Other examples include obtaining all necessary legal opinions, the execution of other agreements (e.g., promissory notes), and the absence of any "material adverse change" in the condition of the target company. The effects of material adverse change clauses (MACs) in agreements of purchase and sale became very visible during the disruption in the financial markets in 2008. Many firms that had signed M&A contracts looked for a way

out. The most common challenge in negotiating such clauses is defining what constitutes materiality (e.g., a 20% reduction in earnings or sales?) and the specific conditions under which MACs are triggered. Because of the inherent ambiguity, the contract language is usually vague, and it is this very ambiguity that has enabled so many acquirers to withdraw from contracts. Lenders, too, use these clauses to withdraw financing.

There is evidence that a broadly defined clause (i.e., the greater the number of circumstances under which the parties can withdraw from the deal without penalty) is associated with higher target and acquirer announcement date returns and a lower likelihood that MACs will be triggered. The more broadly defined clause communicates to the acquirer that the target firm is confident that the information disclosed during due diligence and perceived synergies are sufficient to ensure that the deal will close.³⁴

Indemnification

In effect, indemnification is the reimbursement of the other party for a loss incurred following closing for which they were not responsible. The definitive agreement requires the seller to indemnify or absolve the buyer of liability in the event of misrepresentations or breaches of warranties or covenants. Similarly, the buyer usually agrees to indemnify the seller. Both parties generally want to limit the period during which the indemnity clauses remain in force.³⁵

Other Closing Documents

In addition to resolving the issues just outlined, closing may be complicated by the number and complexity of other documents required to complete the transaction. In addition to the definitive agreement, the more important documents often include patents, licenses, royalty agreements, trade names, and trademarks; labor and employment agreements; leases; mortgages, loan agreements, and lines of credit; stock and bond commitments and details; and supplier and customer contracts. Other documents could include distributor and sales representative agreements, stock option and employee incentive programs, and health and other benefit plans (which must be in place at closing, to eliminate lapsed coverage).

Complete descriptions of all foreign patents, facilities, and investments; insurance policies, coverage, and claims pending; intermediary fee arrangements; litigation pending for and against each party; and environmental compliance issues resolved or on track to be resolved often are part of the closing documents. Furthermore, seller's corporate minutes of the board of directors and any other significant committee information, as well as articles of incorporation, bylaws, stock certificates, and corporate seals, are part of the final documentation.³⁶

³⁴Macias and Moeller (2016).

³⁵At least 1 full year of operation and a full audit are necessary to identify claims. Some claims (e.g., environmental) extend beyond the survival period of the indemnity clause. Usually, neither party can submit claims to the other until some minimum threshold, expressed in terms of the number or dollar size of claims, has been exceeded. Firms also may purchase warranty and indemnity insurance, which provides compensation for losses arising from breach of warranties and indemnities given in the merger agreement.

³⁶Sherman (2006).

Financing Contingencies

Most agreements of purchase and sale contain a financing contingency. The buyer is not subject to the terms of the contract if the buyer cannot obtain adequate funding to complete the transaction. Breakup fees can be particularly useful to ensure that the buyer will attempt as aggressively as possible to obtain financing. In some instances, the seller may require the buyer to put a nonrefundable deposit in escrow, to be forfeited if the buyer is unable to obtain financing to complete the transaction.³⁷

PHASE 9: IMPLEMENTING POSTCLOSING INTEGRATION

The postclosing integration activity is widely viewed as among the most important phases of the acquisition process and is discussed in detail in Chapter 6. What follows is a discussion of those activities required immediately following closing, which fall into five categories.

Communication Plans

Implementing an effective communication plan immediately after the closing is crucial for retaining employees of the acquired firm and maintaining or boosting morale and productivity. The plan should address employee, customer, and vendor concerns. The message always should be honest and consistent. Employees need to understand how their compensation, including benefits, might change under the new ownership. They may find a loss of specific benefits palatable if they are perceived as offset by improvements in other benefits or working conditions. Customers want reassurance that there will be no deterioration in product or service quality or delivery time during the transition from old to new ownership. Vendors also are very interested in understanding how the change in ownership will affect their sales to the new firm.

Whenever possible, communication is best done on a face-to-face basis. Senior managers of the acquiring company can be sent to address employee groups (on site, if possible). They also should contact key customers (preferably in person or at least by telephone) to provide the needed reassurances. Meeting, with complete candor, reasonable requests for information from employees, customers, and vendors immediately following closing will contribute greatly to the sense of trust among stakeholders necessary for the ultimate success of the acquisition.

Employee Retention

Retaining middle-level managers should be a top priority during this phase of the acquisition process. Frequently, senior managers of the target company that the buyer chooses to retain are asked to sign employment agreements as a condition of closing. Although senior managers provide overall direction for the firm, middle-level managers execute the

³⁷Most deals involving privately owned firms do not involve breakup fees, termination fees, or liquidated damage provisions, because such sellers are viewed as highly motivated. If the seller refuses to sell the business once having signed an agreement to do so, the buyer has a breach of contract lawsuit that it can bring against the seller.

day-to-day operations of the firm. Bonuses, stock options, and enhanced sales commission schedules are commonly put in place to keep such managers.

Satisfying Cash Flow Requirements

Conversations with middle-level managers following closing often reveal areas in which maintenance expenditures have been deferred. Receivables previously thought to be collectable may have to be written off. Production may be disrupted as employees of the acquired firm find it difficult to adapt to new practices introduced by the acquiring company's management or if inventory levels are inadequate to maintain desired customer delivery times. Finally, more customers than had been anticipated may be lost to competitors that use the change in ownership as an opportunity to woo them away with various types of incentives.

Employing Best Practices

The combined firms often realize potential synergies by employing the "best practices" of both. However, in some areas, neither company may be employing what its customers believe to be the best practices in the industry. Management should look beyond its own operations to adopt the practices of other companies in the same or other industries.

Cultural Issues

Corporate cultures reflect the set of beliefs and behaviors of the management and employees of a corporation. Some firms are paternalistic, and others are "bottom-line" oriented. Some empower employees, whereas others believe in highly centralized control. Some promote problem solving within a team environment; others encourage individual performance. Inevitably, different corporate cultures impede postacquisition integration efforts. The key to success is taking the time to explain to all of the new firm's employees what behaviors are expected and why and to tell managers that they should "walk the talk."

Cultural differences can be even more pronounced in cross-border deals. In late 2016, merger talks between Germany-based Linde AG and United States-based Praxair Inc. cratered over Linde's insistence that the merged entity be headquartered in Munich. The suitor Linde's historical ties and attachment to customs made this issue largely nonnegotiable.

PHASE 10: CONDUCTING A POSTCLOSING EVALUATION

The primary reasons for conducting a postclosing evaluation of deals are to determine if the acquisition is meeting expectations, to undertake corrective actions if necessary, and to identify what was done well and what should be done better in future deals.

Do Not Change Performance Benchmarks

Once the acquisition appears to be operating normally, evaluate the actual performance to that projected in the acquisition plan. Success should be defined in terms of actual to planned

performance. Too often, management simply ignores the performance targets in the acquisition plan and accepts less than plan performance to justify the acquisition. This may be appropriate if circumstances beyond the firm's control cause a change in the operating environment such as a recession or a change in the regulatory environment.

Ask the Difficult Questions

The types of questions asked vary with the time elapsed since the closing. After 6 months, what has the buyer learned about the business? Were the original valuation assumptions reasonable? If not, what did the buyer not understand about the target company, and why? What did the buyer do well? What should have been done differently? What can be done to ensure that the same mistakes are not made in future acquisitions? After 12 months, is the business meeting expectations? If not, what can be done to put the business back on track? Is the cost of fixing the business offset by expected returns? Are the right people in place to manage the business for the long term? After 24 months,³⁸ does the acquired business still appear attractive? If not, should it be divested? If yes, when and to whom?

Learn From Mistakes

It always pays to identify lessons learned from each transaction. This is often a neglected exercise and results in firms repeating the same mistakes. This occurs because those involved in the acquisition process may change from one deal to another. Highly acquisitive companies can benefit greatly by dedicating certain legal, human resource, marketing, financial, and business development resources to support acquisitions made throughout the company. Despite evidence that abnormal financial returns to frequent acquirers tend to decline on average,³⁹ there is evidence that such firms learn from experience through repetitive deals, especially when the acquirer's CEO remains the same and the successive deals are similar.⁴⁰

THE INCREASING APPLICATION OF "DATA ANALYTICS" IN M&As

Often described as the identification and interpretation of meaningful patterns in data, data analytics relies on the application of statistics, computer programming, and model building to uncover insights helpful in business decision making. In an age when the cost of data

³⁸The acquirer should use the financial projections in the acquisition plan as performance benchmarks against which the target's future performance can be measured. These benchmarks may allow for continued operating losses during the first few years as the business reinvests to fuel future growth. The decision to exit the business should be based on whether the actual losses are consistent with the projected benchmarks.

³⁹Fuller et al. (2002) document that acquirers, completing at least five deals within a 3-year period, earn an average 1.7% cumulative abnormal return, but from the fifth deal on they earn only 0.52%. While this could reflect overconfidence, Aktas et al. (2009) argue that this is consistent with learning by doing because experienced acquirers are better able to assess expected synergies and are willing to pay more to complete deals.

⁴⁰Aktas et al. (2013).

storage, organization, and manipulation has been declining, senior executives often are confronted with vast amounts of data on their customers, suppliers, employees, etc. Just as executives attempt to use such data to describe, predict, and improve business performance, data analytics can be applied to all phases of the M&A process described in this book.

Putting a deal together often requires access to large amounts of granular data and the ability to achieve an understanding of historical patterns that underlie predictions of future performance. While the spreadsheet models discussed in Chapters 9 and 14 of this book are examples of how analytical tools can be used to address value and risk issues related to M&As, they often fail to identify and explain more complex issues. So-called “structured data” such as 10K financial statements are more easily accessible and manipulated than “unstructured data” that range from those gleaned from social media to customer preference survey results, census data, and weather information. Thus, analytical tools that use both structured and unstructured data may provide insights into patterns not observable in the output of financial spreadsheet models.

The application of data analytics to M&A has increased in acceptance and popularity with 40% of 2016 Deloitte & Touche survey respondents viewing data analytics as critical to M&A analysis. Larger firms are more inclined to use data analytics with 58% of firms with revenue exceeding \$5 billion viewing data analytics as a core component of M&A analysis; firms with annual revenue under \$500 million showed less interest in such tools.⁴¹

Data analytical tools can be applied throughout the M&A process. For example, text reading software can organize the review of legal contracts through key word (or phrase) searches based on names, locations, and dollar amounts. A page by page review of legal documents, once time consuming, can now be done automatically. Another application is in assessing the target firm’s talent pool by identifying the number of employees with certain types of degrees or certifications and length of work experience. Comparisons can be made between the target’s and acquirer’s compensation structures to determine what changes might have to be made and the potential impact on the combined firm’s cost structure. Automated natural language processing (i.e., training computers to understand all forms of human communication) can be used to assess the intellectual property of the target firm and to cross-reference those descriptions of the property with other databases to avoid potential future litigation or regulatory challenges.

While data analytics can provide valuable insights, it is subject to significant limitations. It is predicated implicitly on the notion that more data is better than less. A deluge of data makes it difficult to focus on what is really important. While software can sift through reams of data to identify patterns, it is not always clear that the patterns are not simply an anomaly or whether they are significant and sustainable over time. Furthermore, the management of the target firm is likely to balk at handing over voluminous data during due diligence. As explained elsewhere, it is in the interest of sellers to comply with requests for specific data rather than to go through the exhaustive and expensive process of supplying large volumes of data. Analytical tools can be expensive, difficult to use, and appear to executive decision makers as “black boxes.” When executives don’t understand how the conclusions were reached, they are less likely to have a high degree of confidence in them.

⁴¹Deloitte & Touche LLP, <http://www2.deloitte.com/content/dam/Deloitte/global/Documents/Deloitte-Analytics/dttl-analytics-us-da-3minMAAnalytics.pdf>.

SOME THINGS TO REMEMBER

The acquisition process consists of 10 phases. The first phase defines the business plan. If an acquisition is believed necessary to implement the business strategy, an acquisition plan, developed during the second phase, defines the key objectives, available resources, and management preferences for completing an acquisition. The next phase consists of the search for appropriate acquisition candidates. The screening phase is a refinement of the search phase. How the potential acquirer initiates first contact depends on the urgency of completing a deal, target size, and access to highly placed contacts within the target firm. The negotiation phase consists of refining valuation, deal structuring, conducting due diligence, and developing a financing plan. Integration planning must be done before closing. The closing phase includes wading through all the necessary third-party consents and regulatory and shareholder approvals. The postclosing integration phase entails communicating effectively with all stakeholders, retaining key employees, and identifying and resolving immediate cash flow needs. While commonly overlooked, the postclosing evaluation is critical if a firm is to learn from past mistakes.

DISCUSSION QUESTIONS

- 5.1 Identify at least three criteria that might be used to select a manufacturing firm as a potential acquisition candidate. A financial services firm? A high-technology firm?
- 5.2 Identify alternative ways to make “first contact” with a potential acquisition target. Why is confidentiality important? Under what circumstances might a potential acquirer make its intentions public?
- 5.3 What are the differences between total consideration, total purchase price/enterprise value, and net purchase price? How are these different concepts used?
- 5.4 What is the purpose of the buyer’s and the seller’s performing due diligence?
- 5.5 Why is preclosing integration planning important?
- 5.6 In a rush to complete its purchase of health software producer HBO, McKesson did not perform adequate due diligence but, rather, relied on representations and warranties in the agreement of sale and purchase. Within 6 months following closing, McKesson announced that it would have to reduce revenue by \$327 million and net income by \$191.5 million for the preceding 3 fiscal years to correct for accounting irregularities. The company’s stock fell by 48%. If HBO’s financial statements had been declared to be in accordance with GAAP, would McKesson have been justified in believing that HBO’s revenue and profit figures were 100% accurate? Explain your answer.
- 5.7 Find a transaction currently in the news. Speculate as to what criteria the buyer may have employed to identify the target company as an attractive takeover candidate. Be specific.
- 5.8 Fresenius, a German manufacturer of dialysis equipment, acquired APP Pharmaceuticals for \$4.6 billion. The deal includes an earnout, under which Fresenius would pay as much as \$970 million if APP reaches certain future financial targets. What is the purpose of the earnout? How does it affect the buyer and the seller?
- 5.9 MACs allow parties to the contract to determine who will bear the risk of adverse events between the signing of an agreement and the closing. They are frequently not stated in dollar terms. How might MACs affect the negotiating strategies of the parties to the agreement during the period between signing and closing?

- 5.10** Despite disturbing discoveries during due diligence, Mattel acquired The Learning Company (TLC), a leading developer of software for toys, in a stock-for-stock transaction valued at \$3.5 billion. Mattel had determined that TLC receivables were overstated, a \$50-million licensing deal had been prematurely put on the balance sheet, and TLC brands were becoming outdated. TLC also had substantially exaggerated the amount of money put into research and development for new software products. Nevertheless, driven to become a big player in children's software, Mattel closed on the transaction, aware that TLC cash flows were overstated. After restructuring charges associated with the acquisition, Mattel's consolidated net loss was \$82.4 million on sales of \$5.5 billion. Mattel's stock fell by more than 35% to end the year at about \$14 per share. What could Mattel have done to protect its interests better?

Answers to these Chapter Discussion Questions are available in the Online Instructor's Manual for instructors using this book (<https://textbooks.elsevier.com/web/Manuals.aspx?isbn=9780128016091>).

END OF CHAPTER CASE STUDY: MICHAEL DELL COMPLETES THE BIGGEST DEAL IN TECH HISTORY IN BUYING STORAGE MAKER EMC

Case Study Objectives: To Illustrate

- Challenges of strategically realigning a firm
- What it takes to achieve a "competitive edge"
- The importance of getting out in front of rather than simply reacting to market changes

With the PC market maturing, Michael Dell continued his effort to shift the firm more toward software and services. In doing so, he closed the biggest deal in tech history in 2016 in acquiring data storage provider EMC in a deal valued at more than \$63 billion. Dell reasoned that the takeover would enable Dell Inc. to achieve a "competitive edge" over others battling it out in the software and services marketplace. A competitive advantage involves a strategy allowing a firm to gain sales, increase profit margins, or both over its primary competitors by better satisfying customer needs than its competitors. A competitive advantage can result from the pursuit of cost leadership, differentiation, focus, or in rare cases some combination of these strategies. The extent to which it can be sustained often reflects the ability of a firm to build barriers that insulate it from the actions of its competitors.

The size of the deal was possible largely because Dell Inc. was a private company and ownership was heavily concentrated. As such, Dell Inc. was able to make decisions without interference from public shareholders that might have occurred due to the potential reduction in near-term earnings per share. The firm was able to finance the deal as a result of a substantial reduction in the amount of debt incurred when Dell Inc. was taken private and through the use of tracking stock as a form of payment. The latter reduced the amount Dell Inc. had to borrow to pay for the transaction. Finally, the time was right. Unwilling to break up the company, EMC's senior management and board had run out of options and were experiencing considerable pressure from activist shareholders to improve performance.

The takeover of EMC represented another bold move by Michael Dell to reposition the firm bearing his name for the 21st century. What follows is a discussion of Dell's efforts to transform the company from one concentrating on personal computers to a firm offering customers an array of integrated solutions to problems whose resolution was critical to the performance of their businesses, the methods used, and the challenges remaining to achieve this transformation.

Dell Computer was founded by Michael Dell in his college dormitory room in 1987. One year later, he took the company public at 23 years of age. He was 29 when his firm hit \$1 billion in revenue and 31 when it achieved \$5 billion. By 2001, the company became the global leader in PCs. Over the next 3 years, the firm sustained continued growth by diversifying into servers, storage, printers, mobile phones, and MP3 players. In 2004, Dell stepped down from the day-to-day operations as CEO, appointing Kevin Rollins to that position, but he retained his role as Chairman of the board.

The success was not to last as the firm failed to anticipate the massive shift of the desktop PC, its primary revenue source, to the notebook PC. By 2006, Dell had lost its number one spot in the PC market. In 2007, Michael Dell assumed control of the firm again and moved quickly to expand its software, networking, security, and services offerings. The firm's long-term business strategy was to shift its focus from its end-user computing business (EUC), which includes PC, mobility, and third-party software, to its enterprise solutions and services business (ESS), which provides higher-margin enterprise-wide solutions and services to businesses. The firm spent \$13 billion to acquire 20 firms including spending \$3.9 billion for IT services provider Perot Systems.

The transformation to become a more ESS-driven business proved to be more challenging than first believed. Other tech firms had a commanding lead in the software and services business including HP, IBM, Cisco, and Oracle. As a global IT company with significant dependence on the PC market, the Company continued to be highly vulnerable to the fundamental long-term changes in this market.

What the firm was trying to do would require years and in the near term the firm's earnings would suffer. Shareholders were unlikely to accept a protracted period of depressed earnings. Michael Dell was at a cross-road: To remain public or to take the company private by buying out its public shareholders. He opted for the latter strategy.

The events of 2013 surrounding the conversion of Dell Inc. from a public to a private company proved turbulent, pitting billionaire entrepreneur Michael Dell against billionaire activist investor Carl Icahn. Sensing an opportunity to save the multibillion-dollar tech firm he had created in the late 1980s, Michael Dell initiated an audacious move to buy out public investors. The objective was to change the firm from one dependent on PCs to one focused on software and services. To be successful, he felt he needed to gain unfettered control over the firm.

The strategy required layering bone-crushing debt on the already foundering firm. Midway through Michael Dell's effort to privatize the firm, well-known corporate raider Carl Icahn entered the fray using social media such as Twitter and TV interviews to vilify Michael Dell's leadership and personal ethics. Both Dell and Icahn were smart, aggressive, and accustomed to winning. The subsequent effort to take the firm private became one the nastiest tech takeovers in recent history. The stage was set for a battle of the billionaire titans.

From start to finish, the deal took more than 1 year to complete. On October 31, 2013, Dell Inc., one of the world's leading PC manufacturers, ended its 25-year history as a public firm. Dell paid \$13.88 per share, which represented a 36% premium over Dell's share price 90 days prior to the

merger announcement date, and which valued the Company at \$24.9 billion.⁴² The deal included Michael Dell's 16% ownership stake, valued at more than \$3 billion, and another \$750 million of his cash along with \$21.2 billion from Silver Lake Partners, a consortium of lenders, and excess cash on Dell Inc.'s balance sheet. The transaction boosted Michael Dell's ownership stake in the firm to 75%, with Silver Lake holding the remaining equity.

In 2015, the new Dell Corporation has more than 160,000 channel distribution partners (i.e., parties selling Dell products), with about \$20 billion of the firm's \$65 billion in annual revenue coming from these partners. This compares to zero in 2008. The firm has also doubled the number of sales specialists with technical training to 8000 from 2009. The firm is experiencing increasing success in encouraging existing customers to buy more expensive products and services. About 90% of its customers that buy PCs also buy other products and services.

With 110,000 employees worldwide, the firm's current objectives are cash flow and growth: cash flow to pay off the firm's debt and growth to increase the firm's value when it is again taken public. Incremental cash flow is expected to come from increased sales and slashing costs, with a target of \$2 billion in annual cost savings. As a private firm, it will have fewer regulatory hurdles and disclosures than a public firm, allowing for a speedier execution of its business strategy of growing its enterprise solutions business.

The challenges the "New Dell" faces are daunting. Michael Dell must transform the firm from one dominated by PCs to software and services and to generate sufficient cash to pay off the \$20 billion in debt. Dell's market share in software and services is about 1%, but these are the only categories making money. Dell is battling traditional rivals in software and services such as Hewlett-Packard and IBM and must now combat new entrants such as Amazon and Rackspace that are expanding in the cloud-based storage and services business.

The firm's fortunes improved markedly in 2015. According to tech-industry analytical firm IDC, Dell's global PC shipments increased by about 10% over the prior year. In the United States, Dell's shipments increased by almost 20% bringing its total share of the US PC market to 26%. This compares to market leader Hewlett-Packard's share of about 28%. The improvement in the firm's PC sales may provide sufficient cash to finance Dell's changing product focus. Dell's operating performance appears to be holding up as its share of the global PC market has held steady in recent years at about 14%.

While taking the firm private appears to have improved the firm's financial performance, Michael Dell believed that more change was necessary to achieve his strategic vision. Dell saw EMC as an opportunity to accelerate movement toward realizing this vision. He believed that acquiring EMC would enable the firm to combine its server businesses with EMC's storage and virtualization businesses to offer a broader range of products to challenge Cisco Systems, IBM, and HP in the areas of cloud computing, mobility, and cybersecurity.

In striking its deal for storage provider EMC, Dell and its financial partner, private equity firm Silver Lake, are betting that this huge acquisition will help Dell, one of the best-known names in the industry, move increasingly into the fastest-growing areas of the IT industry. Both Michael Dell and his private equity partner Silver Lake had shown an ability to consolidate industries.

⁴²Some shareholders argued they had been shortchanged and initiated a lawsuit to have their stock appraised. In late 2016, a Delaware court concluded that Michael Dell and Silver Lake Partners had paid shareholders at least 20% less than its then fair market value. However, only those having voted against the deal will receive compensation under Delaware law.

Understanding how the EMC transaction unfolded requires an appreciation of the personalities of the CEOs of the firms involved. Billionaire Michael Dell had a passion for preserving and growing the business bearing his name, and the 68-year-old EMC CEO Joseph Tucci sought to protect his legacy. He had been considering retiring since 2009 but postponed it several times amid his firm's slumping stock performance, pressure from activist investors, and a changing environment for computer storage. In agreeing to the deal, Mr. Tucci had an opportunity to establish a positive legacy and generate almost \$27 million more in compensation than he would have received had he willingly retired. His employment contract provided for his receiving the additional compensation if he were ousted due to a change in control of the firm. He built EMC into what it is. EMC had become his identity, and he didn't want to see it dismembered.

Activist hedge fund manager Paul Singer of Elliott Management was among EMC's largest investors and had been pushing the board and management to break up the firm. Investors had shown their dismay with the firm's performance by pushing down EMC's share price by over 15% during the 3 years prior to the announced takeover by Dell. Founded in Boston, MA, 40 years ago, EMC has struggled over the past decade as the cost of data storage has plummeted. Subsequent acquisitions have failed to reverse the firm's operating outlook. The bulk of the firm's value is concentrated in its 81% ownership stake in VMware, a popular maker of virtualization software that emulates different operating systems. As a collection of largely unrelated businesses ranging from data storage to networking to content management, the value of EMC's shares suffered from a conglomerate discount.

But Mr. Tucci balked at the idea of spinning off VMware. Instead, he sought to be acquired by Hewlett-Packard, although these talks reportedly ended in late 2014 after more than a year of discussions. The failure of these discussions provided an opportunity for Michael Dell to contact Mr. Tucci.

Dell agreed to pay the equivalent of \$33.15 per share for all of EMC's outstanding shares. The offer consisted of \$24.05 in cash and tracking stock valued at \$9.10. The tracking stock mirrors the value of the roughly 20% of VMware's outstanding shares already trading on the New York Stock Exchange. In theory, the tracking stock should fluctuate with the value of VMware's publicly traded shares as investors have the option of holding either the tracking shares or the VMware common shares traded publicly. The purchase price represents an approximate 27% premium over EMC's trading price just prior to the announcement of the deal.⁴³

In the past, tracking stocks have often performed poorly, particularly when they were linked to the performance of nonpublic companies. Why? Governance issues can be greater for firms with highly concentrated ownership and more opaque financial reporting. Tracking stocks tend to underperform the overall stock market in the years immediately following their issue. This has been especially true of private firms not subject to the discipline of public investors. Moreover, tracking shares usually have inferior voting rights—or none at all, and holders often do not receive dividends.

⁴³Tracking shares are not actual common stock of VMware; rather, they are issued by Dell. A company issuing tracking stock still owns all the assets associated with the business being tracked, but some of its risks and benefits are sold to investors interested in the "pure play" of the tracking stock. Holders of tracking stock are considered to hold equity in the parent firm (Dell) and not the specific entity represented by the tracking stock (VMware). Determined during the negotiation process, EMC shareholders at closing received tracking stock representing 0.111 share of VMware for each EMC share they owned.

While the EMC offer represented a 27% premium to the EMC trading price immediately prior to the announcement of the deal, most of the premium comes from the problematic valuation of the tracking stock. Dell valued the deal at \$33.15 per EMC share but investors questioned the valuation as EMC's share value rose to only \$28.07 at the end of trading on the announcement date. Shares of VMware dropped by 10%, reflecting concern about the loss of key employees and the uncertainty associated with future decisions made by the Dell board. EMC shareholders also fretted that the issuance of tracking shares (shares that trade like VMware shares) would increase the supply of VMware shares and depress the price. Nevertheless, EMC shareholders approved the deal since the outlook for EMC as an independent entity was dire, with the firm's core enterprise business faltering and the promising cloud-software unit too small to have much of an impact. VMware's server virtualization business was doing better resulting in EMC's investment in VMware accounting for almost one-half of the consolidated company's market capitalization. In other words, the Dell deal simply seemed to EMC shareholders as better than no deal at all.

The new firm (including EMC) has more than \$50 billion in debt on its consolidated balance sheet. Interest paid on the debt amounts to \$2.5 billion annually. That is \$2.5 billion less to spend on R&D and other critical activities, thereby potentially limiting new product development and improving customer service. In addition, integrating EMC and Dell, which combined have more than \$75 billion in revenue and nearly 200,000 employees, is a massive undertaking and an enormous distraction for employees and their management team as two very different cultures come together and a new business strategy is implemented. Moreover, bringing two business portfolios together will require a significant amount of pruning overlapping and unprofitable products, which will be disruptive to their business and create confusion for their customers. Customers simply will not know if the products they are buying today from either company will be supported in a year or two. Finally, since many of these products are sold through distributors, this merger is going to cause chaos in the distribution channels as they bring together two different distributor programs and marketing approaches.

Large acquisitions often are used to rapidly change corporate direction and are referred to as transformative to appear as bold and imaginative moves. However, history shows that many large acquisitions fail to live up to their expectations either because of a flawed strategy, overpayment, inadequate integration, or simply bad postmerger execution. Time will tell whether Michael Dell's "bold" changes represented true strategic thinking or simply a series of desperate moves.

Discussion Questions

1. Discuss the pros and cons of taking a company private. Is a private firm better positioned than a public company to make acquisitions? Explain your answer.
2. What are the key trends external to Dell Inc. that you believe are driving Michael Dell's effort to transform the firm? Be specific.
3. Speculate as to the strengths and weaknesses of the new firm (i.e., the combined Dell Inc. and EMC). Consider the various stakeholder groups in your answer. Be specific.
4. Characterize Dell Inc.'s business strategy as a cost leadership, differentiation, focus, or some combination. Justify your answer.
5. In what sense was Dell's takeover strategic and in what way was it opportunistic? Be specific.

Solutions to these case study discussion questions are found in the Online Instructor's Manual available to instructors using this book (<https://textbooks.elsevier.com/web/Manuals.aspx?isbn=9780128016091>).

**ADDITIONAL CASE STUDY RECOMMENDATIONS
(SEARCH HARVARD BUSINESS SCHOOL
PUBLISHING SITE BY NAME OF CASE:
hbsp.harvard.edu)**

Newell Co.: Corporate Strategy, Cynthia A. Montgomery; Elizabeth J. Gordon, Revised Publication Date: January 31, 2005, *Source*: HBS Premier Case Selection, Product Number: 799139-PDF-ENG, hbsp.harvard.edu.

Subjects covered: Acquisition Target Selection, Conglomerates, Corporate Strategy, Diversification.

Bank of America-Merrill Lynch, Guhan Subramanian, Nithyasri Sharma, Revised Publication Date: 2012, Product Number: 910026-PDF-ENG, *Source*: Harvard Business School, hbsp.harvard.edu.

Subjects covered: Government Intervention, Negotiation.

Tata Motors' Acquisition of Daewoo Commercial Company, Meera Harish

Sanjay Singh, Kulwant Singh, Publication Date: December 4, 2008, Product Number: 908M94-PDF-ENG, *Source*: IVEY Publishing, hbsp.harvard.edu.

Subjects covered: International Expansion, Bidding Process, Cultural Barriers, Criteria for a Successful Acquisition, Market Entry Strategies.

Polycom's Acquisition Process, Michael A. Roberto, Gina M. Carioggia, Publication Date: June 2, 2005, Product Number: 304040-PDF-ENG, *Source*: Harvard Business School, hbsp.harvard.com.

Subjects covered: Business and Acquisition Plan Development, Target Selection, Decision Making, Resource Management.

Postclosing Integration

Mergers, Acquisitions, and Business Alliances

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Whether you think you can, or you think you can't—you're right. —Henry Ford

INSIDE MERGER AND ACQUISITIONS: HOW A CHINESE OIL GIANT STUMBLER IN ITS LARGEST CROSS-BORDER POSTMERGER INTEGRATION EFFORT

KEY POINTS

- Postmerger integration often is a highly complex and lengthy process.
- How smoothly postmerger integration goes often depends on actions taken prior to closing the deal and developments beyond the control of the merger partners.
- Protracted integration often reduces the ability of the acquirer to recover the premium paid for the target firm.

Three years after having acquired Canadian oil and gas company Nexen Inc., China's largest oil company, CNOOC, was beset with problems managing its investment. Publicly traded CNOOC is 64% owned by state-owned China National Offshore Oil Corporation. In its largest foreign takeover ever, CNOOC paid \$15.1 billion for Nexen in 2013, giving it new offshore production in the North Sea, the Gulf of Mexico, offshore of West Africa, and oil and gas properties in the Middle East and Canada. It also gave CNOOC a bet on the future development of nonconventional oil and gas reserves such as the Canadian oil sands. What appeared at the time of closing to have fulfilled CNOOC's three-decade-old vision of becoming a global oil company was soon to become a management nightmare.

Oil sands require high-cost forms of extraction and produce heavy oil, not easily extracted during production, that sells at a discount on the world market. Despite these limitations, technological innovation and high crude prices triggered an oil sands production boom over the past decade. The process by which oil sands are converted to usable crude oil releases more carbon into the atmosphere than conventional crude extraction. This has created substantial opposition among environmental groups seeking to limit or eliminate further development of oil sands. Environmental groups in North America immediately urged regulators not to approve the takeover. Concerns in the United States about national security issues made it clear from the outset that getting regulatory approval in the United States was going to be an uphill battle.

When oil prices were in excess of \$100 per barrel, the Nexen deal looked like a good bet. CNOOC believed that they could make concessions necessary to get regulatory approval and that global energy prices would continue to rise enabling the firm to earn back any premium paid for Nexen. In their rush to get the deal done, CNOOC's management seems to have downplayed the implications of such concessions and the fact that historically oil prices have shown both sharp increases and decreases. CNOOC's troubles with Nexen really began before it actually took control.

To convince shareholders to sell and to appease those concerned about the impact on the environment, the firm paid a 61% premium to Nexen shareholders and made certain public commitments to environmental groups in Canada. As a result, Nexen shareholders readily accepted the offer in October 2012 and the deal received Canadian regulatory approval in December 2012. However, to close, CNOOC still had to overcome opposition among US lawmakers who publicly expressed concern about Chinese government control of Nexen's

Gulf of Mexico assets and other national security issues. To get US regulatory approval, CNOOC ceded operating control over several Gulf of Mexico oil drilling platforms to US or European firms with whom it had partnered to develop these offshore properties paving the way for the deal to close in February 2013.

Since closing, the Nexen acquisition has sopped up huge amounts of management time and corporate capital to fix a unit contributing only 2% of the firm's consolidated profits. CNOOC seriously underestimated the challenges with its Canadian purchase including cost overruns in Canada, US investment controls that forced CNOOC to relinquish operating control over its Gulf of Mexico assets, and a withdrawal from Nexen's Yemen business amid a civil war.

CNOOC's problems have been compounded by the collapse in global oil prices and a pipeline oil spill creating a public furor in Canada. Nexen's oil sands project called Long Lake is typical of CNOOC's woes associated with this deal. Long Lake is one of the least productive oil sands operations in northern Alberta province. Initially expected to cost 3.4 billion Canadian dollars, the project's costs have more than doubled putting pressure on Nexen's profit margins. The oil spill came at a time when Canadian oil producers were anxious to ease growing public concerns about pipeline safety and raised questions about Nexen's quality control and fail-safe protocols.

In response to these developments, CNOOC has cut capital spending by 30% from earlier estimates and reported a reduction in the value of the Nexen acquisition by \$700 million in recognition of the unit's fair market value having dropped below its book value. The firm also reneged on a preclosing pledge it had made to retain existing management and minimize any layoffs related to the deal. Frustrated by CNOOC's refusal to share its long-term strategy with Nexen senior management in Canada, Canadian managers ran Nexen as if it were a totally autonomous unit. CNOOC forced out existing management in April 2014. As world oil prices continued to slide throughout 2015, the Long Lake project became increasingly uncompetitive. The Chinese owners have moved aggressively to cut costs through layoffs and the integration of some business operations in North America. This confluence of events created a public relations nightmare for CNOOC in Canada.

CNOOC's senior managers assumed that they could overcome technical problems at the Long Lake project and that Nexen's management at the time of closing was up to the job of developing the oil sands reserves. CNOOC also confidently believed global oil prices over which they had no control would continue to rise making the oil sands reserves highly profitable in the future, despite operating problems at the Long Lake project that were known at the time of closing. Even the risk associated with the oil reserves in the turbulent country of Yemen often on the brink of civil war was ignored. In the end, a combination of managerial overconfidence and too great a fixation on a corporate vision helped create an ongoing corporate management nightmare.

CHAPTER OVERVIEW

Deciding if and when to integrate an acquisition often depends on the type of acquirer: financial or strategic. *Financial* buyers—those who buy a business for eventual resale—tend not to integrate the acquired business into another entity, at least not in a significant way. Rather than manage the business, they are inclined to monitor the effectiveness of current

management and intervene only if there is a significant and sustained deviation between actual and projected performance. Sometimes, financial buyers will “roll up” a fragmented industry by buying a firm within the industry and subsequently use it as a platform for acquiring additional businesses. Successive acquisitions are integrated into the initial acquisition in an effort to gain additional market share, an improved cost position, and eventually higher financial returns. In either case—whether the financial buyer manages the acquired business as a stand-alone operation or uses it to consolidate an industry—the objective remains the same. Take the business public through an initial public offering, sell to a strategic buyer, or sell to another financial buyer.

In contrast, *strategic* buyers want to make a profit by managing the acquired business for an extended period. How they manage the business postmerger can range from operating the target as a separate subsidiary to partially or wholly integrating the acquired business into the parent. Partial or complete integration of the target into the acquirer often reflects the desire to realize rapidly anticipated synergy to earn back any premium paid for the target. There is evidence that merged firms often continue to create synergy as long as 5 years after the closing date.¹

Synergy is commonly created in combining firms through the transfer of proprietary knowledge, functional and managerial skills, and sharing of resources such as functional departments and operations. However, integration of the target with the acquirer is not without risk. If the target’s value lies in the accumulated knowledge of its management and workforce, unique culture, and management style, full or even partial integration could undermine the value of the target firm.²

For our purposes here, assume that integration is the goal of the acquirer immediately after the transaction closes. A practical process, as outlined in this chapter, makes for effective integration. The factors critical to a successful postmerger integration include careful premerger planning (including the selection of the appropriate postmerger integration strategy), candid and continuous communication, adopting the right pace for combining the businesses, appointing an integration manager and team with clearly defined goals and lines of authority, and making the difficult decisions early in the process. This chapter concludes with a discussion of how to overcome some of the unique obstacles encountered in integrating business alliances. In addition to an end of chapter case study illustrating concepts discussed in this chapter, additional case studies that may be of interest are listed. A chapter review (consisting of practice questions and answers) is available in the file folder entitled “Student Study Guide” on the companion site to this book (<https://www.elsevier.com/books-and-journals/book-companion/9780128016091>).

THE ROLE OF INTEGRATION IN SUCCESSFUL ACQUISITIONS

Rapid integration is more likely to result in a merger that achieves the acquirer’s expectations.³ Andersen Consulting studied 100 global acquisitions, each valued at more than \$500 million, and concluded that most postmerger activities are completed within 6 months to

¹Alhenawi and Krishnaswami (2015).

²Mukherji et al. (2015).

³Cooper and Lybrand (1996) and Marks (1996).

1 year and that integration done quickly generates the financial returns expected by shareholders and minimizes employee turnover and customer attrition.⁴

This does not mean that restructuring ends entirely within this time period. Integration may continue in terms of plant sales or closures for years following the acquisition. Almost one-half of acquirers either sell or close target firms' plants within 3 years of the acquisition. Acquirers having more experience in managing the target's plants are more likely to retain the target's operations than those whose experience in operating such plants is limited. If we extend the period to 5 years following closing, plant divestitures and closures increase by an additional 9%–10%.⁵

Realizing Projected Financial Returns

A simple example demonstrates the importance of rapid integration to realizing projected financial returns. Suppose a firm's current market value of \$100 million accurately reflects the firm's future cash flows discounted at its cost of capital (i.e., the financial return the firm must earn or exceed to satisfy the expectations of its shareholders and lenders). Assume an acquirer is willing to pay a \$25-million premium for this firm over its current share price, believing it can recover the premium by realizing cost savings resulting from integrating the two firms. The amount of cash the acquirer will have to generate to recover the premium will increase the longer it takes to integrate the target company. If the cost of capital is 10% and integration is completed by the end of the first year, the acquirer will have to earn \$27.5 million by the end of the first year to recover the premium plus its cost of capital [$\$25 + (\$25 \times 0.10)$]. If integration is not completed until the end of the second year, the acquirer will have to earn an incremental cash flow of \$30.25 million [$\$27.5 + (\$27.5 \times 0.10)$], and so on.

The Impact of Employee Turnover

Although there is little evidence that firms necessarily experience an actual reduction in their total workforce following an acquisition, there is evidence of increased turnover among management and key employees after a corporate takeover. Some loss of managers is intentional as part of an effort to eliminate redundancies, overlapping positions, and incompetent managers. For example, target firm CEOs commonly are replaced following a takeover. Their departure often is associated with a longer-term improvement in the target firm's operating performance.⁶ This is consistent with the often-cited observation that mergers and acquisitions (M&As) are frequently motivated to remove ineffective management. Other managers, often those the acquirer would like to retain, frequently quit during the integration turmoil.

⁴Andersen Consulting (1999).

⁵Maksimovic et al. (2011).

⁶Demirtas and Simsir (2016).

In many acquisitions, talent and management skills represent the primary value of the target company to the acquirer—especially in high-technology and service companies, for which assets are largely the embodied knowledge of their employees—and it is difficult to measure whether employees who leave represent a significant “brain drain” or loss of key managers. If it does, though, this loss degrades the value of the target company, making the recovery of any premium paid to target shareholders difficult for the buyer.

The cost of employee turnover also may be high simply because the target firm’s top, experienced managers are removed as part of the integration process and replaced with new managers—who tend to have a high failure rate in general. When a firm selects an insider (i.e., a person already in the employ of the merged firms) to replace a top manager (e.g., a CEO), the failure rate of the successor (i.e., the successor is no longer with the firm 18 months later) is 34%. When the board selects an outside successor (i.e., one not currently employed by the merged firms) to replace the departing senior manager, the 18-month failure rate is 55%. Therefore, more than half of the time, an outside successor will not succeed, with an insider succeeding about two-thirds of the time.⁷

The cost of employee turnover does not stop with the loss of key employees. The loss of any significant number of employees can be very disruptive. Current employees have already been recruited and trained; lose them, and you will incur new recruitment and training costs to replace them with equally qualified employees. Moreover, the loss of employees is likely to reduce the morale and productivity of those who remain.

Acquirers are well aware of the need to minimize unwanted employee turnover and often tend to raise significantly target firm employee compensation to retain employees following acquisition. This is particularly true when the value of the target is dependent on certain employees whose skills would be difficult to replace.⁸

Acquisition-Related Customer Attrition

During normal operations, a business can expect a certain level of churn in its customer list. Depending on the industry, normal churn as a result of competitive conditions can be anywhere from 20 to 40%. A newly merged company will experience a loss of another 5%–10% of its existing customers as a direct result of a merger,⁹ reflecting uncertainty about on-time delivery and product quality and more aggressive postmerger pricing by competitors. Moreover, many companies lose revenue momentum as they concentrate on realizing expected cost synergies. The loss of customers may continue well after closing.¹⁰

⁷Dalton (2006).

⁸Macias and Pirinsky (2015).

⁹Down (1995).

¹⁰A McKinsey study of 160 acquisitions by 157 publicly traded firms in 11 different industries in 1995 and 1996 found that, on average, these firms grew 4 percentage points less than their peers during the 3 years following closing. Moreover, 42% of the sample actually lost ground. Only 12% of the sample showed revenue growth significantly ahead of their peers (Bekier et al., 2001).

Rapid Integration Does Not Mean Doing Everything at the Same Pace

Rapid integration may result in more immediate realization of synergies, but it also contributes to employee and customer attrition. Therefore, intelligent integration involves managing these trade-offs by quickly identifying and implementing projects that offer the most immediate payoff and deferring those whose disruption would result in the greatest revenue loss. Acquirers often postpone integrating data-processing and customer-service call centers until much later in the integration process if such activities are pivotal to maintaining on-time delivery and high-quality customer service.

State labor protections may also affect the pace with which postmerger integration can be realized. Many state and federal laws view workers not covered by collective bargaining agreements or individual employment contracts as “at-will” employees. As such, they can be dismissed by their employers for any reason and without notice.¹¹ A number of states have modified the general rule that employees are at will by holding that employees have implied rights under common law to fair treatment by their employers. Consequently, acquirers may be limited in the pace with which they can eliminate redundant workers following closing that impacts the magnitude and timing of realizing cost synergies. Reflecting these considerations, acquirers of targets in states with weak labor protections often realize somewhat larger announcement date returns than takeovers of targets in states with stronger labor protections.¹²

INTEGRATION IS A PROCESS, NOT AN EVENT

Integrating a business into the acquirer’s operations involves six major activities that fall loosely into the following sequence: premerger planning, resolving communication issues, defining the new organization, developing staffing plans, integrating functions and departments, and building a new corporate culture. Some activities are continuous and, in some respects, unending. For instance, communicating with all major stakeholder groups and developing a new corporate culture are largely continuous activities, running through the integration period and beyond. [Table 6.1](#) outlines the sequence.

Premerger Integration Planning

Premerger integration planning should coincide with the onset of due diligence.¹³ During this period, the acquirer is accumulating information about the target that is generally not

¹¹For larger firms employer discretion is limited by the Worker Adjustment and Retraining Notification Act (WARN), which is a US labor law requiring employers with 100 or more workers to provide 60-day advance notification of plant closing and mass layoffs.

¹²John et al. (2015).

¹³Generally, due diligence begins while the negotiation of the merger agreement is underway. When the seller has substantial leverage over the buyer, due diligence is postponed until after an agreement is signed. But the agreement is contingent of the buyer conducting adequate due diligence, the terms of which are described in the sales agreement.

TABLE 6.1 Viewing Merger Integration as a Process

Integration planning	Developing communication plans	Creating a new organization	Developing staffing plans	Functional integration	Building a new corporate culture
Premerger Planning: Select appropriate integration strategy Refine valuation Resolve transition issues Negotiate contractual assurances	Stakeholders: Employees Customers Suppliers Investors Lenders Communities (including regulators)	Learn from the past Business needs drive organizational structure	Determine personnel requirements for the new organization Determine resource availability Establish staffing plans and timetables Develop compensation strategy Create needed information systems	Revalidate due diligence data Conduct performance benchmarking Integrate functions: Operations Information technology Finance Sales Marketing Purchasing R&D Human resources	Identify cultural issues through corporate profiling Integrate through shared: Goals Standards Services Space

available publicly. This enables the acquirer to make more accurate assessments of potential synergy, a reasonable timetable for realizing synergy, and any costs that are likely to be incurred during postmerger integration. The planning activity involves identifying and prioritizing the critical actions that must be completed to combine the businesses. Planning enables the acquiring company to refine its original estimate of the value of the target and deal with postclosing transition issues in the context of the merger agreement. Furthermore, it gives the buyer an opportunity to insert into the agreement the appropriate representations and warranties as well as conditions of closing that facilitate the postmerger integration process. Finally, the planning process creates a postmerger integration organization to expedite the integration process after the closing.

To minimize potential confusion, it is critical to get the integration manager involved in the process as early as possible—ideally as soon as the target has been identified or at least well before the negotiation process begins.¹⁴ Doing so makes it more likely that the strategic rationale for the deal remains well understood by those involved in conducting due diligence and postmerger integration.

Putting the Postmerger Integration Organization in Place Before Closing

A postmerger integration organization with clearly defined goals and responsibilities should be in place before the closing. For friendly mergers, the organization—including supporting work teams—should consist of individuals from both the acquiring and target

¹⁴Uhlener and West (2008).

companies with a vested interest in the newly formed company. During a hostile takeover, of course, it can be problematic to assemble such a team, given the lack of trust that may exist between the parties to the transaction. The acquiring company will likely find it difficult to access needed information and involve the target company's management in the planning process before the transaction closes.

If the plan is to integrate the target firm into one of the acquirer's business units, it is critical to place responsibility for integration in that business unit. Personnel from the business unit should be well represented on the due diligence team to ensure they understand how best to integrate the target to realize synergies expeditiously.

The Postmerger Integration Organization: Composition and Responsibilities

The postmerger integration organization should consist of a management integration team (MIT) and integration work teams focused on implementing a specific portion of the integration plan. Senior managers from the two merged organizations serve on the MIT, which is charged with realizing synergies identified during the preclosing due diligence. Involving senior managers from both firms captures the best talent from both organizations and sends a comforting signal to all employees that decision makers who understand their particular situations are in agreement.

The MIT's emphasis during the integration period should be on activities that create the greatest value for shareholders. [Exhibit 6.1](#) summarizes the key tasks the MIT must perform to realize anticipated synergies.

In addition to driving the integration effort, the MIT ensures that the managers not involved in the endeavor remain focused on running the business. Dedicated work teams perform the detailed integration work. These teams should also include employees from both the acquiring company and the target company. Other team members might include outside advisors such as investment bankers, accountants, attorneys, and consultants.

EXHIBIT 6.1 KEY MANAGEMENT INTEGRATION TEAM RESPONSIBILITIES

1. Build a master schedule of what should be done by whom and by what date.
2. Determine the required economic performance for the combined entity.
3. Establish work teams to determine how each function and business unit will be combined (e.g., structure, job design, and staffing levels).
4. Focus the organization on meeting ongoing business commitments and operational performance targets during the integration process.
5. Create an early warning system consisting of performance indicators to ensure that both integration activities and business performance stay on plan.
6. Monitor and expedite key decisions.
7. Establish a rigorous communication campaign to support aggressively the integration plan. Address both internal constituencies (e.g., employees) and external constituencies (e.g., customers, suppliers, and regulatory authorities).

The MIT allocates dedicated resources to the integration effort and clarifies non-team member roles and enables day-to-day operations to continue at premerger levels. It should be careful to give the teams not only the responsibility to do certain tasks but also the authority and resources to get the job done. To be effective, the work teams must have access to timely, accurate information, receive candid, timely feedback, and be kept informed of the broader perspective of the overall integration effort to avoid becoming too narrowly focused.

Developing Communication Plans for Key Stakeholders

Before publicly announcing an acquisition, the acquirer should prepare a communication plan targeted at major stakeholder groups. Effective communication plans often can overcome resistance to change by those impacted by an M&A.¹⁵ The interests of each stakeholder group are discussed in more detail in the subsequent text.

Employees: Addressing the “Me” Issues Immediately

Employees need to understand early on what is expected of them and why. Simply telling employees what to expect following a takeover is not enough. They need to know why. Any narrative provided by the acquiring firm to explain the justification for the takeover and its implications for employees of both the target and acquired firms can be disruptive in that it can create angst by challenging current practices and core beliefs.

How employees feel about a takeover (i.e., their emotional mindset) can determine its ultimate success.¹⁶ Methodologies exist such as “critical incident techniques” to determine how employees feel about a takeover.¹⁷ Without employee acceptance, employees can resist integration efforts either openly (actively) or passively. The latter is perhaps the most insidious as employees can appear to be cooperating but in fact are not. They are either slow to respond to requests for information or behavioral changes or not responding at all. In the absence of overt resistance (openly refusing to do something), passive resistance (sometimes called passive aggressive behavior) often becomes a major challenge to the effective integration of the acquirer and target firms.

Acquirer and target firm employees are interested in any information pertaining to the merger and how it will affect them, often in terms of job security, working conditions, and total compensation. For example, if the acquirer expects to improve worker productivity or reduce the cost of benefit packages, it is critical to explain that the long-term viability of the business requires such actions as the markets in which the firms compete have become increasingly competitive. Thus, consistent and candid communication is of paramount importance.

Target firm employees often represent a substantial portion of the acquired company’s value, particularly for technology and service-related businesses with few tangible assets. The CEO should lead the effort to communicate to employees at all levels through on-site meetings or via teleconferencing. Communication to employees should be as frequent as possible;

¹⁵Kansal and Chandani (2014).

¹⁶Gunkel et al. (2015).

¹⁷For more about this methodology see Durand (2016).

it is better to report that there is no change than to remain silent. Direct communication to all employees at both firms is critical. Deteriorating job performance and absence from work are clear signs of workforce anxiety. Many companies find it useful to create a single information source accessible to all employees, be it an individual whose job is to answer questions or a menu-driven automated phone system programmed to respond to commonly asked questions. The best way to communicate in a crisis, however, is through regularly scheduled employee meetings.

All external communication in the form of press releases should be coordinated with the PR department to ensure that the same information is released concurrently to all employees. Internal email systems, voice mail, or intranets may be used to facilitate employee communications. In addition, personal letters, question-and-answer sessions, newsletters, and videotapes are highly effective ways to deliver messages.

Customers: Undercommitting and Overdelivering

Attrition can be minimized if the newly merged firm commits to assuring customers that it will maintain or improve product quality, on-time delivery, and customer service. Such assurances are more credible if the merged firms dedicate an account management team to each major customer account. Each team's responsibilities would include all communications with the customer and the resolution of issues that might arise while minimizing the amount of change each customer experiences. Commitments should be realistic in terms of what needs to be accomplished during the integration phase. The firm must communicate to customers realistic benefits associated with the merger. From the customer's perspective, the merger can increase the range of products or services offered or provide lower selling prices as a result of economies of scale and new applications of technology.

Suppliers: Developing Long-Term Vendor Relationships

The new company should seek long-term relationships rather than simply ways to reduce costs. Aggressive negotiation may win high-quality products and services at lower prices in the short run, but that may be transitory if the new company is a large customer of the supplier and if the supplier's margins are squeezed continually. The supplier's product or service quality will suffer, and the supplier eventually may exit the business.

Investors: Maintaining Shareholder Loyalty

The new firm must be able to present to investors a compelling vision of the future. In a share exchange, target shareholders become shareholders in the newly formed company. Loyal shareholders tend to provide a more stable ownership base and may contribute to lower share price volatility. All firms attract particular types of investors—some with a preference for high dividends and others for capital gains—and they may clash over their preferences, as America Online's acquisition of Time Warner in January 2000 illustrates. The combined market value of the two firms lost 11% in the 4 days following the announcement: Investors fretted over what had been created, and there was a selling frenzy that likely involved investors who bought Time Warner for its stable growth and America Online for its meteoric growth rate of 70% per year.

Lenders: Reassuring Lenders

The acquirer generally must get permission from the target firm's lenders to allow it to assume responsibility for any outstanding debt held by the target firm. Lenders must be confident that the new firm will generate sufficient cash flow to ensure that the principal and interest payments on their debt will be paid on a timely basis. Additional borrowing to finance the deal cannot violate loan covenants (i.e., commitments by the borrower to maintain certain financial ratios or limitations on the payment of dividends) on debt held by the acquirer or target firms in order not to allow lenders to immediately demand repayment of any outstanding balances. Many loan agreements have "cross-default" clauses such that if a borrower is in default (i.e., fails to satisfy certain obligations) with respect to one lender, other lenders can also demand repayment. A firm may be technically in default for a number of reasons such as missing or being late on the payment of principal and interest or experiencing declining interest coverage ratios (i.e., operating income to interest expense). Lenders are most likely to be satisfied if the combined firms result in a new company with substantially greater unencumbered liquid assets (i.e., those not used to collateralize existing debt and which can be readily converted to cash) and increased predictable cash flow in excess of what is needed to keep the company operating.

Communities: Building Strong, Credible Relationships

Good working relations with surrounding communities are simply good public relations. Companies should communicate plans to build or keep plants, stores, or office buildings in a community as soon as they can be confident that these actions will be implemented. Such steps often translate into new jobs and increased tax collections for the community. There is evidence that acquirers viewed as "socially responsible" are more likely to experience easier postmerger integration and higher announcement day financial returns than acquirers viewed as less socially responsible.¹⁸

Creating a New Organization

Despite the requirement to appoint dozens of managers—including heads of key functions, groups, and even divisions—creating a new top management team must be given first priority.

Establishing a Structure

Building new reporting structures for combining companies requires knowledge of the target company's prior organization, some sense as to the effectiveness of this organization, and the future business needs of the new firm. Prior organization charts provide insights into how individuals from both companies will interact within the new company, because they reveal the past experience and future expectations of individuals with regard to reporting relationships.

The next step is to create a structure that meets the business needs of the new firm. Common structures include functional, product or service, and divisional organizations. In a *functional organization*, people are assigned to specific departments, such as accounting, engineering, and

¹⁸Deng et al. (2013).

marketing. In a *product or service organization*, functional specialists are grouped by product line or service offering, and each has its own accounting, human resources, sales, marketing, customer service, and product development staffs. *Divisional organizations*, in which groups of products are combined into divisions or strategic business units (SBUs), are the most common. Such organizations have their own management teams and tend to be highly decentralized.

The popularity of decentralized versus centralized management structures varies with the state of the economy. During recessions, when top management is under great pressure to cut costs, companies may tend to move toward centralized management structures, only to decentralize when the economy recovers. Highly decentralized authority can retard the pace of integration because there is no single authority to resolve issues or determine policies.

A centralized structure may make postmerger integration much easier. Senior management can dictate policies governing all aspects of the combined companies, centralize all types of functions that provide support to operating units, and resolve issues among the operating units. Still, centralized control can be highly detrimental and can destroy value if policies imposed by the central headquarters are inappropriate for the operating units—such as policies that impose too many rigid controls, focus on the wrong issues, hire or promote the wrong managers, or establish the inappropriate performance measures. Moreover, centralized companies often have multiple layers of management and centralized functions providing services to the operating units. The parent companies pass on the costs of centralized management and support services to the operating units, and these costs often outweigh the benefits.¹⁹

The benefits of a well-managed, rapid postmerger integration suggest a centralized management structure initially with relatively few management layers. The distance between the CEO and division heads, measured in terms of intermediate positions, has decreased substantially, while the span of a CEO's authority has widened.²⁰ This does not mean all integration activities should be driven from the top. Once integration is complete, the new company may move to a more decentralized structure in view of the well-documented costs of centralized corporate organizations.

Developing Staffing Plans

Staffing plans should be formulated early in the integration process. The early development of such plans provides an opportunity to include key personnel from both firms in the integration effort. Other benefits include the increased likelihood of retaining employees with key skills and talents, maintaining corporate continuity, and team building. [Fig. 6.1](#) presents the logical sequencing of staffing plans and the major issues addressed in each segment.

Personnel Requirements

The appropriate organizational structure is one that meets the current functional requirements of the business and is flexible enough to be expanded to satisfy future requirements. Before establishing the organizational structure, the integration team should agree on the specific functions needed to run the combined businesses and project each function's personnel requirements based on a description of the function's ideal structure to achieve its objectives.

¹⁹Campbell et al. (1997).

²⁰Wulf and Rajan (2003) report a 25% decrease in intermediate positions between 1986 and 1999, with about 50% more positions reporting directly to the CEO.

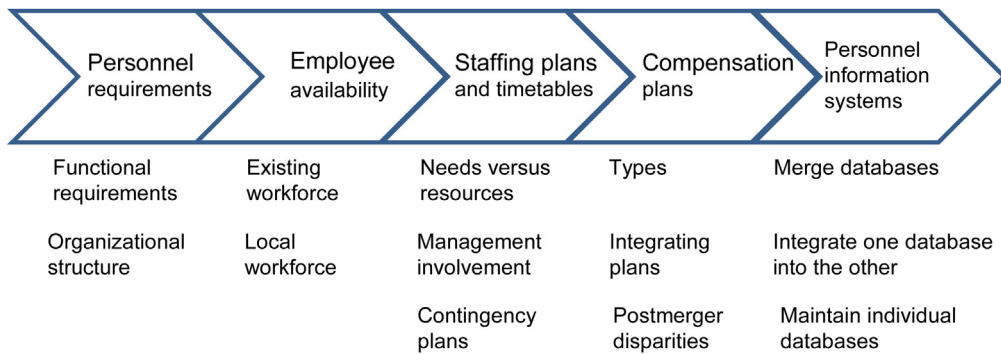


FIGURE 6.1 Staffing strategy sequencing and associated issues.

Employee Availability

Employee availability refers to the number of each type of employee required by the new organization. The skills of the existing workforce should be documented and compared with the current and future requirements of the new company. The local labor pool can be a source of potential new hires for the combined firms to augment the existing workforce. Data should be collected on the educational levels, skills, and demographic composition of the local workforce as well as prevailing wage rates by skill category.

Staffing Plans and Timetable

A detailed staffing plan can be developed once the preceding steps are completed. Gaps in the firm's workforce that need to be filled via outside recruitment can be readily identified. The effort to recruit externally should be tempered by its potentially adverse impact on current-employee morale. Filling needed jobs should be prioritized and phased in over time in recognition of the time required to fill certain types of positions and the impact of major hiring programs on local wage rates in communities with a limited availability of labor.

Compensation Plans

Merging compensation plans must be done in compliance with prevailing regulations and with sensitivity. Total compensation consists of base pay, bonuses or incentive plans, benefits, and special contractual agreements. Bonuses may take the form of a lump sum of cash or stock paid to an employee for meeting or exceeding these targets. Special contractual agreements may consist of noncompete agreements, in which key employees, in exchange for an agreed-on amount of compensation, sign agreements not to compete against the newly formed company if they should leave. Special agreements also may take the form of golden parachutes (i.e., lucrative severance packages) for senior management. Finally, retention bonuses often are given to employees if they agree to stay with the new company for a specific period.²¹

²¹In 2014, Facebook's \$3-billion acquisition of virtual reality headset company, Oculus, included \$700 million in retention bonuses to retain the services of the founder and other key personnel.

Personnel Information Systems

The acquiring company may choose to merge all personnel data into a new database, merge one corporate database into another, or maintain the separate personnel databases of each business. A single database enables authorized users to access employee data more readily, plan more efficiently for future staffing requirements, and conduct workforce analyses. Maintenance expenses associated with a single database also may be lower. The decision to keep personnel databases separate may reflect plans to divest the unit in the future.

Functional Integration

So far, you have learned about the steps involved in *planning* the integration process. Now let's look at functional integration—the actual *execution* of the plans. The MIT must first determine the extent to which the two firms' operations and support staffs are to be centralized or decentralized. The main areas of focus should be IT, manufacturing operations, sales, marketing, finance, purchasing, R&D, and the requirements to staff these functions. However, before any actual integration takes place, it is crucial to revalidate data collected during due diligence, benchmark all operations by comparing them to industry standards, and reset synergy expectations.

Revalidating Due Diligence Data

Data collected during due diligence should be reviewed immediately after closing. The pressure exerted by both buyer and seller to complete the transaction often results in a haphazard preclosing due diligence review. For example, to compress the time devoted to due diligence, sellers often allow buyers access only to senior managers. For similar reasons, site visits by the buyer often are limited to those with the largest number of employees—and so risks and opportunities that might exist at other sites are ignored or remain undiscovered. The buyer's legal and financial reviews typically are conducted only on the largest customer and supplier contracts, promissory notes, and operating and capital leases. Receivables are evaluated, and physical inventory is counted using sampling techniques. The effort to determine whether intellectual property has been properly protected, with key trademarks or service marks registered and copyrights and patents filed, is often spotty.

Benchmarking Performance

Benchmarking important functions such as the acquirer and target manufacturing and IT operations is a useful starting point for determining how to integrate these activities. Standard benchmarks include the International Organization for Standardization's (ISO) 9000 Quality Systems—Model for Quality Assurance in Design, Development, Production, Installation, and Servicing. Other benchmarks that can be used include the US Food and Drug Administration's Good Manufacturing Practices and the Department of Commerce's Malcolm Baldrige Award.

Reset Synergy Expectations

Companies that reexamine their synergy assumptions after closing seem to achieve higher synergies than those that do not. Companies that are most successful in realizing incremental

value resulting from integrating the target firm often are those that use their predeal estimates of synergy as baseline estimates (i.e., the minimum they expect to achieve) and actively seek new synergy opportunities during integration. Such firms are four times more likely to characterize their deals more highly successful than executives of acquiring firms that do not reset their synergy expectations. Additional value is often realized by making fundamental operational changes or from providing customers with new products or services that were envisioned during the due diligence process.²²

Integrating Manufacturing Operations

The objective should be to reevaluate overall capacity, the potential for future cost reductions, the age and condition of facilities, the adequacy of maintenance budgets, and compliance with environmental laws and safety laws. The integration should consider carefully whether target facilities that duplicate manufacturing capabilities are potentially more efficient than those of the buyer. As part of the benchmarking process, the operations of both the acquirer and the target company should be compared with industry standards to evaluate their efficiency properly.

Efficiency may be evaluated in terms of following processes: production planning, materials ordering, order entry, and quality control. The production planning and materials ordering functions need to coordinate activities because the amount and makeup of the materials ordered depends on the accuracy of sales projections. Inaccurate projections create shortages or costly excess inventory accumulation. Order entry may offer significant opportunities for cost savings. Companies that produce in anticipation of sales, such as automakers, often carry large finished-goods inventories, while others, such as personal computer manufacturers, often build only when an order is received, to minimize working capital requirements. Finally, the efficiency of quality control can be measured in terms of the percentage of products that have to be reworked due to their failure to meet quality standards.

Plant consolidation begins with adopting a set of common systems and standards for all manufacturing activities. Such standards often include the time between production runs, cost per unit of output, and scrap rates. Vertical integration can be achieved by focusing on different stages of production. Different facilities specialize in the production of selected components, which are then shipped to other facilities to assemble the finished product. Finally, a company may close certain facilities whenever there is excess capacity.

Integrating Information Technology

IT spending constitutes an ever-increasing share of most business budgets—and about 80% of software projects fail to meet their performance expectations or deadlines.²³ Nearly one-half are scrapped before completion, and about one-half cost two to three times their original budgets and take three times as long as expected to complete. Managers seem to focus too much on technology and not enough on the people and processes that will use that technology. If the buyer intends to operate the target company independently, the information systems of the two companies may be kept separate as long as communications links between them can be established. If the buyer intends to integrate the target, though,

²²Agrawal et al. (2011).

²³Financial Times (1996).

the process can be daunting. Nearly 70% of buyers choose to combine their information systems immediately after closing, and almost 90% of acquirers eventually combine these operations.²⁴

Recent evidence suggests that the successful integration of the acquirer's and target's IT systems is largely a function of the inclusion of an extensive investigation of the target's IT function during due diligence. This heightens the probability that the combined firm's IT functions will better support the firm's business strategy.²⁵ Examples include the acquirer's efforts to improve manufacturing efficiency, procurement, order entry, and customer service.

Integrating Finance

Some target companies will be operated as stand-alone operations with separate finance functions, while others will be completely merged, including finance functions, with the acquirer's existing business. International acquisitions involve companies in geographically remote areas and operate largely independent of the parent. This requires considerable effort to ensure that the buyer can monitor financial results from a distance, even if the parent has its representative on site. The acquirer should also establish a budgeting process and signature approval levels to control spending at remote locations.

Integrating Sales

Significant cost savings may result from integrating sales forces, which eliminates duplicate sales representatives and related support expenses, such as travel and entertainment expenses, training, and management. A single sales force may also minimize customer confusion by allowing customers to deal with a single salesperson when buying multiple products.

Whether the sales forces of the two firms are wholly integrated or operated independently depend on their relative size, the nature of their products and markets, and their geographic location. A small sales force may be readily combined with the larger sales force if they sell sufficiently similar products and serve similar markets. The sales forces may be kept separate if the products they sell require in-depth understanding of the customers' needs and a detailed knowledge of the product. It is quite common for firms that sell highly complex products such as robotics or enterprise software to employ a particularly well-trained and sophisticated sales force that uses a "consultative selling" approach. This approach may entail the firm's sales force working with the customer to develop a solution tailored to their specific needs and may require keeping the sales forces of merged firms separate. Sales forces in globally dispersed businesses often are kept separate to reflect the uniqueness of their markets. However, support activities such as sales training and technical support often are centralized.

Integrating Marketing

Enabling the customer to see a consistent image in advertising and promotional campaigns may be the greatest challenge facing the integration of the marketing function. Steps to ensure consistency, however, should not confuse the customer by radically changing a product's image or how it is sold. The location and degree of integration of the marketing function depend on the global nature of the business, the diversity or uniqueness of product lines, and the

²⁴Cossey (1991).

²⁵Baker and Niederman (2014).

pace of change in the marketplace. A business with operations worldwide may be inclined to decentralize marketing to the local countries to increase awareness of local laws and cultural patterns. Companies with a large number of product lines that can be grouped into logical categories or that require extensive product knowledge may decide to disperse the marketing function to the various operating units to keep marketing personnel as close to the customer as possible.

Integrating Purchasing

Managing the merged firm's purchasing function aggressively and efficiently can reduce the total cost of goods and services purchased by merged companies by 10%–15%.²⁶ The opportunity to reap such substantial savings from suppliers comes immediately after the closing of the transaction. A merger creates uncertainty among both companies' suppliers, particularly if they might have to compete against each other for business with the combined firms. Many will offer cost savings and new partnership arrangements, given the merged organization's greater bargaining power to renegotiate contracts. The new company may choose to realize savings by reducing the number of suppliers. As part of the premerger due diligence, both the acquirer and the acquired company should identify a short list of their most critical suppliers, with a focus on those accounting for the largest share of purchased materials expenses.

Integrating Research and Development

Often, the buyer and seller R&D organizations are working on duplicate projects or projects not germane to the buyer's long-term strategy. Senior managers and the integration team must define future areas of R&D collaboration and set priorities for future R&D research. However, barriers to R&D integration abound. Some projects require considerably more time (measured in years) to produce results than others. Another obstacle is that some personnel stand to lose in terms of titles, prestige, and power if they collaborate. Finally, the acquirer's and the target's R&D financial return expectations may differ. The acquirer may wish to give R&D a higher or lower priority in the combined operation of the two companies. A starting point for integrating R&D is to have researchers from both companies share their work with each other and colocate.

Integrating Human Resources

Human resources departments have traditionally been highly centralized, responsible for evaluating management, conducting employee surveys, developing staffing plans, and providing training. Such departments may be used to evaluate the strengths and weaknesses of potential target company management teams and workforce, integrate the acquirer's and target's management teams, implement pay and benefit plans, and communicate information about acquisitions. Due to expense and a perceived lack of responsiveness, the trend in recent years has been to move the HR function to the operating unit, where hiring and training may be done more effectively. Despite this trend, the administration of benefit plans, management of HR information systems, and organizational development often remain centralized due to their complexity and requirements for specialized expertise.

²⁶Chapman et al. (1998).

Building a New Corporate Culture

Corporate culture is a common set of values, traditions, and beliefs that influence management and employee behavior within a firm. Large, diverse businesses have an overarching culture and a series of subcultures that reflect local conditions. When two companies with different cultures merge, the newly formed company often will take on a new culture that is quite different from either the acquirer's or the target's culture. Cultural differences can instill creativity in the new company or create a contentious environment. Corporate culture also can be a source of competitive advantage if it can be changed to reinforce the firm's desired business strategy. Postmerger integration can be a time for senior managers to diagnose the acquired firm's corporate culture and to decide strategies for modifying the new firm's culture to be compatible with that desired for the combined firms.

But this is far easier said than done, because it is often unobservable core beliefs held by employees that drive their observable behaviors. In a 2016 survey of more than 7000 business executives, 82% of survey respondents viewed culture as a potential source of competitive advantage. Despite this recognition, most executives admitted to only a limited understanding of their firm's cultures, with only (28%) believing they actually understood their firm's culture.²⁷

Tangible symbols of culture include statements hung on walls containing the firm's mission and principles as well as status associated with the executive office floor and designated parking spaces. Intangible forms include the behavioral norms communicated through implicit messages about how people are expected to act. Since they represent the extent to which employees and managers actually "walk the talk," these messages are often far more influential in forming and sustaining corporate culture than the tangible trappings of corporate culture.²⁸ With senior executives serving as role models, desired behaviors can be reinforced.

Employees, customers, and other constituencies can readily see the extent to which a firm's top management values honesty and integrity if their public pronouncements are consistent with what is actually happening. Management that blames their firm's poor performance on factors beyond their control often is viewed as untruthful. In contrast, management willing to take responsibility for a firm's underperformance often is viewed by investors as willing to take the needed corrective actions. As such, investors reward such firms by bidding up their share prices and penalize others whose management is viewed as deceitful.²⁹

Trust in the corporation is undermined after a merger, in part by the ambiguity of the new organization's identity. Employee acceptance of a common culture can build identification with and trust in the corporation. As ambiguity abates and acceptance of a common culture grows, trust can be restored, especially among those who identified closely with their previous organization.³⁰

The culture emerging from Belgian brewer InBev's takeover of US brewer Anheuser-Busch in 2008 clearly reflected a combination of the two firm's premerger cultures. InBev had been

²⁷Deloitte Consulting LLP (2016).

²⁸Kennedy and Moore (2003) argue that the most important source of communication of cultural biases in an organization is the individual behavior of others, especially those with the power to reward appropriate behavior and to punish inappropriate behavior.

²⁹Chance et al. (2015).

³⁰Rao-Nicholson et al. (2016).

viewed as a risk taker and bottom line oriented while Anheuser-Busch was far more paternalistic. The combined firms represented more of the best of both. Anheuser-Busch's training programs and long-term incentive plans have been rolled out to the combined firm's operations worldwide. Once viewed as highly risk averse, Anheuser-Busch managers have been willing to take much greater risk. Threatened by increased competition from craft beers and lower consumer spending since the 2008–09 recession, the firm has become much more innovative with a wave of new products and packaging.³¹

Identifying Cultural Issues Through Cultural Profiling

The first step in building a new corporate culture is to develop a cultural profile of both the acquirer and acquired companies through employee surveys and interviews and by observing management styles and practices. Sometimes it is difficult to identify the root causes of observable behaviors. As such, it may be helpful to work backwards by hypothesizing what is driving such behaviors in order to understand their origin. The information is then used to show the similarities and differences between the two cultures as well as their comparative strengths and weaknesses and to diagnose potential problems that need changing.

The relative size and maturity of the acquirer and target firms can have major implications for cultural integration.³² Start-up companies typically are highly informal in terms of dress and decision making. Compensation may be largely stock options and other forms of deferred income. Benefits, beyond those required by state and federal law, and "perks" such as company cars are largely nonexistent. Company policies frequently do not exist, are not in writing, or are drawn up only as needed. Internal controls covering employee expense accounts are often minimal. In contrast, larger, mature companies are often more highly structured, with well-defined internal controls, compensation structures, benefits packages, and employment policies all in place because the firms have grown too large and complex to function in an orderly manner without them. Employees usually have clearly defined job descriptions and career paths.

Once senior management reviews the information in the cultural profile, it must decide which characteristics of both cultures to emphasize. The most realistic expectation is that employees in the new company can be encouraged to adopt a shared vision, a set of core values, and behaviors deemed important by senior management. Anything more is probably wishful thinking: a company's culture evolves over a long period, but getting to the point where employees wholly embrace management's desired culture may take years at best or never be achieved.

Overcoming Cultural Differences

Cultural differences can be very difficult to overcome because they may have become entrenched in an organization over many years. For example, in a firm in which the CEO for the past decade had been very directive and intolerant of dissent, employees may be reluctant to share their ideas. Consequently, efforts to change the culture can take many years.

Sharing common goals, standards, services, and space can be a highly effective and practical way to integrate disparate cultures. Common goals drive different units to cooperate.

³¹Brown (2013).

³²Brueller et al. (2015).

At the functional level, setting exact timetables and processes for new product development can drive different operating units to collaborate as project teams strive to introduce the product by the target date. At the corporate level, incentive plans spanning many years can focus all operating units to pursue the same goals. Although it is helpful in the integration process to have shared or common goals, individuals must still have specific goals to minimize the tendency of some to underperform while benefiting from the collective performance of others.

Shared standards or practices enable one unit or function to adopt the “best practices” found in another. Standards include operating procedures, technological specifications, ethical values, internal controls, employee performance measures, and comparable reward systems throughout the combined companies. Some functional services can be centralized and shared by multiple departments or operating units. Commonly centralized services include accounting, legal, public relations, internal audit, and information technology. The most common way to share services is to use a common staff. Alternatively, a firm can create a support services unit and allow operating units to purchase services from it or to buy similar services outside the company.

Mixing offices or even locating acquired company employees in space adjacent to the parent’s offices is a highly desirable way to improve communication and idea sharing. Common laboratories, computer rooms, and lunchrooms also facilitate communication and cooperation.³³

When Time Is Critical

Although every effort should be made to merge corporate cultures by achieving consensus around certain core beliefs and behaviors, the need for nimble decision making may require a more expeditious approach. Japanese corporations have a reputation for taking the time to build consensus before implementing corporate strategies. Historically, this approach has served them well. However, in the increasingly fast pace of the global marketplace, this is a luxury they may not be able to afford. Recent moves by Panasonic in 2012 to consolidate past acquisitions illustrate a growing trend among Japanese conglomerates to buy out minority shareholders in their majority-owned subsidiaries in order to gain full control. Minority investors may impede a firm’s ability to implement its business strategy by slowing the decision-making process.

Digital Tools and Change Management

Programs designed to change corporate culture often fail due to employee opposition or a lack of management commitment. Success rates tend to be higher if “digital tools” are

³³The challenges are enormous in companies with disparate cultures. In early 2006, Jeffrey Bewkes, the president of Time Warner, stopped requiring corporate units to cooperate. It was a complete turnabout from the philosophy espoused following the firm’s 2001 merger with AOL. Then, executives promised to create a well-oiled vertically integrated profit generator. Books and magazines and other forms of content would feed the television, movie, and Internet operations. The 2006 change encouraged managers to cooperate only if they could not make more money on the outside. Other media companies, such as Viacom and Liberty Media, have broken themselves up because their efforts to achieve corporate-wide synergies with disparate media businesses proved unsuccessful.

properly applied to accelerate and simplify the ability of an organization to adopt a new set of desired behaviors.³⁴ Such tools offer the prospect for immediate feedback, personalizing communication to the employee's experience, circumventing hierarchy, building shared purpose, and communicating progress. Each of these areas is described in more detail in the subsequent text.

Immediate feedback involves offering employees the right information when they can actually use it to adjust their behavior to what is desired by the corporation. For example, establishing a short messaging system (SMS) can keep widely dispersed employees informed about new products, customer developments, and market changes.

Personalizing communications makes information more important to the user as it can show how the individual fits in the overall organization and how their actions contribute to achieving corporate goals. This requires limiting broadcast messages throughout the corporation and increasing focus on directly communicating information relevant to a specific employee's function such as finance, human resources, engineering, and marketing.

Circumventing hierarchy involves direct communication with employees across business unit or organizational lines. This enables more employees to see firsthand material communicated by senior management without having it reviewed and filtered by their supervisors. However, this is not without risk in that information that can put the firm at a competitive disadvantage can more easily leak into the marketplace.

Building shared purpose is especially challenging in organizations that are widely dispersed geographically. Giving employees in all regions access to the same databases, activities conducted by other team members, and online opinion forums facilitate information flow. Shared information and commentary can help employees to understand what is expected and how others are adapting to the new cultural behaviors. For example, all employees could be given online access to databases showing job vacancies, hiring practices, candidates identified and interviewed, and eventual job placements. By achieving greater transparency, employees in remote locations can have more confidence in the fairness of the human resource system.

Communicating progress toward corporate goals can help employees see the "fruit" of their collective effort by tracking the firm's progress against key corporate goals. When employees see progress, it creates a sense of success, confidence in current business strategies, and greater acceptance of desired corporate behaviors.

INTEGRATING BUSINESS ALLIANCES

Business alliances also must pay close attention to integration activities. Unlike M&As, alliances usually involve shared control. Successful implementation requires maintaining a good working relationship between venture partners. When this is not possible, the alliance is destined to fail. The breakdown in the working relationship is often a result of an inadequate integration.³⁵

³⁴Ewenstein et al. (2015).

³⁵Lynch (1993, pp. 189–205).

Integrating Mechanisms

Robert Porter Lynch suggests six integration mechanisms to apply to business alliances: leadership, teamwork and role clarification, control by coordination, policies and values, consensus decision making, and resource commitments.

Leadership

Although the terms *leadership* and *management* often are used interchangeably, there are critical differences. A leader sets direction and makes things happen, whereas a manager follows through and ensures that things continue to happen. Leadership involves vision, drive, enthusiasm, and selling skills; management involves communication, planning, delegating, coordinating, problem solving, making choices, and clarifying lines of responsibility. Successful alliances require the proper mix of both sets of skills. The leader must provide direction, values, and behaviors to create a culture that focuses on the alliance's strategic objectives as its top priority. Managers foster teamwork in the shared control environment of the business alliance.

Teamwork and Role Clarification

Teamwork is the underpinning that makes alliances work. It comes from trust, fairness, and discipline. Teams reach across functional lines and often consist of diverse experts or lower-level managers with critical problem-solving skills. The team provides functional managers with the broader, flexible staffing to augment their own specialized staff. Teams tend to create better coordination and communication at lower levels of the alliance as well as between partners in the venture. Because teams represent individuals with varied backgrounds and possibly conflicting agendas, they may foster rather than resolve conflict.

Coordination

In contrast to an acquisition, no one company is in charge. Alliances do not lend themselves to control through mandate; rather, in the alliance, control is best exerted through coordination. The best alliance managers are those who coordinate activities through effective communication. When problems arise, the manager's role is to manage the decision-making process, not necessarily to make the decision.

Policies and Values

Alliance employees need to understand how decisions are made, what has high priority, who will be held accountable, and how rewards will be determined. When people know where they stand and what to expect, they are better able to deal with ambiguity and uncertainty. This level of clarity can be communicated through a distinct set of policies and procedures that are well understood by joint venture or partnership employees.

Consensus Decision Making

Consensus decision making does not mean that decisions are based on unanimity; rather, decisions are based on the premise that all participants have had an opportunity to express their opinions and are willing to accept the final decision. Operating decisions must be made within a reasonable time frame. The formal decision-making structure

varies with the type of legal structure. Joint ventures often have a board of directors and a management committee that meet quarterly and monthly, respectively. Projects normally are governed by steering committees. Many alliances are started to take advantage of complementary skills or resources available from alliance participants. The alliance can achieve its strategic objective only if all parties to the alliance provide the resources they agreed to commit.

INTEGRATING FAMILY-OWNED FIRMS

The integration process described in this chapter deals with the challenges of combining public firms. While there are significant similarities when acquiring a family or privately owned firm, the acquirer often is confronted with a range of issues not necessarily found in public firms.

The acquirer is buying not just a company but also a long history of strong ties between individuals with extensive shared experiences. In such situations, the pace of integration often is much slower as the buildup of respect and trust may take much longer.³⁶ The integrating mechanisms discussed in the previous section for business alliances often apply to integrating family or privately owned firms.

Chapter 10 describes in detail the hurdles associated with such businesses including primitive internal controls and reporting systems, limited product and customer diversification, and employee interests and time horizons differing from those in public firms. Acquirers must recognize that realizing anticipated synergy often takes longer in these situations than it might for public targets. As such, a prudent acquirer may choose to discount the offer price from what they believe to be the true value of the target in recognition of the daunting challenges associated with integrating successfully nonpublic firms.

SOME THINGS TO REMEMBER

M&As that are successfully integrated often demonstrate leadership by candidly and continuously communicating a clear vision, a set of values, and clear priorities to all employees. Successful integration efforts are those that are well planned, that appoint an integration manager and a team with clearly defined lines of authority, and that make the tough decisions early in the process, be they about organizational structure, reporting relationships, spans of control, personnel selection, roles and responsibilities, or workforce reduction. The focus must be on those issues with the greatest near-term impact. Because alliances involve shared control, the integration process requires good working relationships with the other participants. Successful integration also requires leadership that is capable of defining a clear sense of direction and well-defined priorities and managers who accomplish their objectives as much by coordinating activities through effective communication as by unilateral decision making.

³⁶Meier and Schier (2014).

CHAPTER DISCUSSION QUESTIONS

- 6.1 Why is the integration phase of the acquisition process considered so important?
- 6.2 Why should acquired companies be integrated quickly?
- 6.3 Why is candid and continuous communication so important during the integration phase?
- 6.4 What messages might be communicated to the various audiences or stakeholders of the new company?
- 6.5 Cite examples of difficult decisions that should be made early in the integration process.
- 6.6 When Daimler Benz acquired Chrysler Corporation, it announced that it could take 6–8 years to integrate fully the combined firm's global manufacturing operations and certain functions such as purchasing. Speculate as to why it might take that long.
- 6.7 In your judgment, are acquirers more likely to underestimate or overestimate anticipated cost savings? Explain your answer.
- 6.8 Cite examples of expenses you believe are commonly incurred in integrating target companies. Be specific.
- 6.9 A common justification for mergers of competitors is the potential cross-selling opportunities it would provide. Comment on the challenges that might be involved in making such a marketing strategy work.
- 6.10 Billed as a merger of equals, Citibank and Travelers resorted to a co-CEO arrangement when they merged. Why do you think they adopted this arrangement? What are the advantages and disadvantages of such an arrangement?

Answers to these Chapter Discussion Questions are available in the Online Instructor's Manual for instructors using this book (<https://textbooks.elsevier.com/web/Manuals.aspx?isbn=9780128016091>).

END OF CHAPTER CASE STUDY: MEN'S WEARHOUSE AND JOS. A. BANK STUMBLE DURING POSTMERGER INTEGRATION

Case Study Objectives: To Illustrate

- The challenges in realizing revenue and cost-related synergies even when firms appear to be substantially similar
- The potential long-term debilitating impact on corporate performance of a lengthy or incomplete integration of a large acquisition
- How the size of acquisition premiums impact the pace and extent of postmerger integration
- Potential conflicts of interest of activist investors promoting a takeover

Pressured by activist investors to pursue growth, Men's Wearhouse is the story of a clothing retailer that undertook an expensive and ultimately value-destroying acquisition. The firm had a history of growth and of making intelligent (value-enhancing) acquisitions, such as tuxedo rental

business After Hours Formal Wear (later renamed Tux). Completed in 2006, the acquisition allowed Men's Wearhouse to tap additional customers in an era of declining brick and mortar retail sales. From 2009 to 2013, revenue and profitability at Men's Wearhouse showed continuous improvement. However, in 2013, the firm's financial performance foundered.

To restore growth in revenue and profitability, the firm acquired competitor Jos. A. Bank in late 2014 for \$1.8 billion after a heated bidding war. The final bid of \$65 in cash for each Jos. A. Bank's share represented a 56% premium to the closing price in early October 2013. The combined company had annual revenue of \$3.5 billion and projected annual savings of \$100–150 million consisting of lower overhead, more efficient marketing, and improved customer service. The combination of Jos. A. Bank, a seller of men's tailored and casual clothing, US retail operations seemed to line up geographically with the larger Men's Wearhouse, which operated in the United States, Canada, and Puerto Rico. The potential for substantial cost savings through elimination of overhead, redundant stores, and economies of scale and purchasing appeared substantial. But actually realizing these potential savings would be challenging.

The animosity that had been created between the management groups of both firms made collaborative premerger integration planning for the culturally disparate organizations difficult. Instead, closing occurred in an atmosphere of mistrust and insecurity among employees, as well as confusion and uncertainty among suppliers and customers. During the following 24 months, Men's Wearhouse stock fell 70% from its level at closing reflecting investor concern about the long-term viability of the merger.

A specialty retailer of men's suits and a provider of tuxedo rental in the United States and Canada, the new Men's Wearhouse Inc. operates in two segments: retail and corporate apparel. The retail operation offers its products and services through its four retail merchandising brands and Internet Websites. The firm's corporate segment provides corporate clothing uniforms and related work apparel. As of December 2016, the firm operated a total of 1758 retail stores.

Private equity firm, Eminence Capital, which owned a 4.9% stake in Jos. A. Bank and a 10% position in Men's Wearhouse prior to the takeover, had been pushing Jos. A. Bank to make a deal for months. In fact, both Men's Wearhouse and Jos. A. Bank's management teams had clung stubbornly to their desire to remain independent. Expressing growing impatience, Eminence Capital unsuccessfully took Jos. A. Bank to court to try to force the retailer to negotiate exclusively with Men's Wearhouse.

Eminence Capital, which had at first backed Jos. A. Bank's bid to acquire Men's Wearhouse, switched sides and encouraged Men's Wearhouse to adopt a so-called Pac Man defense in which the hunted becomes the hunter. It was hedging its bets with investments in both firms, and the combination of the two firms offered to be a winner for the private equity firm. As evidenced by the firm's increased ownership stake after the merger, Eminence fervently believed that substantial synergy between the two clothiers would unlock substantial value for shareholders.

Another private equity firm that also stood to benefit from a deal between Jos. A. Bank and Men's Wearhouse was Golden Gate Capital, which owned outdoor gear retailer Eddie Bauer. Jos. A. Bank had agreed to buy Eddie Bauer for \$825 million in a bid to discourage Men's Wearhouse's takeover bid. The merger agreement with Eddie Bauer stipulated that any alternative bidder such as Men's Wearhouse that came along with a higher bid would pay Golden Gate \$48 million as a breakup fee. Golden Gate also had been a financing source in Jos. A. Bank's original bid for Men's

Wearhouse. The Golden Gate break-up fee forced Men's Wearhouse to up its initial bid putting an additional \$210 million into Jos. A. Bank's shareholders' pockets. At closing it appeared that both Eminence and Golden Gate came out winners as well as Jos. A. Bank shareholders. However, the longer-run outlook for Men's Wearhouse shareholders appeared uncertain due to its problematic ability to digest Jos. A. Bank.

Once the merger was completed, Men's Wearhouse was faced with the task of figuring out how to make good on its publicly stated commitment to eliminate \$100–150 million in costs over 3 years. These anticipated synergies were a major part of the justification for paying the substantial premium for Jos. A. Bank, and Men's Wearhouse was under considerable pressure to realize these savings as quickly as possible. To assist in the integration, the firm hired advisory firm AlixPartners, a well-known retailer turnaround firm, to support the integration process.

In addition to implementing cost savings programs, Men's Wearhouse pursued an aggressive strategy to rationalize Jos. A. Bank's marketing strategy. The latter competed almost exclusively on the basis of price and frequent promotional campaigns. Men's Wearhouse sought to change Jos. A. Bank's customer base by weaning them away from what had attracted them in the first place: highly aggressive pricing and promotion campaigns. Jos. A. Bank's promotions such as "buy one get three free" have proven toxic to Men's Wearhouse. Sensing a chance to turn around the brand, the new owners saw an opportunity to gain market share.

Men's Wearhouse tried to move away from the Jos. A. Bank strategy of being "always on sale" by cutting the number of promotional events in favor of a single, bigger buy-one-get-three-free sale at the end of a quarter. This approach was not well received by Jos. A. Bank customers who had historically been accustomed to regular sales promotions. The strategy change not only cut into Jos. A. Bank's revenue but also discouraged the number of potential customers from visiting the retailer's outlets. In hindsight, it is apparent that these overly generous promotions are what drove large numbers of customers to shop at Jos. A. Bank and that these customers became addicted to them. Despite the negative customer reaction, Men's Wearhouse CEO Doug Ewert remained resolute about the need to transition away from the unsustainable promotional strategy inherited from Jos. A. Bank. The objective was to have fewer sales such that the firm could charge higher average prices throughout the year.

While overly aggressive promotional campaigns can hurt profitability, it can be far more damaging to revenue by eroding store traffic. History has not been kind to retailers who have tried to alter customer expectations. Men's Wearhouse founder and former CEO George Zimmer expressed concern that the aggressive cost cutting to make the integration work was going too quickly and that it would undermine the firm's ability to grow sales. Zimmer, who had been fired by Men's Wearhouse over governance and compensation issues, reasoned that, given the similarity of the two firms' offerings, former Jos. A. Bank customers were simply shopping at nearby Men's Wearhouse stores.

From the outset, management at Men's Wearhouse said publicly they would not rebrand Bank's stores believing the two firms had separate customer bases and different corporate cultures. Where Jos. A. Bank retains the more classic lines, Men's Wearhouse revels in its trendier image. Because of that, the ability to cut costs by closing stores was slow to materialize. Moreover, realizing supply chain efficiencies along with cuts in advertising costs and duplicative corporate functions created friction between the two firms' workforces, impairing communication and the implementation of new programs.

In addition to changing its promotional strategy, Men's Wearhouse sought to update Jos. A. Bank's merchandise by adding more tailored fits and accessories, such as shoes. The chain also rolled out a new ad campaign and worked to retrain employees to sell products under the new promotional strategy. Postmerger integration efforts also included integrating the brands and upgrading the e-commerce system. The buy-one-get-three-free promotions have ended and were replaced with a buy-one-and get-two-free promotion at Jos. A. Bank. In addition to promotional changes, the firm has launched a new loyalty program. Furthermore, Men's Wearhouse signed an agreement with Macy's to open licensed tuxedo rental shops aiming to attract new customers.

The challenge to date of integrating Jos. A. Bank has proven to be bruising for Men's Wearhouse. The firm was forced to take in 2015 a \$90.1-million noncash write-down in the value of the Jos. A. Bank brand due to its declining revenue. Men's Wearhouse also has been burdened by the need to make principal and interest payments on its staggering debt load that has limited reinvestment in stores that needed updating. To finance the deal Men's Wearhouse borrowed \$1.6 billion. In addition to its long-term debt, Men's Wearhouse also carried off balance sheet debt from operating leases for its stores totaling \$700 million bringing total debt at the time of closing to \$2.3 billion.

Two years after buying rival Jos. A. Bank, Men's Wearhouse has seen the market value of its equity and debt plunge as investors and bondholders question the firm's ability to reverse the decline in sales at Jos. A. Bank. When the deal closed in September 2014, the firm's equity value exceeded \$2.6 billion eventually topping out at \$3.2 billion in October 2015. Since then the firm's equity value has fallen to less than \$700 million by the end of 2016. The firm's 7% bonds due in 2022 also plunged to 65¢ per dollar of face value from \$104 during the same period. Standard & Poor's lowered the firm's credit rating to well below investment grade.

Throughout the turmoil, Eminence Capital, the activist investor that had pushed so hard for the merger, has remained the firm's largest investor. The private equity firm has expressed confidence in the clothier's long-term strategy pointing out that Men's Wearhouse brand remains strong and that Jos. A. Bank accounts for only 24% of consolidated sales. While management remains adamant that there are no plans to divest or spin off Jos. A. Bank, only time will tell if the unit can be turned around.

Discussion Questions

1. How does the size of the premium paid for Jos. A. Bank affect the pace and extent of postmerger integration?
2. How did private equity investments in both firms affect the size of the premium paid for Jos. A. Bank? Were the Private equity firms simply interested in getting a deal since it boosted the value of their investment? Explain your answer.
3. What key external and internal factors affected postmerger integration?
4. How does a hostile takeover impact the likelihood of a successful integration?
5. What is the key premise underlying Men's Wearhouse's belief that the two firms can be successfully integrated? Was the premise correct? Be specific.
6. What is the fatal flaw in the integration effort?
7. George Zimmer, the founder of Men's Wearhouse, argued that the integration was too fast. Why would his argument to slow the integration make sense only if the premium paid had been smaller?

Answers to these questions are found in the Online Instructor's Manual for instructors using this book (<https://textbooks.elsevier.com/web/Manuals.aspx?isbn=9780128016091>).

**ADDITIONAL CASE STUDY RECOMMENDATIONS
(SEARCH HARVARD BUSINESS SCHOOL
PUBLISHING SITE BY NAME OF CASE:
hbsp.harvard.edu)**

Cultural Challenges of Integration: Value Creation and Daiichi Sankyo's Indian Acquisition, Beng Geok Wee, Wilfred Chua, Revised Publication Date: November 20, 2012, *Source*: ABCC at Nanyang Tech University, Product Number: NTU027-PDF-ENG, hbsp.harvard.edu.

Subjects covered: Organizational behavior, Role of Culture in Cross-Border M&A, post-M&A Integration Process, Cross-Cultural Relations.

Big (Double) Deal: Anadarko's Acquisition of Kerr-McGee and Western Gas Resources, Clayton Christensen, Curtis B. Rising, Publication Date: October 10, 2009, Product Number: 610020-PDF-ENG, *Source*: Harvard Business School, hbsp.harvard.edu.

Subjects covered: Due diligence,

Integration Planning, Cultural Issues, Negotiation.

Ben & Jerry's and Unilever: The Bohemian and the Behemoth, L.J. Bourgeois, Elio Mariani, Vivian Jen Yu, Publication Date: January 30, 2004, Product Number: UV0597-PDF-ENG, *Source*: Darden School of Business, hbsp.harvard.edu.

Subjects covered: Integration Planning, Business Ethics, Corporate Cultural Issues, Governance.

InBev and Anheuser-Busch, Andrew C. Inkpen, Publication Date: November 16, 2010, Product Number: TB0251-PDF-ENG, *Source*: Thunderbird School of Management, hbsp.harvard.edu.

Subjects covered: Takeovers, Synergy, Premiums, Integration.

P A R T III

MERGERS AND ACQUISITIONS VALUATION AND MODELING



**"Harris, I want you to buy up anything that has
'dot com' in their title."**

CartoonStock.com

Source: Cartoonstock.com.

The *intrinsic value* of a business is the actual cash-generating capacity of its tangible and intangible assets less the liabilities required to finance the creation of these assets. Far more an art than a science, business valuation is the process for determining a business's current value, which can differ from its intrinsic value due to investor optimism or pessimism.

Part III covers alternative valuation methods and basic financial modeling techniques, ranging from the simple to the complex, used to estimate the current value of a business. The applicability of each valuation methodology varies by situation, with each subject to significant limitations. An average of estimates using different methodologies is more likely to provide a better estimate of firm value than any single approach. Moreover, there is little evidence that complex methods provide consistently more accurate estimates than relatively simple ones.

Chapter 7 provides a primer on constructing valuation cash flows, the discount rates necessary to convert projected cash flows to a present value, and commonly used discounted cash flow (DCF) methods. This chapter also deals with how to apply the capital asset pricing model when interest rates may not accurately reflect risk. Alternatives to DCF techniques are discussed in Chapter 8, including relative valuation, asset-oriented, and replacement cost methods. Implicit in the DCF approach to valuation is that management has no flexibility once an investment decision has been made. In practice, management may decide to accelerate, delay, or abandon investments as new information becomes available. This decision-making flexibility may be reflected in the value of the target firm by adjusting DCFs for the value of so-called *real options*.

Chapter 9 discusses how to build financial models in the context of mergers and acquisitions (M&As). Such models are very helpful in answering questions pertaining to valuation, financing, and deal structuring. (Deal-structuring considerations are discussed in detail in Chapters 11 and 12.) Such models may be particularly helpful in determining a range of values for a target firm reflecting different sets of assumptions. Moreover, such models are powerful tools during M&A negotiations, allowing the participants to evaluate rapidly the attractiveness of alternative proposals. (Chapter 14 discusses in detail how complex models are used in deal negotiations.) Finally, Chapter 10 addresses valuing privately held firms and how to adjust purchase prices for liquidity and noncontrolling discounts as well as for the value of control. This chapter is particularly relevant, since the vast majority of firms involved in M&As are privately held.

Mergers and Acquisitions Cash Flow Valuation Basics

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It is better to buy a great business at a fair price than a fair business at a great price. —Warren Buffett

INSIDE M&A: THE ROLE OF VALUATION METHODOLOGIES IN FAIRNESS OPINIONS AND APPRAISAL RIGHTS

KEY POINTS

- Investment bankers often are hired to provide opinions about whether a proposed purchase price is “fair” to shareholders.
- Alternative valuation methods often result in different estimates of value.
- Dissenting shareholders may have their shares valued by an independent appraiser according to the appraisal rights described in state statutes.

Discounted cash flow (DCF), relative valuation, recent comparable sales, and asset-based valuation methods often are used in “fairness opinions” to assess the reasonableness of an offer made to target firm shareholders. They are designed to help protect the target firm’s board and management from future litigation in which it is argued that the sale price was too low. Acquirers also may use fairness opinions if the board and management are sued over having allegedly paid too much for a target firm.

If subsequent to closing, minority shareholders dispute the accuracy of the price offered for their shares, they can exercise their “appraisal rights” specified in the statutes of the state in which the target is incorporated. Appraisal rights represent the statutory option of a firm’s minority shareholders to have the fair market value of their stock price

determined by an independent appraiser and the obligation of the acquiring firm to buy back shares at that price. While alternative valuation methodologies often are used to estimate the fair market value of shares in dispute, courts often defer to the merger price or actual price paid as long as the process used to determine the price was fair. A recent court case illustrates this point.

Most US companies are incorporated in Delaware and are covered by the state's corporate law. The Delaware Chancery Court's opinion in *Merlin Partners v AutoInfo Inc.* in mid-2015 provided guidance regarding the court's determination of fair value in an appraisal action. Private equity company Comvest Partners completed its takeover of AutoInfo, a supply chain logistics company, on April 13, 2013, for \$1.05 per share in cash. This price constituted a 7% premium to AutoInfo's closing share price on February 28, 2013, and a 21% premium over its average closing price for the 6 months ending February 28, 2013.

In the sales process, AutoInfo, the target, with the assistance of its investment bank, contacted 164 potential strategic and financial buyers, 70 of which entered into nondisclosure agreements. The company eventually signed a letter of intent that provided for an acquisition of AutoInfo at \$1.30 per share. After that deal fell through, AutoInfo reached an agreement to sell the firm to Comvest for \$1.26 per share. During due diligence, Comvest uncovered numerous accounting issues, and subsequent negotiations resulted in an agreement for Comvest to acquire the company at \$1.05 per share.

Merlin Partners, a private equity firm with a minority stake in AutoInfo, filed an appraisal action, arguing that the fair value of the company was \$2.60 per share. Merlin presented two comparable companies analyses and a "DCF" analysis prepared by Merlin's financial expert. In its defense, AutoInfo's management argued that comparable companies and DCF analyses could not be reliably performed with the available data and that the sales price represented fair value based on the integrity of the sales process and the merger price paid by Comvest (an unrelated third party). The Chancery Court on April 30, 2015, rejected Merlin Partners' claims, concluding that the DCF and comparable company methods were unreliable, and the actual price paid (i.e., merger price) was the most dependable indicator of fair market value as long as the negotiating process was viewed as fair.

The obvious lesson is that valuation methodologies are only as meaningful as the reliability of their inputs. The court case highlights the importance of process in merger and acquisition (M&A) transactions. The actual merger price paid for a target firm may be the best indicator of fair value as long as the price was determined in a fair auction. The court viewed the use of alternative valuation methods like DCF analysis as "necessarily a second-best method to derive value."

CHAPTER OVERVIEW

This chapter provides an overview of the basics (including limitations) of valuing M&As using DCF methods; additional methods are discussed in Chapter 8. This chapter concludes with a series of discussion questions, practice problems, a short case study, and recommendations for other case studies germane to this chapter. A review of this chapter is available in the file folder entitled "Student Study Guide" in the companion website to this book (<https://www.elsevier.com/books-and-journals/book-companion/9780128016091>).

ESTIMATING REQUIRED FINANCIAL RETURNS

Investors require a minimum rate of return that must be at least equal to what the investor can receive on alternative investments exhibiting a comparable level of perceived risk.

Cost of Equity and the Capital Asset Pricing Model

The cost of equity (k_e) is the rate of return required to induce investors to purchase a firm's equity. It is a return to shareholders after corporate taxes have been paid but before personal taxes. It may be estimated using the capital asset pricing model (CAPM), which measures the relationship between expected risk and return. Presuming investors require higher rates of return for accepting higher levels of risk, the CAPM states that the expected return on an asset is equal to a risk-free rate of return plus a risk premium.

A *risk-free rate of return* is one for which the expected return is free of default risk.¹ Other types of risk remain such as the reinvestment rate (i.e., the rate of return that can be earned at the end of the investor's holding period), the potential loss of principal if the security is sold before its maturity date (*market risk*), and the loss of purchasing power due to inflation (*inflation risk*). Despite widespread agreement on the use of US Treasury securities as assets that are free of default risk, analysts differ over whether a short- or long-term Treasury rate should be applied. Which rate should be used depends on how long the investor intends to hold the investment. The investor who anticipates holding an investment for 5 or 10 years should use either a 5- or 10-year Treasury bond rate.² In this book, a 10-year Treasury bond rate is used to represent the risk-free rate, since it would be most appropriate for a strategic or long-term acquirer.

Estimating Market Risk Premiums

The *market risk*, or *equity premium*, is the additional return in excess of the risk-free rate that investors require to purchase a firm's equity. Intuitively, the risk premium is what the investor requires to be "adequately" compensated for buying a risky asset and is the only factor the basic CAPM model uses to approximate the incremental risk of adding a stock to a diversified portfolio. While the risk premium should be forward looking, obtaining precise estimates of future market returns is exceedingly difficult. Analysts often look to historical data, despite results that vary based on the time periods selected and whether returns are calculated as arithmetic or geometric averages. CAPM relates the cost of equity (k_e) to the risk-free rate of return and market risk premium as follows:

$$\text{CAPM: } k_e = R_f + \beta(R_m - R_f) \quad (7.1)$$

¹Default risk refers to the degree of certainty that an investor will receive the nominal value of his or her investment plus accumulated interest according to the terms of their agreement with the borrower. That is, if \$10,000 is invested at some rate of interest for 10 years, the investor will receive \$10,000 at the end of 10 years plus interest paid annually.

²A 3-month Treasury bill rate is not free of risk for a 5- or 10-year period, since interest and principal received at maturity must be reinvested at 3-month intervals, resulting in considerable reinvestment risk.

TABLE 7.1 Size Premium Estimates

Market value (\$000,000)	Percentage points added to CAPM estimate	Book value (\$000,000)	Percentage points added to CAPM estimate
>21,589	0	>11,465	0
7,150–21,589	1.3	4,184–11,465	1.0
2,933–7,150	2.4	1,157–4,184	2.1
1,556–2,933	3.3	923–1,157	3.0
687–1,556	4.4	382–923	3.7
111–687	5.2	60–382	4.4
<111	7.2	<60	5.6

CAPM, Capital asset pricing model. Source: Size premium estimates were calculated by collapsing the 25 groupings of firms by size in a study conducted by Duff & Phelps LLC into 7 categories. Duff & Phelps examined the relationship between firm size and financial returns between 1963 and 2008 and found that small firms displayed a higher premium whether size is measured by market value, book value, or some other performance measure (e.g., operating profit, number of employees). The Duff and Phelps (2010) findings are listed in Pratt and Grabowski.

where R_f , risk-free rate of return; β , beta (see the section in this chapter titled “Analyzing Risk”)³; R_m , expected rate of return on equities; and $R_m - R_f$, 5.5% (i.e., risk premium equal to the difference between the return on a diversified portfolio of stocks and the risk-free rate).⁴

Despite its intuitive appeal, studies show that actual returns on risky assets frequently differ significantly from those returns predicted by basic CAPM reflecting the well-documented limitations of CAPM.⁵ Since the CAPM measures a stock’s risk relative to the overall market and ignores returns on assets other than stocks, some analysts use *multifactor models*.⁶ Studies show that, of those variables improving the CAPM’s accuracy, firm size tends to be among the more important.⁷ The size premium serves as a proxy for factors such as smaller firms being subject to higher default risk and generally being less liquid than large-capitalization firms. Table 7.1 provides estimates of the adjustment to the cost of equity to correct for firm size based on actual data since 1963.⁸

³Statistically, a β measures the variation of an individual stock’s return with the overall market as a percent of the variation of the overall market (i.e., the covariance of a stock’s return to a broadly defined market index/variance of the broadly defined index).

⁴Fernandez et al. (2015) found the median and average equity risk premium for about three-fourths of the 41 countries surveyed fell within a range of 5.0%–7.0%. In the United States, the survey documented a median and average equity risk premium in 2015 used by those surveyed of 5.5 and 5.3%, respectively.

⁵For a summary of the extensive literature discussing CAPM’s shortcomings, see Fernandez (2014); CAPM’s reliability has been particularly questionable since 2008 due to the suppression of government bond rates (often used as a measure of risk-free rates) due to aggressive purchases of such securities by central banks.

⁶Such models adjust the CAPM by adding other risk factors that determine asset returns, such as firm size, bond default premiums, the bond term structure, and inflation. Fama and French (2015) argue that a five-factor model captures the effects of size, value (market to book ratio), profitability, and firm investment better than models using fewer factors but fails to capture the low returns on small stocks whose firms invest heavily despite low profitability.

⁷Shapovalova and Subbotin (2011).

⁸The magnitude of the size premium should be adjusted to reflect such factors as a comparison of the firm’s key financial ratios (e.g., liquidity and leverage) with comparable firms and after interviewing management.

Eq. (7.1) can be rewritten to reflect an adjustment for firm size as follows:

$$\text{CAPM: } k_e = R_f + \beta(R_m - R_f) + \text{FSP} \quad (7.2)$$

where FSP, firm size premium.

Assume that a firm has a market value of less than \$111 million and a β of 1.75. Also assume that the risk-free rates of return and equity premium are 5 and 5.5%, respectively. The firm's cost of equity using the CAPM method adjusted for firm size can be estimated as follows:

$$k_e = 0.05 + 1.75(0.055) + 0.072 \text{ (Table 7.1)} = 0.218 \times 100 = 21.8\%$$

Applying CAPM in a Near-Zero (or Negative) Interest Rate Environment

For more than a decade (as of this writing), interest rates in many developed countries have been at or near historical lows (and in some instances negative). Since central bank policies in many countries have been to inject massive amounts of liquidity into financial markets during this period, it is unclear whether interest rates have been more reflective of anemic global economic growth or central bank policies or both.

One school of thought argues that the low interest rate environment is more a result of weak financial market conditions due to expectations of lackluster economic growth as central banks exert only limited control of short-term interest rates and little influence on long-term interest rates.⁹ Others argue that the continuing low interest rate environment reflects the highly aggressive liquidity injections by central banks during this period.¹⁰

If we believe low interest rates reflect primarily financial market factors such as anemic or uncertain global economic growth, historically low or negative risk-free rates do not bias target firm valuations. Why? Historically low risk-free rates will be offset partially by increasing risk premiums on stocks keeping the magnitude of the cost of equity comparatively stable. If the expected return on stocks remains the same, equity premiums must widen by definition as risk-free rates decline.¹¹ To illustrate how changes in the risk-free rate are offset partly by changes in the risk premium, consider the following calculations. Assuming the risk-free rate is -0.5% , the expected return on all stocks is 6% , and the target firm's β is 1.2 , the cost of equity using CAPM is 7.3% [i.e., cost of equity = $-0.005 + 1.2(0.06 - (-0.005))$]. The cost of equity is little changed at 7.1% [i.e., cost of equity = $0.005 + 1.2(0.06 - 0.005)$] if we use the same assumptions except for a positive 0.5% risk-free rate. This model is the same as the basic two-factor CAPM discussed previously.

If we believe that interest rates are depressed by central bank policies and do not accurately reflect financial market conditions, application of the CAPM can result in an underestimation

⁹Fama (2013).

¹⁰The US Federal Reserve ceased quantitative easing (aggressively buying treasury and mortgage-backed securities) in late 2014, deciding to simply reinvest cash from maturing bonds and interest earnings. Despite a less aggressive Fed, US interest rates continued to decline as ongoing easing by foreign central banks pushed interest rates in those countries lower, increasing the demand for US treasuries. Moreover, unlike cash from maturing securities, interest earnings reinvested by the Fed represents additional market liquidity that unless offset weighs on US interest rates.

¹¹Duarte and Rosa (2015) concluded that increases in the equity risk premium in recent years were a result of declining risk-free interest rates.

of the cost of equity and subsequent target firm overvaluation. To minimize this bias, the risk-free rate should be the expected future risk-free rate, as the CAPM is predicated on future cash flows and their associated risk. However, any estimation of future interest rates is highly problematic. A more practical alternative is to use a historical average of an appropriate long-term risk-free rate over several decades in order to capture more than one interest rate cycle. Nonetheless, using a historical average as a proxy for future rates is subjective due to the difficulty in determining the appropriate length of the historical time period and may overstate the cost of equity.¹²

In summary, current low interest rates reflect most likely both sluggish growth and central bank policies. It is doubtful the relative importance of each factor can be determined because they are interdependent. That is, many central banks continue to aggressively inject liquidity into the financial markets because of slow economic growth and growth is slow in part because of these bank policies.¹³ Without compelling evidence that adjusting CAPM for the current low interest rates provides more reliable estimates, the author recommends using the basic two-factor CAPM, adjusted for firm size if such data are available, to estimate the cost of equity. Nevertheless, it should be evident to the reader that any method used to estimate the cost of equity is heavily dependent on “faith-based” assumptions. At a minimum, an analyst should average estimates supplied by multiple methodologies to approximate the true cost of equity.

Pretax Cost of Debt

Interest is the cost of borrowing each additional dollar of debt and is tax deductible by the firm; in bankruptcy, bondholders are paid before shareholders as the firm’s assets are liquidated. For these reasons, debt is generally cheaper than equity. *Default risk*, the likelihood the firm will fail to repay interest and principal on a timely basis, can be measured by the firm’s credit rating.¹⁴ Interest paid by the firm on its current debt can be used as an estimate of the current cost of debt if nothing has changed since the firm last borrowed.

When conditions have changed, the analyst must estimate the cost of debt reflecting current market interest rates and default risk. To do so, analysts use the yield to maturity (YTM)¹⁵ of the company’s long-term, option-free bonds. This requires knowing the price of the security and its

¹²Using a historical average risk-free rate with today’s equity premiums instead of the lower actual current rate may tend to overstate the cost of equity as equity premiums are already high due in part to the uncertainty created by the artificially low interest rate environment. To avoid this bias, the analyst should use the average risk-free rate and equity risk premium over the same historical period in applying CAPM.

¹³Historically low interest rates discourage business spending because it is difficult to assess investment risk, create expectations of future slow growth and potentially deflationary pressures, discourage bank lending, contribute to speculative bubbles and capital misallocation, and may force consumers to defer spending and to save more for retirement. While the US savings rate of about 5% is lower than some historical periods, it is higher than what would have been expected considering record low interest rates.

¹⁴Default rates vary from an average of 0.52% for AAA-rated firms over a 15-year period to 54.38% for those rated CCC by Standard & Poor’s Corporation. See Burrus and McNamee (2002).

¹⁵YTM is the internal rate of return on a bond held to maturity, assuming scheduled payment of principal and interest, which takes into account the capital gain on a discount bond or capital loss on a premium bond.

TABLE 7.2 Weighted Average Yield to Maturity of Microsoft's Long-Term Debt

Coupon rate (%)	Maturity	Book value (face value in \$ million)	Percentage of total debt	Price (% of par)	Yield to maturity (%)
0.88	9/27/2013	1250	0.25	99.44	1.09
2.95	6/1/2014	2000	0.40	104.27	1.63
4.20	6/1/2019	1000	0.20	105.00	3.50
5.20	6/1/2039	750	0.15	100.92	5.14
		5000	1.00		2.40

coupon value and face value.¹⁶ In general, the cost of debt is estimated by calculating the YTM on each of the firm's outstanding bond issues. We then compute a weighted average YTM, with the estimated YTM for each issue weighted by its percentage of total debt outstanding. In Table 7.2, Microsoft's weighted average YTM on the bulk of its long-term debt on January 24, 2011, was 2.4%. The source for the YTM for each debt issue was found in the Financial Industry Regulatory Authority's (FINRA) Trace database: www.finra.org/marketdata.¹⁷

YTM represents the most reliable estimate of a firm's cost of debt as long as the firm's debt is investment grade,¹⁸ since the difference between the expected rate of return and the promised rate of return is small. The promised rate of return assumes that the interest and principal are paid on time. The YTM is affected by the cost of debt, the probability of default, and the expected recovery rate on the debt if the firm defaults and is a good proxy for actual future returns on investment-grade debt, since the potential for default is low.

Non-investment-grade debt rated less than BBB by Standard & Poor's and Baa by Moody's represents debt whose default risk is significant due to the firm's leverage, deteriorating cash flows, or both. Ideally, the expected YTM would be calculated based on the current market price of the non-investment-grade bond, the probability of default, and the potential recovery rate following default.¹⁹ Since such data are frequently unavailable, an alternative is to use the YTM for a number of similarly rated bonds of other firms. Such bonds include a so-called *default premium*, which reflects the compensation that lenders require over the risk-free rate to buy non-investment-grade debt.

To illustrate, on January 24, 2011, HCA Healthcare Inc.'s 9% fixed rate noncallable bond (i.e., the bond cannot be repurchased by the issuing firm before maturity) that would reach

¹⁶YTM is not appropriate for valuing short-term bonds, since their term to maturity often is much less than the duration of the company's cash flows. YTM is affected by the bond's cash flows and not those of the firm's; therefore, it is distorted by corporate bonds, which also have conversion or callable features, since their value will affect the bond's value but not the value of the firm's cash flows.

¹⁷FINRA is the largest independent regulator for all securities firms in the United States and administers the Series 79 exam for those looking to become investment bankers. For access to financial market data and a more detailed discussion of FINRA, see <http://cxa.marketwatch.com/finra/MarketData/CompanyInfo/default.aspx>.

¹⁸Investment-grade bonds are those whose credit quality is considered to be among the most secure by independent bond-rating agencies: BBB or higher by Standard & Poor's and Baa or higher by Moody's Investors Service.

¹⁹Titman and Martin (2010, pp. 144–147).

maturity on December 15, 2015 (rated CCC by Standard & Poor's and Caa1 by Moody's), had a YTM of 7.41%, according to FINRA's TRACE database. With 5-year US Treasury bonds offering a YTM of 1.94%, the implied default risk premium was 5.47% (i.e., 7.41 minus 1.94). This same process could then be repeated for a number of similarly rated bonds in order to calculate an average YTM. For nonrated firms, the analyst may estimate the current pretax cost of debt for a specific firm by comparing debt-to-equity ratios, interest coverage ratios, and operating margins with those of similar rated firms. The analyst would then use the interest rates paid by these comparably rated firms as the pretax cost of debt for the firm being analyzed.²⁰

Cost of Preferred Stock

Preferred stock is similar to long-term debt, in that its dividend is generally constant and preferred stockholders are paid after debt holders but before common shareholders if the firm is liquidated. Because preferred stock is riskier than debt but less risky than common stock in bankruptcy, the cost to the company to issue preferred stock should be less than the cost of equity but greater than the cost of debt. The cost of preferred stock should also exceed the cost of debt because with debt investors are certain to receive the principal of the bond if they hold such bonds until maturity. In contrast, the likelihood the investor will recover their initial investment with preferred stock issued without any redemption date is uncertain, depending on market conditions when such stock is sold.

Viewing preferred dividends as paid in perpetuity, the cost of preferred stock (k_{pr}) can be calculated as dividends per share of preferred stock (d_{pr}) divided by the market value of the preferred stock (PR) (see the section "The Zero-Growth Valuation Model"). Consequently, if a firm pays a \$2 dividend on its preferred stock, whose current market value is \$50, the firm's cost of preferred stock is 4% (i.e., \$2/\$50). The cost of preferred stock can be generalized as follows:

$$k_{pr} = \frac{d_{pr}}{PR} \quad (7.3)$$

Cost of Capital

The weighted average cost of capital (WACC) is the broadest measure of the firm's cost of funds and represents the return that a firm must earn to induce investors to buy its common stock, preferred stock, and bonds. The WACC²¹ is calculated using a weighted average of the firm's cost of equity (k_e), cost of preferred stock (k_{pr}), and pretax cost of debt (i):

$$WACC = k_e \frac{E}{D + E + PR} + i(1 - t) \frac{D}{D + E + PR} + k_{pr} \frac{PR}{D + E + PR} \quad (7.4)$$

²⁰Much of this information can be found in local libraries in such publications as Moody's Company Data; Standard & Poor's Descriptions, the Outlook, and Bond Guide; and Value Line's Investment Survey. In the United States, the FINRA TRACE database also is an excellent source of interest rate information.

²¹Note that Eq. (7.4) calculates WACC assuming the firm has one type of common equity, long-term debt, and preferred stock. This is for illustrative purposes only, for a firm may not have any preferred stock and may have many different types of common stock and debt of various maturities.

where E , the market value of common equity; D , the market value of debt; PR , the market value of preferred stock; and t , the firm's marginal tax rate.

A portion of interest paid on borrowed funds is recoverable by the firm because of the tax deductibility of interest. For every dollar of taxable income, the tax owed is equal to \$1 multiplied by t . Since each dollar of interest expense reduces taxable income by an equivalent amount, the actual cost of borrowing is reduced by $(1 - t)$. Therefore, the after-tax cost of borrowed funds to the firm is estimated by multiplying the pretax interest rate, i , by $(1 - t)$.

Note that the weights $[E/(D + E + PR)]$, $[D/(D + E + PR)]$, and $[PR/(D + E + PR)]$ associated with the cost of equity, preferred stock, and debt, respectively, reflect the firm's target capital structure or capitalization. These are targets in that they represent the capital structure the firm hopes to achieve and sustain in the future. The actual market value of equity, preferred stock, and debt as a percentage of total capital (i.e., $D + E + PR$) may differ from the target. Market values rather than book values are used because the WACC measures the cost of issuing debt, preferred stock, and equity securities, which are issued at market and not book value. The use of the target capital structure avoids the circular reasoning associated with using the current market value of equity to construct the WACC, which is subsequently used to estimate the firm's current market value. Non-interest-bearing liabilities, such as accounts payable, often are excluded from the estimation of the cost of capital for the firm to simplify the calculation of WACC.²² Estimates of industry β , cost of equity, and WACC are provided by firms such as Ibbotson Associates, Value Line, Standard & Poor's, and Bloomberg.

RISK ASSESSMENT

Risk is the degree of uncertainty associated with the outcome of an investment. It consists of two components: *diversifiable*, or *nonsystematic*, *risk*, such as strikes and lawsuits that are specific to a firm; and a *nondiversifiable*, or *systematic*, *risk*, such as inflation and war, that affects all firms. In theory, risk specific to a firm can be eliminated by investors selecting a portfolio of stocks whose cash flows are uncorrelated. β is a measure of nondiversifiable risk, or

²²The cost of capital associated with such liabilities (k_{CL}) is included in the price paid to vendors for purchased products and services and affects cash flow through its inclusion in operating expenses (e.g., the price paid for raw materials). However, if a firm uses substantial amounts of current liabilities (CL) such as short-term debt, Eq. (7.4) should be modified as follows:

$$\text{WACC} = k_e \frac{E}{D + E + PR + CL} + i(1 - t) \frac{D}{D + E + PR + CL} + k_{pr} \frac{PR}{D + E + PR + CL} + k_{cl} \frac{CL}{(D + E + PR + CL)}$$

Some current liabilities, such as accruals, are interest free, and accounts and notes payable have an associated capital cost approximated by the firm's short-term cost of funds. Since the market and book value of current liabilities are usually similar, book values can be used in calculating capital cost of current liabilities. Some current liabilities, such as accruals, are interest free, and accounts and notes payable have an associated capital cost approximated by the firm's short-term cost of funds. Since the market and book value of current liabilities are usually similar, book values can be used in calculating capital cost of current liabilities.

the extent to which a firm's financial return changes because of a change in the general stock market's return. While all stocks are impacted by stock market fluctuations, the extent of the impact on each stock will differ resulting in wide variation in the magnitude of β from one stock to the next.

β are commonly estimated by regressing the percent change in the total return on a specific stock with that of a broadly defined stock market index such as the S&P 500 index. The resulting β estimated in this manner for an individual security incorporates both the security's volatility and its correlation with the overall stock market. *Volatility* measures the magnitude of a security's fluctuations relative to the overall stock market, and *correlation* measures the direction. Consequently, when $\beta = 1$, the stock is as risky as the general market. When $\beta < 1$, the stock is less risky; when $\beta > 1$, the stock is riskier than the overall stock market.

The CAPM states that all risk is measured from the perspective of a marginal or incremental investor, who is well diversified. Investors are compensated only for risk that cannot be eliminated through diversification (i.e., nondiversifiable, or systematic, risk).²³ Estimates of public company β may be obtained by going to finance.yahoo.com, finance.google.com, and reuters.com. Alternatively, a firm's β may be calculated based on the β of a sample of similar firms at a moment in time. This process is described in the next section.

Effects of Financial and Operating Leverage on β

Leverage represents the additional increase (decrease) in profit once a firm's revenue exceeds (falls short of) its fixed expenses and the variable expenses incurred to realize the incremental revenue.²⁴ Fixed expenses related to a firm's operating activities do not vary with output and include depreciation, rent, and obligations such as employee and vendor contracts that do not vary with production. Fixed expenses related to a firm's financing activities include interest and lease expenses and principal repayments on debt. *Operating leverage* refers to the way in which a firm combines fixed and variable expenses often measured by the ratio of a firm's fixed expenses to total cost of sales. *Financial leverage* describes the way in which a firm combines debt and equity to finance its operations often measured by the ratio of its debt to equity.

In the absence of debt, the β is called an *unlevered β* , denoted β_u . β_u is determined by the firm's operating leverage and by the type of industry in which the firm operates (e.g., cyclical or noncyclical). If a firm borrows, the unlevered β must be adjusted to reflect the risk that the firm may not be able to repay the debt when due. By borrowing, the firm is able to invest more in its operation without increasing equity, resulting in a proportionately larger (or smaller) return to equity holders. The resulting β is called a *leveraged* or *levered β* , denoted β_l . Both operating and financial leverage increase the volatility of a firm's profits and financial returns substantially.

²³ β in this context applies to the application of CAPM to public firms, where the marginal investor is assumed to be fully diversified. For private firms in which the owner's net worth is disproportionately tied up in the firm, analysts sometimes calculate a total β , which reflects both systematic and nonsystematic risk. See Chapter 10.

²⁴Recall that operating profits equal total revenue less fixed and variable costs. If revenue and fixed and variable costs are \$100, 50, and 25 million (variable costs are 25% of revenue), respectively, the firm's operating profits are \$25 million. If revenue doubles to \$200 million, the firm's profit increases to \$100 million (i.e., \$200 - \$50 - \$50).

TABLE 7.3 How Operating Leverage Affects Financial Returns^a

	Case 1	Case 2: revenue increases by 25%	Case 3: revenue decreases by 25%
Revenue	100	125	75
Fixed	48	48	48
Variable ^b	32	40	24
Total cost of sales	80	88	72
Earnings before taxes	20	37	3
Tax liability at 40%	8	14.8	1.2
After-tax earnings	12	22.2	1.8
Firm equity	100	100	100
Return on equity (%)	12	22.2	1.8

^aAll figures are in millions of dollars unless otherwise noted.

^bIn Case 1, variable costs represent 32% of revenue. Assuming this ratio is maintained, variable costs in Cases 2 and 3 are estimated by multiplying total revenue by 0.32.

Table 7.3 illustrates the effects of operating leverage on financial returns. The three cases reflect the same level of fixed expenses but varying levels of revenue and the resulting impact on financial returns. The illustration assumes in Case 1 that the firm's total cost of sales is 80% of revenue and that fixed expenses comprise 60% of the total cost of sales. Note the volatility of the firm's return on equity resulting from fluctuations of 25% in the firm's revenue in Cases 2 and 3. There is evidence that the degree of operating leverage can impact the timing of acquisition decisions.²⁵

Table 7.4 shows how financial leverage increases the volatility of a firm's financial returns substantially. This is because equity's share of total capital declines faster than the decline in net income as debt's share of total capital increases. The three cases in the table reflect varying levels of debt but the same earnings before interest and taxes (EBIT). Between Case 1 and Case 3, net income declines by one-fourth and equity declines by one-half, magnifying the impact on returns.

If a firm's stockholders bear all the risk from operating and financial leverage and interest paid on debt is tax deductible, then leveraged and unleveraged β can be calculated as follows for a firm whose debt-to-equity ratio is denoted by D/E :

$$\beta_l = \beta_u \left[1 + (1 - t) \left(\frac{D}{E} \right) \right] \quad (7.5)$$

and

$$\beta_u = \frac{\beta_l}{1 + (1 - t)(D/E)} \quad (7.6)$$

²⁵Chung et al. (2017) argue that the business cycle can impact acquirer decisions by documenting that bidders favor targets with high operating leverage when the economy is booming and dislike such firms as the economy weakens. Why? A strong economy favors firms with high operating leverage.

TABLE 7.4 How Financial Leverage Affects Financial Returns^a

	Case 1: no debt	Case 2: 25% debt to total capital	Case 3: 50% debt to total capital
Equity	100	75	50
Debt	0	25	50
Total capital	100	100	100
Earnings before interest and taxes	20	20	20
Interest at 10%	0	2.5	5
Income before taxes	20	17.5	15
Less income taxes at 40%	8	7.0	6
After-tax earnings	12	10.5	9
After-tax returns on equity (%)	12	14	18

^aAll figures are in millions of dollars unless otherwise noted.

Shareholders view risk as the potential for a firm not to earn sufficient future cash flow to satisfy their minimum required returns. Eq. (7.5) implies that increases in a firm's leverage, denoted by D/E , will increase risk, as measured by the firm's levered β because the firm's interest payments represent fixed expenses that must be paid before payments can be made to shareholders. This increased risk is offset somewhat by the tax deductibility of interest, which increases after-tax cash flow available for shareholders. Thus, the levered β will, unless offset by other factors, increase with an increase in leverage and decrease with an increase in tax rates.

In summary, β_u is determined by the characteristics of the industry in which the firm competes and the firm's degree of operating leverage. The value of β_l is determined by the same factors and the degree of the firm's financial leverage. Our objective is to estimate a β that reflects the relationship between risk and return in the future. Estimating β using historical data assumes the historical relationship will hold in the future, which often is not the case.

An alternative to using historical data is to estimate β using a sample of similar firms and applying Eqs. (7.5) and (7.6). Referred to as the "bottoms-up" approach, this three-step process suggests that the target firm's β reflects the business risk (cyclicality and operating leverage only) of the average firm in the industry better than its own historical risk/return relationship. Step 1 requires selecting firms with similar cyclicality and operating leverage (i.e., firms usually in the same industry). The analyst should try to get the largest sample possible. Step 2 involves calculating the average unlevered β for firms in the sample to eliminate the effects of their current financial leverage on their β . Finally, in step 3, we relever the average unlevered β using the debt-to-equity ratio and the marginal tax rate of the target firm to reflect its capital structure and tax rate.

Network equipment and storage company Brocade Communications Systems' β estimated using historical data is 0.88 and its current debt-to-equity ratio is 0.256. Assume analysts believe that the firm's levered β estimated in this manner is too low. Using a representative data

TABLE 7.5 Estimating Brocade Communications Systems' (Brocade) β Using the "Bottoms-Up" Approach

Firm	Step 1: select a sample of firms having similar cyclicity and operating leverage		Step 2: compute the average of the firms' unlevered β	Step 3: relever average unlevered β using Brocade's debt/equity ratio
	Levered β^a	Debt/equity ^a	Unlevered β^b	Brocade relevered β^c
EMC	1.62	0.301	1.37	NA
Sandisk	1.44	0.285	1.23	NA
Western Digital	1.51	0.273	1.30	NA
NetApp Inc.	1.83	0.254	1.59	NA
Terredata	1.12	0.149	1.03	NA
			1.30	1.50

^aYahoo! Finance (3/14/14). β estimates are based on the historical relationship between the firm's share price and a broadly defined stock index.

^b $\beta_u = \beta_l / [1 + (1 - t)(D/E)]$, where β_u and β_l are unlevered and levered β , respectively; the marginal tax rate is 0.4. For example, the unlevered β for EMC = $\beta_u = 1.62 / [1 + (1 - 0.6)0.301] = 1.37$.

^c $\beta_l = \beta_u [1 + (1 - t)(D/E)]$. Using Brocade's debt/equity ratio of 0.256 and marginal tax rate of 0.4, Brocade's relevered $\beta = 1.30 [1 + (1 - 0.4)0.256] = 1.50$.

networking and storage industry sample, the firm's levered β is estimated to be 1.50 using the "bottoms-up" methodology (Table 7.5).

Using Eqs. (7.5) and (7.6), the effects of different amounts of leverage on the cost of equity also can be estimated.²⁶ The process is as follows:

1. Determine a firm's current equity β^* and $(D/E)^*$.
2. Estimate the unlevered β to eliminate the effects of the firm's current capital structure:

$$\beta_u = \frac{\beta^*}{1 + (1 - t)(D/E)^*}$$

3. Estimate the firm's levered β : $\beta_l = \beta_u [1 + (1 - t)(D/E)^{**}]$.
4. Estimate the firm's cost of equity for the new levered β .

Here β^* and $(D/E)^*$ represent the firm's current β and the market value of the firm's debt-to-equity ratio before additional borrowing takes place. $(D/E)^{**}$ is the firm's debt-to-equity ratio after additional borrowing occurs, and t is the firm's marginal tax rate.

In an acquisition, an acquirer may anticipate increasing the target firm's debt level after the closing. To determine the impact on the target's β of the increased leverage, the target's levered β , which reflects its preacquisition leverage, must be converted to an unlevered β , reflecting the target firm's operating leverage and the cyclicity of the

²⁶The reestimation of a firm's β to reflect a change in leverage requires that we first deleverage the firm to remove the effects of the firm's current level of debt on its β and then releverage the firm using its new level of debt to estimate the new levered β .

EXHIBIT 7.1 ESTIMATING THE IMPACT OF CHANGING DEBT LEVELS ON THE COST OF EQUITY

Assume that a target's current or preacquisition debt-to-equity ratio is 25%, the current levered β is 1.05, and the marginal tax rate is 0.4. After the acquisition, the debt-to-equity ratio is expected to rise to 75%. What is the target's postacquisition levered β ?

Answer: Using Eqs. (7.5) and (7.6):

$$\beta_u = \frac{\beta_l^*}{1 + (1 - t)(D/E)^*} = \frac{1.05}{1 + (1 - 0.4)(0.25)} = 0.91$$

$$\beta_l = \beta_u \left[1 + (1 - t) \left(\frac{D}{E} \right)^{**} \right] = 0.91 [1 + (1 - 0.4)(0.75)] = 1.32$$

where $(D/E)^*$, the target's preacquisition debt-to-equity ratio; $(D/E)^{**}$, the target's postacquisition debt-to-equity ratio; and β^* , the target's preacquisition β .

industry in which the firm competes. To measure the increasing risk associated with new borrowing, the resulting unlevered β is then used to estimate the levered β for the target firm (Exhibit 7.1).

CALCULATING FREE CASH FLOWS

Common definitions of cash flow used for valuation are free cash flow to the firm (FCFF), or enterprise cash flow, and free cash flow to equity (FCFE) investors, or equity cash flow. Referred to as *valuation cash flows*, they are constructed by adjusting GAAP cash flows for noncash factors.

Free Cash Flow to the Firm (Enterprise Cash Flow)

FCFF represents cash available to satisfy all investors holding claims against the firm's resources. Claims holders include common stockholders, lenders, and preferred stockholders. Consequently, enterprise cash flow is calculated before the sources of financing are determined and, as such, is not affected by the firm's financial structure.²⁷

FCFF can be calculated by adjusting operating EBIT as follows:

$$\begin{aligned} \text{FCFF} = & \text{EBIT}(1 - \text{Tax Rate}) + \text{Depreciation and Amortization} \\ & - \text{Gross Capital Expenditures} - \Delta \text{Net Working Capital} \end{aligned} \quad (7.7)$$

Only cash flow from operating and investment activities, but not from financing activities, is included. Why? Because this represents the cash flow available to compensate all those providing funds to the firm. The tax rate refers to the firm's marginal tax rate. Net working

²⁷In practice, the financial structure may affect the firm's cost of capital and, therefore, its value due to the potential for bankruptcy (see Chapter 17).

capital is defined as current operating assets (excluding cash balances in excess of the amount required to meet normal operating requirements) less current operating liabilities.²⁸ Depreciation and amortization expenses are not actual cash outlays and are added to operating income in calculating cash flow.

Selecting the Right Tax Rate

The appropriate tax rate is either the firm's marginal rate (i.e., the rate paid on each additional dollar of earnings) or its effective tax rate (i.e., taxes due divided by taxable income). The marginal tax rate in the United States at this time is usually 40%–35% for federal taxes for firms earning more than \$10 million and 5% for most state and local taxes.²⁹ The effective rate is usually less than the marginal rate due to the use of tax credits to reduce actual taxes paid or accelerated depreciation to defer tax payments. Once tax credits have been used and the ability to further defer taxes has been exhausted, the effective rate can exceed the marginal rate in the future. Effective rates lower than the marginal rate may be used in the early years of cash flow projections, if the current favorable tax treatment is likely to continue into the foreseeable future, and eventually the effective rates may be increased to the firm's marginal tax rate. It is critical to use the marginal rate in calculating after-tax operating income in perpetuity. Otherwise, the implicit assumption is that taxes can be deferred indefinitely.

Dealing With Operating Leases

Currently, operating leases do not require a firm to record an asset or a liability on the balance sheet; instead, the lease charge is recorded as an expense on the income statement, and future lease commitments are recorded in footnotes to the firm's financial statements. However, beginning in 2019 the Financial Accounting Standards Board will require that any firm that pays to lease real estate, office equipment, aircraft, or similar items must show such operating leases on the balance sheet.

For our purposes, we discuss how operating leases may be valued under existing FASB guidelines. Future lease payments should be discounted to the present at the firm's pretax cost of debt (i), since leasing equipment represents an alternative to borrowing, and the present value (PV) of the operating lease (PV_{OL}) should be included in the firm's total debt outstanding.³⁰ Once operating leases are converted to debt, operating lease expense (OLE_{EXP}) must be added to EBIT because it is a financial expense and EBIT represents operating income

²⁸In some instances, firms may have negative working capital. Since this is unlikely to be sustainable, it is preferable to set net working capital to zero.

²⁹At the time of this writing, the Trump administration is seeking to substantially reduce the corporate tax rate, perhaps as low as 15%. Consequently, the marginal tax rate used throughout this book should be 20%, 15% federal plus 5% for state and local taxes. Thus the only change in calculations in examples and in the models accompanying this book would be to replace the 40% marginal tax rate with a 20% rate.

³⁰Cornaggia et al. (2013) have documented a huge shift in the way firms finance their capital assets, with operating lease financing increasing by 745% as a proportion of total debt and capital leases falling by half between 1980 and 2007.

before such expenses. Lease payments include both an interest expense component (to reflect the cost of borrowing) and a depreciation component (to reflect the anticipated decline in the value of the leased asset).

An estimate of depreciation expense associated with the leased asset (DEP_{OL}) then must be deducted from EBIT, as is depreciation expense associated with other fixed assets owned by the firm, to calculate an “adjusted” EBIT ($EBIT_{ADJ}$). DEP_{OL} may be estimated by dividing the firm’s gross plant and equipment by its annual depreciation expense. Studies show that the median asset life for leased equipment is 10.9 years.³¹ The $EBIT_{ADJ}$ then is used to calculate FCFE. EBIT may be adjusted as follows:

$$EBIT_{ADJ} = EBIT + OLE_{EXP} - DEP_{OL} \quad (7.8)$$

If EBIT, OLE_{EXP} , PV_{OL} , and the useful life of the leased equipment are \$15 million, \$2 million, \$30 million, and 10 years, respectively, then $EBIT_{ADJ}$ equals \$14 million [i.e., $\$15 + \$2 - (\$30/10)$].

Free Cash Flow to Equity Investors (Equity Cash Flow)

FCFE investors is the cash flow remaining for returning cash through dividends or share repurchases to current common equity investors or for reinvesting in the firm after the firm satisfies all obligations. These obligations include debt payments, capital expenditures, changes in net working capital, and preferred dividend payments. FCFE can be defined as follows:

$$\begin{aligned} \text{FCFE} = & \text{Net Income} + \text{Depreciation and Amortization} \\ & - \text{Gross Capital Expenditures} - \Delta \text{Net Working Capital} \\ & + \text{New Debt and Preferred Equity Issues} \\ & - \text{Principal Repayments} - \text{Preferred Dividends} \end{aligned} \quad (7.9)$$

Exhibit 7.2 summarizes the key elements of enterprise cash flow [Eq. (7.7)] and equity cash flow [Eq. (7.9)]. Note that equity cash flow reflects operating, investment, and financing activities, whereas enterprise cash flow excludes cash flow from financing activities.

APPLYING DISCOUNTED CASH FLOW METHODS

Widely used in valuation,³² DCF methods provide estimates of the economic value of a company at a moment in time, which do not need to be adjusted if the intent is to acquire a small portion of the company. However, if the intention is to obtain a controlling interest in the firm, a control premium must be added to the firm’s value to determine the purchase price.³³

³¹Lim et al. (2004).

³²In a survey of more than 300 financial planning professionals, about 80% said they routinely used DCF techniques in evaluating capital projects, including acquisitions (Association for Financial Professionals: March 2011).

³³A controlling interest generally is considered more valuable to an investor than a noncontrolling interest because the investor has the right to approve important decisions affecting the business.

EXHIBIT 7.2 DEFINING VALUATION CASH FLOWS: EQUITY AND ENTERPRISE CASH FLOWS

Free Cash Flow to Common Equity Investors (Equity Cash Flow: FCFE)

$$\begin{aligned} \text{FCFE} = & \{ \text{Net Income} + \text{Depreciation and Amortization} - \Delta \text{Working Capital} \}^a \\ & - \text{Gross Capital Expenditures}^b \\ & + \{ \text{New Preferred Equity Issues} - \text{Preferred Dividends} \\ & + \text{New Debt Issues} - \text{Principal Repayments} \}^c \end{aligned}$$

⇒ Cash flow (after taxes, debt repayments and new debt issues, preferred dividends, preferred equity issues, and all reinvestment requirements) available for paying dividends and/or repurchasing common equity.

Free Cash Flow to the Firm (Enterprise Cash Flow: FCFF)

$$\begin{aligned} \text{FCFF} = & \{ \text{Earnings Before Interest and Taxes}(1 - \text{Tax Rate}) \\ & + \text{Depreciation and Amortization} - \Delta \text{Working Capital} \}^a \\ & - \text{Gross Capital Expenditures}^b \end{aligned}$$

⇒ Cash flow (after taxes and reinvestment requirements) available to repay lenders and/or pay common and preferred dividends and repurchase equity.

^aCash from operating activities.

^bCash from investing activities.

^cCash from financing activities.

Enterprise Discounted Cash Flow Model (Enterprise or FCFF Method)

The enterprise valuation method, or FCFF, approach discounts the after-tax free cash flow available to the firm from operations at the WACC to obtain the estimated enterprise value. The firm's *enterprise value* (often referred to as *firm value*) reflects the market value of the entire business. It can be viewed as a theoretical takeover price. That is, it represents the sum of investor claims on the firm's cash flows from all those holding securities, including those holding long-term debt, preferred stock, common shareholders, and noncontrolling shareholders. Since it reflects all claims, it is a much more accurate estimate of a firm's takeover value than simply a firm's market value or equity capitalization. For example, in addition to buying a target firm's equity, an acquirer would generally have to assume responsibility for paying off the target firm's debt and preferred stock.

Enterprise value is commonly calculated as the market value of the firm's common equity plus long-term debt, preferred stock, and noncontrolling interest less cash and cash

equivalents.³⁴ Thus measured, the enterprise value represents what an acquirer would have to pay for the target's common and preferred equity and the cost of assuming the responsibility to repay the target's debt while retaining its cash. The firm's common equity value then is determined by subtracting the market value of the firm's debt and other investor claims on cash flow, such as preferred stock and noncontrolling interest, from the enterprise value.³⁵ The enterprise method is used when information about the firm's debt repayment schedules or interest expense is limited.

Equity Discounted Cash Flow Model (Equity or FCFE Method)

The equity valuation, or FCFE, approach discounts the after-tax cash flows available to the firm's shareholders at the cost of equity. This approach is more direct than the enterprise method when the objective is to value the firm's equity. The enterprise, or FCFF, method and the equity, or FCFE, method are illustrated in the following sections of this chapter using three cash flow growth scenarios: zero-growth, constant-growth, and variable-growth rates.

The Zero-Growth Valuation Model

This model assumes that free cash flow is constant in perpetuity. The value of the firm at time zero (P_0) is the discounted or capitalized value of its annual cash flow.³⁶ The subscript FCFF or FCFE refers to the definition of cash flow used in the valuation:

$$P_{0,FCFF} = \frac{FCFF_0}{WACC} \quad (7.10)$$

where $FCFF_0$, free cash flow to the firm at time 0; and WACC, the cost of capital.

$$P_{0,FCFE} = \frac{FCFE_0}{k_e} \quad (7.11)$$

where $FCFE_0$, free cash flow to common equity at time 0; and k_e , the cost of equity.

While simplistic, the zero-growth method has the advantage of being easily understood by all parties to the deal. There is little evidence that more complex methods provide consistently better valuation estimates, due to their greater requirement for more inputs and assumptions. This method often is used to value commercial real estate transactions and small, privately owned businesses (Exhibit 7.3).

³⁴Other long-term liabilities, such as the firm's pension and healthcare obligations, may be ignored if they are fully funded. However, the unfunded portion of such liabilities should be added to enterprise value, while any recoverable surplus should be deducted.

³⁵The estimate of equity derived in this manner equals the value of equity determined by discounting the cash flow available to the firm's shareholders at the cost of equity, if assumptions about cash flow and discount rates are consistent.

³⁶The PV of a constant payment in perpetuity is a diminishing series because it represents the sum of the PVs for each future period. Each PV is smaller than the preceding one; therefore, the perpetuity is a diminishing series that converges to 1 divided by the discount rate.

EXHIBIT 7.3 THE ZERO-GROWTH VALUATION MODEL

1. What is the enterprise value of a firm whose annual FCFF₀ of \$1 million is expected to remain constant in perpetuity and whose cost of capital is 12% [Eq. (7.10)]?

$$P_{0,\text{FCFF}} = \frac{\$1}{0.12} = \$8.3 \text{ million}$$

2. Calculate the weighted average cost of capital [Eq. (7.4)] and the enterprise value of a firm whose capital structure consists only of common equity and debt. The firm desires to limit its debt to 30% of total capital.^a The firm's marginal tax rate is 0.4, and its β is 1.5. The corporate bond rate is 8%, and the 10-year US Treasury bond rate is 5%. The expected annual return on stocks is 10%. Annual FCFF is expected to remain at \$4 million indefinitely.

$$k_e = 0.05 + 1.5(0.10 - 0.05) = 0.125 \times 100 = 12.5\%$$

$$\text{WACC} = 0.125 \times 0.7 + 0.08 \times (1 - 0.4) \times 0.3 = 0.088 + 0.014 = 0.102 = 10.2\%$$

$$P_{0,\text{FCFF}} = \frac{\$4}{0.102} = \$39.2 \text{ million}$$

^aIf the analyst knows a firm's debt-to-equity ratio (D/E), it is possible to calculate the firm's debt-to-total capital ratio [$D/(D + E)$] by dividing (D/E) by $(1 + D/E)$, since $D/(D + E) = (D/E)/(1 + D/E) = [(D/E)/(D + E)/E] = (D/E) \times (E/(D + E)) = D/(D + E)$.

The Constant-Growth Valuation Model

The constant-growth model is applicable for firms in mature markets, characterized by a somewhat predictable rate of growth. Examples include beverages, cosmetics, personal care products, prepared foods, and cleaning products. To project growth rates, extrapolate the industry's growth rate over the past 5–10 years. The constant-growth model assumes that cash flow grows at a constant rate, g , which is less than the required return, k_e . The assumption that k_e is greater than g is a necessary mathematical condition for deriving the model. In this model, next year's cash flow to the firm (FCFF₁), or the first year of the forecast period, is expected to grow at the constant rate of growth, g .³⁷ Therefore, $\text{FCFF}_1 = \text{FCFF}_0(1 + g)$:

$$P_{0,\text{FCFF}} = \frac{\text{FCFF}_1}{\text{WACC} - g} \quad (7.12)$$

$$P_{0,\text{FCFE}} = \frac{\text{FCFE}_1}{k_e - g} \quad (7.13)$$

where $\text{FCFE}_1 = \text{FCFE}_0(1 + g)$.

This simple valuation model also provides a means of estimating the risk premium component of the cost of equity as an alternative to relying on historical information, as is done in the capital asset pricing model. This model was developed originally to estimate the value of stocks in the current period (P_0) using the level of expected dividends (d_1) in the next period. This

³⁷Note that the zero-growth model is a special case of the constant-growth model for which $g = 0$.

EXHIBIT 7.4 THE CONSTANT-GROWTH MODEL

1. Determine the enterprise value of a firm whose projected free cash flow to the firm (enterprise cash flow) *next* year is \$1 million, WACC is 12%, and expected annual cash flow growth rate is 6% [Eq. (7.12)].

$$P_{0,\text{FCFF}} = \frac{\$1}{0.12 - 0.06} = \$16.7 \text{ million}$$

2. Estimate the equity value of a firm whose cost of equity is 15% and whose free cash flow to equity holders (equity cash flow) in the *prior* year is projected to grow 20% this year and then at a constant 10% annual rate thereafter. The prior year's free cash flow to equity holders is \$2 million [Eq. (7.13)].

$$P_{0,\text{FCFE}} = \frac{(\$2.0 \times 1.2)(1.1)}{0.15 - 0.10} = \$52.8 \text{ million}$$

model estimates the PV of dividends growing at a constant rate forever. Assuming the stock market values stocks correctly and that we know P_0 , d_1 , and g , we can estimate k_e . Therefore,

$$P_0 = \frac{d_1}{k_e - g} \quad \text{and} \quad k_e = \frac{d_1}{P_0} + g \quad (7.14)$$

For example, if d_1 is \$1, g is 10%, and $P_0 = \$10$, then k_e is 20%. See [Exhibit 7.4](#) for an illustration of how to apply the constant-growth model.

The Variable-Growth (Supernormal or Nonconstant) Valuation Model

Many firms experience periods of high growth followed by a period of slower, more stable growth. Examples include cellular phone firms, personal computer firms, and cable TV firms. Such firms experience double-digit growth rates for periods of 5–10 years because of low penetration early in the product's life cycle. As the market becomes saturated, growth slows to a rate more in line with the overall growth of the economy or the general population. The PV of such firms is equal to the sum of the PV of the DCFs during the high-growth period plus the discounted value of the cash flows generated during the stable-growth period. The discounted value of the cash flows generated during the stable-growth period is often called the *terminal, sustainable, horizon, or continuing-growth value*.

The terminal value may be estimated using the constant-growth model.³⁸ Free cash flow during the first year beyond the n th or final year of the forecast period, FCFF_{n+1} , is divided by the difference between the assumed cost of capital and the expected cash flow growth rate beyond the n th-year forecast period. The terminal value is the PV in the n th year of all future cash flows beyond the n th year. To convert the terminal value to its value in the current year, it is necessary to discount it by the discount rate used to convert the n th-year value to a PV. Small

³⁸The use of the constant-growth model provides consistency, since the DCF methodology is used during both the variable- and stable-growth periods.

TABLE 7.6 Impact of Changes in Assumptions on a Terminal Value of \$1 Million

Difference between cost of capital and cash flow growth rate (%)	Terminal value (\$ million)
3	33.3 ^a
4	25.0
5	20.0
6	16.7
7	14.3

^a \$1.0/0.03.

changes in assumptions can result in dramatic swings in the terminal value and in the valuation of the firm. Table 7.6 illustrates the sensitivity of a terminal value of \$1 million to different spreads between the cost of capital and the stable growth rate. Note that, using the constant-growth model formula, the terminal value declines dramatically as the spread between the cost of capital and expected stable growth for cash flow increases by 1 percentage point.³⁹

Using the definition of FCFF, $P_{0,FCFF}$ can be estimated using the variable-growth model as follows:

$$P_{0,FCFF} = \sum_{t=1}^n \frac{FCFF_0(1+g_t)^t}{(1+WACC)^t} + \frac{P_n}{(1+WACC)^n} \quad (7.15)$$

where $P_n = \frac{FCFF_n(1+g_m)}{WACC_m - g_m}$; $FCFF_0$, FCFF in year 0; WACC, weighted average cost of capital

through year n ; $WACC_m$, cost of capital assumed beyond year n (Note: $WACC > WACC_m$); P_n , value of the firm at the end of year n (terminal value); g_t , growth rate through year n ; and g_m , stabilized or long-term growth rate beyond year n (Note: $g_t > g_m$).

Similarly, the value of the firm to equity investors can be estimated using Eq. (7.15). However, projected FCFEs are discounted using the firm's cost of equity.

The cost of capital is assumed to differ between the high-growth and the stable-growth periods when applying the variable-growth model. High-growth rates usually are associated with increased levels of uncertainty. A high-growth firm may have a β significantly above 1. However, when the growth rate becomes stable, it is reasonable to assume that the β should approximate 1. A reasonable approximation of the discount rate to be used during the stable-growth period is to adopt the industry average cost of equity or WACC.

Eq. (7.15) can be modified to use the growing-annuity model⁴⁰ to approximate the growth during the high-constant-growth period and the constant-growth model for the terminal

³⁹Terminal value also may be estimated using price-to-earnings, price-to-cash flow, or price-to-book ratios to value the target as if it were sold at the end of a specific number of years. At the end of the forecast period, the terminal year's earnings, cash flow, or book value is projected and multiplied by a P/E, cash flow, or book value multiple believed to be appropriate for that year.

⁴⁰Ross et al. (2008, pp. 238–240).

period. This formulation requires fewer computations if the number of annual cash flow projections is large. As such, $P_{0,\text{FCFF}}$ also can be estimated as follows:

$$P_{0,\text{FCFF}} = \frac{\text{FCFF}_0(1+g)}{\text{WACC}-g} \left[1 - \left(\frac{1+g}{1+\text{WACC}} \right)^n \right] + \frac{P_n}{(1+\text{WACC})^n} \quad (7.16)$$

See [Exhibit 7.5](#) for an illustration of how to apply the variable-growth model and the growing-annuity model.

EXHIBIT 7.5 THE VARIABLE-GROWTH VALUATION MODEL

Estimate the enterprise value of a firm (P_0) whose free cash flow is projected to grow at a compound annual average rate of 35% for the next 5 years. Growth then is expected to slow to a more normal 5% annual rate. The current year's cash flow to the firm is \$4 million. The firm's weighted average cost of capital during the high-growth period is 18% and 12% beyond the fifth year, as growth stabilizes. The firm's cash in excess of normal operating balances is assumed to be zero. Therefore, using [Eq. \(7.15\)](#), the present value of cash flows during the high-growth 5-year forecast period (PV_{1-5}) is calculated as follows:

$$\begin{aligned} PV_{1-5} &= \frac{\$4.00 \times 1.35}{1.18} + \frac{\$4.00 \times (1.35)^2}{(1.18)^2} + \frac{\$4.00 \times (1.35)^3}{(1.18)^3} + \frac{\$4.00 \times (1.35)^4}{(1.18)^4} + \frac{\$4.00 \times (1.35)^5}{(1.18)^5} \\ &= \frac{\$5.40}{1.18} + \frac{\$7.29}{(1.18)^2} + \frac{\$9.84}{(1.18)^3} + \frac{\$13.29}{(1.18)^4} + \frac{\$17.93}{(1.18)^5} \\ &= \$4.58 + \$5.24 + \$5.99 + \$6.85 + \$7.84 = \$30.50 \end{aligned}$$

Calculation of the terminal value (PV_{TV}) is as follows:

$$\begin{aligned} PV_{\text{TV}} &= \frac{[\$4.00 \times (1.35)^5 \times 1.05] / (0.12 - 0.05)}{(1.18)^5} = \frac{\$18.83 / 0.07}{2.29} = \$117.60 \\ P_{0,\text{FCFF}} &= P_{1-5} + PV_{\text{TV}} = \$30.50 + \$117.60 = \$148.10 \end{aligned}$$

Alternatively, using the growing-annuity model to value the high-growth period and the constant-growth model to value the terminal period [[Eq. \(7.16\)](#)], the present value of free cash flow to the firm could be estimated as follows:

$$\begin{aligned} PV &= \frac{\$4.00 \times 1.35}{0.18 - 0.35} \left[1 - \left(\frac{1.35}{1.18} \right)^5 \right] + \frac{[\$4.00 \times (1.35)^5 \times 1.05] / (0.12 - 0.05)}{(1.18)^5} \\ &= \$30.50 + \$117.60 \\ &= \$148.10 \end{aligned}$$

Determining the Duration of the High-Growth Period

Projected growth rates for sales, profit, and cash flow can be calculated based on the historical experience of the firm or industry.⁴¹ The length of the high-growth period should be longer when the current growth rate of a firm's cash flow is much higher than the stable-growth rate and the firm's market share is small. For example, if the industry is expected to grow at 5% annually and the target firm, which has only a negligible market share, is growing at three times that rate, it may be appropriate to assume a high-growth period of 5–10 years. If the terminal value constitutes more than 75% of the total PV, the annual forecast period should be extended beyond the customary 5 years to at least 10 years to reduce its impact on the firm's total market value. Historical evidence shows that sales and profitability tend to revert to normal levels within 5–10 years,⁴² suggesting that the conventional use of a 5- to 10-year annual forecast before calculating a terminal value makes sense.⁴³

Determining the Stable or Sustainable Growth Rate

The stable growth rate generally is going to be less than or equal to the overall growth rate of the industry in which the firm competes or the general economy. Stable growth rates above these levels implicitly assume that the firm's cash flow eventually will exceed that of its industry or the general economy. Similarly, for multinational firms, the stable growth rate should not exceed the projected growth rate for the world economy or a particular region of the world.

Determining the Appropriate Discount Rate

In evaluating projects most firms use the WACC methodology to discount future cash flows. However, they often increase it to reflect business-specific risk, and firms adding the largest premiums to their WACC estimates also tend to hold the largest cash balances. By using higher discount rates, such firms fail to pursue projects that would have been attractive using their actual cost of capital in an effort to hoard cash in anticipation of future attractive opportunities. Even when firms are not financially constrained, firms may forgo attractive projects due to operational issues such as the time required to expand their workforce and the inability of current management to manage new projects effectively at that time. In these circumstances, firms inflate their discount rates above their cost of capital to account for these operational constraints.⁴⁴

As with other investment opportunities, choosing the right discount rate is critical: one that is too low overvalues the target and risks overpayment while one that is too high undervalues the target and reduces the likelihood of being able to close the deal. Surveys show that many

⁴¹See the document entitled "Primer on Cash Flow Forecasting" on the companion site to this text for a discussion on how to apply regression analysis to projecting a firm's cash flow.

⁴²Palepu et al. (2004).

⁴³More sophisticated forecasts of growth rates involve annual revenue projections for each customer or product, which are summed to provide an estimate of aggregate revenue. A product or service's life cycle (see Chapter 4) is a useful tool for making such projections.

⁴⁴Jagannathan et al. (2016).

acquirers use a single firm-wide WACC to value target firms due to its simplicity. This is especially problematic when the acquirer has many lines of business and fails to use the WACC associated with each line of business.⁴⁵ The correct discount rate is generally the target's cost of capital if the acquirer is merging with a higher-risk business. However, either the acquirer's or the target's cost of capital may be used if the two firms are equally risky and based in the same country.

USING THE ENTERPRISE METHOD TO ESTIMATE EQUITY VALUE

A firm's common equity value often is calculated by estimating its enterprise value, adding the value of nonoperating assets, and then deducting nonequity claims on future cash flows. Such claims commonly include long-term debt, operating leases, deferred taxes, unfunded pension liabilities, preferred stock, employee options, and noncontrolling interests. What follows is a discussion of how to value nonequity claims and nonoperating assets.⁴⁶ This approach is especially useful when a firm's capital structure (i.e., debt-to-total capital ratio) is expected to remain stable. However, the presumption that a firm's capital structure is likely to remain stable often is problematic. Actual leverage for many firms tends to vary over time and median average leverage tends to differ significantly across industries.⁴⁷

Determining the Market Value of Long-Term Debt

The current value of a firm's debt generally is independent of its enterprise value for financially healthy companies, but this is not true for financially distressed firms and for hybrid securities.

Financially Stable Firms

If the debt repayment schedule is unknown, the market value of debt may be estimated by treating the book value of the firm's debt as a conventional coupon bond, in which interest is paid annually or semiannually and the principal is repaid at maturity. The coupon is the interest on all of the firm's debt, and the principal at maturity is a weighted average of the maturity of all of the debt outstanding. The weighted average principal at maturity is the sum of the amount of debt outstanding for each maturity date multiplied by its share of total debt outstanding. The estimated current market value of the debt then is calculated as the sum of the annuity value of the interest expense per period plus the PV of the principal ([Exhibit 7.6](#)).⁴⁸

Note that the book value of debt may be used unless interest rates have changed significantly since the debt was incurred or the likelihood of default is high. If interest rates have increased since a firm first issued debt, the higher rates lessen the value of existing bonds.

⁴⁵Kruger et al. (2015).

⁴⁶If these factors already are included in the projections of future cash flows, they should not be deducted from the firm's enterprise value.

⁴⁷DeAngelo and Roll (2015).

⁴⁸The only debt that must be valued is the debt outstanding on the valuation date. Future borrowing is irrelevant if we assume that investments financed with future borrowings earn their cost of capital. As such, net cash flows would be sufficient to satisfy interest and principal payments associated with these borrowings.

EXHIBIT 7.6 ESTIMATING THE MARKET VALUE OF A FIRM'S DEBT AND CAPITALIZED OPERATING LEASES

According to its 10K report, Gromax, Inc. has two debt issues outstanding, with a total book value of \$220 million. Annual interest expense on the two issues totals \$20 million. The first issue, whose current book value is \$120 million, matures at the end of 5 years; the second issue, whose book value is \$100 million, matures in 10 years. The weighted average maturity of the two issues is 7.27 years [i.e., $5 \times (120/220) + 10 \times (100/220)$]. The current cost of debt maturing in 7–10 years is 8.5%.

The firm's 10K also shows that the firm has annual operating-lease expenses of \$2.1, 2.2, 2.3, and 5 million in the fourth year and beyond (the 10K indicated the firm's cumulative value in the fourth year and beyond to be \$5 million). (For our purposes, we may assume that the \$5 million is paid in the fourth year.) What is the total market value of the firm's total long-term debt, including conventional debt and operating leases?

$$\begin{aligned}
 PV_D (\text{Long-Term Debt})^a &= \$20 \times \frac{1 - [1 / (1.085)^{7.27}]}{0.085} + \frac{\$220}{(1.085)^{7.27}} \\
 &= \$105.27 + \$121.55 = \$226.82 \\
 PV_{OL} (\text{Operating Leases}) &= \frac{\$2.10}{1.085} + \frac{\$2.20}{(1.085)^2} + \frac{\$2.30}{(1.085)^3} + \frac{\$5.00}{(1.085)^4} \\
 &= \$1.94 + \$1.87 + \$1.80 + \$3.61 = \$9.22 \\
 PV_{TD} (\text{Total Debt}) &= \$226.82 + \$9.22 = \$236.04
 \end{aligned}$$

^aThe present value of debt is calculated using the PV of an annuity formula for 7.27 years and an 8.5% interest rate plus the PV of the principal repayment at the end of 7.27 years.

Why? Because newly issued bonds reflecting higher interest rates pay more than older ones causing the price of older bonds to fall. In these situations, value each bond issued by the firm separately by discounting cash flows at yields to maturity for comparably rated debt with similar maturities issued by similar firms. Book value also may be used for floating-rate debt, since its market value is unaffected by fluctuations in interest rates. In the United States, the current market value of a company's debt can be determined using the FINRA TRACE database. For example, Home Depot Inc.'s 5.40% fixed coupon bond maturing on March 1, 2016, was priced at \$112.25 on September 5, 2010, or 1.1225 times par value. Multiply the book (par) value of debt, which for Home Depot was \$3,040,000, by 1.1225 to determine its market value of \$3,412,400 on that date.

Financially Distressed Firms

For such firms, the value of debt and equity reflect the riskiness of the firm's cash flows. Therefore, debt and equity are not independent, and the calculation of a firm's equity value cannot be estimated by simply subtracting the market value of the firm's debt from the firm's enterprise value. One solution is to estimate the firm's enterprise value using two scenarios: one in which the firm is able to return to financial health and one in which the firm's position deteriorates. For each scenario, calculate the firm's enterprise value and deduct the book value of the firm's debt and other nonequity claims. Each scenario is weighted by the

probability that the analyst attaches to each scenario, such that the resulting equity value estimate represents a probability-weighted average (expected average) of the scenarios.

Hybrid Securities (Convertible Bonds and Preferred Stock)

Convertible bonds and stock represent conventional debt and preferred stock plus a conversion feature, or call option to convert the bonds or stock to shares of common equity at a stipulated price per share. Since the value of the debt reflects the value of common equity, it is not independent of the firm's enterprise value and therefore cannot be deducted from the firm's enterprise value to estimate equity value. One approach to valuing such debt and preferred stock is to assume that all of it will be converted into equity when a target firm is acquired. This makes the most sense when the offer price for the target exceeds the price per share at which the debt can be converted. See Table 14.12 for an illustration of this method.

Determining the Market Value of Operating Leases

Both capital and operating leases also should be counted as outstanding debt of the firm. When a lease is classified as a capital lease, the PV of the lease expenses is treated as debt. Interest is imputed on this amount, which corresponds to debt of comparable risk and maturity and is shown on the income statement. Although operating-lease expenses are treated as operating expenses on the income statement, they are not counted as part of debt on the balance sheet for financial reporting purposes. For valuation purposes, operating leases should be included in debt. Future operating-lease expenses are shown in financial statement footnotes. The discount rate may be approximated using the firm's current pretax cost of debt, reflecting the market rate of interest that lessors would charge the firm. The principal amount of the leases also can be estimated by discounting the current year's operating-lease payment as a perpetuity using the firm's cost of debt ([Exhibit 7.6](#)).

Determining the Cash Impact of Deferred Taxes

Deferred tax assets and liabilities arise when the tax treatment of an item is temporarily different from its financial accounting treatment. Such taxes may result from uncollectible accounts receivable, warranties, options expensing, pensions, leases, net operating losses (NOLs), depreciable assets, and inventories. Deferred taxes have a current and a future or noncurrent impact on cash flow. The current impact is reflected by adding the change in deferred tax liabilities and subtracting the change in deferred tax assets in the calculation of working capital. The noncurrent impact of deferred assets generally is shown in other long-term assets and deferred tax liabilities in other long-term liabilities on the firm's balance sheet. A deferred tax asset is a future tax benefit, in that deductions not allowed in the current period may be realized in some future period. A deferred tax liability represents the increase in taxes payable in future years. The excess of accelerated depreciation taken for tax purposes over straight-line depreciation often used for financial reporting reduces the firm's current tax liability but increases future tax liabilities when spending on plant and equipment slows. The amount of the deferred tax liability equals the excess of accelerated over straight-line depreciation times the firm's marginal tax rate.

To estimate a firm's equity value, the PV of net deferred tax liabilities (i.e., deferred tax assets less deferred tax liabilities) is deducted from the firm's enterprise value.⁴⁹ The use of net deferred tax liabilities is appropriate, since deferred tax liabilities often are larger than deferred tax assets for firms in the absence of significant NOLs. The impact on free cash flow of a change in deferred taxes can be approximated by the difference between a firm's marginal and effective tax rates multiplied by the firm's operating income before interest and taxes. The analyst may assume the effective tax rate is applicable for a specific number of years before reverting to the firm's marginal tax rate. For example, the effective tax rate for 5 years increases the deferred tax liability to the firm during that period as long as the effective rate is below the marginal rate. The deferred tax liability at the end of the fifth year is estimated by adding to the current cumulated deferred tax liability the additional liability for each of the next 5 years. This liability is the sum of projected EBIT times the difference between the marginal and effective tax rates. Assuming tax payments on the deferred tax liability at the end of the fifth year will be spread equally over the following 10 years, the PV of the tax payments during that 10-year period is then estimated and discounted back to the current period ([Exhibit 7.7](#)).

Determining the Cash Impact of Unfunded Pension Liabilities

Deduct the PV of such liabilities from the enterprise value to estimate the firm's equity value. Publicly traded firms are required to identify the PV of unfunded pension obligations; if not shown on the firm's balance sheet, such data can be found in the footnotes to the balance sheet.⁵⁰

Determining the Cash Impact of Employee Options

Key employees often receive compensation in the form of options to buy a firm's common stock at a stipulated price (i.e., exercise price). Once exercised, these options impact cash flow as firms attempt to repurchase shares to reduce earnings-per-share dilution resulting from the firm's issuance of new shares to those exercising their options. The PV of these future cash outlays to repurchase stock should be deducted from the firm's enterprise value.⁵¹

Determining the Cash Impact of Other Provisions and Contingent Liabilities

Provisions (i.e., reserves) for future layoffs due to restructuring usually are recorded on the balance sheet in undiscounted form, since they usually represent cash outlays to be made in the near term. Such provisions should be deducted from the enterprise value because they are equivalent to debt. Contingent liabilities, whose future cash outlays depend on certain events, are shown not on the balance sheet but, rather, in footnotes. Examples include pend-

⁴⁹Alternatively, noncurrent deferred taxes may be valued separately, with deferred tax assets added to and deferred tax liabilities subtracted from the firm's enterprise value.

⁵⁰If the unfunded liability is not shown in the footnotes, the footnote should indicate where they have been included.

⁵¹Options represent employee compensation and are tax deductible for firms. Accounting rules require firms to report the PV of all stock options outstanding based on estimates provided by option-pricing models (see Chapter 8) in the footnotes to financial statements.

EXHIBIT 7.7 ESTIMATING COMMON EQUITY VALUE BY DEDUCTING THE MARKET VALUE OF DEBT, PREFERRED STOCK, DEFERRED TAXES FROM THE ENTERPRISE VALUE

Operating income, depreciation, working capital, and capital spending are expected to grow 10% annually during the next 5 years and 5% thereafter. The book value of the firm's debt is \$300 million, with annual interest expense of \$25 million and term to maturity of 4 years. The debt is a conventional "interest-only" note, with a repayment of principal at maturity. The firm's annual preferred dividend expense is \$20 million. The prevailing market yield on preferred stock issued by similar firms is 11%. The firm does not have any operating leases, and pension and healthcare obligations are fully funded. The firm's current cost of debt is 10%. The firm's weighted average cost of capital is 12%. Because it is already approximating the industry average, it is expected to remain at that level beyond the fifth year. Because of tax deferrals, the firm's current effective tax rate of 25% is expected to remain at that level for the next 5 years. The firm's current net deferred tax liability is \$300 million. The projected net deferred tax liability at the end of the fifth year is expected to be paid off in 10 equal amounts during the following decade. The firm's marginal tax rate is 40%, and it will be applied to the calculation of the terminal value. What is the value of the firm to common equity investors?

Financial data (in \$ million)

	Current year	Year 1	Year 2	Year 3	Year 4	Year 5
EBIT	200	220	242	266.2	292.8	322.1
EBIT (1 - t)	150	165	181.5	199.7	219.6	241.6
Depreciation (straight line)	8	8.8	9.7	10.7	11.7	12.9
Δ Net working capital	30	33	36.	39.9	43.9	48.3
Gross capital spending	40	44	48.4	3.2	58.6	64.4
Free cash flow to the firm	88	96.8	106.5	117.3	128.8	141.8

$$P_{0,FCFF^a} = \frac{\$88.00(1.10)}{0.12 - 0.10} \times \left[1 - \left(\frac{1.10}{1.12} \right)^5 + \frac{\$93.50^b \times 1.05 / (0.12 - 0.05)}{(1.12)^5} \right]$$

$$= \$416.98 + \$795.81 = \$1212.80$$

$$PV_D(\text{Debt})^c = \$25 \times \frac{1 - 1 / (1.04)^4}{0.10} + \frac{\$300}{(1.10)^4}$$

$$= \$25(3.17) + \$300(0.683) = \$79.25 + \$204.90 = \$284.15$$

$$PV_{PFD}(\text{Preferred Stock})^d = \frac{\$20.11}{0.11} = \$181.82$$

$$\begin{aligned}\text{Deferred Tax Liability by End of Year 5} &= \$300 + (\$220 + \$242 + 266.20 + \$292.80 \\ &\quad + \$322.10)(0.40 - 0.25) = \$501.47\end{aligned}$$

$$\begin{aligned}\text{PV}_{\text{DEF}}(\text{Deferred Taxes}) &= \frac{\$501.47}{10} \times \frac{1 - [1 / (1.12)^{10}] / (1.12)^5}{0.12} \\ &= \frac{\$50.15 \times 5.65}{1.76} = \$160.99\end{aligned}$$

$$P_{0,\text{FCFE}} = \$1212.80 - \$284.15 - \$181.82 - \$160.99 = \$585.84$$

^a See Eq. (7.16).

^b The terminal value reflects the recalculation of the fifth-year after-tax operating income using the marginal tax rate of 40% and applying the constant-growth model. Fifth-year free cash flow equals $\$322.1(1 - 0.4) + \$12.9 - \$48.3 - \$64.4 = \$93.5$.

^c The present value of debt is calculated using the PV of an annuity for 4 years and a 10% interest rate plus the PV of the principal repayment at the end of 4 years. The firm's current cost of debt of 10% is higher than the implied interest rate of 8% ($\$25/\$300$) on the loan currently on the firm's books. This suggests that the market rate of interest has increased since the firm borrowed the \$300 million "interest-only" note.

^d The market value of preferred stock (PV_{PFD}) is equal to the preferred dividend divided by the cost of preferred stock.

ing litigation and loan guarantees. Since such expenses are tax deductible, estimate the PV of future after-tax cash outlays discounted at the firm's cost of debt, and deduct from the firm's enterprise value.

Determining the Market Value of Noncontrolling Interests

When a firm owns less than 100% of another business, it is shown on the firm's consolidated balance sheet. That portion not owned by the firm is shown as a noncontrolling interest. For valuation purposes the noncontrolling interest has a claim on the assets of the majority-owned subsidiary and not on the parent firm's assets. If the less than wholly owned subsidiary is publicly traded, value the noncontrolling interest by multiplying the noncontrolling's ownership share by the market value of the subsidiary. If the subsidiary is not publicly traded and you as an investor in the subsidiary have access to its financials, value the subsidiary by discounting the subsidiary's cash flows at the cost of capital appropriate for the industry in which it competes. The resulting value of the noncontrolling interest also should be deducted from the firm's enterprise value.

VALUING NONOPERATING ASSETS

Assets not used in operating the firm also may contribute to firm value and include excess cash balances, investments in other firms, and unused or underutilized assets. Their value should be added to the firm's enterprise value to determine the total value of the firm.

Cash and Marketable Securities

Excess cash balances are cash and short-term marketable securities held in excess of the target firm's minimum operating cash balance. What constitutes the minimum cash balance depends on the firm's *cash conversion cycle*, which reflects the firm's tendency to build inventory, sell products on credit, and later collect accounts receivable. The length of time cash is committed to working capital can be estimated as the sum of the firm's inventory conversion period plus the receivables collection period less the payables deferral period.⁵² To finance this investment in working capital, a firm must maintain a minimum cash balance equal to the average number of days its cash is tied up in working capital times the average dollar value of sales per day. The inventory conversion and receivables collection periods are calculated by dividing the dollar value of inventory and receivables by average sales per day. The payments deferral period is estimated by dividing the dollar value of payables by the firm's average cost of sales per day. [Exhibit 7.8](#) illustrates how to estimate minimum and excess cash balances.

While excess cash balances should be added to the PV of operating assets, any cash deficiency should be subtracted from the value of operating assets to determine the value of the firm. This reduction in the value reflects the need for the acquirer to invest additional working capital to make up any deficiency.

The method illustrated in [Exhibit 7.8](#) may not work for firms that manage working capital aggressively, so receivables and inventory are very low relative to payables. An alternative is to compare the firm's cash and marketable securities as a percent of revenue with the industry average. If the firm's cash balance exceeds the industry average, the firm has excess cash balances, assuming there are no excess cash balances for the average firm in the industry. For example, if the industry average cash holdings as a percent of annual revenue is 5% and the target firm has 8%, the target holds excess cash equal to 3% of its annual revenue.

EXHIBIT 7.8 ESTIMATING MINIMUM AND EXCESS CASH BALANCES

Prototype Incorporated's current inventory, accounts receivable, and accounts payables are valued at \$14, 6.5, and 6 million, respectively. Projected sales and cost of sales for the coming year total \$100 and 75 million, respectively. Moreover, the value of the firm's current cash and short-term marketable securities is \$21,433,000. What minimum cash balance should the firm maintain? What is the firm's current excess cash balance?

$$\frac{\$14,000,000}{\$100,000,000 / 365} + \frac{\$6,500,000}{\$100,000,000 / 365} - \frac{\$6,000,000}{75,000,000 / 365}$$

$$= 51.1 + 23.7 + 29.2 \text{ days} + 29.2 \text{ days} = 45.6 \text{ days}$$

$$\text{Minimum Cash Balance} = 45.6 \text{ days} \times \$100,000,000 / 365 = \$12,493,151$$

$$\text{Excess Cash Balance} = \$21,433,000 - \$12,493,151 = \$8,939,849$$

⁵²The inventory conversion period is the average length of time in days required to produce and sell finished goods. The receivables collection period is the average length of time in days required to collect receivables. The payables deferral period is the average length of time in days between the purchase of and payment for materials and labor.

Investments in Other Firms

Such investments, for financial reporting purposes, may be classified as noncontrolling passive investments, noncontrolling active investments, or majority investments. These investments need to be valued individually and added to the firm's enterprise value to determine the total firm value. See the companion website to this book for an explanation of the valuation methodology in a document entitled "Investments in Other Firms."

Unutilized and Undervalued Assets

Target firm real estate may have a market value in excess of its book value. A firm may have an overfunded pension fund. Intangible assets such as patents and licenses may have substantial value. In the absence of a predictable cash flow stream, their value may be estimated using the Black-Scholes model (see Chapter 8) or the cost of developing comparable technologies.

Patents, Service Marks, and Trademarks

A patent without a current application may have value to an external party, which can be determined by a negotiated sale or license to that party. When a patent is linked to a specific product, it is normally valued based on the "cost avoidance" method. This method uses after-tax royalty rates paid on comparable patents multiplied by the projected future stream of revenue from the products whose production depends on the patent discounted to its PV at the cost of capital. Products and services, which depend on a number of patents, are grouped together as a single portfolio and valued as a group using a single royalty rate applied to a declining percentage of the future revenue. Trademarks are the right to use a name, and service marks are the right to use an image associated with a company, product, or concept. Their value is name recognition reflecting the firm's longevity, cumulative advertising expenditures, the effectiveness of its marketing programs, and the consistency of perceived product quality.

Overfunded Pension Plans

Defined benefit pension plans require firms to hold financial assets to meet future obligations. Shareholders have the legal right to assets in excess of what is needed. If such assets are liquidated and paid out to shareholders, the firm has to pay taxes on their value. The after-tax value of such funds may be added to the enterprise value.

PUTTING IT ALL TOGETHER

Table 7.7 shows how Home Depot's equity value is estimated by first determining the firm's total operating value, adding the value of nonoperating assets, and subtracting the value of all nonequity claims. The nonoperating assets in this example include

TABLE 7.7 Determining Home Depot's Equity Value Using the Enterprise Method

	History		Projections									
	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
ASSUMPTIONS												
Net sales growth rate (%)	−0.078	−0.072	−0.040	0.010	0.020	0.040	0.050	0.050	0.040	0.040	0.035	0.030
Operating profit margin (%)	0.061	0.073	0.070	0.065	0.068	0.070	0.072	0.075	0.075	0.078	0.080	0.080
Depreciation expenditure (% of sales)	0.026	0.025	0.025	0.025	0.025	0.025	0.025	0.025	0.025	0.025	0.025	0.025
Effective tax rate (%)	0.356	0.342	0.340	0.340	0.340	0.340	0.340	0.340	0.340	0.340	0.340	0.340
Marginal tax rate (%)			0.400	0.400	0.400	0.400	0.400	0.400	0.400	0.400	0.400	0.400
Working capital (% of sales)	0.048	0.057	0.060	0.060	0.060	0.060	0.060	0.060	0.060	0.060	0.060	0.060
Gross P&E (% of sales)	0.049	0.026	0.035	0.035	0.035	0.035	0.035	0.035	0.035	0.035	0.035	0.035
WACC (2010–19) (%) ^a			0.073									
WACC terminal period (%)			0.070									
Terminal period growth rate (%)			0.030									
VALUATION (\$ MILLION)												
Net sales	71,288	66,176	63,529	64,164	65,448	68,065	71,469	75,042	78,044	81,166	84,006	86,527
Operating income (EBIT)	4,359	4,803	4,447	4,171	4,450	4,765	5,146	5,628	5,853	6,331	6,721	6,922
Plus: operating-lease expense			802	717	640	584	535	535	535	535	535	535
Less: operating lease depreciation			258	258	258	258	258	258	258	258	258	258
Equals: adjusted EBIT			4,991	4,630	4,832	5,091	5,423	5,905	6,130	6,608	6,998	7,199
Adjusted EBIT(1 − <i>t</i>)			3,294	3,056	3,189	3,360	3,579	3,897	4,046	4,361	4,618	4,751
Plus: depreciation and amortization	1,785	1,707	1,906	1,925	1,963	2,042	2,144	2,251	2,341	2,435	2,520	2,596
Minus: Δnet working capital ^b		1,328	275	38	77	157	204	214	180	187	170	151
Minus: gross P&E expenditure	1,847	966	2,224	2,246	2,291	2,382	2,501	2,626	2,732	2,841	2,940	3,028
Equals: enterprise cash flow ^c			2,702	2,697	2,785	2,862	3,017	3,308	3,476	3,768	4,028	4,168

(Continued)

TABLE 7.7 Determining Home Depot's Equity Value Using the Enterprise Method (cont.)

	History		Projections									
	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
PV (2010–19)			22,048									
Terminal value			47,638									
Total operating value			69,686									
Plus												
Excess cash ^d			0									
Other long-term assets ^e			256									
Equals: enterprise value			69,942									
Less												
Market value of debt ^f			9,469									
Capitalized operating leases			6,450									
PV net noncurrent DTLs ^g			1,102									
Stock options			158									
Equals: equity value			52,763									
Number of shares (million)			1,683									
Equity value per share			\$31.35									

***WACC calculation:** $k_e = 0.0265 + 1.10(0.055) = 8.43\%$, where 2.65% is the 10-year Treasury bond rate on September 5, 2010, and 1.21 is the firm's β provided Yahoo! Finance/Capital IQ. $i = 6.85\%$, pretax cost of debt estimated as the yield to maturity on BBB+ rated debt per Yahoo! Finance on 9/5/2010. Weights for debt and equity of 31 and 69%, respectively, are based on firm's current debt-to-capital ratio held constant throughout the forecast period. $WACC = 8.70 \times 0.69 + 6.85(1 - 0.4) \times 0.31 = 7.28$. WACC for terminal period equal to average for comparable retail companies per Yahoo! Finance.

^bWorking Capital \$3537, 3812, 3850, 3927, 4084, 4288, 4503, 4683, 4870, 5040, 5192.

^cTerminal-period enterprise cash flow recalculated using 40% marginal tax rate.

^dExcess cash is zero, since minimum balances estimated using Exhibit 7.8 method exceed actual year-end 2009 cash balances.

^eExcludes goodwill but includes \$33 million in notes receivable.

⁷Market Value of Home Depot Debt:

Coupon	Maturity date	Face value (000)	Percent of par value (9/5/10)	Market value
5.20%	March 2011	\$1,000,000 × 1.02630		1,026,300
6.19%	March 2012	\$40,000 × 1.03366		\$41,346
6.74%	May 2013	\$14,285 × 1.03650		\$14,806
5.25%	December 2013	\$1,258,000 × 1.02630		\$1,291,085
5.88%	December 2036	\$2,960,000 × 1.10650		\$3,275,240
5.40%	March 2016	\$3,040,000 × 1.12250		\$3,412,400
Capitalized leases (payments vary from 2010 to 2056)				\$408,000
Total Long-Term Debt				\$9,469,177

⁸PV of Net Noncurrent DTLs (Net Deferred Tax Assets – Deferred Tax Liabilities) Calculation:

Future value as of 2019 = \$3570 Adds current net deferred tax liability to the sum of the projected EBIT times the difference between marginal and effective tax rates

Present value = \$1102 2019 net deferred tax liability paid off in equal amounts during following decade

EBIT, Earnings before interest and taxes; PV, present value; WACC, weighted average cost of capital.

excess cash balances and other long-term assets, while the nonequity claims include the market value of long-term debt, capitalized operating leases, net deferred tax liabilities, and employee stock options. The exhibit is divided into three panels. The top panel displays the primary assumptions underlying the valuation. The second panel shows how the total value of the firm is determined. The bottom panel—"Explanatory Notes"—provides details on how various line items in the exhibit were calculated. Cash flow is projected for 10 years, reflecting the anticipated slow recovery of the firm's free cash flow from the 2008–09 recession. The Excel-based model underlying this exhibit is provided in an Excel file entitled "Determining Home Depot's Equity Value Using the Enterprise Method" on the companion site to this book.

SOME THINGS TO REMEMBER

DCF methods are widely used to estimate the firm value. To do so, GAAP cash flows are adjusted to create enterprise and equity cash flow for valuation purposes. A common way of estimating equity value is to deduct the market value of nonequity claims from its enterprise value and to add the market value of nonoperating assets.

DISCUSSION QUESTIONS

- 7.1 What is the significance of the WACC? How is it calculated? Do the weights reflect the firm's actual or target debt-to-total capital ratio? Explain your answer.
- 7.2 What does a firm's β measure? What is the difference between an unlevered and a levered β ?
- 7.3 Under what circumstances is it important to adjust the CAPM model for firm size? Why?
- 7.4 What are the primary differences between FCFE and FCFF?
- 7.5 Explain the conditions under which it makes the most sense to use the zero-growth and constant-growth DCF models. Be specific.
- 7.6 Which DCF valuation methods require the estimation of a terminal value? Why?
- 7.7 Do small changes in the assumptions pertaining to the estimation of the terminal value have a significant impact on the calculation of the total value of the target firm? If so, why?
- 7.8 How would you estimate the equity value of a firm if you knew its enterprise value and the PV of all nonoperating assets, nonoperating liabilities, and long-term debt?
- 7.9 Why is it important to distinguish between operating and nonoperating assets and liabilities when valuing a firm? Be specific.
- 7.10 Explain how you would value a patent under the following situations: a patent with no current application, a patent linked to an existing product, and a patent portfolio.

Answers to these Chapter Discussion Questions are available in the Online Instructor's Manual for instructors using this book (<https://textbooks.elsevier.com/web/Manuals.aspx?isbn=9780128016091>).

PRACTICE PROBLEMS AND ANSWERS

- 7.11** ABC Incorporated shares are currently trading for \$32 per share. The firm has 1.13 billion shares outstanding. In addition, the market value of the firm's outstanding debt is \$2 billion. The 10-year Treasury bond rate is 6.25%. ABC has an outstanding credit record and has earned a AAA rating from the major credit-rating agencies. The current interest rate on AAA corporate bonds is 6.45%. The historical risk premium over the risk-free rate of return is 5.5%. The firm's β is estimated to be 1.1, and its marginal tax rate, including federal, state, and local taxes, is 40%.
- What is the cost of equity? *Answer: 12.3%.*
 - What is the after-tax cost of debt? *Answer: 3.9%.*
 - What is the WACC? *Answer: 11.9%.*
- 7.12** HiFlyer Corporation currently has no debt. Its tax rate is 0.4, and its unlevered β is estimated by examining comparable companies to be 2.0. The 10-year bond rate is 6.25%, and the historical risk premium over the risk-free rate is 5.5%. Next year, HiFlyer expects to borrow up to 75% of its equity value to fund future growth.
- Calculate the firm's current cost of equity. *Answer: 17.25%.*
 - Estimate the firm's cost of equity after the firm increases its leverage to 75% of equity. *Answer: 22.2%.*
- 7.13** Abbreviated financial statements for Fletcher Corporation are given in [Table 7.8](#).

TABLE 7.8 Abbreviated Financial Statements for Fletcher Corporation
(in \$ Million)

	2010	2011
Revenues	\$600	\$690
Operating expenses	520	600
Depreciation	16	18
Earnings before interest and taxes	64	72
Less interest expense	5	5
Less taxes	23.6	26.8
Equals: net income	35.4	40.2
ADDENDUM		
Year-end working capital	150	200
Principal repayment	25	25
Capital expenditures	20	10

Year-end w-or-king capital in 2009 was \$160 million, and the firm's marginal tax rate was 40% in both 2010 and 2011. Estimate the following for 2010 and 2011:

- FCFE. *Answer: \$16.4 million in 2010 and -\$26.8 million in 2011.*
- FCFF. *Answer: \$44.4 million in 2010 and \$1.2 million in 2011.*

- 7.14** In 2011, No Growth Inc. had operating income before interest and taxes of \$220 million. The firm was expected to generate this level of operating income indefinitely. The firm had depreciation expense of \$10 million that year. Capital spending totaled \$20 million during 2011. At the end of 2010 and 2011, working capital totaled \$70 and 80 million, respectively. The firm's combined marginal state, local, and federal tax rate was 40%, and its outstanding debt had a market value of \$1.2 billion. The 10-year Treasury bond rate is 5%, and the borrowing rate for companies exhibiting levels of credit-worthiness similar to No Growth is 7%. The historical risk premium for stocks over the risk-free rate of return is 5.5%. No Growth's β was estimated to be 1.0. The firm had 2.5 million common shares outstanding at the end of 2011. No Growth's target debt-to-total capital ratio is 30%.
- Estimate FCFF in 2011. *Answer: \$112 million.*
 - Estimate the firm's WACC. *Answer: 8.61%.*
 - Estimate the enterprise value of the firm at the end of 2011, assuming that it will generate the value of free cash flow estimated in (a) indefinitely. *Answer: \$1300.8 million.*
 - Estimate the value of the equity of the firm at the end of 2011. *Answer: \$100.8 million.*
 - Estimate the value per share at the end of 2011. *Answer: \$40.33.*
- 7.15** Carlisle Enterprises, a specialty pharmaceutical manufacturer, has been losing market share for 3 years because several key patents have expired. FCFF is expected to decline rapidly as more competitive generic drugs enter the market. Projected cash flows for the next 5 years are \$8.5, 7, 5, 2, and 0.5 million. Cash flow after the fifth year is expected to be negligible. The firm's board has decided to sell the firm to a larger pharmaceutical company that is interested in using Carlisle's product offering to fill gaps in its own product offering until it can develop similar drugs. Carlisle's WACC is 15%. What purchase price must Carlisle obtain to earn its cost of capital?
Answer: \$17.4 million.
- 7.16** Ergo Unlimited's current year's FCFE is \$10 million. It is projected to grow at 20% per year for the next 5 years. It is expected to grow at a more modest 5% beyond the fifth year. The firm estimates that its cost of equity is 12% during the next 5 years and will drop to 10% beyond the fifth year as the business matures. Estimate the firm's current market value.
Answer: \$358.3 million.
- 7.17** In the year in which it intends to go public, a firm has revenues of \$20 million and net income after taxes of \$2 million. The firm has no debt, and revenue is expected to grow at 20% annually for the next 5 years and 5% annually thereafter. Net profit margins are expected to remain constant throughout. Annual capital expenditures equal depreciation, and the change in working capital requirements is minimal. The average β of a publicly traded company in this industry is 1.50, and the average debt-to-equity ratio is 20%. The firm is managed conservatively and will not borrow through the foreseeable future. The Treasury bond rate is 6%, and the marginal tax rate is 40%. The normal spread between the return on stocks and the risk-free rate of return is believed to be 5.5%. Reflecting the slower growth rate in the sixth year and beyond, the discount rate is expected to decline to the industry average cost of capital of 10.4%. Estimate the value of the firm's equity.
Answer: \$63.41 million.

- 7.18** The information in Table 7.9 is available for two different common stocks: Company A and Company B.

TABLE 7.9 Common Stocks in Problem 7.18

	Company A	Company B
Free cash flow per share in the current year (\$)	1.00	5.00
Growth rate in cash flow per share (%)	8	4
β	1.3	0.8
Risk-free return (%)	7	7
Expected return on all stocks (%)	13.5	13.5

- Estimate the cost of equity for each firm. *Answer:* Company A = 15.45%; Company B = 12.2%.
 - Assume that the companies' growth will continue at the same rates indefinitely. Estimate the per-share value of each company's common stock. *Answer:* Company A = \$13.42; Company B = \$61.00.
- 7.19** You have been asked to estimate the β of a high-technology firm that has three divisions with the characteristics shown in Table 7.10.

TABLE 7.10 High-Technology Company in Problem 7.19

Division	β	Market value (\$ million)
Personal computers	1.60	100
Software	2.00	150
Computer mainframes	1.20	250

- What is the β of the equity of the firm? *Answer:* 1.52.
 - If the risk-free return is 5% and the spread between the return on all stocks is 5.5%, estimate the cost of equity for the software division. *Answer:* 16%.
 - What is the cost of equity for the entire firm? *Answer:* 13.4%.
 - FCFE investors in the current year for the entire firm is \$7.4 million and for the software division is \$3.1 million. If the total firm and the software division are expected to grow at the same 8% rate into the foreseeable future, estimate the market value of the firm and of the software division. *Answer:* PV (total firm) = \$147.96; PV (software division) = \$41.88.
- 7.20** Financial Corporation wants to acquire Great Western Inc. Financial has estimated the enterprise value of Great Western at \$104 million. The market value of Great Western's long-term debt is \$15 million, and cash balances in excess of the firm's normal working capital requirements are \$3 million. Financial estimates the PV of certain licenses that Great Western is not currently using to be \$4 million. Great Western is the defendant in several outstanding lawsuits. Financial Corporation's legal department estimates the potential future cost of this litigation to be \$3 million, with an estimated PV of \$2.5 million. Great Western has 2 million common shares outstanding. What is the adjusted equity value of Great Western per common share?
Answer: \$46.75/share.

Solutions to these Practice Problems are available in the Online Instructor's Manual for instructors using this book (<https://textbooks.elsevier.com/web/Manuals.aspx?isbn=9780128016091>).

END OF CHAPTER CASE STUDY: COURT RULES DELL UNDERPAID PUBLIC SHAREHOLDERS HIGHLIGHTING LEGAL DISTINCTION BETWEEN FAIR VALUE AND FAIR MARKET VALUE

Case Study Objectives: To Illustrate

- When “fair value” can trump “fair market value”
- The subjectivity inherent in determining “fair value”
- How appraisal rights’ legal rulings could impact future deal negotiations

Financial theory postulates that the value of a firm is determined by discounting projected net cash flows at an appropriate discount rate. In practice, buyers and sellers estimate the value of a firm using an array of valuation methodologies discussed in this chapter and Chapter 8. The actual price paid by the buyer to selling firm shareholders is determined when the parties to the negotiation reach an agreement on what is a mutually acceptable price. Assuming neither party was under duress to accept the price, the price paid by the buyer and accepted by the seller is said to represent the “fair market value” of the firm.

Despite investment banking “fairness opinions,” some target firm shareholders will argue the price offered for their shares is inadequate, contest it in court, and choose to have their shares valued by an independent appraiser, state statutes permitting. Historically, judges in so-called “appraisal rights” hearings have relied on experts whose opinions rely on conventional valuation methodologies. In recent years, judges frustrated by the often contradictory opinions expressed by experts have deferred to the merger price or actual price paid for target firm shares as long as the process used to determine the price was deemed fair. As such “fair market value” and “fair value” are the same, under these circumstances.⁵³

The concept of “fair value” is applied when no active market exists for a business, accurate cash flow projections are problematic, or it is not possible to identify the value of similar firms. “Fair value” differs from “fair market value,” which is the cash or cash-equivalent price that a willing buyer and a willing seller would accept for a business. “Fair value” is, by necessity, more subjective because it represents the dollar value of a business based on an independent appraisal of the net asset value (assets less liabilities) of a firm. What follows is a discussion of a court ruling in which a judge concluded that the actual price paid (or “fair market value”) to selling shareholders for their shares did not represent “fair value.” The judge determined what was fair (rather than the market) despite finding nothing unfair with the process employed by the parties to the negotiation. Was this an example of judicial overreach (i.e., a judge in effect changing the statute rather than simply applying existing law to the facts of the case) or an illustration of protecting shareholder rights? As you will see, the answer is not straightforward.

Vice Chancellor Travis Laster of the Delaware Court of Chancery exercised his legal right to determine what is fair on June 16, 2016, in ruling that public shareholders were undercompensated for their shares in the \$24.9-billion management buyout of Dell Corporation in 2013. The judge ruled that the price paid to such shareholders was undervalued by 22% and should have been \$17.62 per share, even though he found no wrongdoing with the process Dell management and Silver Lake Partners employed in buying out public shareholders. With interest, investors who sought appraisal will collect about \$20.84 per share.

⁵³See the case study at the beginning of this chapter for a more detailed discussion of this point.

While finding the process fair, Vice Chancellor Laster viewed it as incomplete as he argued that the Dell board of directors did not pay sufficient attention to all bidders (both private equity and strategic buyers). The judge also argued that the purchase price was based on a leveraged buyout (LBO) model valuation that he argued was not an actual market-determined price.

In an LBO model valuation,⁵⁴ a buyer's offer is based on its desired return that is often higher than what a strategic buyer would require due to the amount of financial leverage involved in financing the LBO. The judge claimed that the purchase price in the Dell deal reflected only what a private equity firm would pay and not a true market price. The latter he reasoned would be higher because strategic buyers often pay higher prices than private equity firms because they can exploit synergy opportunities. Concluding the buyout price was not reflective of "fair value," the judge used the DCF analyses provided by the experts to compute a "fair value" of \$17.65 for each share held by Dell's public investors.

The judge's conclusion ignored the absence of strategic bidders showing an interest in buying Dell. Thus, the auction process included only private equity firms. The deal was widely contested in public by the likes of such activist investors as Carl Icahn who argued relentlessly that the price offered by Michael Dell and Silver Lake Partners undervalued the stock held by public shareholders. If the judge's conclusion was correct, Dell's public shareholders acting rationally should have chosen to vote against the deal, as they did have access to Icahn's arguments. Instead, they voted for the transaction in large numbers.

While the ruling applied to 5.5 million Dell shares (out of the more than 40 million purchased by Dell) costing the firm an additional \$36 million, the potential impact could have been much greater. A number of shareholders including T. Rowe Price were excluded from the appraisal case because they had voted for the deal. To qualify for having shares appraised in most states, a shareholder must have voted against a deal. Consequently, had other shareholders been included as plaintiffs, the ruling could have cost Dell hundreds of millions of dollars.

Will the ruling accelerate the trend toward "appraisal arbitrage" in which hedge funds buy a firm's shares after takeover announcements intent upon suing the bidder claiming the price was too low? The number of appraisal rights petitions has indeed increased from a trickle of cases in early 2000s to over 20 a year in recent years, or close to one-quarter of all transactions where appraisal rights were available to target firm shareholders.⁵⁵ Also, will deals be more difficult to negotiate because of the additional uncertainty posed by the potential adverse impact from appraisal arbitrage?

Critics of the Delaware Court of Chancery's decision expressed concern over the broad implications for the future of corporate takeovers, arguing that the judge's ruling exceeded a reasonable interpretation of the law. Critics also argued that seller shareholders could be hurt in the future because fewer private equity firms might participate in auctions for fear the price agreed to by the buyer and seller can be increased postmerger by hedge funds encouraged to profit from activist judges presiding over appraisal rights hearings. The decision means that companies, critics contend, do not simply have a fiduciary duty to find a buyer willing to pay the highest price, but that a judge may ultimately deem what the price should be. Buyers may insist on an appraisal cap in buyout agreements allowing them to walk away if, as a result of appraisal litigation, the agreed-upon price

⁵⁴ A LBO valuation model analyzes the contribution of alternative sources of funds to the determination of financial returns to equity investors (i.e., so-called financial buyers). The use of large amounts of debt to finance the acquisition of a target firm improves significantly the return to equity investors, although excessive amounts of debt add to the risk of the deal.

⁵⁵ Jiang (2016).

is increased above the cap by a court ruling. Selling company boards might find such caps onerous, making closing deals that much more difficult.

Supporters of the judge's ruling argue it is a victory for shareholder rights particularly in management buyouts that often are rife with conflicts of interest. They argue that the ruling is unlikely to discourage bidders and contribute to an increase in appraisal litigation because it is likely to be applied primarily to management buyouts that are relatively rare. Also, the number of shareholders affected by this specific ruling was small, even though the impact could have been much greater as explained earlier. In addition, the ruling occurred during an appraisal rights hearing. Shareholder appraisal rights statutes differ by state and how they are worded tends to be nebulous. This means that "fair market value" and "fair value" can have different meanings from state to state and that what is considered "fair value" is not necessarily the price actually paid for a business. Consequently, judicial rulings in appraisal rights cases could vary widely and result in significantly different outcomes. As with many things, whether Chancellor Laster's ruling is an example of judicial overreach or of protecting shareholder rights depends on one's perspective.

Discussion Questions

1. What's the appropriate way to determine a takeover price? [Consider the application of conventional valuation methodology, the negotiating process in which the parties involved are not subject to duress, and an impartial arbiter's (i.e., a judge) determination].
2. Do you believe this court ruling is appropriate considering the facts of the case? Explain your answer.
3. Should a freely negotiated purchase price always be used as the appropriate valuation of a target firm's shares assuming the process was fair? Explain your answer.
4. How does this case illustrate the shortcomings of DCF (and other methodologies) in valuing a business?

ADDITIONAL CASE STUDY RECOMMENDATIONS (SEARCH HARVARD BUSINESS SCHOOL PUBLISHING SITE BY NAME: hbsp.harvard.edu)

Mercury Athletic: Valuing the Opportunity,
Revision Date June 20, 2011, Timothy A.
Luehrman, Joel L. Heilprin, Source: Harvard
Business Publishing, Product Number
4050-PDF-ENG, <http://hbsp.harvard.edu/>.

Subjects Covered: Mergers &
Acquisitions, Sensitivity analysis, Valuation.

Raffles Holdings Limited-Valuation of a
Divestiture, Siriwan Chutikamoltham,
Wilfred Chua, Product Number: NTU042-
PDF-ENG, July 29, 2013, Source: ABCC at

Nanyang University Tech University, hbsp.
hbsp.harvard.edu.

Subjects Covered: Valuing Tangible and
Intangible Assets.

Valuation of AirThread Connections, Erik
Stafford, Joel L. Heilprin, Revision Date:
April 27, 2012, Product Number: 4263-PDF-
ENG, Source: HBS Brief Cases, hbsp.
hbsp.harvard.edu.

Subjects Covered: Valuation, Capital
Structure, Synergy.

Relative, Asset-Oriented, and Real Option Valuation Basics

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Happiness is a personal choice. We can be angry about the things we do not have or happy about the things we do. —Nick Vujicic

INSIDE MERGERS AND ACQUISITIONS: MANAGING COKE'S NATURAL DRINK BUSINESS PORTFOLIO

KEY POINTS

- Discounted cash flow (DCF) and relative valuation methods suggest implicitly that once an investment decision has been made, there is little opportunity for management to change the outcome.
- In practice, management often has considerable flexibility to accelerate, delay, or abandon the original investment as new information is obtained.
- Recognizing the need for flexibility in decision making, partial takeovers often include a mechanism (so-called “real options”) for expanding or exiting an investment.

Faced with a maturing soda market, Coca-Cola (Coke) has sought to broaden its brand offering portfolio. To this end, the firm has taken ownership stakes varying in amount in a variety of companies whose brands offer greater growth potential than its core product line. The firm's strategy is to find promising new brands and then test the firm's potential by making a minority ownership investment. Coke has previously invested in Monster Beverage Corp., the energy drink company, and Keurig Green Mountain Inc., which sells single-serving coffee pods. Coke already owns Odwalla, Honest Tea, and Zico Coconut Water.

In an investment consistent with this strategy, Coke announced on August 19, 2015, that it had invested \$90 million for a 30% ownership position in Suja Life LLC (Suja) along with Goldman Sachs's (Goldman) merchant banking subsidiary that had invested \$60 million for a slightly smaller stake in Suja. The combined \$150-million investment gives the two investors slightly less than 50% ownership of Suja's outstanding equity. The deal also gives Coke an option to require the remainder of the company at a predetermined price within 3 years. As part of the deal, Coke will expand Suja's distribution and provide funds to build a new factory. The deal will help boost the number of locations that sell Suja by 50% by late 2016. Coke also will use its procurement network to buy raw materials at a lower cost.

Health drink brand, Suja, whose juices include combinations such as strawberry and flaxseed, has posted rapid revenue growth since its start-up in early 2012, with its sales doubling each year since then to more than \$43 million in 2014. New juice brands are benefitting from consumers turning away from sugary brands of soda. For Suja, the deal has been highly controversial as many of its customers are concerned that Coke will cause the firm to stray from what makes it unique and socially responsible. Suja avoids using genetically modified organisms (GMOs), and donates a portion of its sales to environmental causes. Some customers stopped purchasing the product in protest.

The risk to Coke and Goldman Sachs is clear: Does Suja's meteoric revenue growth rate have staying power? Currently, Suja's products are a niche market and as many such products could be destined to fade as fickle consumers lose interest. Moreover, the association

with Coke could cause the current unrest among Suja customers to grow. These factors could substantially reduce Suja's value. Given these uncertainties, what future options do Coke and Goldman have?

In practice, Coke's management could accelerate investment in Suja if revenue and profit growth rates justify it by exercising its option to buy the 50% of the shares it and Goldman do not currently own. Goldman could participate by providing a portion of the additional funds needed to buy out the remaining Suja shareholders. If the firm's growth slows appreciably, the option could be allowed to expire. Finally, Coke and Goldman could abandon their investment by spinning off or divesting their minority positions. While expensive potentially, the latter option allows the investors to limit future losses.

CHAPTER OVERVIEW

This chapter addresses commonly used alternatives to DCF merger and acquisition (M&A) valuation methods. These include relative valuation (i.e., market-based) methods, asset-oriented methods, real options analysis, and replacement cost. The chapter concludes with a summary of the strengths and weaknesses of the alternative valuation methods (including DCF) and when it is appropriate to apply each methodology. A review of this chapter is available in the file folder entitled "Student Study Guide" on the companion site to this book (<https://www.elsevier.com/books-and-journals/book-companion/9780128016091>).

RELATIVE VALUATION METHODS

Relative valuation involves valuing assets based on how similar assets are valued in the marketplace. Such methods assume a firm's market value can be approximated by a value indicator for comparable companies, comparable transactions, or comparable industry averages. Value indicators could include the firm's earnings, operating cash flow, earnings before interest, taxes, depreciation, and amortization (EBITDA), sales, and book value. This approach often is described as market based, since it reflects the amounts investors are willing to pay for each dollar of earnings, cash flow, sales, or book value at a moment in time. As such, it reflects theoretically the collective wisdom of investors in the marketplace. Because of the requirement for positive current- or near-term earnings or cash flow, this approach is meaningful only for companies with a positive, stable earnings or cash flow stream.

If comparable companies are available, the market value of a target firm, MV_T , can be estimated by solving the following equation:

$$MV_T = \frac{MV_C}{VI_C} \times VI_T \quad (8.1)$$

where MV_C , market value of comparable company C; VI_C , value indicator for comparable company C; VI_T , value indicator for firm T; and (MV_C/VI_C) , market value multiple for the comparable company.

For example, if the price-to-earnings (P/E) ratio or multiple for the comparable firm is 10 (i.e., MV_C/VI_C) and after-tax earnings of the target firm are \$2 million (VI_T), the market

value of the target firm at that moment in time is \$20 million (MV_T). Relative-value methods are used for three reasons. First, they are simple to calculate and require far fewer assumptions than DCF techniques. Second, relative valuation is easier to explain than DCF methods. Finally, the use of market-based techniques is more likely to reflect current market demand and supply conditions. The relationship expressed in Eq. (8.1) can be used to estimate the value of the target firm in all the relative valuation and asset-oriented methods discussed in this chapter, except the replacement cost method.

The analyst must follow certain guidelines in applying relative valuation methods. First, when using multiples (e.g., MV_C/VIC), it is critical to ensure that the multiple is defined in the same way for all comparable firms. For example, in using a P/E ratio, earnings may be defined as trailing (i.e., prior), current, or projected. The definition must be applied consistently to all firms in the sample. Also, the numerator and the denominator of the multiple must be defined in the same way. If the numerator in the P/E ratio is defined as price per share, the denominator must be calculated as earnings per share. Second, the analyst must examine the distribution of the multiples of the firms being compared and eliminate outliers, those whose values are substantially different from others in the sample.

The Comparable Companies Method

Applying this approach requires that the analyst identify companies that are substantially similar to the target firm. Generally speaking, a comparable firm is one whose profitability, potential growth rate in earnings or cash flows, and perceived risk are similar to those of the firm to be valued. By defining comparable companies broadly, it is possible to utilize firms in other industries. As such, a computer hardware manufacturer can be compared to a telecom firm as long as they are comparable in terms of profitability, growth, and risk. Consequently, if the firm to be valued has a 15% return on equity (i.e., profitability), expected earnings or cash flow growth rates of 10% annually (i.e., growth), and a β of 1.3 or debt-to-equity ratio of 1 (i.e., risk), the analyst must find a firm with similar characteristics in either the same industry or another industry. In practice, analysts often look for comparable firms in the same industry and that are similar in terms of such things as markets served, product offering, degree of leverage, and size.¹

To determine if the firms you have selected are truly comparable, estimate the correlation between the operating income or revenue of the target firm and that of the comparable firms. If the correlation is positive and high, the firms are comparable.² Even when companies appear to be substantially similar, there are likely to be significant differences in valuation at any moment in time. For example, the announcement of a pending acquisition may boost the share prices of competitors as investors anticipate takeover bids for these firms. The impact of such events abates with the passage of time. Consequently, comparisons made at different times can provide distinctly different results. By taking an average of multiples over 6 months

¹Smaller firms, other things being equal, are more prone to default than larger firms, which generally have a larger asset base and a larger and more diversified revenue stream than smaller firms. Consequently, the analyst should take care not to compare firms that are substantially different in size.

²Similarly, if the firm has multiple product lines, collect comparable firms for each product line and estimate the correlation coefficient.

TABLE 8.1 Valuing Total SA Using Comparable Integrated Oil Companies

Comparable company	Target valuation based on following multiples (MV _C /VI _C)				
	Trailing P/E ^a , Col. 1	Forward P/E ^b , Col. 2	Price/sales, Col. 3	Price/book, Col. 4	Average, Cols. 1–4
Exxon Mobil Corp. (XOM)	168.56	9.12	4.64	6.97	
British Petroleum (BP)	207.69	9.55	4.45	8.87	
Chevron Corp. (CVX)	136.30	9.01	5.79	7.49	
Royal Dutch Shell (RDS-B)	194.23	8.22	3.22	5.19	
ConocoPhillips (COP)	9.02	11.71	1.43	1.50	
Eni SpA (E)	12.90	14.01	.57	1.12	
PetroChina Co. (PTR)	9.21	8.20	.50	1.04	
Oil & Natural Gas Corp. (ONGC)	11.40	7.11	1.71	1.82	
Average multiple (MV _C /VI _C)	93.66	9.62	2.79	4.25	
Total SA value indicators (dollars per share, VI _T)	1.77	8.93	76.60	41.45	
Equals estimated market value of target (\$ billion) ^c	165.78	85.87	213.62	176.16	160.36

P/E, Price-to-earnings.

^aTrailing 52-week averages.

^bProjected 52-week averages.

^cBillions of dollars. Average multiple (MV_C/VI_C) × Total SA value indicator expressed in dollars per share (VI_T). For example, using the price-to-trailing earnings multiple times Total SA trailing earnings per share = 93.66 × \$1.77 = \$165.78 billion.

or 1 year, these differences may be minimized. Note that valuations derived using the comparable companies method do not include a purchase price premium.

Table 8.1 illustrates how to apply the comparable companies method to value French oil and gas company Total SA. Total is a geographically diversified integrated oil and gas company; as such, it has economic and political risks and growth characteristics similar to other globally diversified integrated oil and gas companies. The estimated value of Total based on the average of the comparable companies estimates calculated using the 4 different market multiples is \$160.36 billion, versus its actual March 14, 2014, market capitalization of \$144.59 billion.

The analyst needs to be mindful of changes in fundamentals that can affect multiples. These fundamentals include a firm's ability to generate and grow earnings and cash flow through reinvestment in the firm's operations as well as the risk associated with the firm's earnings and cash flows. Since multiples are affected by each of these variables, changes in the variables affect multiples. Firms with lower earnings and cash flow generation potential, lower growth prospects, and higher risk should trade at multiples less than firms with higher earnings and cash flow generation capability, higher growth prospects, and less risk. Therefore, the analyst needs to understand why one firm's multiple is less than a comparable firm's before concluding that it is undervalued or overvalued. For example, a firm with a P/E of 10 may not be more expensive than a comparable firm with a P/E of 8 if the former's growth

prospects, profitability, and the rate at which profits are reinvested in the firm are higher than the latter firm's growth, profitability, and reinvestment rate.

In the current (as of this writing) artificially low-interest-rate environment, P/E multiples tend to be overstated. Why? Abnormally low interest rates drive investors to search for higher financial returns in risky assets such as stocks. Consequently, investors bid up the price of stocks relative to their earnings. To avoid overvaluation, an analyst may choose to use a historical average P/E multiple over several decades to incorporate several interest rate cycles.

Recent Comparable Transactions Method

Also referred to as the *precedent transactions method*, the multiples used to estimate the value of the target are based on purchase prices of comparable companies that were recently acquired. P/E, sales, cash flow, EBITDA, and book-value ratios are calculated using the purchase price for the recent comparable transaction. Earnings, sales, cash flow, EBITDA, and book value for the target are subsequently multiplied by these ratios to obtain an estimate of the market value of the target company. The estimated value of the target firm obtained using recent comparable transactions already reflects a purchase price premium, unlike the comparable companies approach to valuation. The obvious limitation to the comparable transactions method is the difficulty in finding truly comparable, recent transactions. Recent transactions can be found in other industries as long as they are similar to the target firm in terms of profitability, expected earnings and cash flow growth, and perceived risk. [Table 8.1](#) could be used to illustrate how the recent transaction valuation method may be applied simply by replacing the data in the column headed "Comparable Company" with data for "Recent Comparable Transactions."

Same or Comparable Industries Method

Using this approach, the target company's net income, revenue, cash flow, EBITDA, and book value are multiplied by the ratio of the market value of shareholders' equity to net income, revenue, cash flow, EBITDA, or book value for the average company in the target firm's industry or a comparable industry ([Exhibit 8.1](#)). Such information can be obtained from Standard & Poor's, Value Line, Moody's, Dun & Bradstreet, and Wall Street analysts. The primary advantage of this technique is the ease of use. Disadvantages include the presumption that industry multiples are actually comparable. The use of the industry average may overlook the fact that companies, even in the same industry, can have drastically different expected growth rates, returns on invested capital, and debt-to-total capital ratios.

Enterprise-Value-to-EBITDA Method

In recent years, analysts have increasingly valued firms by multiplying the enterprise-value (EV)-to-EBITDA multiple based on comparable companies or recent transactions by the target firm's EBITDA. That is, if the EV/EBITDA multiple for a sample of comparable firms or recent transactions is 8 and the target's EBITDA is \$10 million, the value of the target is \$80 million.

EXHIBIT 8.1 VALUING A TARGET COMPANY USING THE SAME OR COMPARABLE INDUSTRIES METHOD

As of March 17, 2014, Applied Materials Inc. (AMAT), a producer of semiconductor manufacturing equipment and materials, had projected earnings per share for the coming year of \$1.07.^a The industry average forward price-to-earnings ratio for 51 companies was 24.05.^b Estimate the firm's intrinsic price per share [Eq. (8.1)].

$$\begin{aligned} MV_T &= \frac{MV_{IND}}{VI_{IND}} \times VI_T \\ &= 24.05 \times \$1.07 = \$25.73 \text{ per share (3/17/2014 actual price} = \$18.98) \end{aligned}$$

where MV_T , market value per share of the target company; MV_{IND}/VI_{IND} , market value per share of the average firm in the industry divided by a value indicator for that average firm in the industry (e.g., industry average forward price-to-earnings ratio); and VI_T , value indicator for the target firm (e.g., projected earnings per share).

^aThomson Reuters I/B/E/S Consensus Estimates Report for 2014 based on a survey of industry analysts taken on March 3, 2014.

^bSource: http://people.stern.nyu.edu/adamodar/New_Home_Page/datafile/pedata.html.

In this chapter, EV is viewed from the perspective of the liability, or “right-hand,” side of the balance sheet.³ As such, the EV consists of the sum of the market values of long-term debt (MV_D), preferred equity (MV_{PF}), common equity (MV_{FCFE}), and noncontrolling interest excluding cash. Other long-term liabilities often are ignored, and cash is assumed to be equal to cash and short-term marketable securities on the balance sheet.⁴ Cash and short-term marketable securities are deducted from the firm's EV, since interest income from such cash is not counted in the calculation of EBITDA. The inclusion of cash would overstate the EV-to-EBITDA multiple. Furthermore, cash is a nonoperating asset whose value is implicitly included in the market value of equity since it is owned by the shareholders. The EV-to-EBITDA multiple is commonly expressed as follows:

$$\frac{EV}{EBITDA} = \frac{MV_{FCFE} + MV_{PF} + (MV_D - \text{Cash})}{EBITDA} \quad (8.2)$$

where $(MV_D - \text{Cash})$ is often referred to as net debt.

Many consider the EV a more accurate representation of firm value than equity value because it reflects the obligation of the acquirer to pay off assumed liabilities, such as long-term debt.

The EV-to-EBITDA valuation method is useful because more firms are likely to have negative earnings rather than negative EBITDA. Consequently, relative valuation methods are more often applicable when EBITDA is used as the value indicator. Furthermore, net or operating

³In Chapter 7, EV was discussed from the perspective of the asset, or “left-hand,” side of the balance sheet as the PV of cash flows from operating assets and liabilities available for lenders and common and preferred shareholders [i.e., free cash flow to the firm (FCFF)]. Thus defined, EV was adjusted for the value of nonoperating assets and liabilities to estimate the value of common equity.

⁴Ignoring the firm's pension and healthcare obligations makes sense only if they are fully funded.

income can be significantly affected by the way the firm chooses to calculate depreciation (e.g., straight line vs. accelerated). Such problems do not arise with EBITDA, which is estimated before deducting depreciation and amortization expense. Finally, the multiple can be compared more readily among firms exhibiting different levels of leverage than for other measures of earnings, since the numerator represents the total value of the firm irrespective of its distribution between debt and equity and the denominator measures earnings before interest.

A shortcoming of EBITDA as a value indicator is that it provides a good estimate of the firm's assets already in place but ignores the impact of new investment on future cash flows. This is not a problem as long as the firm is not growing. Despite this limitation, EBITDA is more often used than a multiple based on FCFF, since FCFF is frequently negative due to increases in working capital and capital spending in excess of depreciation. EBITDA multiples are most often used for mature businesses, for which most of the value comes from the firm's existing assets. [Exhibit 8.2](#) illustrates how to construct EV/EBITDA multiples.

Adjusting Relative Valuation Methods for Firm Growth Rates

Assume that Firm A and Firm B are direct competitors and have P/E ratios of 20 and 15, respectively. Which is the cheaper firm? It is not possible to answer this question without knowing how fast the earnings of the two firms are growing and what rate of return can be earned on reinvested funds. While not a complete solution because reinvestment rates of return are not considered, relative valuation methods may be adjusted for differences in growth rates among firms. Due to its simplicity, the most common adjustment is the PEG ratio, calculated by dividing the firm's P/E ratio by the expected growth rate in earnings. The comparison of a firm's P/E ratio to its projected earnings is helpful in identifying stocks of firms that are undervalued or overvalued. Firms with P/E ratios less than their projected growth rates may be considered undervalued, while those with P/E ratios greater than their projected growth rates may be viewed as overvalued. Note that growth rates do not increase multiples unless financial returns improve. Investors are willing to pay more for each dollar of future earnings only if they expect to earn a higher future rate of return.⁵

The PEG ratio can be helpful in selecting the most attractive acquisition target from among a number of potential targets. Attractiveness is defined as that target that is most undervalued. Undervaluation is the extent to which a firm's current share price exceeds the firm's intrinsic share price estimated using the PEG ratio. While the PEG ratio uses P/E ratios, other ratios may be employed, such as price to cash flow, EBITDA, revenue, and the like.

Eq. (8.3) gives an estimate of the implied market value per share for a target firm (MV_T) based on the PEG ratio for comparable companies:

$$\frac{MV_C / VI_C}{VI_{CGR}} = A$$

and

$$MV_T = A \times VI_{TGR} \times VI_T \quad (8.3)$$

⁵Investors may be willing to pay considerably more for a stock whose PEG ratio is greater than 1 if they believe the future increase in earnings will result in future financial returns that significantly exceed the firm's cost of equity.

EXHIBIT 8.2 CALCULATING ENTERPRISE-VALUE-TO-EBITDA MULTIPLES

AT&T Inc. and Verizon Communications Inc. are United States-based leading telecommunications companies. As of December 31, 2013, the market value of AT&T's common equity was \$171.4 billion, and Verizon's was \$193.2 billion. Neither firm had preferred stock outstanding. Per investment research firm Morningstar Inc., the weighted average maturity date is 16 years for AT&T's debt and 14 years for Verizon's. Market rates of interest for AT&T (rated A- by S&P) was 3.87% and Verizon (rated BBB+ by S&P) 4.45% for debt with those approximate maturity dates at that time. AT&T's and Verizon's 2013 income, balance sheet, and cash flow statements are shown in the following table:

Financial statements

Income statement (2013)	AT&T (\$ billion)	Verizon (\$ billion)
Revenue	128.7	120.6
Cost of sales	51.5	44.9
Other expenses	46.8	43.7
Earnings before interest and taxes	30.4	32.0
Net interest expense	3.9	2.7
Earnings before taxes	26.5	29.3
Taxes	9.2	5.7
Minority interest		12.0
Net income	17.3	11.6
Balance Sheet (12/31/2013)		
Cash	9.3	54.1
Other current assets	19.8	16.9
Long-term assets	254.6	203.1
Total Assets	283.7	274.1
Current liabilities	35.0	27.1
Long-term debt	69.2	89.7
Other long-term liabilities	88.6	118.5
Total Liabilities	192.8	235.3
Shareholders' equity	90.9	38.8
Equity + Total Liabilities	283.7	113.20
Cash flow (2013)		
Net income	17.3	11.6
Depreciation	18.4	16.6
Change in working capital	-2.2	10.7
Investments	-23.1	-14.8
Financing	-13.2	26.5
Change in cash balances	-2.8	50.6

Source: Edgar Online.

Which firm has the higher enterprise-value-to-EBITDA ratio? [Hint: Use Eq. (8.2).]

Answer: AT&T.

Market Value of Existing Debt

$$\begin{aligned} PV_D(\text{PV of AT \& T Long-Term Debt})^a &= \$3.9 \times \frac{1 - 1/(1.0387)^{16}}{0.0387} + \frac{\$69.2}{(1.0387)^{16}} \\ &= \$3.9 \times 11.76 + \$37.69 = \$83.55 \text{ billion} \end{aligned}$$

$$\begin{aligned} PV_D(\text{PV of Verizon Long-Term Debt})^b &= \$2.7 \times \frac{1 - 1/(1.0445)^{14}}{0.0445} + \frac{\$89.7}{(1.0445)^{14}} \\ &= \$2.7 \times 10.26 + \$48.76 = \$76.46 \text{ billion} \end{aligned}$$

Enterprise-to-EBITDA Ratio

$$\frac{\text{Market value of equity} + \text{Market Value of Debt} - \text{Cash}^c}{\text{EBIT} + \text{Depreciation}};$$

$$\text{AT \& T: } \frac{\$171.40 + \$83.55 - \$9.30}{\$30.40 + \$18.40} = 5.03$$

$$\text{Verizon: } \frac{\$193.20 + \$76.46 - \$54.10}{\$32.00 + \$16.60} = 4.44$$

^a The present value of AT&T's debt is calculated using the PV of an annuity formula for 16 years and a 3.87% market rate of interest plus the PV of the principal repayment of \$69.2 billion at the end of 16 years. Note that only annual interest expense of \$3.9 billion is used in the calculation of the PV of the annuity payment because the debt is treated as a balloon note.

^b The present value of Verizon's debt is calculated using the PV of an annuity formula for 14 years and a 4.45% market interest rate plus the PV of the principal repayment of \$89.7 billion at the end of 14 years. Annual interest expense is \$2.7 billion.

^c A firm's financial statements frequently include depreciation in the cost of sales. Therefore, EBITDA may be calculated by adding EBIT from the income statement and depreciation shown on the cash flow statement.

where A , PEG ratio—that is, market price-to-value indicator ratio (MV_C/VI_C) for comparable firms relative to the growth rate of the value indicator (VI_{CGR}) for comparable firms; VI_T , value indicator for the target firm; and VI_{TGR} , projected growth rate of the value indicator for the target firm. Because this method uses an equity multiple (e.g., price per share/net income per share), consistency suggests that the growth rate in the value indicator should be expressed on a per-share basis. Therefore, if the value indicator is net income per share, then the growth in the value indicator should be the growth rate for net income per share and not net income.

PEG ratios are useful for comparing firms whose expected growth rates are positive and different. This method implies a zero value for firms that are not growing and a negative value for those whose growth rates are negative. The practical implications are that firms that are not growing are not likely to increase in market value, while those exhibiting negative growth are apt to experience declining firm values.⁶ Exhibit 8.3 illustrates how to apply the PEG ratio.

⁶As a means of selecting attractive takeover targets, the PEG ratio can be calculated for each firm and the firms ranked from lowest (most undervalued) to highest (most overvalued) in terms of their PEG ratios. While helpful in determining the most attractive acquisition targets (i.e., most undervalued), this ranking does not indicate the extent to which a firm is undervalued or overvalued as compared to its current share price.

EXHIBIT 8.3 APPLYING THE PEG RATIO

An analyst is asked to determine whether Johnson and Johnson Inc. (JNJ) or Pfizer Inc. (PFE) is a more attractive takeover target. Both firms are multinational pharmaceutical companies headquartered in the United States. One measure of their relative attractiveness is to compare their current valuation to their projected earnings growth. A convenient means of making this comparison is to apply the PEG ratio methodology. JNJ and PFE have projected annual earnings-per-share growth rates of 7.9 and 4.8%, respectively. JNJ's and PFE's current earnings per share for 2014 are \$5.32 and 3.34, respectively. The share prices as of March 19, 2014, were \$90.95 and 29.70 for JNJ and PFE, respectively. The industry average price-to-earnings ratio and projected 5-year growth rate at that time were 19.7 and 11.6%, respectively. Based on this information and the PEG methodology, which firm is a more attractive takeover target as of the point in time the firms are being compared? [Hint: Use Eq. (8.3).] The PEG ratio focuses on P/E ratios and earnings growth rates. What other factors if known might change your answer to the previous question?

Industry average PEG ratio: $19.7/11.6 = 1.6983^a$

JNJ: Implied intrinsic share price = $1.6983 \times 7.9 \times \$5.32 = \$71.38$

PFE: Implied intrinsic share price = $1.6983 \times 4.8 \times \$3.34 = \$27.23$

Answer: Both firms according to their respective PEG ratio estimates of their intrinsic values compared to their actual prices are overvalued at a moment in time. The percentage difference between the actual share price and implied intrinsic share prices for JNJ and PFE is 27.4% [i.e., $(\$90.95 - \$71.38)/\$71.38$] and 9.1% [i.e., $(\$29.70 - \$27.23)/\$27.23$], respectively. JNJ is much more overvalued than PFE according to this methodology. Because PEG ratios do not explicitly account for the risk associated with future earnings and the rate at which they can be reinvested, the extent of the overvaluation may be misleading. In practice, the PEG ratio estimate simply provides an additional data point in any evaluation of the overall attractiveness of a potential target firm.

Data Sources:

Industry earnings growth rates and price-to-earnings ratios: http://pages.stern.nyu.edu/~adamodar/New_Home_Page/datafile/pedata.html.

Individual firm data: Thomson Reuters I/B/E/S *Consensus Estimates Report for 2014* based on a survey of industry analysts taken on March 3, 2014.

^a Solving $MV_T = A \times VI_{TGR} \times VI_T$ using the target's PEG ratio, where MV_T is the market value of the target firm, VI_T is the target's value indicator, and VI_{TGR} is VI_T 's growth rate, provides the firm's share price in period T , since this formula is an identity. An industry average PEG ratio may be used to estimate the firm's intrinsic value, assuming that the target firm and the average firm in the industry exhibit the same relationship between price-to-earnings ratios and earnings growth rates.

Value-Driver-Based Valuation

In the absence of earnings, factors that drive firm value may be used for valuation purposes and commonly are used to value start-up companies and initial public offerings (IPOs), which often have little or no earnings history. Measures of profitability and cash flow are manifestations of these value drivers. Value drivers exist for each major function within the firm, including sales, marketing, and distribution; customer service; operations and manufacturing; and purchasing.

There are both microvalue drivers and macrovalue drivers. *Microvalue drivers* are those that influence specific functions within the firm directly. Microvalue drivers for sales, marketing, and distribution could include product quality measures, such as part defects per 100,000 units sold, on-time delivery, the number of multiyear subscribers, and the ratio of product price to some measure of perceived quality. Customer service drivers could include average waiting time on the telephone, the number of billing errors as a percent of total invoices, and the time required to correct such errors. Operational value drivers include the average collection period, inventory turnover, and the number of units produced per manufacturing employee hour. Purchasing value drivers include average payment period, on-time vendor delivery, and the quality of purchased materials and services. *Macrovalue drivers* are more encompassing than microvalue drivers by affecting all aspects of the firm. Examples of macrovalue drivers include market share, overall customer satisfaction as measured by survey results, total asset turns (i.e., sales to total assets), revenue per employee, and “same-store sales” in retailing.

Using value drivers to value businesses is straightforward. First, the analyst identifies the key drivers of firm value. Second, the market value for comparable companies is divided by the value driver selected for the target to calculate the dollars of market value per unit of value driver. Third, this figure is multiplied by the same value driver for the target company. Assume that the key macrovalue driver in an industry is market share. How investors value market share can be estimated by dividing the market leader’s market value by its market share. If the market leader has a market value and market share of \$300 million and 30%, respectively, the market is valuing each percentage point of market share at \$10 million [i.e., the market multiple based on points of market share as an indicator of value (MV_C/VI_C) is \$300 million/30]. If the target company in the same industry has a 20% market share, an estimate of the market value of the target company (MV_T) is \$200 million [i.e., $MV_T = (MV_C/VI_C) \times VI_T = \$10 \text{ million} \times 20 \text{ points of market share}$].

Similarly, the market value of comparable companies could be divided by other known value drivers. Examples include the number of visitors or page views per month for an Internet content provider, the number of subscribers to a magazine, cost per hotel room for a hotel chain, and the number of households with TVs in a specific geographic area for a cable TV company. AT&T’s acquisitions of the cable companies TCI and Media One in the late 1990s would appear to have been a “bargain,” since it spent an average of \$5000 per household (the price paid for each company divided by the number of customer households acquired) in purchasing these companies’ customers. In contrast, Deutsche Telekom and Mannesmann spent \$6000 and 7000 per customer, respectively, in buying mobile phone companies One 2 One and Orange PLC.

The major advantage of this approach is its simplicity. Its major disadvantage is the implied assumption that a single value driver or factor is representative of the total value of the business. The bankruptcy of many dot-com firms between 2000 and 2002 illustrates how this valuation technique can be misused. Many of these firms had never shown any earnings, yet they exhibited huge market valuations as investors justified these lofty values by using page views and registered users of comparable firms to value any firm associated with the Internet.

ASSET-ORIENTED METHODS

Such methods typically value firms based on tangible book, breakup, and liquidation values. These are discussed in detail next.

Tangible Book Value (Shareholders' Equity Less Goodwill) Method

Book value is a much-maligned value indicator because book asset values rarely reflect actual market values. The value of land frequently is understated on the balance sheet, whereas inventory often is overstated if it is old or obsolete. Moreover, book value may be higher for highly acquisitive firms than for other firms in the same industry that choose not to grow through acquisition. Because of the way acquisitions are recorded for financial reporting purposes (see Chapter 12), takeovers often result in the creation of such intangible assets as goodwill. Goodwill reflects the value of intangible factors such as a strong brand name, patents and other proprietary technologies, and synergy anticipated by the buyer when the acquisition was completed. Because acquirers may overpay, the book value of goodwill may overstate its actual value to the firm in generating future operating profits and cash flow. For these reasons, it is important to estimate *tangible book value* (TBV; i.e., book value less goodwill) in estimating an industry average multiple based on book value.⁷

Although book values generally do not mirror actual market values for manufacturing companies, they may be more accurate for distribution companies, whose assets are largely composed of inventory exhibiting high inventory turnover rates. Examples of such companies include pharmaceutical distributor Bergen Brunswick and personal computer distributor Ingram Micro. Book value is also widely used for valuing financial services companies, where TBV consists mostly of liquid assets.

Exhibit 8.4 provides an estimate of Ingram Micro's intrinsic share price on March 20, 2014, based on the market-to-TBV for comparable firms multiplied by Ingram's TBV as the firm's indicator of value. The selection of firms believed to be most comparable to Ingram was based on their similarity to Ingram in terms of risk (measured by β), expected growth, and profitability.

Breakup Value

Breakup value is the price of the firm's assets sold separately less its liabilities and expenses incurred in dividing up the firm. Diversified companies often are valued by investors as if broken up and sold as discrete units, as well as their going concern or synergistic value as a consolidated operation. If the breakup value exceeds the going concern value, shareholder value may be maximized by splitting up the firm. In mid-2012, News Corporation, a media conglomerate, announced its decision to divide the firm into two independent units: entertainment and publishing. Estimated after-tax earnings for the entertainment unit and publishing unit for the fiscal year ending June 2012 were \$3.1 and 0.5 billion, respectively. If valued at Disney Corporation's P/E ratio of 17, the entertainment businesses were worth \$52.7 billion at that time; if valued at newspaper conglomerate Gannett Inc.'s 7.3 P/E, the publishing businesses were worth \$3.7 billion. The resulting estimated breakup value of \$56.4 billion versus its market value on July 7, 2012, of \$50.4 billion suggested the firm was undervalued by about 12%.

⁷The importance of this adjustment is evident in comparing highly diversified businesses with more focused competitors. When goodwill is deducted from the more acquisitive firms, market-to-book ratios tend to be similar to other firms in the same industry (Custodio, 2014).

EXHIBIT 8.4 VALUING COMPANIES USING TANGIBLE BOOK VALUE

Ingram Micro Inc. and its subsidiaries distribute information technology products worldwide. The firm's market price per share on March 20, 2014, was \$29.83. Ingram's projected 5-year average annual net income growth rate is 11.2%, its β is 0.90, and after-tax profit margin is 1.03%. The firm's shareholders' equity as of December 31, 2013, was \$3.95 billion and goodwill was \$0.89 billion. Ingram has 155 million (0.155 billion) shares outstanding. The following firms represent Ingram's primary competitors:

	Market value/ tangible book value	β	Projected 5-year net income growth rate (%)	Net profit margin (%)
Tech Data	2.10	0.99	11.15	1.44
United Stationers Inc.	2.70	1.36	13.11	2.42
PC Connections	1.72	0.82	18.75	1.61

Ingram's tangible book value per share (VI_T) = $(\$3.95 - \$0.89)/0.155 = \$19.74$.

The industry average ratio (MV_{IND}/VI_{IND}) = $(2.10 + 2.70 + 1.72)/3 = 2.17$.

Ingram's implied value per share = $MV_T = (MV_{IND}/VI_{IND}) \times VI_T = 2.17 \times \$19.74 = \$42.84$.

Based on the implied intrinsic value per share, Ingram was undervalued on March 20, 2014, when its share price was \$29.83.

Data Source: Yahoo! Finance.

Exhibit 8.5 illustrates the estimation of the breakup value of JPMorgan Chase. Value is determined for each of the firm's lines of business by multiplying its 2011 reported net income by the average June 2012 P/E multiple for the industry in which the business competes and then summing each operation's value to determine the firm's total equity value. The implicit assumption is that the interdependencies among the firm's business units are limited, such that they can be sold separately without reducing significantly the value of any individual unit. Reflecting the impact of highly publicized trading losses, global turmoil, and an increasingly restrictive regulatory environment, the firm's July 6, 2012, market capitalization of \$129.4 billion suggested that it was undervalued by as much as 48%.

Liquidation Value

The terms *liquidation* and *breakup value* often are used interchangeably. However, there are subtle distinctions. Liquidation may be involuntary, as a result of bankruptcy, or voluntary, if a firm is viewed by its owners as worth more in liquidation than as a going concern. Liquidation and breakup strategies are explored further in Chapters 16 and 17.

Analysts may estimate the liquidation value of a target company to determine the minimum value of the company in the worst-case scenario of liquidation. It is particularly

EXHIBIT 8.5 CALCULATING THE BREAKUP VALUE OF JPMORGAN CHASE

Line of business	Services provided by line of business	Industry market multiple	After-tax earnings (\$ billion)	Fair market value of equity (\$ billion)	Average June 2012 price-to-earnings ratio for large
Investment bank	Advisory, underwriting, and market making	13.3×	6.8	90.4	Investment banks (e.g., Goldman Sachs)
Retail financial services	Consumer and residential mortgage lending	13.2×	1.7	22.4	Diversified financial services firms (e.g., American Express)
Card services and auto	Credit card, auto, and student loans	13.2×	4.5	59.4	Diversified financial services firms (e.g., American Express)
Commercial banking	Middle-market lending, term lending, and corporate client banking	11.1×	2.4	26.6	Money center banks, excluding JPMorgan Chase (e.g., Citigroup Inc.)
Treasury and securities services	Global corporate cash management services	11.1×	1.2	13.3	Money center banks, excluding JPMorgan Chase (e.g., Citigroup Inc.)
Asset management	Private banking, retail and institutional investment management	17.2×	1.6	27.5	Mutual funds (e.g., T. Rowe Price)
Private equity	Corporate overhead and private equity activities	13.2×	.6	7.9	Private equity firms (e.g., KKR)
Total fair market value				247.5	

Sources: JPMorgan Chase 2011 10K and Yahoo Finance.

appropriate for financially distressed firms. Analysts often assume the assets can be sold in an orderly fashion, often defined as 9–12 months. Under these circumstances, high-quality receivables often can be sold for 80%–90% of their book value. Inventories might realize 80%–90% of their book value, depending on the condition and the degree of obsolescence. The value of inventory may also vary, depending on whether it consists of finished, intermediate, or raw materials. More rapid liquidation might reduce the value of inventories to 60%–65% of their book value. The liquidation value of equipment varies widely, depending on the age and condition.

Inventories need to be reviewed in terms of obsolescence, receivables in terms of the ease with which they may be collected, equipment in terms of age and effectiveness, and real estate in terms of current market value. Equipment, such as lathes and computers, with a zero book value may have a significant economic value (i.e., useful life). Land can be a hidden source of value because it frequently is undervalued on GAAP balance sheets. Prepaid assets, such as insurance premiums, sometimes can be liquidated, with a portion of the premium recovered. The liquidation value is reduced dramatically if the assets have to be liquidated in “fire sale” conditions, under which assets are sold to the first bidder rather than the highest bidder (Exhibit 8.6).

The Replacement Cost Method

Replacement cost is the cost to replace a firm’s assets at current market prices. Equity value is determined by deducting the present value (PV) of the firm’s liabilities. Valuing the assets separately in terms of what it would cost to replace them may seriously understate the firm’s true value, since synergies created when the assets are used in combination are not

EXHIBIT 8.6 CALCULATING LIQUIDATION VALUE

Limited Options Corporation has declared bankruptcy, and the firm’s creditors have asked the trustee to estimate its liquidation value assuming orderly sale conditions. Note that this example does not take into account legal fees, taxes, management fees, and contractually required employee severance expenses. These expenses can comprise a substantial percentage of the proceeds from liquidation.

Balance sheet item	Book value (\$ million)	Orderly sale value (\$ million)
Cash	100	100
Receivables	500	450
Inventory	800	720
Equipment (after depreciation)	200	60
Land	200	300
Total assets	1800	1630
Total liabilities	1600	1600
Shareholders’ equity	200	30

considered. For example, the value of an automotive company that assembles cars on an assembly line consisting of a series of robotic machines reflects the value of the final product of the assembly line (i.e., assembled cars) rather than the sum of the replacement cost of each of the machines. This approach should not be used if the firm has significant intangible assets due to the difficulty in valuing such assets.

THE WEIGHTED AVERAGE VALUATION METHOD

No valuation method is universally accepted as the best measure of a firm's value, although some may be more appropriate in certain situations. When to use the various valuation methodologies discussed in this book is explained in [Table 8.3](#).

Unless there is a compelling reason to apply a certain methodology, the weighted average method of valuation represents a compromise position.⁸ This approach involves calculating the expected value (EXPV) or weighted average of a range of potential outcomes. The weights, which must sum to 1, reflect the analyst's relative confidence in the various methodologies employed to value a business. Assuming that an analyst is equally confident in the accuracy of both methods, the EXPV of a target firm valued at \$12 million using DCF and \$15 million using the comparable companies method can be written as follows:

$$\text{EXPV} = 0.5 \times \$12 + 0.5 \times \$15 = \$13.5 \text{ million}$$

Neither valuation method includes a purchase price premium. Thus, a premium will have to be added to the EXPV to obtain a reasonable purchase price for the target firm.

ADJUSTING VALUATION ESTIMATES FOR PURCHASE PRICE PREMIUMS

With the exception of the recent transactions method, the individual valuation estimates comprising the weighted average estimate do not reflect a purchase premium. The premium generally reflects those paid on recent acquisitions of similar firms, the percentage of synergy provided by the target firm, and the relative leverage of the two parties.⁹ [Exhibit 8.7](#) illustrates a practical way of calculating the EXPV of the target firm, including a purchase premium, using estimates from multiple valuation methods. In the example, the purchase price premium associated with the estimate provided by the recent comparable transactions method is applied to estimates provided by the other valuation methodologies.

⁸Liu et al. provide empirical support for using multiple valuation methods to estimate firm value.

⁹An analyst should be careful not to add an acquisition premium mechanically to the target's estimated value based on the comparable companies method if there is evidence that the market values of "comparable firms" already reflect acquisition activity elsewhere in the industry. Rival firms' share prices will rise in response to the announced acquisition of a competitor (Song et al., 2013). Akhigbe et al. (2000) find that the increase in rivals' share prices may be even greater if the acquisition attempt is unsuccessful because investors believe that the bidder will attempt to acquire other firms in the same industry.

EXHIBIT 8.7 WEIGHTED AVERAGE VALUATION OF ALTERNATIVE METHODOLOGIS

An analyst has estimated the value of a company using multiple valuation methodologies. The discounted cash flow value is \$220 million, the comparable transactions value is \$234 million, the P/E-based value is \$224 million, and the firm's breakup value is \$200 million. The breakup value was estimated using DCF methodology. The analyst has greater confidence in certain methodologies than others. The purchase price paid for the recent comparable transaction represented a 20% premium over the value of the firm at the time of the takeover announcement. Estimate the weighted average value of the firm using all valuation methodologies and the weights or relative importance the analyst assigns to each methodology.

Estimated value (\$ million), Col. 1	Estimated value including 20% premium (\$ million), Col. 2	Relative weight (as determined by analyst), Col. 3	Weighted average (\$ million), Col. 2 × Col. 3
220	264.0	30	79.2
234	234.0 ^a	40	93.6
224	268.8	20	53.8
200	240.0	10	24.0
		1.00	250.6

^a Note that the comparable recent transactions estimate already contains a 20% purchase price premium.

REAL OPTIONS ANALYSIS

An *option* is the right, but not the obligation, to buy, sell, or use property for a period of time in exchange for a specific amount of money. Those traded on financial exchanges, such as puts and calls, are called *financial options*. Options that involve real assets, such as licenses, copyrights, trademarks, and patents, are called *real options*. Other examples of real options include the right to buy land, commercial property, and equipment. Such assets can be valued as call options if their current value exceeds the difference between the asset's current value and some preset level. For example, if a business has an option to lease office space at a predetermined price, the value of that option increases as lease rates for this type of office space increase. The asset can be valued as a put option if its value increases as the value of the underlying asset falls below a predetermined level. To illustrate, if a business has an option to sell an office building at a preset price, its value increases as the value of the office building declines.

Real options reflect management's ability to adopt and later revise corporate investment decisions. They can impact substantially the value of an investment in a single project and should be considered when valuing such investments. However, real options can be costly to obtain (e.g., the right to extend a lease or purchase property), complex to value, and dependent on problematic assumptions. As such, they should not be pursued unless the firm has the resources to exploit the option and they add significantly to the value of the firm. According

to a recent survey, real options are used relatively infrequently by corporate chief financial officers (CFOs) but tend to be more common in the energy and biotech industries.¹⁰ In these industries, investments tend to be large, long-lived, and subject to a wide range of outcomes.

Identifying Real Options Embedded or Implied in M&A Decisions

Investment decisions, including M&As, often contain certain “embedded or implied options,” such as the ability to accelerate growth by adding to the initial investment (i.e., expand), delay the timing of the initial investment (i.e., delay), or walk away from the project (i.e., abandon). Pharmaceutical firms seeking to acquire the next “blockbuster” drug frequently employ an option to expand strategy as part of their M&A deals. British drug maker AstraZeneca acquired a 55% stake in Acerta Pharma for \$4 billion in 2016 with the option to buy the remainder of Acerta for \$3 billion. The buyout of the balance of Acerta was contingent on receipt of regulatory approval in the United States and Europe for certain drugs and the achievement of specified sales targets establishing the commercial value of the new drugs.

Valuing Real Options for Mergers and Acquisitions

Three ways to value real options are discussed in this book. The first is to use DCF, relative valuation, or asset-oriented methods and ignore alternative real options by assuming that their value is zero. The second is to value the real options in the context of a decision tree, an expanded timeline that branches into alternative paths whenever an event can have multiple outcomes. The decision tree branches at points called *nodes* and is most useful whenever the investment is subject to a relatively small number of probable outcomes and can be made in stages. The third method involves the valuation of the real option as a put or call, assuming that the underlying asset has the characteristics of a financial option. A widely used method for valuing a financial option is the Black–Scholes model, which is typically applied to “European options,” those that can be exercised only at the expiration date of the option.¹¹

Valuing Real Options Using a Decision Tree Framework

Table 8.2 shows how real options may affect the net present value (NPV) of an acquisition in which management has identified two cash flow scenarios (i.e., a successful and an unsuccessful acquisition). Each pair of cash flow scenarios is associated with different options: the option to immediately acquire, delay, or abandon the acquisition. Each outcome is shown as a “branch” on a tree. Each branch shows the cash flows and probabilities of each scenario displayed as a timeline. The probability of realizing the “successful” cash flow projections is assumed to be 60% and that of realizing the “unsuccessful” one is 40%. The expected enterprise cash flow of the target firm is the sum of the future cash flows of the “successful” and “unsuccessful” scenarios multiplied by the estimated probability associated with each scenario. The target firm is assumed to have been acquired for \$300 million, and the NPV is estimated using

¹⁰Horn et al. (2015).

¹¹A more flexible method is the binomial valuation model used to value so-called American options, which may be exercised at any time before expiration. While the binomial model allows for changing key assumptions over time, it requires many inputs, making it far more complex and problematic than the Black–Scholes approach.

TABLE 8.2 The Impact of Real Options on Valuing Mergers and Acquisitions

	Projected target firm cash flows									
	Year 0	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9
FIRST BRANCH: OPTION FOR IMMEDIATE INVESTMENT/ACQUISITION										
Enterprise cash flows										
Successful case	−300	30	35	40	45	50	55	60	65	
Unsuccessful case	−300	−5	−5	−5	−5	−5	−5	−5	−5	
Weighted cash flows										
Successful case (60%)	0	18	21	24	27	30	33	36	39	
Unsuccessful case (40%)	0	−2	−2	−2	−2	−2	−2	−2	−2	
Expected enterprise cash flow	−300	16	19	22	25	28	31	34	37	
Expected NPV years 1–8 at 15%										−166
Expected terminal value at 13%; sustainable growth rate = 5%										159
Expected total NPV										−7
SECOND BRANCH: OPTION TO ABANDON (DIVEST OR LIQUIDATE)										
Enterprise cash flows										
Successful case	−300	30	35	40	45	50	55	60	65	
Unsuccessful case	−300	−5	−5	−5	−5	−5	−5	−5	−5	
Weighted cash flows										
Successful case (60%)	0	18	21	24	27	30	33	36	39	
Unsuccessful case (40%)	0	−2	−2	150	0	0	0	0	0	
Expected enterprise cash flow	−300	16	19	174	27	30	33	36	39	
Expected NPV years 1–6 at 15%										−75
Expected terminal value at 13%; sustainable growth rate = 5%										167
Expected total NPV										92
THIRD BRANCH: OPTION TO DELAY INVESTMENT/ACQUISITION										
Enterprise cash flows										
Successful case	0	−300	35	40	45	50	55	60	65	70
Unsuccessful case	0	−300	0	0	0	0	0	0	0	0
Weighted cash flows										
Successful case (60%)	0	0	21	24	27	30	33	36	39	42
Unsuccessful case (40%)	0	0	0	0	0	0	0	0	0	0
Expected enterprise cash flow	0	−300	21	24	27	30	33	36	39	42
Expected NPV at 15%										−146
Expected terminal value at 13%; sustainable growth rate = 5%										180
Expected total NPV										34

NPV, Net present value. *Note:* The NPV for the delay option is discounted at the end of year 1, while the other options are discounted from year 0 (i.e., the present).

a 15% discount rate. The terminal value assumes a 5% growth rate. With an NPV of $-\$7$ million, the immediate investment option suggests that the acquisition should not be undertaken.

Recognizing that the target could be sold or liquidated, the expected NPV is $\$92$ million, implying the acquisition should be undertaken. This assumes the target is sold or liquidated at the end of the third year following its acquisition for $\$152$ million. Note that the cash flow in year 3 is $\$150$ million, reflecting the difference between $\$152$ and the -2 million in operating cash flow during the third year. The expected NPV with the option to delay is estimated at $\$34$ million. Note that the investment is made after a 1-year delay only if the potential acquirer feels confident that competitive market conditions will support the projected “successful” scenario cash flows. Consequently, the “unsuccessful” scenario’s cash flows are zero. Fig. 8.1 summarizes the results provided in Table 8.2 in a decision tree framework. Of the three options considered, valuing the target (including the value of the cash flows) with the option to abandon appears to be the most attractive investment strategy based on NPV. The values of the abandon and delay options are estimated as the difference between each of their NPVs and the NPV for the “immediate investment or acquisition” case.

Valuing Real Options Using the Black–Scholes Model

Options to assets whose cash flows have large variances and a long time before they expire are typically more valuable than those with smaller variances and less time remaining. The greater variance and time to expiration increases the chance that the factors affecting cash flows will change a project from one with a negative NPV to one with a positive NPV. If the values of certain variables are known, we can use the Black–Scholes model to establish a theoretical price for an option. The limitations of the Black–Scholes model are the difficulty in

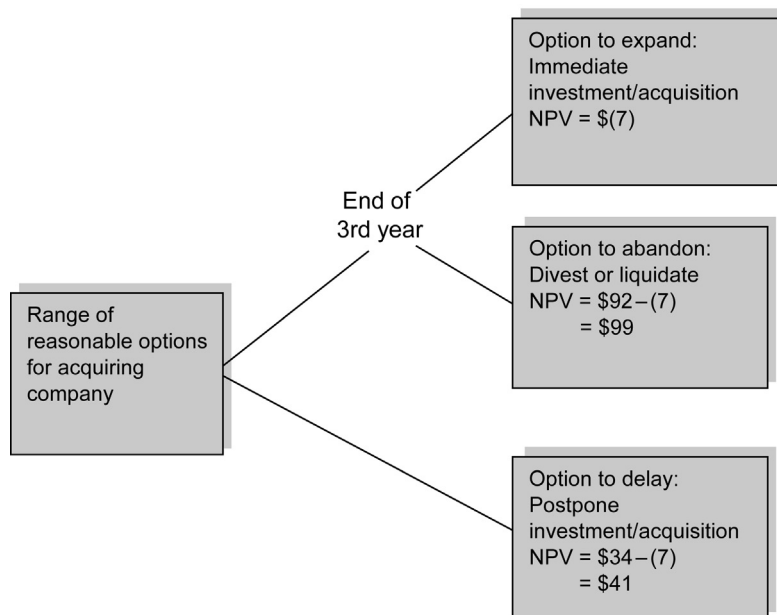


FIGURE 8.1 Real options decision tree. NPV, Net present value.

estimating key assumptions (particularly risk) and its assumptions that interest rates and risk are constant, that it can be exercised only on the expiration date, and that taxes and transactions costs are minimal. The basic Black–Scholes formula for valuing a call option is as follows:

$$C = SN(d_1) - Ee^{-Rt} N(d_2) \quad (8.4)$$

where C , theoretical call option value; $d_1 = \frac{\ln(S/E) + [R + (1/2)\sigma^2]t}{\sigma\sqrt{t}}$; $d_2 = d_1 - \sigma\sqrt{t}$; S , stock price or underlying asset price; E , exercise or strike price; R , risk-free interest rate corresponding to the life of the option; σ^2 , variance (a measure of risk) of the stock's or underlying asset's return; t , time to expiration of the option; and $N(d_1)$ and $N(d_2)$, cumulative normal probability values of d_1 and d_2 .

The term Ee^{-Rt} is the PV of the exercise price when continuous discounting is used. The terms $N(d_1)$ and $N(d_2)$, which involve the cumulative probability function, are the terms that take risk into account. $N(d_1)$ and $N(d_2)$ measure the probability that the value of the call option will pay off and the probability that the option will be exercised, respectively. These two values are Z-scores from the normal probability function, and they can be found in cumulative normal distribution function tables for the standard normal random variable in many statistics books.

The variance (i.e., risk) to be used in the Black–Scholes model can be estimated in a number of ways. First, risk could be estimated as the variance in the stock prices of similar firms or the associated cash flows. The average variance in the share prices of US oil services companies could be used as the variance in valuing a real option associated with the potential purchase of an oil services firm.¹² Second, the variance of cash flows from similar prior investments can be used. A pharmaceutical company may use the variance associated with the cash flows of previously developed comparable drugs in valuing an option to invest in a new drug. A third method is to use commonly available software to conduct Monte Carlo simulation analyses.¹³

Assuming that the necessary inputs (e.g., risk) can be estimated, a real option can be valued as a put or call option. The NPV of an investment can be adjusted for the value of the real option as follows:

$$\text{Total NPV} = \text{Present Value} - \text{Investment} + \text{Option Value} \quad (8.5)$$

Option to Expand

To value a firm with an option to expand, the analyst must define the potential value of the option. For example, suppose a firm has an opportunity to enter a new market. The analyst must project cash flows that accrue to the firm if it enters the market. The cost of entering the market becomes the option's exercise price, and the PV of the expected cash flows resulting from entering the market becomes the value of the firm or underlying asset. The PV is likely to be less than the initial entry costs, or the firm would already have entered the market. The

¹²In another example, if an acquirer of an oil company recognizes that, in buying the target, it would have a call option (real option to expand) to develop the firm's oil reserves at a later date, it could choose to value separately the target as a stand-alone entity and the option to develop the firm's reserves at some time in the future. The variance in world oil prices may be used as a proxy for the risk associated with an option to develop the reserves.

¹³A Monte Carlo simulation is a technique used to approximate the probability of certain outcomes by running multiple trial runs (i.e., simulations) using random variables, those whose possible numerical values are the result of random or indeterminate factors.

variance of the firm's value can be estimated by using the variances of the market values of publicly traded firms that currently participate in that market. The option's life is the length of time during which the firm expects to achieve a competitive advantage by entering the market now. [Exhibit 8.8](#) illustrates how to value an option to expand.

Option to Delay

The underlying asset is the project to which the firm has exclusive rights. The current value is the PV of expected cash flows from undertaking the project now. The variance of cash flows from similar past projects or acquisitions can be used to estimate the variance for the project under consideration. A firm exercises an option to delay when it decides to postpone investing in a project. The option's exercise price is the cost of making the initial investment.

The option to delay expires whenever the exclusive rights to the project end. Since the option eventually expires, excess profits associated with having the option disappear as other competitors emerge to exploit the opportunity. This opportunity cost associated with delaying implementation of an investment is similar to an adjustment made to the Black–Scholes model for stocks that pay dividends. The payment of a dividend is equivalent to reducing the value of the stock, since such funds are not reinvested in the firm to support future growth. Consequently, for a project whose expected cash flows are spread evenly throughout the option period, each year the project is delayed, the firm will lose 1 year of profits that it could have earned. Therefore, the annual cost of delay is $1/n$, where n is the time period for which the option is valid. If cash flows are not spread evenly, the cost of delay may be estimated as the projected cash flow for the next period as a percent of the current PV ([Exhibit 8.9](#)). Eq. (8.4) may be modified to reflect these considerations:

$$C = SN(d_1)e^{-DYt} - Ee^{-Rt}N(d_2) \quad (8.6)$$

where

$$d_1 = \frac{\ln(S/E) + [R - DY + (1/2)\sigma^2]t}{\sigma\sqrt{t}}; \\ d_2 = d_1 - \sigma\sqrt{t}$$

and DY, dividend yield or opportunity cost.

Option to Abandon

For a project with a remaining life of n years, the value of continuing the project should be compared to its value in liquidation or sale (i.e., abandonment). The project should be continued if its value exceeds the liquidation value or sale value. Otherwise, the project should be abandoned. The option to abandon is equivalent to a put option (i.e., the right to sell an asset for a predetermined price at or before a stipulated time). The Black–Scholes formula for valuing a call option can be rewritten to value a put option (P) as follows [Eq. (8.4)]:

$$P = S[1 - N(d_2)]e^{-Rt} - E[1 - N(d_1)]e^{-DYt} \quad (8.7)$$

where P , theoretical put option value; $d_1 = \frac{\ln(S/E) + [R - DY + (1/2)\sigma^2]t}{\sigma\sqrt{t}}$; and $d_2 = d_1 - \sigma\sqrt{t}$.

[Exhibit 8.10](#) illustrates how the abandonment or put option can be applied.

EXHIBIT 8.8 VALUING AN OPTION TO EXPAND USING THE BLACK-SCHOLES MODEL

AJAX Inc. is negotiating to acquire Comet Inc. to broaden its product offering. Based on its projections of Comet's cash flows as a stand-alone business, AJAX cannot justify paying more than \$150 million for Comet. However, Comet is insisting on a price of \$160 million. Following additional due diligence, AJAX believes that if it applies its technology, Comet's product growth rate could be accelerated significantly. By buying Comet, AJAX is buying an option to expand in a market in which it is not participating currently by retooling Comet's manufacturing operations. The cost of retooling to utilize AJAX's technology fully requires an initial investment of \$100 million. The present value of the expected cash flows from making this investment today is \$80 million. Consequently, based on this information, paying the higher purchase price cannot be justified by making the investment in retooling now.

However, if Comet (employing AJAX's new technology) could be first to market with the new product offering, it could achieve a dominant market share. While the new product would be expensive to produce in small quantities, the cost of production is expected to fall as larger volumes are sold, making Comet the low-cost manufacturer. Moreover, because of patent protection, AJAX believes that it is unlikely that competitors will be able to develop a superior technology for at least 10 years. An analysis of similar investments in the past suggests that the variance of the projected cash flows is 20%. The option is expected to expire in 10 years, reflecting the time remaining on AJAX's patent. The current 10-year Treasury bond rate (corresponding to the expected term of the option) is 6%. Is the value of the option to expand, expressed as a call option, sufficient to justify paying Comet's asking price of \$160 million [Eq. (8.4)]?

Solution

Value of the asset (PV of cash flows from retooling Comet's operations)	= \$80 million
Exercise price (PV of the cost of retooling Comet's operations)	= \$100 million
Variance of the cash flows	= 0.20
Time to expiration	= 10 years
Risk-free interest rate	= 0.06

$$d_1 = \frac{\ln(\$80/\$100) + [0.06 + (1/2)0.2]10}{\sqrt{0.2} \sqrt{10}} = \frac{-0.2231 + 1.600}{0.4472 \times 3.1623} = \frac{-1.3769}{1.4142} = 0.9736$$

$$d_2 = 0.9736 - 1.4142 = -0.4406$$

$$C = \$80(0.8340) - \$100(2.7183)^{-0.06 \times 10} (0.3300) = \$66.72 - \$18.11 \\ = \$48.61 \text{ (value of the call option)}$$

The NPV of the investment in retooling Comet's operations, including the value of the call option, is \$28.61 million [i.e., \$80 - (\$100 + \$48.61)]. Including the value of the option, AJAX could pay Comet up to \$178.61 million (i.e., \$150 million + \$28.61 million). Therefore, it does make sense for AJAX to exercise its option to retool Comet's operations, and AJAX can justify paying Comet its \$160-million asking price.

Note: Z-values for d_1 and d_2 were obtained from a cumulative standardized normal distribution $N(d)$ table in Levine et al. (1999, pp. E6–E7).

EXHIBIT 8.9 VALUING AN OPTION TO DELAY USING THE BLACK-SCHOLES MODEL

Aztec Corp. has an opportunity to acquire Pharmaceuticals Unlimited, which has a new cancer-fighting drug recently approved by the Food and Drug Administration. While current market studies indicate that the new drug's market acceptance will be slow due to competing drugs, it is believed that the drug will have meteoric growth potential in the long term as new applications are identified. The R&D and commercialization costs associated with exploiting new applications are expected to require an upfront investment of \$60 million. However, Aztec can delay making this investment until it is more confident of the new drug's actual growth potential.

It is believed that Pharmaceuticals Unlimited's research and development efforts give it a 5-year time period before competitors will have similar drugs on the market to exploit these new applications. However, if the higher growth for the new drug and its related applications does not materialize, Aztec estimates the NPV for Pharmaceuticals Unlimited to be \$(30). That is, if the new cancer-fighting drug does not realize its potential, it makes no sense for Aztec to acquire Pharmaceuticals Unlimited. Cash flows from previous drug introductions have exhibited a variance equal to 50% of the present value of the cash flows. Simulating alternative growth scenarios for this new drug provides an expected value of \$40 million. The 5-year Treasury bond rate (corresponding to the expected term of the option) is 6%. Despite the negative NPV associated with the acquisition, does the existence of the option to delay, valued as a call option, justify Aztec's acquiring Pharmaceuticals Unlimited [Eq. (8.6)]?

Solution

Value of the asset (PV of projected cash flows for the new drug)	= \$40 million
Exercise price (investment required to develop the new drug fully)	= \$60 million
Variance of the cash flows	= 0.5
Time to expiration (t)	= 5 years
Risk-free interest rate	= 0.06
Dividend yield or opportunity cost (cost of delay = $1/5$)	= 0.2

$$d_1 = \frac{\ln(\$40/\$60) + [0.06 - 0.2 + (1/2)0.5]5}{\sqrt{0.5}\sqrt{5}} = \frac{-0.4055 + 0.5500}{0.7071 \times 2.2361} = \frac{0.1445}{1.5811} = 0.0914$$

$$d_2 = 0.0914 - 1.5811 = -1.4897$$

$$\begin{aligned} C &= \$40(0.5359)2.7183^{-0.2 \times 5} - \$60(0.0681)(2.7183)^{-0.06 \times 5} \\ &= \$40(0.5359)0.3679 - \$60(0.0681)0.7408 \\ &= 7.89 - 3.03 = \$4.86 \text{ million (value of the call option)} \end{aligned}$$

The modest \$4.86 million value of the call option is insufficient to offset the negative NPV of \$30 million associated with the acquisition. Consequently, Aztec should not acquire Pharmaceuticals Unlimited.

Note: Z-values for d_1 and d_2 were obtained from a cumulative standardized normal distribution $N(d)$ table in Levine et al. (1999, pp. E6–E7).

EXHIBIT 8.10 VALUING AN OPTION TO ABANDON USING THE BLACK-SCHOLES MODEL

BETA Inc. has agreed to acquire a 30% ownership stake in Bernard Mining for \$225 million to finance the development of new mining operations. The mines are expected to have an economically useful life of 35 years. BETA estimates that the PV of its share of the cash flows would be \$210 million, resulting in a negative NPV of \$15 million (i.e., \$210 million – \$225 million). To induce BETA to make the investment, Bernard Mining has given BETA a put option enabling it to sell its share (i.e., abandon its investment) to Bernard at any point during the next 5 years for \$175 million. The put option limits the downside risk to BETA.

In evaluating the terms of the deal, BETA needs to value the put option, whose present value will vary depending on when it is exercised. BETA estimates the average variance in the present values of future cash flows to be 20%, based on the variance of the share prices of publicly traded similar mining companies. Since the value of the mines will diminish over time as the reserves are depleted, the present value of the investment will diminish over time because there will be fewer years of cash flows remaining. The dividend yield or opportunity cost is estimated to be 1 divided by the number of years of profitable reserves remaining. The risk-free rate of return is 4%. Is the value of the put option sufficient to justify making the investment despite the negative NPV of the investment without the inclusion of the option value [Eq. (8.7)]?

Solution

Present or expected value of BETA's 30% share of Bernard SA	= \$210 million
Exercise price of put option	= \$175 million
Time to expiration of put option	= 5
Variance	= 20%
Dividend yield (1/35)	= 0.029

$$d_1 = \frac{\ln(\$210/\$175) + [0.04 - 0.029 + (1/2)0.2]5}{\sqrt{0.2} \sqrt{5}} = \frac{0.1823 + 0.5550}{0.4472 \times 2.2361} = \frac{0.7373}{1.0} = 0.7373$$

$$d_2 = 0.7373 - 1.000 = -0.2627$$

$$P = \$210 \times (1 - 0.6026) \times 2.7183^{-0.04 \times 5} - \$175 \times (1 - 0.7673) \times 2.7183^{-0.029 \times 5} \\ = \$210 \times 0.3974 \times 0.8187 - \$175 \times 0.2327 \times 0.8650 = \$33.10$$

The value of the put option represents the additional value created by reducing risk associated with the investment. This additional value justifies the investment, because the sum of the NPV of \$(15) million and the put option of \$33.10 million gives a total NPV of \$18.10 million.

Note: Z-scores for d_1 and d_2 were obtained from a cumulative standardized normal distribution $N(d)$ table in Levine et al. (1999, pp. E6–E7).

DETERMINING WHEN TO USE THE DIFFERENT APPROACHES TO VALUATION

Table 8.3 summarizes when it is most appropriate to use each valuation method, including DCF discussed in detail in Chapter 7, as well as the relative valuation, asset-oriented, replacement cost, and real options methods discussed in this chapter. If a controlling interest is desired, a control premium must be added to the estimated firm value to determine the purchase price. Recall that the comparable recent transactions method already contains a premium.

WHAT DO VALUATION PROFESSIONALS DO IN PRACTICE?

The capital budgeting process is the cornerstone of corporate finance literature. This practice describes how firms determine which projects to undertake based on various investment rules. The primary decision rule is the ranking of projects by their NPVs. The basis for NPV analysis is the projection of cash flows generated by the investment and converted to a PV by discounting these future cash flows using a discount rate based on the capital asset pricing model (CAPM). The finance literature argues that this approach results in better investment decisions when compared to alternative methodologies such as internal rate of return (IRR) or payback analysis.

Indeed, past survey results suggest corporate CFOs are equally likely to use NPV techniques as they are IRR analyses. Large-company CFOs rely heavily on the CAPM to estimate their cost of capital. Investment bankers also are likely to use NPV methods and CAPM calculations in estimating the weighted average cost of capital (WACC) as illustrated in their fairness opinion documents for M&As.¹⁴

A recent survey of private equity firms shows that such practitioners often diverge from mainstream academic finance in how they value businesses. Private equity investors rely primarily on IRR and exit multiples (i.e., what they hope to sell the business for at the end of the forecast period) derived from comparable company analyses to evaluate investments. Moreover, private equity investors tend not to calculate a WACC but rather to develop their own target financial rate of return (often in the 20%–25% range) that exceeds the standard WACC calculation. The target rate is set above the WACC rate because private equity buyout firms subtract their fees from these target rates so they must be high enough that limited partners can still earn their desired rate of return after fees have been deducted. Private equity investors tend to use a 5-year forecast horizon (consistent with their expected holding period) in their IRR calculations. In the fifth year, a terminal or exit value is calculated based on the comparable companies or recent transactions methods. Their main criteria for choosing the comparable firms are industry and firm size followed by growth, profit margins, and geography in importance.¹⁵

¹⁴Graham and Harvey (2001).

¹⁵Gompers et al. (2016).

TABLE 8.3 When to Use Various Valuation Methodologies

Methodology	Use this methodology when
Discounted cash flow	• The firm is publicly traded or private with identifiable cash flows • A start-up has some history to facilitate cash flow forecasts • An analyst has a long time horizon • An analyst has confidence in forecasting the firm's cash flows • Current- or near-term earnings or cash flows are negative but are expected to turn positive in the future • A firm's competitive advantage is expected to be sustainable • The magnitude and timing of cash flows vary significantly
Comparable companies	• There are many firms exhibiting similar growth, return, and risk characteristics • An analyst has a short-term time horizon • Prior, current-, or near-term earnings or cash flows are positive • An analyst has confidence that the markets are, on average, right • Sufficient information to predict cash flows is lacking • Firms are cyclical. For P/E ratios, use normalized earnings (i.e., earnings averaged throughout the business cycle) • Growth rate differences among firms are large. Use the PEG ratio.
Comparable transactions	• Recent transactions of similar firms exist • An analyst has a short-term time horizon • An analyst has confidence the markets are, on average, right • Sufficient information to predict cash flows is lacking
Same or comparable industry	• Firms within an industry or a comparable industry are substantially similar in terms of profitability, growth, and risk • An analyst has confidence the markets are, on average, right • Sufficient information to predict cash flows is lacking
Replacement cost approach	• An analyst wants to know the current cost of replicating a firm's assets • The firm's assets are easily identifiable, tangible, and separable • The firm's earnings or cash flows are negative
Tangible book value	• The firms' assets are highly liquid • The firm is a financial services or product distribution business • The firm's earnings and cash flows are negative
Breakup value	• The sum of the value of the businesses or product lines comprising a firm are believed to exceed its value as a going concern
Liquidation value	• An analyst wants to know asset values if they were liquidated today • Assets are separable, tangible, and marketable • Firms are bankrupt or subject to substantial financial distress • An orderly liquidation is possible
Real options (contingent claims)	• Additional value can be created if management has a viable option to expand, delay, or abandon an investment • Assets not currently generating cash flows have the potential to do so • The markets have not valued the management decision-making flexibility associated with the option • Assets have characteristics most resembling financial options • The asset owner has some degree of exclusivity (e.g., a patent)

P/E, Price-to-earnings.

SOME THINGS TO REMEMBER

Relative valuation and asset-oriented techniques offer alternatives to DCF estimates. Since no single valuation approach ensures accuracy, analysts often choose to use a weighted average of several valuation methods to increase their level of confidence in the final estimate. Real options refer to management's ability to revise corporate investment decisions after they have been made.

DISCUSSION QUESTIONS

- 8.1 Does the application of the comparable companies valuation method require the addition of an acquisition premium? Why or why not?
- 8.2 Which is generally considered more accurate: the comparable companies method or the recent transactions method? Explain your answer.
- 8.3 What key assumptions are implicit in using the comparable companies valuation method? The recent comparable transactions method?
- 8.4 Explain the primary differences between the income (DCF), market-based, and asset-oriented valuation methods.
- 8.5 Under what circumstances might it be more appropriate to use relative valuation methods rather than the DCF approach? Be specific.
- 8.6 PEG ratios allow for the adjustment of relative valuation methods for the expected growth of the firm. How might this be helpful in selecting potential acquisition targets? Be specific.
- 8.7 How is the liquidation value of a firm calculated? Why is the assumption of orderly liquidation important?
- 8.8 What are real options, and how are they applied in valuing acquisitions?
- 8.9 Give examples of preclosing and postclosing real options. Be specific.
- 8.10 Conventional DCF analysis does not incorporate the effects of real options into the valuation of an asset. How might an analyst incorporate the potential impact of real options into conventional DCF valuation methods?

Answers to these Chapter Discussion Questions are available in the Online Instructor's Manual for instructors using this book (<https://textbooks.elsevier.com/web/Manuals.aspx?isbn=9780128016091>).

PRACTICE PROBLEMS AND ANSWERS

- 8.11 BigCo's CFO is trying to determine a fair value for PrivCo, a nonpublicly traded firm that BigCo is considering acquiring. Several of PrivCo's competitors, Ion International and Zenon, are publicly traded. Ion and Zenon have P/E ratios of 20 and 15, respectively. Moreover, Ion and Zenon's shares trade at a multiple of earnings EBITDA of 10 and 8, respectively. BigCo estimates that next year PrivCo will achieve net income

and EBITDA of \$4 and 8 million, respectively. To gain a controlling interest in the firm, BigCo expects to have to pay at least a 30% premium to the firm's market value. What should BigCo expect to pay for PrivCo?

a. Based on P/E ratios? *Answer:* \$91 million.

b. Based on EBITDA? *Answer:* \$93.6 million.

- 8.12** LAFCO Industries believes that its two primary product lines, automotive and commercial aircraft valves, are becoming obsolete rapidly. Its free cash flow is diminishing quickly as it loses market share to new firms entering its industry. LAFCO has \$200 million in debt outstanding. Senior management expects the automotive and commercial aircraft valve product lines to generate \$25 and 15 million, respectively, in earnings EBITDA next year. The operating liabilities associated with these two product lines are minimal. Senior management also believes that it will not be able to upgrade these product lines because of declining cash flow and excessive current leverage. A competitor to its automotive valve business last year sold for 10 times EBITDA. Moreover, a company similar to its commercial aircraft valve product line sold last month for 12 times EBITDA. Estimate LAFCO's breakup value before taxes.

Answer: \$230 million.

- 8.13** Siebel Incorporated, a nonpublicly traded company, has 2009 after-tax earnings of \$20 million, which are expected to grow at 5% annually into the foreseeable future. The firm is debt free, capital spending equals the firm's rate of depreciation, and the annual change in working capital is expected to be minimal. The firm's β is estimated to be 2.0, the 10-year Treasury bond is 5%, and the historical risk premium of stocks over the risk-free rate is 5.5%. Publicly traded Rand Technology, a direct competitor of Siebel's, was sold recently at a purchase price of 11 times its 2009 after-tax earnings, which included a 20% premium over its current market price. Aware of the premium paid for the purchase of Rand, Siebel's equity owners would like to determine what it might be worth if they were to attempt to sell the firm in the near future. They chose to value the firm using the DCF and comparable recent transactions methods. They believe that either method provides an equally valid estimate of the firm's value.

a. What is the value of Siebel using the DCF method? *Answer:* \$229.1 million.

b. What is the value using the comparable recent transactions method? *Answer:* \$220 million.

c. What would be the value of the firm if we combine the results of both methods?

Answer: \$224.5 million.

- 8.14** Titanic Corporation reached an agreement with its creditors to voluntarily liquidate its assets and use the proceeds to pay off as much of its liabilities as possible. The firm anticipates that it will be able to sell off its assets in an orderly fashion, realizing as much as 70% of the book value of its receivables, 40% of its inventory, and 25% of its net fixed assets (excluding land). However, the firm believes that the land on which it is located can be sold for 120% of book value. The firm has legal and professional expenses associated with the liquidation process of \$2.9 million. The firm has only common stock outstanding. Using Table 8.4, estimate the amount of cash that would remain for the firm's common shareholders once all assets have been liquidated.

Answer: \$1.3 million.

TABLE 8.4 Titanic Corporation Balance Sheet

Balance sheet item	Book value of assets (\$)	Liquidation value
Cash	10	
Accounts receivable	20	
Inventory	15	
Net fixed assets excluding land	8	
Land	6	
Total assets	59	
Total liabilities	35	
Shareholders' equity	24	

- 8.15** Best's Foods is seeking to acquire the Heinz Baking Company, whose shareholders' equity and goodwill are \$41 and 7 million, respectively. A comparable bakery was recently acquired for \$400 million, 30% more than its TBV. What was the TBV of the recently acquired bakery? How much should Best's Foods expect to have to pay for the Heinz Baking Company? Show your work.

Answer: The TBV of the recently acquired bakery = \$307.7 million, and the likely purchase price of Heinz = \$44.2 million.

- 8.16** Delhi Automotive Inc. is the leading supplier of specialty fasteners for passenger cars in the US market, with an estimated 25% share of this \$5-billion market. Delhi's rapid growth in recent years has been fueled by high levels of reinvestment in the firm. While this has resulted in the firm having "state-of-the-art" plants, it also has resulted in the firm showing limited profitability and positive cash flow. Delhi is privately owned and has announced that it is going to undertake an IPO in the near future. Investors know that economies of scale are important in this high-fixed-cost industry and understand that market share is an important determinant of future profitability. Thornton Auto Inc., a publicly traded firm and the leader in this market, has an estimated market share of 38% and an \$800-million market value. How should investors value the Delhi IPO? Show your work.

Answer: \$526.3 million.

- 8.17** Photon Inc. is considering acquiring one of its competitors. Photon's management wants to buy a firm it believes is most undervalued. The firm's three major competitors, AJAX, BABO, and COMET, have current market values of \$375, 310, and 265 million, respectively. AJAX's FCFE is expected to grow at 10% annually, while BABO's and COMET's FCFEs are projected to grow by 12 and 14% per year, respectively. AJAX, BABO, and COMET's current year FCFE are \$24, 22, and 17 million, respectively. The industry average price-to-FCFE ratio and growth rate are 10 and 8%, respectively. Estimate the market value of each of the three potential acquisition targets based on the information provided. Which firm is the most undervalued? Which firm is the most overvalued? Show your work.

Answer: AJAX is the most overvalued, and Comet is the most undervalued.

- 8.18** Acquirer Incorporated's management believes that the most reliable way to value a potential target firm is by averaging multiple valuation methods, since all methods have their shortcomings. Consequently, Acquirer's CFO estimates that the value of Target Inc. could range, before an acquisition premium is added, from a high of \$650 million using DCF analysis to a low of \$500 million using the comparable companies relative valuation method. A valuation based on a recent comparable transaction is \$672 million. The CFO anticipates that Target Inc.'s management and shareholders would be willing to sell for a 20% acquisition premium, based on the premium paid for the recent comparable transaction. The CEO asks the CFO to provide a single estimate of the value of Target Inc. based on the three estimates. In calculating a weighted average of the three estimates, she gives a value of 0.5 to the recent transactions method, 0.3 to the DCF estimate, and 0.2 to the comparable companies estimate. What is the weighted average estimate she gives to the CEO? Show your work.
- Answer:* \$690 million.
- 8.19** An investor group has the opportunity to purchase a firm whose primary asset is ownership of the exclusive rights to develop a parcel of undeveloped land sometime during the next 5 years. Without considering the value of the option to develop the property, the investor group believes the NPV of the firm is \$(10) million. However, to convert the property to commercial use (i.e., exercise the option), the investors have to invest \$60 million immediately in infrastructure improvements. The primary uncertainty associated with the property is how rapidly the surrounding area will grow. Based on their experience with similar properties, the investors estimate that the variance of the projected cash flows is 5% of NPV, which is \$55 million. Assume the risk-free rate of return is 4%. What is the value of the call option the investor group would obtain by buying the firm? Is it sufficient to justify the acquisition of the firm? Show your work.
- Answer:* The value of the option is \$13.47 million. The investor group should buy the firm, since the value of the option more than offsets the \$(10)-million NPV of the firm if the call option were not exercised.
- 8.20** Acquirer Company's management believes that there is a 60% chance that Target Company's FCFF will grow at 20% per year during the next 5 years from this year's level of \$5 million. Sustainable growth beyond the fifth year is estimated at 4% per year. However, they also believe that there is a 40% chance that cash flow will grow at half that annual rate during the next 5 years and then at a 4% rate thereafter. The discount rate is estimated to be 15% during the high-growth period and 12% during the sustainable-growth period. What is the EXPV of Target Company?
- Answer:* \$94.93 million.

Solutions to these Practice Problems are available in the Online Instructor's Manual for instructors using this book (<https://textbooks.elsevier.com/web/Manuals.aspx?isbn=9780128016091>).

END OF CHAPTER CASE STUDY: INVESTORS QUESTION ABBOTT LABS' VALUATION OF ST. JUDE MEDICAL

Case Study Objectives: To Illustrate

- The application of relative valuation methods
- The limitations of such methods
- How to approximate the value of synergy
- The role key assumptions play in establishing the credibility of any valuation

Abbott Lab's market value plunged more than \$5 billion or 6% in a single day following the announcement of the firm's acquisition of St. Jude Medical (St. Jude) on April 26, 2016, as investors expressed their disapproval. Their concern was that Abbot was overpaying and would be unable to earn financial returns demanded by investors. The \$25-billion deal included a \$6.5-billion premium, 37% above St. Jude's closing price on April 25, 2016. St. Jude's shares soared by more than 27% boosting the firm's market capitalization to \$24.1 billion from its level of \$17.59 billion the prior day.

In announcing the transaction, Abbott said the primary motive for the takeover was to expand its heart device business. Abbott, the industry leader in manufacturing coronary stents and heart valves, wanted to combine with St. Jude, a maker of pacemakers and other devices for failing hearts. The aging population makes the "failing heart" market likely to show considerable growth in the coming years.

Medical equipment makers are under pressure to offer a wider portfolio of products to their hospital customers, which have been through a wave of mergers that have increased their power to negotiate pricing. With combined revenue of \$8.7 billion, Abbott said its deal would help it compete more effectively against larger rivals Medtronic Plc, Boston Scientific Corp., and Edward Life Sciences. The combination of Abbott and St. Jude creates a medical device manufacturer with leading positions in high-growth cardiovascular markets, including atrial fibrillation, structural heart, and heart failure, as well as a leading position in the high-growth neuromodulation market. The new firm also will have the largest pipeline (products in development) to deliver a steady stream of new medical devices to these high-growth markets.

The definitive agreement reached by Abbott and St. Jude called for St. Jude shareholders to receive \$46.75 in cash and 0.8708 share of Abbott common stock. This represented a total consideration of \$85 per share. Abbott expects the deal would be accretive to earnings per share and that the combined firm will earn double-digit financial returns within 5 years. Management expects annual pretax cost savings of \$500 million to begin within 5 years following closing. For the firm to earn the returns promised by management, it must be able to realize expected annual pretax cost savings beginning in 2020. Failure to realize these expected savings in a timely manner can impact significantly synergy value. Also, it is unclear if the full cost of realizing these synergies has been deducted from the projected savings.

One way of determining if Abbott is overpaying is to estimate St. Jude's stand-alone value plus the PV of anticipated synergy. This estimate represents the upper limit (maximum) for the amount Abbott should pay for St. Jude and still be able to earn its cost of capital. Any payment in excess of the maximum purchase price means that Abbott is destroying shareholder value by in effect transferring more value than would be created to the target firm shareholders.

Table 8.5 provides data enabling an analyst to value St. Jude on a stand-alone basis using the comparable company method. Note that the table contains valuation multiples for St. Jude's three

TABLE 8.5 St. Jude Medical Valuation Data

	Forward P/E ^a , Col. 1	Price/revenue ^b , Col. 2	Price/book ^c , Col. 3	Enterprise value to EBITDA, Col. 4	Enterprise value to revenue, Col. 5
Primary competitors					
Medtronic (ratio)	16.14	4.17	2.32	15.19	4.69
Boston Scientific (ratio)	18.04	4.10	4.82	18.41	4.70
Edward Life Sciences (ratio)	29.28	4.87	9.13	26.77	4.99
St. Jude Medical (dollars per share)	Earnings per share, \$1.06	Annual revenue/ share, \$5.54	Book value/ share, \$4.04	Enterprise value/ share, \$1.12	Annual revenue/ share, \$5.54

EBITDA, Earnings before interest, taxes, depreciation, and amortization; P/E, price-to-earnings.

^aS&P Capital IQ report consensus estimate (4/26/16).

^bTrailing 52-week average from S&P Capital IQ for period ending March 31, 2016.

^cMost recent quarter (April 2, 2016).

primary competitors as well as earnings, revenue, book value, and enterprise value per share for St. Jude. The choice of valuation multiples is subjective in that it is unclear which best mirror the stand-alone value of St. Jude's. Abnormally low interest rates at the time of the merger announcement could have resulted in artificially high valuation multiples. Also, the competitors selected are larger and more diversified than St. Jude's and their growth rates and profitability tend to be greater while the riskiness of their cash flows tends to be less.

Discussion Questions

1. Based on the information provided in Table 8.5, what do you believe is a reasonable stand-alone value for St. Jude Medical? (Hint: Use the comparable company valuation method to derive a single point estimate of stand-alone value.) Show your work.
2. Does your answer to question (1) include a purchase price premium? Explain your answer.
3. What are the key limitations of the comparable companies valuation methodology? Be specific.
4. In estimating the value of anticipated cost savings, should an analyst use St. Jude's marginal tax rate of 40% or its effective tax rate of 22%? Explain your answer.
5. What is the PV of the \$500-million pretax annual cost savings expected to start in 2020? Assume the appropriate cost of capital is 10% and that the savings will continue in perpetuity. Show your work.
6. What are the key valuation assumptions underlying the valuation of St. Jude Medical? Include both the valuation of St. Jude as a stand-alone business and synergy value. Be specific.
7. What is the maximum amount Abbott Labs could have paid for St. Jude Medical and still earned its cost of capital? Did Abbott overpay for St. Jude based on the information given in the case? Explain your answer. [Hint: Use your answers to questions (1) and (5).]

Solutions to these questions are provided in the Online Instructor's Guide accompanying this manual (<https://textbooks.elsevier.com/web/Manuals.aspx?isbn=9780128016091>).

**ADDITIONAL CASE STUDY RECOMMENDATIONS
(SEARCH HARVARD BUSINESS SCHOOL
PUBLISHING SITE BY NAME OF CASE:
hbsp.harvard.edu)**

Methods of Valuation for Mergers and Acquisitions, Michael J. Schill, Paul Doherty, Revision Date: February 24, 2009, Product Number: UV0112-PDF-ENG, Source: Darden School of Business, hbsp.harvard.edu.

Subjects Covered: Discounted Cash Flow, Book Value, Liquidation Value, Replacement Cost, Market Value, Trading Multiples of

Peer Firms, and Comparable Transaction Multiples.

Valuation of AirThread Connections, Erik Stafford, Joel L. Heilprin, Revision Date: April 27, 2012, Product Number: 4263-PDF-ENG, Source: HBS Brief Cases, hbsp.harvard.edu.

Subjects Covered: Valuation, Capital Structure, Synergy.

Financial Modeling Basics

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There are two kinds of forecasters: the ones who don't know and the ones who don't know they don't know. —John Kenneth Galbraith

INSIDE M&A: THE UNRELENTING ALLURE OF THE “TRANSFORMATIVE” ACQUISITION—MICROSOFT BUYS LINKEDIN IN ITS BIGGEST DEAL IN HISTORY

KEY POINTS: FINANCIAL MODELS

- Enable the rapid consideration of alternative scenarios by changing key assumptions underlying valuation, deal structuring, and financing issues.
- Help define the range of risks associated with an investment.
- Sometimes aid and abet managers in crossing the fine line between “reimagining” how their business can compete and hyperbole.

The good news, bad news about financial models is that they can be used to evaluate a wide range of alternatives. Generally, this capability is highly useful because it gives senior management a look into the future without having to commit substantial resources to a bet on a highly uncertain outcome. But it is critical to remember that financial models are in effect sophisticated high-speed calculators that can lull management into a false sense of security. If given a set of optimistic assumptions, we should not be surprised that we get a rosy outlook. This can be especially seductive when management is frustrated with their inability to improve their firm’s current operating performance and boost its share price.

Enter the “transformational deal”: those intended to enable a company to fundamentally change the way it does business. Often highly risky, they push the acquirer into new areas with which it is largely unfamiliar, requiring the acquirer to climb rapidly a steep learning curve. In the tech sector, “transformational deals” often are precedent setting, with little historical comparisons to assess likely future performance. They require management to place a bet on new products still in the concept stage to be sold in markets that are often poorly understood or largely undefined and requiring execution skills seldom found in large bureaucratic firms.

These concerns notwithstanding, Microsoft made its most ambitious move in years when it announced on June 13, 2016, that it would acquire LinkedIn in an all-cash deal valued at \$26.2 billion, almost 9 times LinkedIn \$2.9 billion annual revenue. By far the largest in the firm’s history, the takeover combines Microsoft, a leading maker of software, and LinkedIn, the world’s largest business-oriented social networking site. While dwarfed by Facebook, the largest and most profitable of social networks, LinkedIn is the most widely used site for people to promote their professional skills and accomplishments.

Arguably the deal was about gaining access to LinkedIn’s data and user base. Using this metric for valuing businesses without significant earnings but with significant user growth rests on the premise that sustained user growth will eventually result in future earnings. Facebook acquired WhatsApp (the popular messaging service) for \$21.8 billion in late 2014. It paid about \$48 per existing user (\$21.8 billion/0.45 billion users) for WhatsApp versus about \$33 per user (\$1 billion/0.30 billion users) for its earlier acquisition of Instagram. While these deals were eye-popping at the time, Microsoft’s acquisition of LinkedIn topped these transactions by paying almost \$61 dollar per user for LinkedIn (\$26.2 billion/0.433 billion users). To be fair, Microsoft believed it was playing catch-up as the digital world moves away from

the firm's traditional software business to cloud computing in which users rent software accessible via the internet. Management may have viewed the price paid as justifiable as this acquisition could ultimately "save" the firm.

The common thread between Microsoft and LinkedIn, Microsoft argues, is that both make most of their money selling to professionals. Microsoft sees the deal conceptually as all about bringing together the professional cloud and the professional network. It sees the acquisition as providing new revenue streams to shore up its aging Windows operating system and Office software businesses by combining their capabilities with LinkedIn's user-supplied data.

While the potential may be large, any payoff requires skillful execution by Microsoft in implementing a coherent strategy. Given what the firm paid for LinkedIn, the challenges to earning the firm's cost of capital are daunting. Paying a 50% premium for a money-losing business like LinkedIn should raise red flags. LinkedIn has struggled to sustain its growth. Less than 1 year ago, its stock was trading 30% higher than the \$196 per share offered by Microsoft.

With large acquisitions, Microsoft's execution skills are problematic. In 2014 it paid \$9.4 billion for Nokia's smartphone business and \$6 billion in 2007 for internet advertising firm, aQuantive. Both acquisitions have since then been totally written off. What entry barriers the LinkedIn acquisition may create are likely to be brief. The social networking behemoth, Facebook, could get into business networking where both employers and employees connect given its massive financial resources, huge user base, ubiquitous brand, and increasingly integrated databases.

While models can be indispensable in addressing valuation, deal structuring, and financing issues, they cannot be divorced from pressure on management to transform businesses performing below investor expectations. Model output driven by management input will reflect their convictions. Senior managers can (sometimes unknowingly) get the model to deliver the output management wants by making overly optimistic assumptions. In the final analysis, models are an important tool supplementing but not replacing executive judgment. Models work best when history is available to evaluate the reasonableness of growth, profitability, and risk assumptions, but they can fall short with new, still unproven businesses like LinkedIn.

CHAPTER OVERVIEW

Financial models are widely used in a variety of business applications from financial reporting to capital budgeting to valuing and structuring mergers and acquisitions (M&As). The purpose of this chapter is to discuss the basics of applying financial modeling methods to firm valuation and to assist the reader in understanding the power (and limitations) of models in analyzing real-world situations. The model discussed in this chapter is relatively simple consisting of four Microsoft Excel worksheets and is applied to the valuation of a single firm. Building upon the basics of financial modeling outlined in this chapter, Chapter 14 will discuss the important role such models play in valuing and structuring M&As using a substantially more complex, interactive model.

The chapter begins with an overview of what financial modeling entails, why it is important, the data requirements of such models, and common financial model linkages. It then illustrates a simplified methodology for using a financial model to value a firm and discusses

where to find data required by the model. The case study at the end of the chapter entitled “Life Technologies Undertakes a Strategic Review” illustrates how financial models can be used to estimate firm value, identify the key determinants of firm value, and simulate alternative outcomes to facilitate management decision making.

The spreadsheets and formulas for the model described in this chapter are available in a Microsoft Excel file entitled “Target Firm Valuation Model” on the companion site to this book (<https://www.elsevier.com/books-and-journals/book-companion/9780128016091>). A review of this chapter is available in the file folder entitled “Student Study Guide” on the companion site to this book.

WHAT IS FINANCIAL MODELING?

Financial modeling refers to the creation of a mathematical representation or model of the financial and operational characteristics of a business. Applications involving financial modeling include business valuation, management decision making, capital budgeting, financial statement analysis, and determining the firm’s cost of capital. Such models are at best a simplistic illustration of how the firm actually creates value for its shareholders. Their real value comes from forcing the model builder to think about the important relationships among the firm’s financial statements and to focus on the key determinants of value creation and the assumptions underlying forecasts. Often referred to as “simulation,” financial models provide a useful means of assessing alternative options and associated risks and of identifying how firm value is affected by different economic events.

To estimate firm value, financial modeling requires that the analyst forecast cash flow. How this may be done and the accompanying challenges are addressed next.

FINANCIAL MODELING DATA REQUIREMENTS

The quality of a model’s output is dependent on the reliability of data (i.e., audited by a trusted party) used to build the model and the credibility of the assumptions underlying cash flow projections. Consequently, analysts must understand on what basis numbers are collected and reported. That is, are they based on generally accepted accounting principles (GAAP) or pro forma financial statements?

Generally Accepted Accounting Principles and International Standards

US public companies prepare their financial statements in accordance with GAAP. GAAP financial statements are those prepared in agreement with guidelines established by the Financial Accounting Standards Board (FASB). GAAP is a rules-based system, giving explicit instructions for every situation that the FASB has anticipated. In contrast, *international accounting standards* (IAS) are a principles-based system, with more generalized standards. GAAP and IAS currently exhibit significant differences. When and the extent to which GAAP and IAS systems converge are open questions. Consequently, while we recognize that the way financial data is recorded often differs by country, we utilize GAAP-based financial reporting throughout this book.

In early 2017, the US Securities and Exchange Commission (SEC) announced that it was investigating allowing public companies to supplement their GAAP financial statements with information prepared according to IAS. Among other things, the supplemental information is used by US companies seeking to purchase foreign firms to see what the firms' consolidated financial statements might look like if the two firms were to merge.

GAAP Financial Statements

A firm's financial statements typically consist of an income statement, balance sheet, and cash flow statement. The income statement measures a firm's financial performance over a specific time period: month, quarter, or year. The statement displays revenue and expenses generated from both operating and nonoperating activities. Operating revenues and expenses are derived from the firm's normal operations; nonoperating revenues and expenses result from activities such as the sale of assets or employee termination expenses associated with a facility closure. Such events are not a regular part of a firm's normal operations.

The balance sheet provides data on what a firm owns (i.e., its assets), what it owes (i.e., its liabilities), and its value to its shareholders (i.e., shareholders' equity) at a moment in time. Assets are resources that generate future cash flows for shareholders. Liabilities are obligations to parties outside of the firm. Shareholders' equity is the value of the business to its owners after all obligations to external parties have been satisfied.

A cash flow statement summarizes the firm's cash inflows and outflows from operating, investing, and financing activities during a specific time period. Cash flows from operations represent those arising from the firm's normal operations such as revenues and actual cash expenses after taxes. Cash from investing activities arises from the acquisition or disposition of current or fixed assets. Finally, cash inflows from financing activities include the issuance of additional shares or new borrowing; cash outflows include share repurchases, principal repayments, and dividend payouts.

Pro Forma Accounting

Pro forma financial statements (also referred to as adjusted financial statements) present financial data in a way that may describe more accurately a firm's current or projected performance. Because there are no accepted standards, pro forma statements may deviate substantially from GAAP statements. In 2015, 5.7% of US Standard & Poor's companies reported their financial statements using GAAP accounting standards exclusively.¹ Most public firms supplement their GAAP statements with pro forma statements that are "adjusted" to reflect factors that firms will argue more accurately represent their business.

Pro forma statements show what an acquirer's and target's combined financial performance would look like if they were merged. Although public firms still are required to file their financial statements with the SEC in accordance with GAAP, companies often argue that pro forma statements provide investors with a more realistic view of a company's true performance than GAAP reporting. Although pro forma statements serve a useful purpose, such

¹Shumsky and Francis (2016).

liberal accounting can easily hide a company's poor performance. [Exhibit 9.1](#) suggests some ways in which an analyst can tell if a firm is engaging in inappropriate accounting practices.

The failure to adequately review a firm's financial statements can have disastrous results for acquiring firm shareholders. Target firms may manipulate earnings upward prior to a bid in an effort to get a higher offer price.² Earnings manipulation tends to occur more commonly with respect to overstating net sales rather than mishandling accruals, since the latter may be more easily detected during acquirer due diligence.³ In late 2012, the failure to catch alleged major accounting improprieties in its acquisition of British software maker Autonomy Corporation for \$10.3 billion forced Hewlett-Packard to take a \$5.0-billion reduction in the value of the 2011 acquisition. The accounting changes reflected an 81% reduction in Autonomy's operating profit and a 54% reduction in reported revenue. Valeant Pharmaceutical International Inc., a Canada-based company, found itself at the center of a firestorm generated by alleged

EXHIBIT 9.1 ACCOUNTING DISCREPANCY RED FLAGS

1. The source of the revenue is questionable. Examples include revenue from selling to an affiliated party or selling something to a customer in exchange for something other than cash.
2. Income is inflated by nonrecurring gains. Gains on the sale of assets may be inflated by an artificially low book value of the assets sold.
3. Deferred revenue shows a large increase. It increases as a firm collects money from customers in advance of delivering its products and is reduced as the products are delivered. A jump in this item could mean the firm is having trouble delivering its products.
4. Reserves for bad debt are declining as a percentage of revenue. This implies the firm may be boosting revenue by not reserving enough to cover losses from uncollectable accounts.
5. Growth in accounts receivable exceeds substantially the increase in revenue or inventory. This may mean that a firm is having difficulty in selling its products (i.e., inventories are accumulating) or that it is having difficulty collecting what it is owed.
6. The growth in net income is much different from the growth in cash from operations. Because it is more difficult to "manage" cash flow than net income (often distorted due to improper revenue recognition), this could indicate that net income is being misstated.
7. An increasing gap between a firm's income reported on its financial statements and its taxable income. In general, the relationship between book and tax accounting is likely to remain constant over time, unless there are changes in tax rules or accounting standards.
8. Unexpected large asset write-offs. This may reflect management inertia in incorporating changing business circumstances into its accounting estimates.
9. Extensive use of related party transactions. Such transactions may not be subject to the same discipline and high standards of integrity as unrelated party transactions.
10. Changes in auditing firms that are not well justified. The firm may be seeking a firm that will accept its aggressive accounting positions.

²According to Mao and Renneboog (2015), in management buyouts, the firm's managers may manipulate earnings downward so that they may be able to take the firm private at a lower offer price.

³Campo and Hgbaba (2016).

accounting irregularities. In late 2016, the firm was accused of understating its normal operating expenses by burying a portion of such expenses among one-time acquisition-related write-offs and inflating sales by “channel stuffing.”⁴ The firm publishes both a GAAP-based earnings per share (EPS) and pro forma (adjusted) cash flow-based EPS. The latter made its performance look much better than the standard method of calculating EPS.

COMMON FINANCIAL MODEL LINKAGES

A financial model creates a set of projections about the future of a business in terms of the businesses’ income statement, balance sheet, and cash flow statement. Each statement is linked in such a way that changing assumptions about one factor can result in changes in other financial statements. Let us examine these linkages in more detail.

The income statement, balance sheet, and cash flow statements are interrelated (Fig. 9.1). All items on the income statement from revenue to taxes affect the calculation of net income that measures how well the assets and liabilities listed on the balance sheet were used. Net income flows from the income statement to retained earnings (i.e., cumulative income or losses

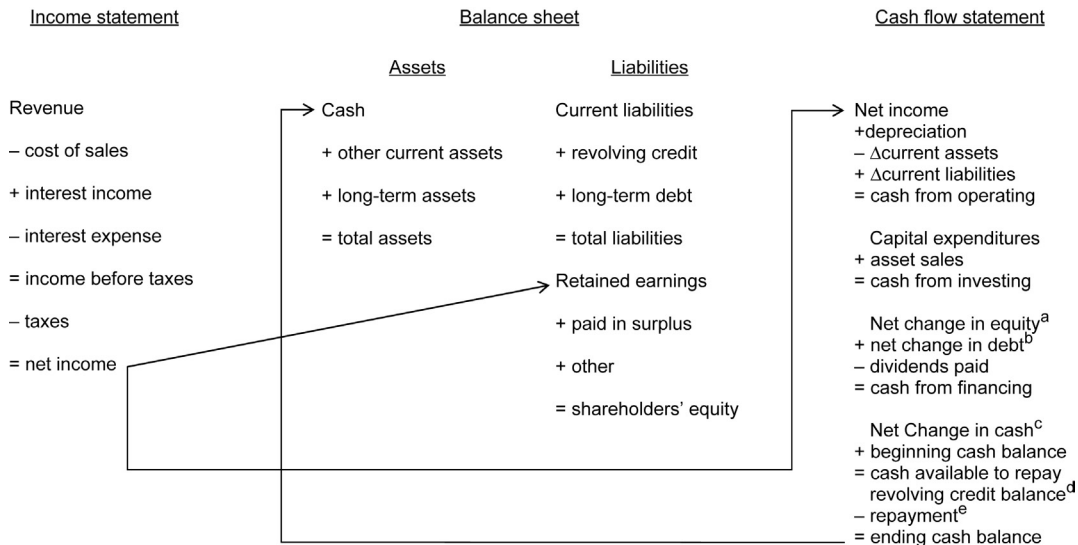


FIGURE 9.1 Interrelationships between a firm's financial statements. ^aNew equity issues less repurchases. ^bNew borrowing less debt repayment. ^cSum of cash from operating, investing, and financing activities. ^dCash available to repay outstanding revolving credit balance in excess of the firm's desired minimum cash balance. ^ePayment made to reduce outstanding revolving credit balance in excess of the firm's desired minimum cash balance.

⁴Channel stuffing refers to recording as sales product shipments to a distributor that have not been ordered. The distributor may then return the products to the manufacturer or hold them in inventory. In either case Valeant would not receive payment for the products. Valeant was accused of “selling” its products through Philidor, a specialty pharmacy, which sells drugs directly to consumers by mail.

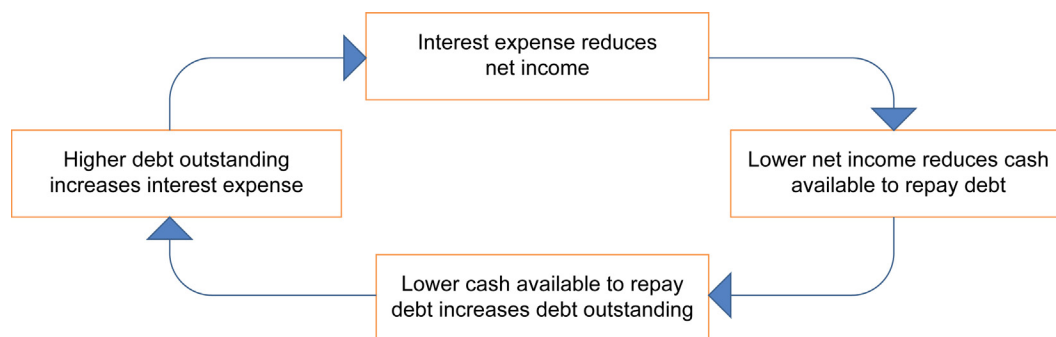


FIGURE 9.2 Financial model circularity.

since the firm's inception) on the balance sheet and also is shown as the first line of the cash flow statement. The cash flow statement shows cash from operating, investing, and financing activities. It describes the source of cash inflows and the uses for cash outflows and the amount of cash the firm reports on its balance sheet at the end of an accounting period. That is, the cash flow statement begins with net income from the income statement and concludes with the firm's ending cash balance, which is also shown at the top of the asset side of the firm's balance sheet.

Firms attempt to maintain minimum cash balances to meet short-term working capital needs such as payroll. Any cash from operating and investing activities in excess of that required to maintain the firm's desired minimum cash balance may be used to repay any outstanding debt. Consequently, the firm's year-ending debt balance is reduced by the amount of excess cash used to repay debt.

In building financial models, the previously described linkages among the financial statements introduce circular logic known as circular references in spreadsheet software programs. *Circular references* are a series of cell references in which the last cell reference refers to the first resulting in a closed loop. For example, increases in interest expense reduce net income, which decreases cash flow to repay borrowing resulting in higher debt outstanding and higher interest expense. Fig. 9.2 illustrates this circularity.

Such circular references could result in the financial model becoming unstable with Microsoft's Excel software showing any of the following error messages: REF!, #Value, or Div/0!. To resolve circular references using Microsoft's Excel, turn on the iteration command for Windows 7, 8, or 10 as follows:

- On the ribbon bar, click on File >>> Options >>> Formulas.
- Set workbook calculation to Automatic and enable Iterative Calculation.
- Set maximum number of iterations to 100 and the maximum amount of change to 0.001.

An alternative means of resolving circular references is to use "toggle buttons" that indicate a state such as yes/no or on/off. "Toggle buttons" are used in the models accompanying this textbook on the income statement (interest income and expense rows) and debt repayment (revolving credit facility row) worksheets. Such buttons are triggered by switching the interest income/expense or revolving credit "toggle button" on and off and on (i.e., from 1 to 0 to 1 and may be expressed as 1 >> enter 0 >> enter 1). This often restores model stability just

as turning a wireless modem on and off and on can restore an internet connection. “Toggle buttons” are displayed on the worksheets as follows:

1	0 = circ off
	1 = circ on

KEY STEPS IN THE VALUATION PROCESS

The financial modeling process used to value a firm consists of a series of steps. First, analyze the target firm’s historical statements to identify the primary determinants of cash flow. Second, project 3–5 years (or more) of annual pro forma financial statements. This period is called the *planning period*. Third, estimate the present value (PV) of the projected pro forma cash flows, including the terminal value. These steps are discussed in detail in the following sections.

Step 1: Analyze Recent Financial Statements

Understanding how a firm made money historically is helpful in determining how it may do so in the future. Once the firm’s historical financial data has been collected,⁵ the analyst should look for relationships or correlation between line items on financial statements and the firm’s free cash flows. Variables exhibiting strong historical correlation with operating cash flows and in turn firm value often are referred to as value drivers. *Value drivers* are variables that exert the greatest impact on firm value. For nonfinancial firms, they generally include the rate of growth in sales, the cost of sales as a percent of sales, selling, general, and administrative expenses (SG&A) as a percent of sales, weighted average cost of capital (WACC) assumed during the annual cash flow growth period, and the WACC and sustainable cash flow growth rate assumed during the terminal period.⁶

Equal to the difference between sales and cost of sales as a percent of sales, gross margin per dollar of sales is a widely used means of summarizing a firm’s ability to create value. A simple diagram plot of a firm’s gross margin over at least one full business cycle (5–7 years) provides useful insight into how the firm was able to create value historically. An increase in the ratio over time indicates that the firm has been able to reduce its costs compared to sales, raise prices on each item sold, or a combination of the two. A declining ratio reflects deterioration in the firm’s ability to control costs, raise prices, or both. However, gross margin may show considerable variation from one year to the next. How we deal with this issue is addressed next.

⁵Common sources of data for publicly traded firms include the firm’s annual report and 10K filing with the SEC, available at sec.gov/edgar.shtml or via the firm’s website (see Investor Relations). Other sources of information include subscription-based services such as Standard and Poor’s Compustat service (www.compustatresources.com/support/index.html), Morningstar.com, and free sources including finance.yahoo.com or finance.google.com.

⁶Value drivers differ by type of firm. For marketing-oriented businesses such as Nike, SG&A as a percent of sales is likely to be a key determinant of firm value; for pharmaceuticals such as Pfizer, research and development (R&D) is an important value driver.

Normalize Historical Data

To ensure that these historical relationships can be accurately defined, it is necessary to *normalize* the data by removing nonrecurring changes and questionable accounting practices in order to identify longer-term trends in the data. Such data often is easily recognized because it represents an outlier in the data series. Cash flow may be adjusted by adding back large increases in reserves⁷ or deducting large decreases in reserves from free cash flow to the firm. Similar adjustments can be made for significant nonrecurring gains on the sale of assets or losses due to nonrecurring expenses, such as those associated with the settlement of a lawsuit or warranty claim. Monthly revenue may be aggregated into quarterly or even annual data to minimize period-to-period distortions in earnings or cash flow resulting from inappropriate accounting practices.⁸

Common-size financial statements are used to uncover data irregularities. These statements may be constructed by calculating the percentage each line item of the income statement, balance sheet, and cash flow statement is of annual sales for each quarter or year for which historical data are available. Common-size financial statements are useful for comparing businesses of different sizes in the same industry at a specific moment in time. Called *cross-sectional comparisons*, such analyses may indicate that the ratio of capital spending to sales for the target firm is much less than for other firms in the industry. This discrepancy may simply reflect “catch-up” spending at the target’s competitors, or it may suggest the target is deferring necessary plant and equipment spending. To determine which is true, it is necessary to calculate common-size financial statements for the target firm and its primary competitors over a number of consecutive periods. Called a *multi-period comparison*, these analyses help confirm whether the target simply has completed a large portion of capital spending that others in the industry are undertaking currently or is behind in making necessary expenditures.⁹

Financial ratio analysis is the calculation of performance ratios from data in a firm’s financial statements to identify the firm’s financial strengths and weaknesses. Such analysis helps identify potential problems requiring further examination during due diligence. Ratios allow the analyst to compare firms of different sizes. For example, assume we are comparing operating profits [earnings before interest and taxes (EBIT)] of two firms. EBIT for Firm A is \$20 million and \$6 million for Firm B. It is inappropriate to conclude that Firm A is better managed than Firm B. Firm A may have a larger dollar value of profits only because it is larger. The firms’ profitability should be compared in terms of their margins (i.e., the amount of profit per dollar of sales each firm can keep). If Firm A has sales of \$100 million and Firm B has sales of \$30 million, the two firms are equally profitable (when measured in this manner) with each earning 20% of each dollar of sales.

⁷Reserves are charges taken on the income statement against current earnings in anticipation of future expenses. Such reserves also are entered on the firm’s balance sheet as a liability item to reflect pending obligations.

⁸While public companies are required to provide financial data for only the current and 2 prior years, it is highly desirable to use data spanning at least one business cycle (i.e., about 5–7 years) to identify trends.

⁹Even if it is not possible to collect sufficient data to undertake cross-sectional and multi-period comparisons of both the target firm and its direct competitors, constructing common-size statements for the target firm only can provide useful insights. Abnormally large increases or decreases in these ratios from one period to the next highlight the need for further examination to explain why these fluctuations occurred.

Because ratios adjust for firm size, they enable the analyst to compare a firm's ratios with industry averages to discover if the company is out of line with competitors. A successful competitor's performance ratios may be used if industry average data¹⁰ are not available. Once the historical data have been normalized or smoothed, we need to understand the primary factors that affected changes in gross margin historically. That is, what are the primary determinants of sales growth and profit margins?

Understand Determinants of Revenue Growth and Profit Margins

A firm's revenue growth and profitability are determined by a combination of industry-specific and firm-specific factors. A suggested approach to understanding the determinants of a firm's revenue growth and profit margins is to evaluate the industry's attractiveness in terms of the intensity of competition within the industry and in turn potential profitability and the firm's competitive position within the industry.

A convenient means of evaluating industry attractiveness is to apply the Porter Five Forces Model described in Chapter 4. The Porter Model identifies a series of factors that collectively help determine the potential competitiveness and in turn profitability of an industry. Highly competitive industries tend to offer lower potential profitability than less competitive ones. These factors include the following: the threat of new entrants, bargaining power of suppliers, bargaining power of customers, threat of substitute products, and the degree of competitive rivalry within the industry. Bargaining power refers to the ability of a firm's customers to influence the prices of the products and services it sells and suppliers to set the prices the firm pays for materials and services that it buys. This influence can extend well beyond price and include transaction payment and delivery terms. [Table 9.1](#) summarizes the factors that determine the significance of each "force" and its implication for potential profitability. These forces can be augmented to include other considerations such as the role of regulation, unions, and government as needed.

[Table 9.2](#) generalizes the results of the Porter Five Forces Model by summarizing the characteristics of high-profit versus low-profit industries. In general, highly profitable industries are subject to less competition than lower-profit industries. Highly competitive industries tend to experience so-called normal profits, that is, a level of profits that compensates firms for the risk they have assumed. Less competitive industries often result in firms earning abnormal profits (i.e., those in excess of the risk assumed). An example of a high-profit industry would be soft drinks and a low-profit industry would be airlines. The terms weak and strong refer to the bargaining power of suppliers and customers relative to the firm being analyzed.

Once factors affecting industry profitability are understood, the analyst can turn to analyzing firm-specific factors determining profit margins: sales and cost of sales.

Sales are the product of price per unit times the number of units sold. The growth in the firm's sales thus reflects the ability of the firm to raise prices (i.e., pricing power), the firm's ability to gain market share, and the growth in product demand in the industry. The firm's capacity to raise prices is a measure of its pricing power. Pricing power tends to be less in highly competitive markets than in less competitive ones. According to the Porter Five Forces

¹⁰Industry data are found in such publications as *The Almanac of Business and Industrial Financial Ratios* (Prentice Hall), *Annual Statement Studies* (Robert Morris Associates), *Dun's Review* (Dun and Bradstreet), *Industry Norms and Key Business Ratios* (Dun and Bradstreet), and *Value Line Investment Survey for Company and Industry Ratios*.

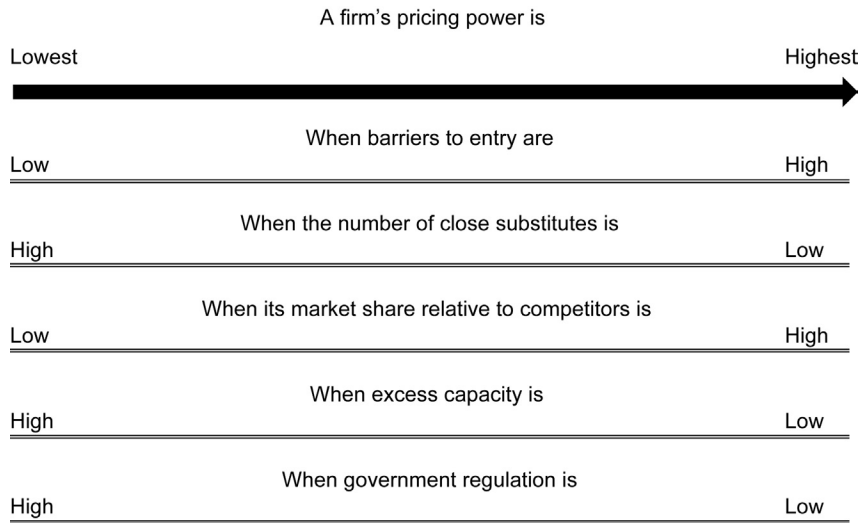
TABLE 9.1 Porter Five Forces Model Summary

Force	Implication for profit margins
Threat of new entrants into a market: stronger when • Entry barriers are low such as – Low capital requirements – Absence of strong brands – Access to distribution channels • Competitors use a common technology Bargaining power of suppliers: stronger when • Resource supplied is scarce • Switching costs high • Customer small relative to supplier • Few substitutes Bargaining power of customers: bargaining power stronger when • They are few in number relative to sellers • A customer purchases a large portion of a seller's output • They possess a credible backward integration threat (i.e., ability to enter the supplier's business) • Switching costs are low Threat of substitute products: impact on reducing demand for current competitor products greater when • Substitutes are close to existing products • Switching costs are low • Customers willing to switch Degree of competitive rivalry: intensity greater when • Competitors are comparable in size and few in number (oligopoly) • Market size and growth prospects are limited (stagnant markets breed more intense competition) • Product differentiation and brand loyalty is low • Exit barriers are high • Capacity utilization is low • Fixed costs as a percent of total costs are high	New entrants may: • Intensify rivalry/competitive environment • Compete for market share by reducing selling prices • Add to costs by stimulating innovation boosting advertising and marketing expenses Suppliers having substantial bargaining power can: • Boost prices paid for inputs used by current customers • Impose less favorable terms such as longer delivery schedules Customers having substantial bargaining power can: • Force selling prices down and squeeze supplier profit margins • Extract more favorable terms such as longer payment periods Many substitutes (i.e., those meeting the same customer need) can: • Limit prices that can be charged • Reduce demand for product and service offerings of current industry competitors Intense rivalry may: • Breed competitive price reductions, innovation and investment in new products • Intensify sales promotions and advertising campaigns • Reduce current competitor profit margins

model discussed in detail in Chapter 4, the degree of competitiveness in a market and in turn pricing power (i.e., the ability to influence pricing) is affected by the ease with which new firms can enter a market, the availability of close substitutes for products or services currently offered in the market, the degree of industry concentration, and the amount of excess capacity. Fig. 9.3 provides a framework (the Pricing Power Continuum) for assessing a firm's pricing power within its served market. The continuum should be read as follows. Firms in an industry have significant pricing power when barriers to entry are high, there are few close substitutes for its product or service offering, there is little excess capacity, the firm's market share is high relative to current competitors, and government regulation and oversight is limited. An analyst can describe subjectively the degree of a firm's pricing power by

TABLE 9.2 Characteristics of High-Profit Versus Low-Profit Industries

High industry profits are associated with	Low industry profits are associated with
Weak suppliers	Strong suppliers
Weak customers	Strong customers
High entry barriers	Low entry barriers
Few substitutes	Many substitutes
Little rivalry/competition	Intense rivalry/competition

**FIGURE 9.3** Pricing power continuum.

its relative position on the continuum. The further to the right the firm is placed, the greater is its perceived pricing power.

The other major component of revenue growth, unit sales, is driven by the growth in industry product demand and by gains in market share. Industry product demand often is correlated with one or two key variables. The determinants of unit sales will differ by industry. For example, beer, beverage, and personal care products (e.g., shampoo) are heavily influenced by demographics such as population growth and changes in the age composition of the population. Sporting goods sales are directly related to advertising and marketing expenditures. Automotive sales are driven by a combination of changes in consumer real income (i.e., purchasing power), consumer confidence, and borrowing costs. Pharmaceutical product sales are impacted by R&D spending and the aging of the population. The demand for smart-phone apps is correlated with the growth in handset sales.

Once the analyst feels that they understand what has determined pricing power and unit sales growth historically, it is necessary to analyze the primary determinants of the cost of

sales. Depending on the industry, the two largest components of the cost of sales are usually direct labor costs and purchased materials and services. Direct labor costs are those directly attributable to the production of goods and services. Indirect labor costs such as those affecting distribution, marketing, and sales are excluded from the calculation of cost of sales. Factors affecting direct labor cost often include the availability of labor having the requisite skills, the degree of unionization, government regulation, and productivity (i.e., output per worker per hour).

Purchased material and service costs are likely to correlate with the size of purchase (i.e., purchase discounts are larger for larger quantities purchased), the number of suppliers, product uniqueness, and available substitutes. In addition to labor and capital costs, raw material costs are frequently impacted by external factors such as geopolitical supply disruptions and the weather.

Since current sales can be satisfied from current production or from inventory, cost of sales is affected by how a firm values its inventory. The current cost of sales is reduced by units produced currently but not sold and placed in inventory and increased by current sales that are satisfied by reducing inventory. The two most common ways to value inventory are first in, first out (FIFO) and last in, last out (LIFO). FIFO uses inventory that is purchased earliest in the production process, resulting in lower-priced inventory used to satisfy sales in the current period. Items placed in inventory that are purchased at earlier dates are generally considered to have been purchased at a lower price due to inflation. Thus, FIFO has the effect of reducing the cost of sales. In contrast, LIFO uses the most recently purchased inventory items resulting in higher-cost inventory items, which adds to the cost of sales.

Step 2: Project Pro Forma Financial Statements

If the factors affecting sales, profit, and cash flow historically are expected to exert the same influence in the future, a firm's financial statements may be projected by extrapolating historical growth rates in key variables such as revenue, with other line items on the financial statement projected as a percent of sales. If the factors affecting sales growth are expected to change due to the introduction of new products, total revenue growth may accelerate from its historical trend. In contrast, the emergence of additional competitors in the future may limit revenue growth by eroding the firm's market share and selling prices.

Financial statements should be projected for at least 3–5 years and possibly more until the firm's cash flows turn positive or the growth rate slows to what is believed to be a sustainable pace. Some firms may show profit growth in excess of the industry average. Since above-average profit growth is not sustainable, cash flows for such firms should be projected until they are expected to slow to the industry average. This usually happens when new competitors are expected to enter the industry. Projections should reflect the best information about product demand growth, future pricing, technological changes, new competitors, new product and service offerings from current competitors, potential supply disruptions, raw material and labor cost increases, and possible new product or service substitutes.

Because accuracy diminishes rapidly the further the analyst projects detailed financial statements into the future, projections are typically made over two forecast periods: the planning period and the terminal period. The planning period represents the period of annual projections, while the terminal period approximates the PV of all cash flows beyond the last year of the planning period.

The planning period forecast begins with an estimate of the firm's revenue using either the top-down or bottom-up approaches. The *top-down approach* projects the size of the firm's target market using macro (e.g., personal income, interest rates) or market-level data (e.g., the number of customers) and then applying an estimated market share for the firm. That is, if the market is projected to grow to \$800 million next year and the firm's market share is expected to be 10%, then the firm's revenue next year is expected to be \$80 million. The *bottom-up approach* involves summing up forecasts made by the firm's sales force by product line and by customer. Alternatively, the analyst could simply extend present trends into the future using historical growth rates or multiple regression techniques. This approach implicitly assumes the factors affecting growth in the past will do so in the same way in the future.

Tables 9.3–9.7 illustrate the output of the Microsoft Excel spreadsheet model entitled Target Valuation Model found on the website accompanying this text. The cells denoted in each worksheet in yellow represent *input cells*. Cells in black contain formulas. Entries into input cells change automatically the subsequent years to reflect the new data in the input cell. Changes to the model are made primarily by making changes in the worksheet labeled Target Assumptions (Table 9.3), which contains the assumptions underlying the projected income statement, balance sheet, and cash flow statement. The analyst should input cell values one at a time using only small changes in such values in order to assess accurately the outcome of each change on valuation. In doing so, it will become evident which variables represent key value drivers in the model. The cell highlighted in yellow containing the year 2011 can be changed to change the years denoted in each successive period. That is, if the value of the cell is changed to 2012, each successive year will increase by one.

Note that the Target Valuation Model already contains input and output data and an estimated valuation for the firm. For our purposes, consider this projection the “base case” valuation. To simulate the impact of an assumption change, change the value in the appropriate input cell. For example, to assess the impact on valuation of an increase of 1 percentage point in the Target's revenue growth rate, change the Target's revenue growth rate assumption on the Target's Assumptions Worksheet by 1 percentage point during the planning period (2014–18) from 5.5 to 6.5% in the yellow input cell on the Sales Growth line for the year 2014. The model will increase automatically the growth rate annually from 2014 to 2018 by 1 percentage point. The model also accommodates a variable growth rate forecast. For example, if the growth rate in 2015 is expected to increase by an additional 1 percentage point and to continue at that higher rate in subsequent years, the analyst simply increases the growth rate from 5.5 to 6.5% in 2014 and to 7.5% in 2015.

Worksheets labeled Target Income Statement (Table 9.4) and Target Balance Sheet (Table 9.5) provide the input for the worksheet labeled Target Cash Flow (Table 9.6) and reflect the assumptions provided in the Target Assumptions Worksheet. Note the red cells at the bottom of the Target Balance Sheet worksheet. If the balance sheet is balancing properly, the values in these cells should be zero, as they represent the difference between total assets and total liabilities plus shareholders' equity.

Step 3: Estimate the Present Value of the Projected Pro Forma Cash Flows

This step requires the analyst to estimate the sum of the PV of the cash flows during the planning period (in this instance, 2014–18) and the PV of the cash flows beyond the planning

TABLE 9.3 Target Firm Planning Period Assumptions

	Actual			Projections for the period ending December 31				
	2011	2012	2013	2014	2015	2016	2017	2018
INCOME STATEMENT								
Sales growth	NA	5.2%	4.8%	7.5%	7.5%	7.5%	7.5%	7.5%
COGS as a percent of sales	41.3	44.1	42.0	41.0	41.0	41.0	41.0	41.0
SG&A percent annual increase (decrease)	NA	(1.4)	4.5	4.0	4.0	4.0	4.0	4.0
Other operating expense as a percent of sales	13.1	12.0	10.5	11.0	11.0	11.0	11.0	11.0
EBITDA growth (%)	NA	5.8	27.4	−14.6	11.6	11.3	11.0	10.8
EBITDA margin (%)	17.1	17.2	20.8	−22.2	23.1	23.9	24.7	25.4
BALANCE SHEET								
Receivable days	59.8	61.6	64.3	49.0	49.0	49.0	49.0	49.0
Inventory days	79.6	82.8	88.5	74.0	74.0	74.0	74.0	74.0
Other current assets percent of sales	7.8	5.2	6.3	5.5	5.5	5.5	5.5	5.5
Accounts payable days	43.0	39.1	40.9	40.0	40.0	40.0	40.0	40.0
Other current liabilities percent of COGS	65.6	79.1	60.4	68.0	68.0	68.0	68.0	68.0
Working capital/sales (excluding cash and debt) (%)	1.3	(7.5)	4.0	−(5.1)	(5.1)	(5.1)	(5.1)	(5.1)
CASH FLOW								
Capital expenditures	26.7	13.8	10.3	17.0	18.3	19.7	21.1	22.7
Capex as a percent of sales	0.7	0.4	0.3	0.4	0.4	0.4	0.4	0.4
Depreciation	123.0	123.6	126.0	136.2	146.4	157.4	169.2	181.9
Depreciation as a percent of sales	3.4	3.3	3.2	3.2	3.2	3.2	3.2	3.2

EBITDA, Earnings before interest, taxes, depreciation, and amortization; SG&A, selling, general, and administrative expenses.

period. The PV of the cash flows beyond the planning period is commonly referred to as the terminal value that is estimated using the constant growth valuation method (see Chapter 7).

Calculating Enterprise and Equity Values

Table 9.7 illustrates the calculation of the enterprise and equity values of the firm. The former represents the value of the firm to all those supplying funds to the firm, while the equity value represents the value of firm to common shareholders only. Target's enterprise value is estimated on the model's Valuations Worksheet using inputs from the Target Assumptions Worksheet. Enterprise value often is defined as the sum of the market value of a firm's equity, preferred shares, debt, and noncontrolling interest less total cash and cash equivalents.

TABLE 9.4 Target Firm Planning Period Income Statement

	Actual			Projections for the period ending December 31				
	2011	2012	2013	2014	2015	2016	2017	2018
Sales (\$)	3588.1	3775.7	3958.5	4255.4	4574.5	4917.6	5286.5	5682.9
Cost of goods sold	1482.0	1665.7	1664.1	1744.7	1875.6	2016.2	2167.4	2330.0
Gross profit	2106.1	2110.0	2294.4	2510.7	2699.0	2901.4	3119.0	3352.9
SG&A	1023.2	1009.0	1054.6	1096.8	1140.7	1186.3	1233.7	1283.1
Other operating expense	470.7	453.2	414.6	468.1	503.2	540.9	581.5	625.1
Depreciation	123.0	123.6	126.0	136.2	146.4	157.4	169.2	181.9
Amortization	299.6	313.9	302.9	300.0	300.0	300.0	300.0	300.0
EBIT	189.6	210.3	396.3	509.6	608.7	716.8	834.6	962.9
Unusual (gain) loss	(37.2)	—	—	—	—	—	—	—
(Income) from affiliates	—	—	—	—	—	—	—	—
Other expense (income)	60.0	10.9	11.9	—	—	—	—	—
Interest (income)	(4.3)	(3.9)	(2.4)	—	—	—	—	—
Interest expense	152.3	162.1	123.9	95.5	80.5	65.5	50.5	35.5
Earnings before taxes	18.8	41.2	262.9	414.1	528.2	651.3	784.1	927.3
Noncontrolling interest	—	—	—	—	—	—	—	—
Taxes	63.7	100.9	101.4	165.6	211.3	260.5	313.6	370.9
Net income before extra items	(44.9)	(59.7)	161.5	248.5	316.9	390.8	470.4	556.4
Extraordinary items	0.6	0.7	0.4	—	—	—	—	—
Net income after extra items (\$)	(44.3)	(59.0)	161.9	248.5	316.9	390.8	470.4	556.4

EBIT, Earnings before interest and taxes; SG&A, selling, general, and administrative expenses.

Cash is commonly deducted since the amount in excess of what is needed to satisfy working capital requirements is a nonoperating asset whose value is implicitly included in the market value of equity since it is owned by the shareholders. Unimportant to the ongoing operation of the business, it can be used by an acquirer to finance the deal.¹¹ Once the enterprise value has been estimated, the market value of equity is then calculated by adding cash to and deducting long-term debt and noncontrolling interests from the enterprise value.

While this definition may reasonably approximate the takeover value of a company, it does not encompass all of the significant nonequity claims on cash flow such as operating leases, unfunded pension and healthcare obligations, and loan guarantees. Thus, the common definition of enterprise value may omit significant obligations that must be paid by Acquirer and whose PV should be included in estimating Target's purchase price. When calculating the

¹¹It is often useful to deduct other assets not germane to the ongoing operation of the combined businesses from the enterprise value if they can be easily sold for cash and subsequently used to finance the transaction.

TABLE 9.5 Target Firm Planning Period Balance Sheet

	Actual			Projections for the period ending December 31				
	2011	2012	2013	2014	2015	2016	2017	2018
Cash (\$)	854.9	882.1	276.3	1019.0	1480.4	2026.4	2663.8	3399.7
Accounts receivable	587.5	637.0	697.3	571.3	614.1	660.2	709.7	762.9
Inventory	323.1	377.9	403.5	353.7	380.3	408.8	439.4	472.4
Other	281.0	196.6	248.1	234.0	251.6	270.5	290.8	312.6
Current assets	2046.5	2093.6	1625.2	2178.0	2726.3	3365.9	4103.7	4947.6
Property, plant, and equipment	870.4	858.7	871.4	888.4	906.7	926.4	947.5	970.3
Accumulated depreciation	—	—	—	(136.2)	(282.6)	(439.9)	(609.1)	(790.9)
Net property, plant, and equipment	870.4	858.7	871.4	752.2	624.2	486.5	338.4	179.3
Goodwill	4372.1	4366.7	4503.4	4503.4	4503.4	4503.4	4503.4	4503.4
Intangible assets	2040.2	1746.6	1525.8	1225.8	925.8	625.8	325.8	25.8
Deferred taxes	26.8	28.8	23.0	23.0	23.0	23.0	23.0	23.0
Other	130.2	93.6	89.2	89.2	89.2	89.2	89.2	89.2
Total assets (\$)	9486.2	9188.0	8638.0	8771.7	8891.9	9093.7	9383.6	9768.3
Accounts payable	174.4	178.4	186.6	191.2	205.5	221.0	237.5	255.3
Other	972.0	1317.9	1005.8	1186.4	1275.4	1371.0	1473.9	1584.4
Current liabilities	1146.4	1496.3	1192.4	1377.6	1480.9	1592.0	1711.4	1839.7
Revolving credit facility	—	—	—	—	—	—	—	—
Senior debt	2727.6	2297.7	2060.9	1760.9	1460.9	1160.9	860.9	560.9
Subordinated debt	—	—	—	—	—	—	—	—
Total	2727.6	2297.7	2060.9	1760.9	1460.9	1160.9	860.9	560.9
Deferred taxes	558.0	410.6	287.4	287.4	287.4	287.4	287.4	287.4
Other	616.1	384.1	443.9	443.9	443.9	443.9	443.9	443.9
Total liabilities	5048.1	4588.7	3984.6	3869.8	3673.1	3484.2	3303.6	3131.9
Common stock	5225.0	5443.2	5733.7	5733.7	5733.7	5733.7	5733.7	5733.7
Preferred equity	—	—	—	—	—	—	—	—
Retained earnings	532.5	911.0	1341.8	1590.3	1907.2	2297.9	2768.4	3324.8
Treasury stock	(1420.0)	(1820.0)	(2482.0)	(2482.0)	(2482.0)	(2482.0)	(2482.0)	(2482.0)
Other adjustments	96.6	65.1	59.1	59.1	59.1	59.1	59.1	59.1
Noncontrolling interest	4.0	—	0.8	0.8	0.8	0.8	0.8	0.8
Total stockholders' equity	4438.1	4599.3	4653.4	4901.9	5218.8	5609.5	6080.0	6636.4
Total liabilities and equity (\$)	9486.2	9188.0	8638.0	8771.7	8891.9	9093.7	9383.6	9768.3
Reconciliation	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

TABLE 9.6 Target Planning Period Cash Flow Statement

	Actual		Projections for the period ending December 31				
	2012	2013	2014	2015	2016	2017	2018
Net income (\$)	(59.0)	161.9	248.5	316.9	390.8	470.4	556.4
Depreciation and amortization	437.5	428.9	436.2	446.4	457.4	469.2	481.9
Change in							
Accounts receivable	(49.5)	(60.3)	126.0	(42.8)	(46.1)	(49.5)	(53.2)
Inventory	(54.8)	(25.6)	49.8	(26.5)	(28.5)	(30.7)	(33.0)
Accounts payable	4.0	8.2	4.6	14.3	15.4	16.6	17.8
Deferred taxes	(149.4)	(117.4)	—	—	—	—	—
Other liabilities	(232.0)	59.8	—	—	—	—	—
Cash flow from operating activities	359.7	97.1	1059.7	779.7	865.7	958.5	1058.6
Capital expenditures	(13.8)	(10.3)	(17.0)	(18.3)	(19.7)	(21.1)	(22.7)
Acquisitions	(0.1)	(149.0)	—	—	—	—	—
Sale of assets	3.4	25.5	—	—	—	—	—
Cash flow from investing activities	(10.5)	(133.8)	(17.0)	(18.3)	(19.7)	(21.1)	(22.7)
Net change in equity	(213.3)	(377.5)	—	—	—	—	—
Net change in debt	(429.9)	(236.8)	(300.0)	(300.0)	(300.0)	(300.0)	(300.0)
Dividends paid	—	—	—	—	—	—	—
Cash flow from financing activities	(643.2)	(614.3)	(300.0)	(300.0)	(300.0)	(300.0)	(300.0)
Net change in cash	(294.0)	(651.0)	742.7	461.4	546.1	637.4	735.9
Beginning cash balance	854.9	882.1	276.3	1019.0	1480.4	2026.4	2663.8
Cash available for revolving credit (\$)	560.9	231.1	1019.0	1480.4	2026.4	2663.8	3399.7
Beginning revolver			—	—	—	—	—
Total repayment			—	—	—	—	—
Ending revolving credit facility			—	—	—	—	—
Ending cash			1019.0	1480.4	2026.4	2663.8	3399.7

Note: In the Target Valuation Model accompanying this text, the components of working capital are calculated according to whether they represent a source or use of cash. Consequently, increasing annual accounts receivable would be shown as negative representing a use of funds as the firm's revenues grow.

ratio of enterprise to earnings before interest, taxes, depreciation, and amortization (EBITDA) as a valuation multiple, the analyst needs to add back leasing and pension expenses to EBITDA in order to compare the ratio for a firm with substantial amounts of such long-term obligations with other companies.

Chapter 7 discusses alternative ways of estimating the market value of a firm's long-term debt. Commonly used methods for modeling purposes by practitioners involve either valuing the book value of a firm's long-term debt at its current market value if it is publicly traded

TABLE 9.7 Target Firm Valuation

	2014	2015	2016	2017	2018
Free cash flow					
EBIT	509.6	608.7	716.8	834.6	962.9
Taxes	(203.9)	(243.5)	(286.7)	(333.8)	(385.1)
Depreciation and amortization	436.2	446.4	457.4	469.2	481.9
Gross Capex	(17.0)	(18.3)	(19.7)	(21.1)	(22.7)
Δ NWC	180.4	(55.0)	(59.2)	(63.6)	(68.4)
Free cash flow	905.3	738.3	808.6	885.2	968.5 ^a
Period ^b	1.00	1.00	1.00	1.00	1.00
Midyear convention ^c	0.50	1.50	2.50	3.50	4.50
Discount factor ^d	0.96	0.88	0.80	0.73	0.67
PV FCFF (\$)	866.0	646.3	647.7	648.8	649.5
PV (years 1–5)	3,458.3				
PV (terminal value)	10,453.5				
Enterprise value	13,911.8				
Plus cash	276.3				
Less debt and minimum interest	2,061.7				
Equity value	12,126.4				
Equity value per share (\$)	69.49				
Assumptions					
WACC (%)	9.3				
Target D/E (%)	75.0				
Target D/TC (%)	42.9				
Marginal tax rate (%)	40.0				
k_e (%)	14.0				
R_f (%)	2.5				
$R_f - R_m$ (%)	5.5				
β	2.09				
Terminal value					
FCF 2020	968.5				
Terminal growth rate (%)	3.0				
Terminal period WACC (%)	9.4				

^aFree cash flow in the last year of the planning period is recalculated at the marginal tax rate of 40% rather than the lower effective tax rate used during the planning period, and then used to estimate the terminal value using the constant growth model.

^bPeriod reflects months of actual data available for first forecast year, that is, if 9 months of actual data is available, period one equals 0.25; if one-half year of data is available, period one is 0.5; if 3 months of data is available, period one equals 0.75. If the data available is less than a full year, it must be annualized.

^cDCF valuation assumes that cash flows occur in a lump sum at the end of the year. What is more likely is that they occur throughout the year. With the midyear convention, cash flows are assumed to occur in the middle of the year. Consequently, those cash flows are discounted half a year instead of a whole year.

^dA factor that when multiplied by the period cash flow converts it into a present value.

D/E, Debt-to-equity ratio; DCF, discounted cash flow; EBIT, earnings before interest and taxes; FCFE, free cash flow to the firm; NWC, net working capital; PV, present value; WACC, weighted average cost of capital.

or book value if it is not. Alternatively, the market value of similar debt at a firm exhibiting a comparable credit rating can be used to value a target firm's debt. For example, assume the book value of Target's debt with 10 years remaining to maturity is \$478 million and its current market value or the market value of comparable publicly traded debt is 1.024 per \$1000 of face value. The market value of the firm's debt can be estimated as \$489.5 million (i.e., $1.024 \times \$478$).

The market value of noncontrolling interests can be estimated by multiplying the book value of such interests by the price-to-earnings ratio for comparable firms. That is, if the book value of the noncontrolling interests in the firm is \$25 million and the price-to-earnings ratio for comparable firms is 15, the market value of noncontrolling interests would be \$375 million (i.e., $15 \times \$25$ million).

Calculating the Weighted Average Cost of Capital

Converting projected pro forma cash flows to a PV requires the estimation of the WACC during the planning period and the terminal period. The data, with the exception of borrowing costs, used in estimating Eqs. (9.1) and (9.2) comes from Table 9.7. From Chapter 7, the WACC assumed during the planning period can be expressed as follows:

$$\text{WACC} = \frac{D}{D+E} \times (1-T) \times i + \frac{E}{D+E} \times k_e \quad (9.1)$$

where D , debt; E , equity; T , corporate marginal tax rate (i.e., 40%); R_f , risk-free rate approximated by the 10-year US treasury bond rate = 2.5%; R_m , return on a broad based stock index; $R_m - R_f$, equity risk premium = 5.5%; β_l , levered β (from finance.yahoo.com) = 2.09; i , weighted average cost of borrowing¹² = 5%; k_e , cost of equity (estimated using the Capital Asset Pricing Model) = $R_f + \beta_l(R_m - R_f) = 2.5 + 2.09(5.5) = 14\%$; D/E , desired future (or target) debt-to-equity ratio set by the firm = 75%; $D/(D + E)$, target debt-to-total capital ratio = $(D/E)/(1 + D/E) = 0.75/(1 + 0.75) = 0.429$; and $E/(D + E) = 1 - [D/(D + E)] = 1 - 0.429 = 0.571$.

The WACC is estimated as follows:

$$\text{WACC} = 0.429 \times [(1 - 0.4) \times 5] + 0.571 \times 14 = 1.29 + 7.99 = 9.28\%$$

Calculating the Terminal Value

The terminal value represents the PV of all cash flows beyond the planning period (i.e., 2014–18). Recall from Chapter 7 that the WACC used during the terminal period, WACC_{TV} , is assumed to equal the current industry average WACC. The terminal value, P_{TV} , is calculated using the constant growth valuation method (see Chapter 7)¹³:

$$P_{\text{TV}} = \left\{ \frac{\text{FCFF}_n \times (1 + g_{\text{TV}})}{(\text{WACC}_{\text{TV}} - g_{\text{TV}})} \right\} \times \text{discount factor} \quad (9.2)$$

¹²The weighted average borrowing cost is displayed on the Target Assumptions Worksheet but not shown on Table 9.2 due to space limitations. See Target Assumptions Worksheet in the model on the companion site to this text.

¹³Recall that the discount factor equals $[1/(1 + \text{WACC})^N]$, where N is the number of time periods.

TABLE 9.8 Calculating the Discount Factor Using the Midyear Convention^a

	2014	2015	2016	2017	2018
Discount factor	$1/(1 + 0.093)^{1-0.5}$ $=1/(1 + 0.093)^{0.5}$ $=0.96$	$1/(1 + 0.093)^{2-0.5}$ $=1/(1 + 0.093)^{1.5}$ $=0.88$	$1/(1 + 0.093)^{3-0.5}$ $=1/(1 + 0.093)^{2.5}$ $=0.80$	$1/(1 + 0.093)^{4-0.5}$ $=1/(1 + 0.093)^{3.5}$ $=0.73$	$1/(1 + 0.093)^{5-0.5}$ $=1/(1 + 0.093)^{4.5}$ $=0.67$

^aUsing the midyear convention will result in a larger discounted cash flow valuation than using full year discounting, because it results in a larger discount factor. For example, assume cash flow in 2014 is \$100 million; using the midyear convention, its present value would be \$95 million (i.e., $[1/(1 + 0.098)^{0.5} = 0.95] \times \$100$ million), but using full year discounting, it would be \$91 million (i.e., $[1/(1 + 0.098)^1 = 0.911] \times \$100$ million).

where $FCFF_{2018}$, free cash flow to the firm (FCFF) in year 2018 (i.e., the last year of the planning period), must be recalculated if the marginal and effective tax rates differ)¹⁴ = \$968.5; $WACC_{TV}$, cost of capital assumed beyond year n (2018) and is assumed to equal the current industry average WACC of 9.4%; and g_{TV} , assumed growth rate during the terminal period = 3%.

Discount factor uses the midyear convention = 0.66 (Table 9.8).

The PV of the terminal value is calculated as follows:

$$P_{TV} = \frac{\$968.5 \times (1 + 0.03)}{0.094 - 0.03} \times 0.66 = \frac{\$997.56}{0.064} \times 0.67 = \$10.4 \text{ billion}$$

MODEL BALANCING MECHANISM

Financial models are said to be in balance when total assets equal total liabilities plus shareholders' equity on the balance sheet. This may be done manually by inserting a value equal to the difference between the two sides of the balance sheet or automatically by building in a mechanism for forcing this equality. The latter has the enormous advantage of allowing the user of the model to simulate multiple scenarios over many future years without having to stop the forecast each year to manually force the balance sheet to balance.

The mechanism in the model illustrated in this chapter for forcing automatic balance is the use of a revolving loan facility or line of credit. Such arrangements allow a firm to borrow up to a specific amount. To maintain the ability to borrow to meet unanticipated needs, firms have an incentive to pay off the loan as quickly as possible. Once the maximum has been reached, the firm can no longer borrow. If total assets exceed total liabilities plus equity, the model borrows (the "revolver" shows a positive balance). If total liabilities plus shareholders' equity exceed total assets, the model first pays off any outstanding "revolver" balances and uses the remaining excess cash flow to add to cash and short-term investments on the balance sheet.

¹⁴The effective tax rate is the tax rate actually paid by the firm during the planning period. In this illustration, free cash flow in 2018 used in the calculation of the terminal value is the same as the last year of the 5-year planning period because the effective and marginal tax rates, at 40%, are the same.

How does the model determine the firm's ending cash balances? Ending cash balances will always equal minimum cash if available cash is less than the loan balance. Why? Because only that portion of the loan balance greater than the minimum balance will be used to repay the loan. Conversely, if available cash exceeds the loan balance, the ending cash balance equals the difference between available cash and the loan payment, since the total loan balance will not be repaid unless there is sufficient cash available to cover the minimum balance. See Chapter 14 for a numerical example illustrating how the model automatically balances when input values are changed.

DATA SOURCES

Financial models often require substantial amounts of historical data inputs to operate. The process of collecting the data can be laborious and time consuming. For publicly traded firms, most of the financial statement data is available in the firm's annual 10K submitted to the US SEC. The 10K contains detailed income, balance sheet, and cash flow statements as well as numerous footnotes explaining these financial statements. The annual 10K provides the current year and 2 historical years. Firms often make 10Ks available for many years. Consequently, by downloading past 10Ks, the analyst can create a historical time series for analysis. However, in doing so, the analyst should check for revisions to the data to ensure that the historical information is recorded properly. Morningstar is also a good source of selected historical data on public firms.

While the SEC mandates that all publicly traded firms submit certain types of information, it does not require that each firm's 10K be formatted in precisely the same way due to the differing circumstances for each firm. For example, one firm may have extraordinary or nonrecurring events that need to be displayed, while others do not. Consequently, financial information may be displayed differently from one firm to the next depending on their circumstances. Explanations of specific line item detail are available in the Notes to the Consolidated Financial Statements. Additional data required by financial models such as industry credit ratios and firm β often are available for free through various sources of publicly available information accessible via the internet. What follows is a discussion of the sources of data for each financial statement and for other data inputs required by the model.

Income Statement

Typically, sales, cost of sales, gross profit, SG&A, other operating expenses, extraordinary (nonrecurring) expenses, and the provision for taxes are shown in a firm's annual 10K. However, depreciation and amortization expense often are not shown as separate line items as they are frequently included in the cost of sales or in some instances such as for retailing businesses in sales, general, and administrative expenses. These data usually are broken out separately on the firm's cash flow statement. Note that it is not necessary to separate amortization expense from depreciation if they are included as one line item. It is only important that

we add noncash expenses back to net income in the calculation of cash flow. EPS and fully diluted EPS also are commonly displayed. When we include depreciation and amortization expense as a separate line item on the model's income statement, it is important to deduct such expenses from the cost of sales or SG&A, if these line items taken from the firm's 10k include depreciation and amortization expense. Failure to do so will lead to double counting these expense items when they are input into the model.

Table 9.9 identifies the income statement information usually available (Column 1) in a firm's 10K and shows how this information corresponds to the input data requirements (Column 2) of the financial model discussed in this chapter. Column 3 indicates where data not available on the income statement may be found in the "Notes to the Consolidated Financial Statements." Brackets in Column 1 indicate that multiple line items of the firm's 10k are included in a single line item in the M&A Model. Similarly, brackets in Column 2 indicate that multiple line items in the model are included in a single line item on the firm's 10k financial statements and that the detail is found in the Notes to the Financial Statements.

Balance Sheet

Current asset items such as cash and cash equivalents, short-term investments, accounts receivable, inventories, the current portion of deferred tax assets, and other current assets are readily available on 10Ks. Long-term asset categories provided on 10Ks often include net property, plant, and equipment (i.e., gross property, plant, and equipment less accumulated depreciation), other assets, and goodwill (Table 9.10).

Current liabilities usually displayed on 10Ks include short-term obligations and current maturities of long-term obligations (i.e., the current portion of long-term debt), accounts payable, accrued payroll and employee benefits, deferred revenue, and other accrued expenses. Long-term liabilities contain deferred income taxes (i.e., taxes owed but not paid because of timing differences), other long-term liabilities, and long-term obligations (i.e., long-term debt).

The components of shareholders' equity shown in the 10K balance sheet include preferred stock (par value and the number of shares authorized and the number issued) and common stock (par value and the number of such shares authorized and the number issued). Authorized shares have been approved by shareholders and the SEC but have not yet been issued by the firm. Capital in excess of par value (also called "additional paid in capital") shows the value of the issued shares when issued in excess of their par value when authorized. The remaining shareholders' equity items include retained earnings (i.e., accumulated historical net income after preferred dividends), treasury stock, and accumulated "other comprehensive items" (e.g., corrections made due to prior accounting errors and restatements).

The Note on Debt and Long-term Obligations describes the types of debt outstanding, maturity dates, and associated interest rates, and usually gives a 5-year projection of a total annual debt repayment schedule. Principal repayments beyond the fifth year are shown as an aggregate figure. Interest expense and principal usually can be estimated by using a weighted average of each type of debt (i.e., senior, subordinate, etc.) and applying the applicable

TABLE 9.9 Historical Income Statement

Column 1: typical 10K income statement	Column 2: financial model income statement input requirements	Column 3: notes to financial statements
Revenue/sales (consolidated and by major business segment)	Sales	See note on business segment data
Cost of product/service sales (consolidated and by major business segment). May include depreciation and amortization expense	Cost of goods sold	See note on business segment data
SG&A (consolidated and by major business segment)	SG&A	See note on business segment data
Research and development expenses Restructuring and other costs, net	Other operating expenses	
	Depreciation	See 10K's cash flow statement
	Amortization	See 10K's cash flow statement
Operating income	EBIT	
Total other expense, net	Unusual (gain) loss (Income) from affiliates Other expense (income) Interest (income) Interest expense	See note on other expense, net for detail on interest income and interest expense
Unusual (gain) loss		
Income from affiliates		
Interest (income)		
Interest expense		
Income from continuing operations before income taxes	Earnings before taxes	
Taxes	Taxes	
Net income (loss) before extraordinary items	Net income before extraordinary items	
Loss (income) from discontinued operations after tax	Extraordinary items	
Loss (gain) from disposal of discontinued operations after tax		
Net income after extraordinary items	Net income after extraordinary items	

EBIT, Earnings before interest and taxes; SG&A, selling, general, and administrative expenses.

amortization rate (i.e., annual principal repayment) for the largest amount of debt outstanding in each category.

Cash Flow Statement

The firm's cash flow statement ([Table 9.11](#)) typically shows the key cash inflows and outflows from operating, investing, and financing activities. This financial statement determines ending cash balances for the firm that is also reported on the firm's balance sheet.

TABLE 9.10 Historical Balance Sheet

Column 1: typical 10k balance sheet	Column 2: financial model balance sheet input requirements	Column 3: notes to financial statements
Assets		
Current assets		
Cash and cash equivalents	Cash (includes short-term investments)	
Short-term investments		
Accounts receivable (net of reserves)	Accounts receivable (net of reserves)	
Inventory	Inventory	
Deferred tax assets (current portion)	Other	See note on income taxes for details
Other current assets		
Long-term assets		
Net property, plant, and equipment	Property, plant, and equipment Less accumulated depreciation = net property, plant, and equipment	See note on property, plant, and equipment for accumulated depreciation
Other assets	Intangible assets Deferred taxes Other	
Goodwill	Goodwill	
Liabilities and shareholders' equity		
Current liabilities		
Accounts payable	Accounts payable	
Short-term obligations	Other	
Accrued payroll and employee benefits		
Deferred revenue		
Other accrued expenses		
Long-term liabilities		
Deferred income taxes	Deferred taxes (long-term portion)	See note on income taxes for details
Other long-term liabilities		See note on pensions
Long-term obligations	Revolving credit facility Senior debt Subordinated debt	
Shareholders' equity		
Preferred stock, par value, shares authorized and issued	Preferred stock	See consolidated statement of shareholders' equity
Common stock, par value, shares authorized and issued	Common stock	
Retained earnings	Retained earnings	

TABLE 9.10 Historical Balance Sheet (cont.)

Column 1: typical 10k balance sheet	Column 2: financial model balance sheet input requirements	Column 3: notes to financial statements
Treasury stock (at cost)	Treasury stock	
Capital in excess of par	Other adjustments	
Accumulated other comprehensive items		
Noncontrolling interest (if any)		Noncontrolling interests
Total shareholders' equity	Total stockholders' equity	
Liabilities and shareholders' equity	Liabilities and shareholders' equity	

Risk Measures: β and Credit Ratios

Historical β for public firms and industry credit ratios are available from a number of sources: Yahoo Finance, Google Finance, Morningstar, Value Line Research Center, Standard & Poor's Net Advantage, One Source, and Thomson One Banker. Go to the Yahoo.com/finance website and search in the "look up" block for the company in which you are interested. The firm's β is located below the day's closing price in the table of daily trading activity. Alternatively, go to google.com/finance and search for your company; the firm's β will be at the top of the page among the daily trading data.

TABLE 9.11 Historical Cash Flow Statement

Column 1: typical 10k cash flow statement	Column 2: financial model cash flow statement input requirements	Column 3: notes to financial statements
OPERATING ACTIVITIES		
Net income	Net income	
Loss (income) from discontinued operations		
Loss (gain) on disposal of discontinued operations		
Income from continuing operations		
Depreciation and amortization	Depreciation and amortization	
Change in deferred income taxes	Deferred taxes (current portion)	See note on income taxes
Changes in assets and liabilities		
Accounts receivable	Accounts receivable	
Inventories	Inventory	
Other assets		
Accounts payable	Accounts payable	
Other liabilities	Other liabilities	
Net cash from operating activities	Cash flow from operating activities	

(Continued)

TABLE 9.11 Historical Cash Flow Statement (*cont.*)

Column 1: typical 10k cash flow statement	Column 2: financial model cash flow statement input requirements	Column 3: notes to financial statements
INVESTING ACTIVITIES		
Acquisitions, net of cash acquired	Acquisition	See note on acquisitions
Purchases of property, plant, and equipment	Capital expenditures	
Proceeds from sale of property, plant, and equipment	Sale of assets	
Proceeds from sale of investments		
Proceeds from sale of businesses		
Other investing activities, net		
Net cash from investing activities	Cash flow from investing activities	
FINANCING ACTIVITIES		
Net proceeds from issuance of long-term debt	Net change in debt	
Redemptions and repayments of long-term debt		
Purchases of company common stock	Net change in equity	
Net proceeds from issuance of common stock		
Dividends paid	Dividends paid	
Other financing activities, net		
Net cash from financing activities	Cash flow from financing activities	
(Decrease) increase in cash and cash equivalents	Net change in cash	
Cash and cash equivalents at beginning of period	Beginning cash balance	
Cash and cash equivalents at end of period	Ending cash balance	

MANAGING THE MODEL

Following certain protocols will help simplify the process of applying the model to analyze different situations. Save the model once historical data and forecast assumptions have been entered into the model. Make additional changes to copies of the saved model. If errors arise and cannot be resolved, it is helpful to return to an earlier version of the model. This obviates the need to reload historical and forecast information. Make sure the model's balance sheet "balances" as denoted by the red cells at the bottom of the balance sheet worksheet equal to zero (i.e., total assets equal total liabilities plus shareholders' equity). Do not be concerned about "fine-tuning" the model's forecast until the model "balances." Adjusting the model's forecast should start with a focus on making small changes to model value drivers one at a

time. To test the reasonableness of the model's output, check key output variables such as net PV and the trend in EPS, outstanding debt, and cash balance. Avoid making too many changes to the model before saving its output.

ADDRESSING VALUATION ISSUES IN A NEAR-ZERO INTEREST RATE ENVIRONMENT

Chapter 7 discussed the challenges of valuation in a sustained artificially low interest rate environment. While adjustments can be made in an attempt to offset potential underestimation in the calculation of the cost of capital and the resulting overvaluation of a target firm, they tend to be highly subjective and therefore problematic. Financial models can be used to address this problem by providing a range of valuation estimates enabling senior management to have a reasonable understanding of potential outcomes.

A model can be used to define alternative scenarios that can be as basic as three outcomes: optimistic, pessimistic, and most likely. This approach has the advantage of simplicity and ease of understanding. Alternatively, more sophisticated statistical methods can be used to estimate the most probable outcome. One method is Monte Carlo simulation.

The primary advantage of a Monte Carlo simulation (which involves the random sampling of model inputs to simulate a range of outcomes and their likelihood of occurring) is its ability to allow the user to vary assumptions such as the cost of capital. This is also its foremost disadvantage since the outcomes are only as good as the quality of the inputs. Another major disadvantage is that Monte Carlo simulations tend to underestimate the likelihood of extreme events (so-called "black swan events") such as the 2008–09 financial market crisis.

SOME THINGS TO REMEMBER

Financial modeling helps the analyst understand the determinants of value creation, provides a useful means of assessing alternative options and risks, and identifies how firm value is affected by different economic events. The estimation of firm value involves a three-step procedure: (1) analyze the target firm's historical statements to determine the primary determinants of cash flow; (2) project 3–5 years of annual pro forma financial statements (i.e., the planning period); and (3) estimate the PV of the projected pro forma cash flows, including the terminal value.

DISCUSSION QUESTIONS

- 9.1 What is financial modeling? How is it helpful in analyzing a firm's financial statements?
- 9.2 How is financial modeling applied to M&As?
- 9.3 What are the differences between GAAP-based and Pro Forma financial statements?
- 9.4 What are value drivers and why are they important?
- 9.5 What does it mean to normalize historical financial data and why is this an important

part of the financial model building process?

- 9.6 What are common-size financial statements and how might they impact the financial model building process?
- 9.7 A firm's financial statements are tightly linked such that an increase in a key variable on one statement will impact the other financial statements. Assuming a firm's gross margin (i.e., sales less cost of sales) is positive and constant, describe how an increase in revenue will impact net income and in turn the other financial statements. Assume the firm does not pay preferred dividends.
- 9.8 What is the appropriate number of years to project a firm's financial statement?
- 9.9 What is the difference between a firm's enterprise and equity values?
- 9.10 Financial models normally are said to be in balance when total assets equal total liabilities plus shareholders' equity on the balance sheet. How are financial models often forced to balance automatically?

Answers to these Chapter Discussion Questions are available in the Online Instructor's Manual for instructors using this book (<https://textbooks.elsevier.com/web/Manuals.aspx?isbn=9780128016091>).

PRACTICE PROBLEMS AND ANSWERS

9.11 The purpose of this practice exercise is to illustrate how a change in an input cell impacts variables on other financial statements. Using the Excel spreadsheet model in the file entitled Target Firm Valuation Model on the companion website accompanying this book (see the section "Chapter Overview" for the website address), note the values for 2018 of Target's net income (Target IS Worksheet), cash balance and shareholders' equity (Target's BS Worksheet), and enterprise value and equity value (Target Valuation Worksheet).

Change the Target's revenue growth rate assumption by 1 percentage point in 2014. On the Target's Assumptions Worksheet, increase the growth rate from 7.5 to 8.5% in the yellow input cell on the Sales Growth line for the year 2014. What are the new values in 2018 for net income, cash balance, shareholders' equity, enterprise value, and equity value following the increase in the growth rate assumption in the base case by 1 percentage point? Explain why these variables increased? (Hint: See Fig. 9.1.)

Click the undo command or close the model but do not save the output to restore the base case model results. The numerical solution is given in Table 9.12.

9.12 The purpose of this practice exercise is to underscore how small changes in terminal value assumptions result in disproportionately large changes in firm value. Using the Excel spreadsheet model in the file folder entitled Target Valuation Model found on the companion website to this book, locate the PV of the Target's enterprise and equity values on the Valuation Worksheet and write them down. Increase the terminal value growth rate assumption by 1 percentage point and reduce the discount rate by 1 percentage point. How does this impact the firm's enterprise and equity value? Explain how this might happen. (Hint: Consider the definition of the constant growth valuation model.) Click the undo command to eliminate changes to the base case model or close model but do not save the results.

Solutions to these Practice Problems are available in the Online Instructor's Manual for instructors using this book (<https://textbooks.elsevier.com/web/Manuals.aspx?isbn=9780128016091>).

TABLE 9.12 Impact of an Increase in Revenue Growth Rate Assumption on Selected Financial Variables (\$ Million)

Variable name	2018 (prior to assumption change)	2018 (after assumption change)
Net income	556.4	6,288.0
Cash balance	3,399.7	3,630.9
Shareholders' equity	6,636.4	6,833.2
Enterprise value	13,911.8	14,771.4
Equity value	12,126.4	12,986.0

END OF CHAPTER CASE STUDY: LIFE TECHNOLOGIES UNDERTAKES A STRATEGIC REVIEW

Case Study Objectives: To Illustrate How Financial Models

- Can be used to estimate firm value
- Allow simulation of alternative scenarios to facilitate management decision making
- Help identify the key drivers of firm value
- Focus attention on key assumptions underlying financial projections and valuation
- Facilitate executive decision making

Background

Life Technologies (Life Tech), a leading global life sciences firm, had rewarded its shareholders by almost doubling the firm's share price from its 2009 low of \$26 per share to \$51 by mid-2012. Despite this stellar performance, Gregory T. Lucier, Life Tech's Chairman of the Board and Chief Executive Officer since 2008, felt uneasy about the firm's future financial performance.

The life sciences industry is facing major challenges. Foremost is the increasing pressure on profit margins stemming from the escalating cost of health care due to the growth in chronic diseases, an aging population, and new medical therapies. Efforts to control healthcare costs are resulting in a reduction in the reimbursement rate for healthcare providers such as hospitals, testing laboratories, and physicians. Furthermore, pressure to reduce runaway government deficits is reducing the funding of scientific research.

These developments are driving consolidation among Life Tech's customers. Such consolidation reduces the number of potential new accounts and enables customers to increase their negotiating leverage with vendors such as Life Tech. There is also a growing trend for customers to reduce the total number of vendors they use. Customer consolidation is driving consolidation among life science companies in an effort to realize economies of scale, scope, and purchasing. Underway for several years, consolidation among Life Tech's competitors is expected to continue as companies attempt to strengthen or hold their market positions. Increased concentration within the life

sciences industry is expected to result in stronger competitors that are better able to compete as sole-source vendors for customers.

The combination of customer and competitor consolidation could put significant downward pressure on Life Tech's profit margins. Mr. Lucier and the Life Tech board faced a dilemma: whether to continue to pursue the firm's strategy of growing market share through customer-focused innovation or to consider alternative ways to maximize shareholder value such as selling the firm or aggressively growing the firm.

Founded in 1987, Life Tech had established itself as a leading innovator of life science products and services that improve the effectiveness and efficiency of professionals in the pharmaceutical, biotechnology, agricultural, clinical, government, and academic scientific communities. The company's products also are used in forensics, food and water safety, animal health testing, and other industrial applications. Life Tech produces lab analytical and testing instruments; robotic systems to automate labor intensive research, research consumables including glassware, plastic ware, vials, tubes, and syringes; equipment from centrifuges to microscopes; lab furniture; and lab information management and testing systems.

On January 18, 2013, Life Tech announced that it had hired several investment banks Deutsche Bank and Moelis & Co. to explore strategic options for the firm as part of the board's annual strategic review. Mr. Lucier offered additional details in a subsequent earnings-related telephone conference call to investors and Wall Street analysts saying that the review has begun in the summer of 2012 and that "all ideas were on the table." Sensing the possibility of a sale, investors drove the share price up by 10% to \$58 by the end of February.

Mr. Lucier and the board's decision would be based on a continued analysis of current and expected industry trends and the firm's overall competitive position. Mr. Lucier directed his accounting and finance department to assess the impact of the results of this analysis on the value of the firm under different sets of assumptions. What follows is a discussion of these considerations.

The Life Sciences Industry

The life sciences comprise fields of science involving the study of living organisms such as plants, animals, and humans. While biology remains the centerpiece of the life sciences, technological advances in molecular biology and biotechnology have led to a burgeoning of specializations and new interdisciplinary fields. Because of the extremely high R&D costs coupled with little revenue in the initial years of development, many life sciences firms partner with larger firms to complete product development. However, the industry tends to be dominated by handful of big companies. [Table 9.13](#) lists the major market segments of the industry.

In general, the ratio of R&D spending to revenue drives new products in this industry. The key to successful companies is achieving a proper balance between R&D spending and expense control. Because of the long R&D phase, during which there is very little revenue being generated, projecting earnings requires looking at a firm's products both under development and in production. For firms already selling products, looking at sales trends makes projecting revenue growth rates easier. Firm value in this industry is largely driven by their intellectual property and the ability to derive commercial products from their proprietary knowledge to generate future profits and cash flows. Because life sciences firms require substantial amounts of capital, they are prone to maintaining substantial amounts of cash on hand. [Table 9.14](#) provides an overview of the factors contributing to the intensity of industry competition.

TABLE 9.13 Major Life Science Market Segments

Healthcare: Drugs, vaccines, gene therapy, and tissue replacements

Agriculture: Improved foods and food production, pest control, and plant and animal disease control

Research: Understanding the human genome and better disease detection

Industry: Oil and mineral recovery, environmental protection, waste reduction; improved detergents, chemicals, stronger textiles

TABLE 9.14 Assessing the Intensity of Life Science Industry Competition

Factor	Implications
Threat of new entrants	Limited by high barriers to entry • Substantial funding requirements are needed to finance R&D budgets • Specialized knowledge • Existing patents • Limited access to distribution channels
Power of suppliers	Limited by • Firms not generally reliant on a single supplier • Forward integration by suppliers unlikely because of the highly specialized nature of computers, testing equipment, and materials
Power of buyers	Substantial for firms • Selling to governments, hospitals, and universities • Many firms small relative to their customers
Availability of substitutes	Depends on time horizon • Limited by existing patents • Generics emerge as patent protection expires
Competitive rivalry	Intense • Industry concentration high. While hundreds of firms compete in this industry, about 1% account for most of the revenue • Industry growth to slow. While the degree of rivalry varies by segment, industry size and growth prospects clouded by potential cutbacks in government funding of research and healthcare reimbursement rates • Market share gains important to realize economies of scale, scope, and purchasing

Conclusions:

- Downward pressure on selling prices
- Decelerating future unit sales growth rate during 2014–18 planning period
- Moderate increases in human resource costs due to modest inflation outlook and sluggish job market



Downward pressure on gross operating margins for life science firms

R&D, Research and development.

For firms to succeed in this industry they must be able to innovate cost effectively. Furthermore, to minimize product distribution costs and to gain access to needed R&D capabilities, firms need to be able to work collaboratively with product distributors, universities, and government agencies. Finally, because of the long lead time in developing new products and services, firms must have continuing access to financing. These three so-called success factors ultimately drive future cash flow and firm value in this industry.

Life Technology's Business Overview

Life Tech's business is described in terms of its targeted markets; products, services, and after-sale support; R&D activities; license agreements; and suppliers. These factors (in italics) are discussed next.

Life Tech's *targeted markets* include life sciences, applied sciences, and medical sciences. Customers within the life sciences segment consist of laboratories generally associated with universities, medical research centers, government institutions, and other research institutions as well as biotechnology, pharmaceutical, and chemical companies. Researchers at these institutions use Life Tech products to conduct research and clinical trials, and to improve the efficacy of drugs. The applied sciences segment serves a diverse range of industries, with a focus on the areas of forensic analysis, quality and safety testing, animal health testing, and the commercial production of genetically engineered products. The medical services segment includes customers in clinical labs and medical institutions who use commercial technology for clinical and diagnostic purposes, and medical researchers who use Life Tech's research-related technologies to search for new discoveries. Approximately 20% of the Life Tech's revenues are derived from federal, university, and/or research institutions funded either entirely or partially by the US government.

Life Tech's *services and support* activities provide limited warranties on equipment it sells for periods of up to 2 years from the date of the sale. The firm also offers service contracts to customers that are generally 1–5 years in duration after the original warranty period. Life Tech provides both repair services and routine maintenance services under these arrangements, and it also offers repair and maintenance services on a time and material basis to customers without service contracts.

Life Tech's continued growth in market share is heavily dependent on *R&D*. Its core R&D skills include expertise ranging from biology to chemistry to engineering. The Company invested \$341.9, 377.9, and 375.5 million in R&D for the years ended December 31, 2012, 2011, and 2010, respectively. These expenditures comprise about 10.5% of annual revenue, slightly above the industry average. As of December 31, 2012, the Company had approximately 1200 employees engaged in R&D activities in the United States, Singapore, India, Germany, Norway, France, and the Netherlands.

Life Tech's *sales and marketing* activities include a direct sales force of 3700 employees and a presence in more than 180 countries. The company also has over 1000 supply centers worldwide based in close proximity to customers' laboratories to provide convenient access and an e-commerce website to provide easy online ordering of Life Tech products.

The firm manufactures and sells some of its existing products under the terms of *license agreements* that require it to pay royalties to the licensor based on the sales of products containing the licensed materials or technology. Although the company emphasizes its own R&D, its ability to license new technology from third parties is, and will continue to be, critical to Life Tech's ability to offer competitive new products.

The firm buys materials from many *suppliers* and has contracts with many third parties for the manufacturing of various products sold under the firm's brand. The firm is not dependent on any one supplier or group of suppliers as raw materials are generally available from a number of suppliers.

Life Technologies Competitor Profile

Competitor profiling consists of subjectively ranking a firm against its primary competitors in terms of critical success factors (i.e., those factors most responsible for determining success in an industry). A common technique is to create detailed profiles on each of major competitors. These profiles give an in-depth description of the competitor's background, finances, products, markets, facilities, personnel, and strategies.

Table 9.15 provides a ranking of Life Tech compared to its primary competitors by those factors critical for success in the life sciences industry. These include the ability to innovate, collaborate with research and distribution partners, and finance ongoing R&D spending. The critical success factors are weighted by their presumed importance and sum to one. Each competitor is ranked on a scale of 1–10 with respect to each success factor. These scores are then totaled to create a competitor ranking in terms of the success factors. The primary competitors were selected from among 20 competitors each of which had a market value at year-end 2012 of \$2.4 billion or more (Table 9.16). Of those 20 firms, only those having a market value of greater than \$9 billion were included in the comparison of Life Tech and its competitors. Unlike the other firms listed as competitors, Thermo Fisher Scientific, Agilent Technologies, Quest Diagnostics, and Laboratory Corporation of America share many products and services in common with Life Technologies. Based on this subjective ranking, Life Tech has a slight competitive edge over Thermo Fisher Scientific and Agilent Technologies, its largest competitors in terms of size.

Life Technologies' Historical Financial Performance

Life Tech's historical performance in terms of its gross profit margin has been remarkably stable over time at approximately 56% (Table 9.17). This table displays simple averages over different time periods as well as that estimated using regression analysis. The historical resiliency of the firm's gross margin caused Mr. Lucier to use the historical gross margin in valuing the firm, despite anticipated future pricing pressures. The firm's revenue growth rate has averaged a 6.5% compound

TABLE 9.15 Life Technologies and Primary Competitors Ranked by Critical Success Factors

Key industry success factors	Weight	Life Technologies	Thermo Fisher Scientific	Agilent Technologies	Quest Diagnostics	Laboratory Corporation of America
1—ability to innovate	0.4	8	8	7	4	3
2—effective collaboration	0.3	8	7	6	6	5
3—access to capital	0.3	8	7	7	4	2
Total	1.0	24	22	20	14	10

TABLE 9.16 Life Technologies Versus Peers: Financial Metrics

	Market cap (\$ million)	Net income (\$ million)	P/S	P/B	P/E	Dividend yield (%)	5-Year rev CAGR (%)	Net operating margin (%)	Interest coverage	D/E
Thermo Fisher Scientific Inc.	34,749	1,307	2.7	2.1	26.5	0.6	5.1	11.4	6.3	0.4
Agilent Technologies Inc.	16,556	938	2.6	3.5	18.7	0.9	4.8	13.3	11.3	0.6
Life Technologies Corp.	13.064	476	3.5	2.6	27.9	—	24.3	17.1	5.3	0.4
Quest Diagnostics Inc.	9,263	762	1.4	2.4	11.8	1.9	1.9	16.9	7.5	0.8
Laboratory Corporation of America Holdings	9,118	567	1.7	3.6	17.2	—	6.9	18.7	11.0	1.0
Waters Corporation	8,381	484	4.6	5.2	17.7	—	4.6	27.4	18.4	0.7
Mettler-Toledo International, Inc.	7,336	298	3.3	9.0	25.6	—	5.5	15.1	17.8	0.5
Quintiles Transnational Holdings Inc.	5,679	188	1.1	−8.0	29.1	—	—	8.2	3.0	—
Idexx Laboratories	5,633	187	4.4	10.5	31.6	—	7.0	18.5	68.7	0.0
Qiagen NV	5,298	47	4.2	2.0	114.9	—	14.1	16.3	7.2	0.3
Covance, Inc.	4,809	167	1.9	3.2	28.8	—	7.7	8.1	20.0	—
Lonza Group AG	4,693	139	1.2	2.0	31.0	2.3	6.5	9.7	3.4	1.2
PerkinElmer Inc.	4,092	84	1.9	2.1	49.8	0.8	3.4	7.9	2.1	0.5
Eurofins Scientific Group S.A.	3,556	69	2.5	7.3	40.5	—	16.0	7.2	5.6	1.2
Cepheid	2,767	−2	7.2	10.1	—	—	20.7	−6.4	−144.1	0.0
Alere Inc.	2,721	−130	0.9	1.8	—	—	27.4	3.9	0.5	2.6
Swedish Orphan Biovitrum AB	2,670	−211	8.7	3.6	—	—	8.9	−2.8	−0.7	0.2
Icon PLC	2,484	80	1.5	3.1	31.2	—	19.0	7.3	35.5	—
Industry Average	7,357	277	2.3	3.2	26.9	0.4	8.9	11.3	25.4	0.7

D/E, Debt-to-equity ratio.

TABLE 9.17 Historical Gross Profit Margin

Average 1998–2012 (%)	56.46
Average 2003–12 (%)	56.38
Average 2008–12 (%)	56.83
Regression 1998–2012 (%)	56.73

annual average growth rate since 2008 when the firm completed an acquisition that nearly doubled the size of the company. Mr. Lucier directed his financial staff to evaluate the impact of different revenue growth rate, cost reduction, and asset utilization assumptions, as well as increasing Life Tech's leverage, to assess the impact of alternative strategies on the firm's market value.

The firm's historical performance has exceeded major financial benchmarks. Life Tech's price to earnings, cash flow, and sales ratios exceeded both the life sciences industry average and the S&P 500 average as of the end of 2012 (Table 9.18). Table 9.19 shows Life Tech's historical data for selected financial metrics.

Conclusions

The Life Tech CEO, Greg Lucier, and the Life Tech Board were at a crossroads. The ongoing trend toward customer consolidation would require increased consolidation among life science companies. The strategic options available to the firm were clear: continue the firm's current strategy; acquire a sizeable competitor to achieve economies of scale, scope, and purchasing; or sell the firm to a competitor. The firm lacked the financial resources to acquire a major competitor. Therefore, that option was dismissed. Of the remaining two options, maintaining the current strategy or selling the firm, which would maximize shareholder value? In April 2013, the firm announced that it had agreed to merge with the industry leader in terms of revenue, Thermo Fisher Scientific, itself the product of a number of acquisitions. The merger was completed in 2014. This merger is discussed in detail in the case study at the end of Chapter 14.

Discussion Questions

Use the Microsoft Excel model entitled *Target Firm Valuation Model Case Study Final Version* on the companion site to this book to answer the following questions. Please see the section

TABLE 9.18 Life Technology Valuation Ratios (as of Year-End 2012)

	Life Technologies	Life sciences industry average	S&P 500	Life Technologies 5-year average
Price/earnings	27.9	26.9	17.1	42.7
Price/book	2.6	3.2	2.5	1.7
Price/sales	3.5	2.3	1.6	2.3
Price/cash flow	16.1	10.4	10.7	11.5

Note: Price/cash flow = 3-year average.

TABLE 9.19 Life Technologies Corp. (12 Months Ending December)

	2003– 12	2004– 12	2005– 12	2006– 12	2007– 12	2008– 12	2009– 12	2010– 12	2011– 12	2012– 12	TTM
Revenue (\$ millions)	778	1024	1198	1263	1282	1620	3280	3588	3776	3799	3842
Gross margin (%)	60.3	59.4	58.7	59.5	55.9	58.1	55.6	58.7	55.9	56.2	57.9
Operating income (\$ millions)	89	136	127	–158	178	167	386	612	648	665	683
Operating margin (%)	11.5	13.3	10.6	–12.5	13.9	10.3	11.8	17.1	17.2	17.5	17.8
Net income (\$ millions)	60	89	132	–191	143	31	145	378	378	431	476
Earnings per share (\$)	0.59	0.82	1.17	–1.86	1.48	0.30	0.80	1.99	2.05	2.40	2.71
Shares (millions)	103	121	120	103	97	104	181	191	186	179	175
Book value per share (\$)	16.64	18.67	19.32	16.95	18.96	37.43	22.36	24.33	25.76	27.17	28.79
Operating cash flow (US\$ million)	168	253	309	235	324	366	714	739	809	778	826
Cap spending (\$ million)	–32	–39	–726	–70	–78	–82	–181	–131	–108	–136	–142
Free cash flow (\$ millions)	136	214	–417	165	245	284	534	608	701	642	684

“Chapter Overview” for the site’s internet address. The model already contains data and an estimate of Life Tech’s enterprise and equity valuations based on this data and a set of assumptions about the planning period spanning 2014–18, as well as the years beyond. In answering the following questions, assume the valuation provided in this model represents the firm’s base case and reflects what the firm could do if it continued the business strategy in effect in 2012.

1. Note the enterprise and equity valuations for Life Technology in the Excel spreadsheet model entitled *Life Tech Undertakes Strategic Review Financial Model* on the companion website accompanying this book. View this as the base case. The CEO Greg Lucier asks his chief financial officer (CFO) to determine the impact of plausible assumption changes on the firm’s valuation. The CFO asks you as a financial analyst to estimate the impact of a change in the firm’s revenue growth rate and cost of sales as a percent of sales. On the Target Assumptions Worksheet, make the following changes and note their impact on Life Tech’s enterprise and equity values on the Valuation Worksheet:
 - a. Increase the sales growth rate in 2014 by 2 percentage points.

- b. Retaining the assumption change made in (a), decrease the cost of sales as a percent of sales by 2 percentage points in 2014.

What is Life Tech's enterprise and equity value resulting from these changes? How do they compare to the base case? Briefly explain why each of these changes affects firm value. Do not undo the results of your changes to the model's base case.

2. Using the model results from question 1, the CFO believes that in addition to an increase in the sales growth rate and an improving cost position, Life Tech could employ its assets more effectively by better managing its receivables and inventory. Specifically, the CFO directs you as a financial analyst to make the following changes to days' sales in receivables and days in inventory. On the Target Assumptions Worksheet, make the following changes and note their impact on Life Tech's enterprise and equity values on the Valuation Worksheet:

- a. Reduce receivables days by 10 days starting in 2014.
b. Reduce inventory days by 10 days starting in 2014.

What is Life Tech's enterprise and equity value resulting from these changes? How do they compare to the results in question 1? Briefly explain why each of these changes affects firm value. Do not undo the changes to the model you have made.

3. Given the results of the model from questions 1 and 2, assume Mr. Lucier and the Life Tech board raised their target debt to equity ratio from 30 to 60% to reduce their WACC. Such a reduction would make projects that would not have been undertaken at a higher cost of capital attractive. Recalculate the firm's WACC assuming that none of the assumptions about the cost of capital made in the base case have changed, with the exception of the levered β . (Hint: The levered β needs to be unlevered and then relevered to reflect the new debt to equity ratio.) Without undoing the assumption changes made in questions 1 and 2, use your new estimate of the firm's WACC during the planning period to calculate Life Tech's enterprise and equity values given on the Valuation Worksheet. Briefly explain why the change in the debt to equity ratio affected firm value.
4. Based on your answers to questions 1–3, what do you believe are the most important value drivers for Life Tech based on their impact on the firm's enterprise and equity values? Which are the least important? (Hint: Calculate the percentage increase in enterprise and equity values over the base case due to each assumption change.)
5. The base case valuation reflects a constant 57% gross margin throughout the planning period. Based on the information given in the case study, do you believe that this is realistic? Why? Why not? How might this assumption have biased the estimates of enterprise and equity valuation in your answers to questions 1–4? If they were biased, what would be the direction of the bias?

Solutions to these case study discussion questions are available in the Online Instructor's Manual for instructors using this book (<https://textbooks.elsevier.com/web/Manuals.aspx?isbn=9780128016091>).

**ADDITIONAL CASE STUDY RECOMMENDATIONS
(SEARCH HARVARD BUSINESS SCHOOL
PUBLISHING SITE BY NAME OF CASE:
hbsp.harvard.edu)**

Finance Simulation: M&A in Wine Country, Timothy A. Luerhman, W. Carl Kester, Revision Date: June 23, 2011, Harvard Business Publishing, Product Number: 329-HTM-ENG, hbsp.harvard.edu.

Subjects Covered: Mergers and Acquisitions, Negotiation, Valuation, Value Creation.

The Toys “R” Us LBO, David P. Stowell, Matthew Raino, Publication Date: January 1, 2007, Product Number: Kel168-PDF-ENG, Source: Kellogg School of Business, hbsp.harvard.edu.

Subjects Covered: Model Simulation, LBOs, Restructuring, Financing.

Analysis and Valuation of Privately Held Firms

OUTLINE

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Maier's Law: If the facts do not conform to the theory, they must be disposed of.

INSIDE M&A: OWNER'S DECISION TO RETIRE FORCES SALE OF BORTZ HEALTH CARE

KEY POINTS

- Succession planning and insufficient capital are leading factors forcing the sale of privately held or family-owned businesses.
- Small businesses often are unable to adapt to rapid changes in the markets in which they compete.
- For many deals to take place, sellers must feel comfortable that prospective buyers share their operating philosophy.

After being honorably discharged from the US Navy in 1946, Donald Bortz, Jr. went to work for his father in the used car business. By 1957, his father wanted a greater challenge and together they bought a nursing home in Orchard Lake, MI. This would be the first of many nursing homes to be acquired by the father and son management team. They developed a reputation of buying poorly run facilities, some in bankruptcy and some in financial distress, and rapidly improving their operations. The growing chain of nursing facilities was named Bortz Health Care with the slogan "We Care" a prominent part of the firm's culture.

Fast forward 58 years to 2015, Don Bortz found himself at a crossroads. At 89, he and his wife, Valerie, with the reluctant consent of his three adult children all employees of the firm, decided to sell the family-owned firm. When he and his father started in the business almost six decades ago, there were few regulations governing nursing home operations other than a promise to patients that they would be cared for in their old age. But times had changed and the business was having difficulty adapting. Don and his wife knew that the firm's available cash flow was insufficient to keep the business competitive and did not want to burden their children with a business that was likely to lose value over time.

Bortz was not alone in selling, as a number of long-standing nursing facility owners in Michigan have sold their businesses in recent years. While some retired, major changes in healthcare reimbursement and regulations are accelerating the change in the industry. Unlike hospitals and physicians who are partially reimbursed by the federal government, skilled nursing facilities have to bear the brunt of rising operating costs and expenditures to meet

government-mandated technology such as electronic record keeping. Small nursing home chains are having difficulty flourishing. Larger and better capitalized chains are necessary to diversify revenue sources into rehabilitation and physical therapy and their own laboratories to generate sufficient profit to remain in business. Patients are living longer and are sicker requiring more acute care. Fee for service reimbursement is ending and other reimbursement models such as risk-based managed care contracts and quality incentive withholds are being evaluated.¹ Time will tell whether these new reimbursement methods will lower patient costs while keeping the skilled nursing facilities financially viable.

Bortz Healthcare in 2014 recorded \$95 million in revenue and operated 11 nursing homes and assisted living facilities: 10 in Michigan and 1 in Florida. In 2013, the firm had sold two other nursing homes located in Michigan. The well-managed operation was highly attractive to a number of larger nursing home chains hoping to increase the scale of their operations through acquisition.

In mid-2015, the business was sold to Villa Healthcare, a Skokie, IL-based nursing home chain operating 10 long-term care and assisted living homes in Illinois, Wisconsin, and Minnesota. According to Don Bortz, Villa was selected from among 12–14 bids received over the past several years because they shared his philosophy and vision for the business. While Villa has not committed contractually to retaining Bortz's 1500 employees, they recognized the high quality of the staff and were likely to retain most of the employees. All of the Bortz children have been given 1-year retention contracts to remain with the firm after closing. This would ease transition of the facilities now under new ownership. Villa also has said that it will be spending several million dollars to update Bortz facilities and healthcare information technology, and to expand rehabilitation services.

Like many things in life timing often is everything. Don and Valarie Bortz were ready to retire and saw in Villa's owners a willingness to manage Bortz Health Care the way they would have wanted to had they retained the business. With the cost of operating skilled nursing facilities likely to continue to escalate, they knew that they could not make the investment necessary to meet the changing industry environment. They reasoned that it was better to sell now when the value of the business was likely to be highest.

CHAPTER OVERVIEW

Privately owned businesses are those whose securities are not registered with state or federal regulators and, as such, cannot be traded on public markets.² Such firms account for about 86% of all US corporations³ and more than three-fourths of US acquisitions.⁴ The lack

¹Risk-based managed care involves the payment of a fixed fee per insured to managed care providers with the provider at risk if their patient care costs exceed the reimbursement rates. Under quality incentive withholds government agencies retain a portion of reimbursement for services provided by healthcare providers until certain performance-based measures have been satisfied. These measures involve predetermined quantitative improvements in patient care and outcomes in such areas as prevention and screening and patient access.

²Privately owned corporations should not be confused with closely held corporations whose shares are sometimes traded publicly. According to the US Internal Revenue Service (IRS) more than one-half of the value of closely held corporations is held by five or fewer individuals.

³Asker et al. (2015).

⁴Capron and Shen (2007).

of “tradeable” markets makes valuing these businesses challenging. Nonetheless, the need to value such businesses may arise for a variety of reasons. Investors and small business owners may need a valuation as part of a merger or acquisition, for settling an estate, or because employees wish to exercise their stock options. Employee stock ownership plans (ESOPs) also may require periodic valuations. In other instances, shareholder disputes, court cases, divorce, or the payment of gift or estate taxes may necessitate a valuation.

Most privately owned firms are owned (or controlled) by members of the same family.⁵ Ownership tends to be more concentrated in family-owned firms with a few large shareholders than in more widely held publicly traded companies. Challenges facing family-owned firms include management succession, limited access to financing, informal management structure, poorly trained management, and a potential preference for ownership over growth.

Family-controlled acquirers generate more positive total merger and acquisition (M&A) gains than more widely held acquirers⁶ and tend to achieve greater profitability during the 3 years following closing than firms in which ownership is less concentrated.⁷ This may reflect more active monitoring by large shareholders of manager performance, a longer-term view for the firm, and a greater commitment to making value-enhancing investments than in public firms where CEOs may engage in empire building. Family-owned firm CEOs are less likely to pursue empire building or excessive pay packages as is often the case with nonfamily-owned firms because they are closely monitored by family members.⁸ However, excessive ownership concentration can hurt performance as family members dominate decision making, alienating minority shareholders and nonfamily managers who do not see advancement opportunities within the firm.⁹ Highly concentrated ownership also can enable large shareholders to exploit smaller shareholders by buying products and services at above market prices from firms owned by the large shareholders. Furthermore, family-controlled firms tend to focus acquisitions in a single industry; however, as their control increases significantly, such firms often diversify by making unrelated acquisitions. This may reflect an effort to reduce risk by making investments whose cash flows are uncorrelated with the firm’s primary business.¹⁰

This chapter discusses how the analyst deals with problems uncommon to public firms. Since issues concerning making initial contact and negotiating with the owners of private businesses were addressed in Chapter 5, this chapter focuses on the difficulties of valuing such firms and adjusting firm value for control premiums, minority discounts, and liquidity discounts. This chapter also includes a discussion of how corporate shells, created through reverse mergers, and leveraged ESOPs are used to acquire privately owned companies and how so-called private investment in public equity (PIPE) financing may be used to fund their ongoing operations. A review of this chapter is available in the file folder entitled “Student Study Guide” on the companion site to this book (<https://www.elsevier.com/books-and-journals/book-companion/9780128016091>).

⁵All family-owned firms are not small, since families control the operating policies at many large, publicly traded companies. In such firms, family influence is exercised by family members holding senior management positions or board seats and through holding supervoting stock. Examples of large publicly traded family businesses include Walmart, Ford Motor, Loew’s, and Bechtel Group, each of which has annual revenues of more than \$20 billion.

⁶Craninckx and Huyghebaert (2015).

⁷Adhikari and Sutton (2016).

⁸DeCesari et al. (2016).

⁹De Massis et al. (2013).

¹⁰DeFrancq et al. (2016).

CHALLENGES OF VALUING PRIVATELY HELD COMPANIES

The anonymity of many privately held firms, the potential for data manipulation, problems specific to small firms, and the tendency of owners of private firms to manage in a way to minimize tax liabilities create a number of significant valuation issues.

Lack of Externally Generated Information

There is generally a lack of analyses of private firms generated by sources outside of the company. Private firms provide little incentive for outside analysts to cover them because of the absence of a public market for their securities. As such, there are few forecasts of their performance other than those provided by the firm's management. Press coverage is usually quite limited, and what is available is often based on information provided by the firm's management. Even companies (e.g., Dun & Bradstreet) purporting to offer demographic and financial information on small privately held firms use largely infrequent telephone interviews with the management of such firms as their primary source of such information.

Lack of Internal Controls and Inadequate Reporting Systems

Private firms generally do not have the same level of controls and reporting systems as public firms, which are required to prepare audited financial statements and are subject to Sarbanes-Oxley. The lack of formal controls, such as systems to monitor how money is spent, invites fraud and misuse of private-firm resources. With intellectual property being a substantial portion of the value of many private firms, the lack of documentation also constitutes a key valuation issue. Often only a few individuals within the firm know how to reproduce valuable intangible assets such as software, chemical formulas, and recipes; the loss of such individuals can destroy a firm. Moreover, customer lists and the terms and conditions associated with key customer relationships also may be undocumented, creating the basis for customer disputes when a change in ownership occurs.

Firm-Specific Problems

Private firms may lack product, industry, and geographic diversification. There may be insufficient management talent to allow a firm to develop new products for its current markets or expand into new markets. Small size may restrict its influence with regulators and unions, and limit its access to distribution channels and leverage with suppliers and customers. Finally, the company may have little brand recognition.

Common Forms of Manipulating Reported Income

Revenue and operating expenses may be misstated. How this may occur is explained next.

Misstating Revenue

Revenue may be overstated or understated, depending on the owner's objectives. If the intent is tax minimization, businesses operating on a cash basis may opt to report less revenue because of the difficulty outside parties have in tracking transactions. Private-business owners

intending to sell a business may be inclined to inflate revenue if the firm is to be sold. Common examples include manufacturers, which rely on others to distribute their products. These manufacturers can inflate revenue in the current accounting period by booking as revenue products shipped to resellers without adequately adjusting for probable returns. Membership or subscription businesses, such as health clubs and magazine publishers, may inflate revenue by booking the full value of multiyear contracts in the current period rather than prorating the payment received at the beginning of the contract period over the life of the contract.¹¹

Manipulation of Operating Expenses

Owners of private businesses attempting to minimize taxes may give themselves and family members higher-than-normal salaries, benefits, and bonuses. Other examples of cost manipulation include expenses that are really other forms of compensation for the owner, his or her family, and key employees, including the rent on the owner's summer home or hunting lodge and salaries for the pilot and captain of the owner's airplane. Current or potential customers sometimes are allowed to use these assets. Owners frequently argue that these expenses are necessary to maintain customer relationships or close large contracts and are therefore legitimate business expenses. Other areas commonly abused include travel and entertainment (T&E), insurance, and excessive payments to vendors supplying services to the firm. Due diligence frequently uncovers situations in which the owner or a family member is either an investor in or an owner of the vendor supplying the products or services.

Alternatively, if the business owner's objective is to maximize the firm's selling price, salaries, benefits, and other operating costs may be understated significantly. An examination of the historical trend in the firm's profitability may reveal that profits are being manipulated. If operating profits in the year in which the business is being offered for sale unexpectedly improve, this may suggest that expenses have historically been overstated, revenues understated, or both.

PROCESS FOR VALUING PRIVATELY HELD BUSINESSES

To address the challenges presented by privately owned firms, an analyst should adopt a four-step procedure. Step 1 requires adjustment of the target firm's financial data to reflect true profitability and cash flow in the current period. Step 2 entails determining the appropriate valuation methodology. Step 3 requires estimating the proper discount rate. Finally, in the fourth step, firm value is adjusted for a control premium (if appropriate), a liquidity discount, and a minority discount (if an investor takes a less-than-controlling ownership stake in a firm).

STEP 1: ADJUSTING FINANCIAL STATEMENTS

The purpose of adjusting the income statement is to provide an accurate estimate of the current year's net or pretax income, earnings before interest and taxes (EBIT), or earnings before interest, taxes, depreciation, and amortization (EBITDA). The various measures of income should reflect all costs actually incurred in generating the level of revenue, adjusted

¹¹Such booking activity boosts current profitability because not all the costs associated with multiyear contracts, such as customer service, are incurred in the period in which the full amount of revenue is booked.

for doubtful accounts the firm booked in the current period. They also should reflect other expenditures (e.g., training and advertising) that must be incurred in the current period to sustain the anticipated growth in revenue. The importance of establishing accurate current or base-year data is evident when we consider how businesses—particularly small businesses—are often valued. If the current year's profit data are incorrect, future projections of the dollar value would be inaccurate, even if the projected growth rate is accurate. Furthermore, valuations based on relative valuation methods such as price-to-current year earnings ratios would be biased to the extent estimates of the target's current income are inaccurate.

EBITDA is a popular measure of value for privately held firms. The use of this measure facilitates the comparison of firms because it eliminates the potential distortion in earnings performance due to differences in depreciation methods and financial leverage among firms. Furthermore, this indicator is often more readily applicable in relative valuation methods than other measures of profitability, since firms are more likely to display positive EBITDA than EBIT or net income figures. Despite its convenience, the analyst needs to be mindful that EBITDA is only one component of cash flow and ignores the impact on cash flow of changes in net working capital, investing, and financing activities.

Making Informed Adjustments

While finding reliable current information on privately held firms is challenging, information is available. The first step for the analyst is to search the Internet for references to the target firm. This search should unearth a number of sources of information on the target firm. [Table 10.1](#) provides a partial list of websites containing information on private firms.

TABLE 10.1 Sources of Information on Private Firms

Source/web address	Content
RESEARCH FIRMS	
Washington Researchers: www.washingtonresearchers.com	Provide listing of sources such as local government officials, local chambers of commerce, state government regulatory bodies, credit-reporting agencies, and local citizen groups
Fuld & Company: www.fuld.com	
DATABASES	
Dun & Bradstreet: smallbusiness.dnb.com	Information on firms' payment histories and limited financial data
Hoover: www.hoovers.com	Data on 40,000 international and domestic firms, IPOs, not-for-profits, trade associations, and small businesses, and limited data on 18 million other companies
Standard & Poor's NetAdvantage: www.netadvantage.standardandpoors.com	Financial data and management and directors' bibliographies on 125,000 firms
InfoUSA: www.infousa.com	Industry benchmarking and company-specific data
Forbes: www.forbes.com/list	Provides list of top privately held firms annually
Inc.: www.inc.com/inc500	Provides list of 500 of fastest-growing firms annually

IPO, Initial public offering.

Salaries and Benefits

Before drawing any conclusions, the analyst should determine the actual work performed by all key employees and the compensation received for performing a similar job in the same industry. Comparative salary data can be obtained by employing the services of a compensation consultant familiar with the industry or simply by scanning “employee wanted” advertisements in the industry trade press and magazines and the “help wanted” pages of the local newspaper. Depending on the industry, benefits can range from 14 to 50% of an employee’s base salary. Certain employee benefits, such as Social Security and Medicare taxes, are mandated by law and, therefore, an uncontrollable cost of doing business. Other types of benefits may be more controllable and include items such as pension contributions and life insurance coverage, which are calculated as a percentage of base salary. Efforts by the buyer to trim salaries that appear to be excessive also reduce these types of benefits. However, benefit reductions often contribute to higher operating costs in the short run due to higher employee turnover, the need to retrain replacements, and the potential negative impact on the productivity of those who remain.

Travel, Meals, and Entertainment

T&E expenditures tend to be one of the first cost categories cut when a potential buyer attempts to value a target company. What may look excessive to one who is relatively unfamiliar with the industry may in fact be necessary for retaining current customers and acquiring new customers. Establishing, building, and maintaining relationships is particularly important for personal and business services companies, such as consulting and law firms. Account management may require consultative selling at the customer’s site. A complex product like software may require on-site training. Indiscriminant reduction in the T&E budget could lead to a loss of customers following a change in ownership.¹²

Auto Expenses and Personal Life Insurance

Ask if such expenses represent a key component of the overall compensation required to attract and retain key employees. This can be determined by comparing total compensation paid to employees of the target firm with compensation packages offered to employees in similar positions in the same industry in the same region. A similar review should be undertaken with respect to the composition of benefits packages.

Family Members

Similar questions need to be asked about family members on the payroll. Frequently, they perform real services and tend to be highly motivated because of their close affinity with the business. If the business has been in existence for many years, the loss of key family members who built relationships with customers over the years may result in a subsequent loss of key accounts. Moreover, family members may be those who possess proprietary knowledge.

¹²Recent changes in tax laws have made the impact of inflated meals and entertainment expenses more burdensome. For tax purposes, only one-half of entertainment and meals, in certain circumstances, are deductible expenses.

Rent or Lease Payments in Excess of Fair Market Value

Check who owns the buildings housing the business or the equipment used by the business. This is a common method of transferring company funds to the business owner, who also owns the building, in excess of their stated salary and benefits.

Professional Services Fees

Professional services could include legal, accounting, personnel, and actuarial services. Once again, check for any nonbusiness relationship between the business owner and the firm providing the service. Always consider any special circumstances that may justify unusually high fees. An industry that is subject to continuing regulation and review may incur what appear to be abnormally high legal and accounting expenses.

Depreciation Expense

Accelerated depreciation methodologies may make sense for tax purposes, but they may seriously understate current earnings. For financial reporting purposes, it may be appropriate to convert depreciation schedules from accelerated to straight-line depreciation if this results in a better matching of when expenses actually are incurred and revenue actually is received.

Reserves

Current reserves may be inadequate to reflect future events. An increase in reserves lowers taxable income, whereas a decrease in reserves raises taxable income. Collection problems may be uncovered following an analysis of accounts receivable. It may be necessary to add to reserves for doubtful accounts. Similarly, the target firm may not have adequately reserved for future obligations to employees under existing pension and healthcare plans. Reserves also may have to be increased to reflect known environmental and litigation exposures.

Accounting for Inventory

During periods of inflation, businesses frequently use the last-in, first-out (LIFO) method to account for inventories. This approach results in an increase in the cost of sales that reflects the most recent and presumably highest-cost inventory; therefore, it reduces gross profit and taxable income. The use of LIFO during inflationary periods tends to lower the value of inventory on the balance sheet as items in inventory are valued at the lower cost of production associated with earlier time periods. In contrast, the use of first-in, first-out (FIFO) accounting for inventory assumes that inventory is sold in the chronological order in which it was purchased. When prices are increasing, the FIFO method produces a higher ending inventory, a lower cost of goods sold, and higher gross profit. Although it may make sense for tax purposes to use LIFO, the buyer's objective for valuation purposes should be to obtain a realistic estimate of actual earnings in the current period. FIFO accounting appears to be most logical for products that are perishable or subject to rapid obsolescence and, therefore, are most likely to be sold in chronological order. LIFO makes sense when inflation is expected to remain high.

Areas That Are Commonly Understated

Projected sales increases normally require more aggressive marketing efforts, more effective customer service support, and better employee training. Nonetheless, it is common to see the ratio of annual advertising and training expenses to annual sales decline during the period of highest projected growth in forecasts developed by either the seller or the buyer. The seller wants to boost the purchase price. The buyer simply may be overly optimistic about how much more effectively they can manage the business or because they want a lender to finance the deal. Other areas that are commonly understated in projections but that can never really be escaped include the expense associated with environmental cleanup, employee safety, and pending litigation.

Areas That Are Commonly Overlooked

The value in a business often is more in its intangible than tangible assets. The best examples include the high valuations placed on many Internet-related and biotechnology companies. Intangible assets may include customer lists, patents, licenses, distributorship agreements, leases, regulatory approvals, noncompete agreements, and employment contracts. For these items to represent incremental value they must represent sources of revenue or cost reduction not already reflected in the target's operating cash flows.

Explaining Adjustments to Financial Statements

Table 10.2 illustrates how historical and projected financial statements received from the target as part of the due diligence process could be restated to reflect what the buyer believes to be a more accurate description of revenue and costs. Adjusting the historical financials provides insight into what the firm could have done had it been managed differently. Adjusting the projected financials enables the analyst to use what he or she considers more realistic assumptions. Note that the cost of sales is divided into direct and indirect expenses. Direct cost of sales relates to costs incurred directly in the production process. Indirect costs are those incurred as a result of the various functions (e.g., senior management) supporting the production process. The actual historical costs are displayed above the "explanation of adjustments" line. Some adjustments represent "add backs" to profit, while others reduce profit. The adjusted EBITDA numbers at the bottom of the table represent what the buyer believes to be the most realistic estimate of the profitability of the business. Finally, by displaying the data historically, the buyer can see trends that may be useful in projecting the firm's profitability.

In this illustration, the buyer believes that because of the nature of the business, inventories are more accurately valued on a FIFO rather than LIFO basis. This change in inventory cost accounting results in a sizeable boost to the firm's profitability. Due diligence also revealed that the firm was overstaffed and that it could be operated by eliminating the full-time position held by the former owner (including fees received as a member of the firm's board of directors) and a number of part-time positions held by the owner's family members. Although some cost items are reduced, others are increased. Office space is reduced, thereby lowering rental expense as a result of the elimination of regional sales offices. However, the sales- and

TABLE 10.2 Adjusting the Target Firm's Financial Statements

	Year 1	Year 2	Year 3	Year 4	Year 5
Revenue (\$ thousands)	8000.0	8400.0	8820.0	9261.0	9724.1
Less: direct cost of sales (COS), excluding depreciation and amortization	5440.0	5712.0	5997.6	6297.5	6612.4
Equals: gross profit	2560.0	2688.0	2822.4	2963.5	3111.7
Less: indirect cost of sales					
Salaries and benefits	1200.0	1260.0	1323.0	1389.2	1458.6
Rent	320.0	336.0	352.8	370.4	389.0
Insurance	160.0	168.0	176.4	185.2	194.5
Advertising	80.0	84.0	88.2	92.6	97.2
Travel and entertainment	240.0	252.0	264.6	277.8	291.7
Director fees	50.0	50.0	50.0	50.0	50.0
Training	10.0	10.0	10.0	10.0	10.0
All other indirect expenses	240.0	252.0	264.6	277.8	291.7
Equals: EBITDA	260.0	276.0	292.8	310.4	329.0
Explanation of adjustments					
	Add backs/(deductions)				
LIFO direct COS is higher than FIFO cost; adjustment converts to FIFO costs	200.0	210.0	220.5	231.5	243.1
Eliminate part-time family members' salaries and benefits	150.0	157.5	165.4	173.6	182.3
Eliminate owner's salary, benefits, and director fees	125.0	131.3	137.8	144.7	151.9
Increase targeted advertising to sustain regional brand recognition	(50.0)	(52.5)	(55.1)	(57.9)	(60.8)
Increase T&E expense to support out-of-state customer accounts	(75.0)	(78.8)	(82.7)	(86.8)	(91.2)
Reduce office space (rent) by closing regional sales offices	120.0	126.0	132.3	138.9	145.9
Increase training budget	(25.0)	(26.3)	(27.6)	(28.9)	(30.4)
Adjusted EBITDA	705.0	743.3	783.4	825.6	869.9

EBITDA, earnings before interest, taxes, depreciation, and amortization; FIFO, first-in, first-out; LIFO, last-in, first-out; T&E, travel and entertainment.

marketing-related portion of the T&E budget is increased to accommodate the increased travel necessary to service out-of-state customers. Likewise, advertising expenses will have to be increased to promote the firm's products in those regions. The new buyer also believes the firm's historical training budget to be inadequate to sustain the growth of the business and more than doubles spending in this category.

STEP 2: APPLYING VALUATION METHODOLOGIES TO PRIVATELY HELD COMPANIES

Methods employed to value private firms are similar to those discussed elsewhere in this book. However, in the absence of public markets, alternative definitions of value often are employed, and the valuation methods are subject to adjustments not commonly applied to public firms.

Defining Value

Fair market value is the cash or cash-equivalent price that a willing buyer would propose and a willing seller would accept for a business if both parties have access to all relevant information. It assumes that neither party is under any obligation to buy or sell. It is easier to obtain the fair market value for a public company because of the existence of public markets in which stock in the company is actively traded. The concept may be applied to privately held firms if similar publicly traded companies exist. Because finding substantially similar companies is difficult, valuation professionals have developed a related concept called fair value. *Fair value* is applied when no strong market exists for a business or it is not possible to identify the value of similar firms. Fair value is, by necessity, more subjective because it represents the dollar value of a business based on an appraisal of its tangible and intangible assets.¹³

Selecting the Appropriate Valuation Methodology

Appraisers, brokers, and investment bankers generally classify valuation methodologies into four approaches: income [discounted cash flow (DCF)], relative or market based, replacement cost, and asset oriented. These are discussed next as they apply to private businesses.

The Income, or Discounted Cash Flow, Approach

Factors affecting this method include the definition of income or cash flow, the timing of those cash flows, and the selection of an appropriate discount or capitalization rate. The terms *discount rate* and *capitalization rate* often are used interchangeably. Capitalization rates may be converted to multiples for valuation purposes ([Exhibit 10.1](#)).

While more complex DCF methods are commonly used to value private firms, capitalization multiples may be used when owners lack sophistication in financial matters. Such multiples are easy to calculate and communicate to the parties involved and may facilitate completion of the deal. Also, there is little empirical evidence that more complex valuation methods necessarily result in more accurate valuation estimates. Although the DCF method

¹³Fair value is the statutory standard applicable in cases of dissenting stockholders' appraisal rights. Following a merger or corporate dissolution, shareholders in many states have the right to have their shares appraised and to receive fair value in cash. In states adopting the Uniform Business Corporation Act, fair value refers to the value of the shares immediately before the corporate decision to which the shareholder objects, excluding any appreciation or depreciation in anticipation of the corporate decision. In contrast, according to the Financial Accounting Standards Board Statement 157 effective November 15, 2007, fair value is the price determined in an orderly transaction between market participants (Pratt and Niculita, 2008).

EXHIBIT 10.1 APPLYING CAPITALIZATION MULTIPLES

Assume Firm A's and Firm B's current-year cash flows are \$1.5 million and the discount rate is 8%. Firm A's cash flows are not expected to grow, while Firm B's cash flows are expected to grow at 4% in perpetuity. What is the current market value of each firm?

Answer: Firm A is valued using the zero-growth method and Firm B the constant-growth DCF method (see Chapter 7).

Firm A: $\$1.5 \text{ million} \times (1/0.08) = \$1.5 \text{ million} \times 12.5 = \$18.75 \text{ million}.$

Firm B: $\$1.5 \text{ million} \times (1.04)/(0.08 - 0.04) = \$1.5 \text{ million} \times 26 = \$39 \text{ million}.$

The perpetuity and constant-growth capitalization multiples are 12.5 and 26, respectively, and imply that investors are willing to pay \$12.5 and 26 for each dollar of cash flow.

is widely used, it is not used exclusively. Other valuation methodologies are used, depending on the facts and circumstances of the particular case.

The Relative Value (or Market-Based) Approach

This approach also may be used in valuing private firms by business brokers or appraisers to establish a purchase price. The IRS and the US tax courts have encouraged the use of market-based valuation techniques. Therefore, in valuing private companies, it is always important to keep in mind what factors the IRS thinks are relevant to the process, because the IRS may contest any sale requiring the payment of estate, capital gains, or unearned-income taxes. The IRS's positions on specific tax issues can be determined by reviewing revenue rulings. A *revenue ruling* is an official interpretation by the IRS of the Internal Revenue Code, related statutes, tax treaties, and regulations. Revenue Ruling 59-60 describes the general factors that the IRS and tax courts consider relevant in valuing private businesses. These factors include general economic conditions, the specific conditions in the industry, the type of business, historical trends in the industry, the firm's performance, and the firm's book value. In addition, the IRS and tax courts consider the ability of the company to generate earnings and pay dividends, the amount of intangibles such as goodwill, recent sales of stock, and the stock prices of companies engaged in the "same or similar" line of business.

The Replacement Cost Approach

This approach states that the assets of a business are worth what it costs to replace them and is most applicable to businesses that have substantial amounts of tangible assets for which the actual cost to replace them can be determined. This method is often not useful in valuing a business whose assets are primarily intangible. Moreover, the replacement cost approach ignores the value created by operating the assets as a going concern.¹⁴

¹⁴The replacement cost approach sometimes is used to value intangible assets by examining the amount of historical investment associated with the asset. For example, the cumulative historical advertising spending targeted at developing a particular product brand or image may be a reasonable proxy for the intangible value of the brand name or image. However, changing consumer tastes may make this method misleading.

The Asset-Oriented Approach

Book value is an accounting concept and often is not considered a good measure of market value because book values usually reflect historical rather than current market values. However, as noted in Chapter 8, tangible book value (i.e., book value less intangible assets) may be a good proxy for the current market value for both financial services and product distribution companies. Breakup value is an estimate of what the value of a business would be if each of its primary assets were sold independently. Liquidation value is a reflection of the firm under duress. For a listing of when to use the various valuation methodologies, see Table 8.3.

STEP 3: DEVELOPING DISCOUNT RATES

While the discount or capitalization rate can be derived using a variety of methods, the focus in this chapter is on the weighted average cost of capital or the cost of equity. The capital asset pricing model (CAPM) provides an estimate of the acquiring firm's cost of equity, which may be used as the discount or capitalization rate when the firm is debt free. However, there is evidence that CAPM tends to understate financial rates of return on private companies. What follows is a discussion of ways to adjust CAPM to improve its accuracy in estimating the cost of equity for small privately owned firms.

Estimating a Private Firm's β and Cost of Equity

CAPM assumes the cost of equity is determined by the marginal or incremental investor. Although both public and private firms are subject to systematic risk, nonsystematic risk associated with publicly traded firms can be eliminated by such investors holding a properly diversified portfolio of securities. This often is not true for privately held firms.

Without properly adjusting for risk specific to privately held firms, the cost of equity can be significantly understated. For an unlevered private firm, the cost of equity exceeds the cost of equity for a comparable unlevered public firm by between 2 and 15%, depending on the riskiness of the firm's operating cash flows and nondiversification of investors. When considering levered firms, the private firm's cost of equity can be up to 33% higher than a comparably leveraged public firm.¹⁵

How is the cost of equity determined for private firms? For firms in which the owner is most often the only (or primary) investor, the marginal investor is the current owner because of the frequent difficulty in attracting new investors.¹⁶ Since the owner's net worth is primarily his or her ownership stake in the business, the owner is not likely to be well diversified and their required rate of return (cost of equity) will be higher than for better diversified investors in public firms. Why? Because private business owner's net worth is more exposed to the firm's asset risk (i.e., the volatility of the firm's operating cash flows). β for these firms understate the true exposure of these firms to risk, which would include both systematic and nonsystematic risk. Thus, unlike investors in publicly traded firms, owners of private firms are concerned about total risk and not just systematic risk.

¹⁵Abudy et al. (2016).

¹⁶The business owner may not want new investors because of a desire to retain control.

To approximate total risk for owners of closely held firms, the analyst may estimate the *total* β . The total β is calculated by dividing the CAPM market β for a security by the correlation coefficient for comparable public firms with the overall stock market.¹⁷ Because the correlation with the overall market has been removed, the total β captures the security's risk as a stand-alone asset rather than as part of a well-diversified portfolio. The correlation coefficient may be estimated by taking the square root of the average coefficient of determination (R^2) for comparable public companies, obtained from linear regressions of their share prices against the overall stock market. The total β (β_{tot}) may be expressed as follows:

$$\beta_{\text{tot}} = \frac{\beta}{\sqrt{R^2}} \quad (10.1)$$

The total β will provide a cost of equity for an investor who is completely invested in a single business.¹⁸ When there is insufficient historical information to use regression analysis, the total β may be estimated using the "bottom-up" process discussed in Chapter 7 (Table 7.5).

An alternative to the total β to estimate the cost of equity is the *buildup method*, which represents the sum of the risks associated with a particular class of assets. This methodology assumes the firm's market β is equal to 1 and adds to the CAPM's estimate of a firm's cost of equity an estimate of firm size, industry risk, and company-specific risk. These factors are an attempt to measure nonsystematic risk.

Firm-size adjustments reflect the assumption that on average larger firms are less likely to default than smaller firms; the industry adjustment reflects the observation that certain industries are more cyclical (and therefore riskier) than others. Examples of company-specific risks for small privately owned firms include a lack of professional management, excessive dependence on a single customer or supplier, lack of access to capital, and a narrow product focus. Reflecting these factors, the buildup method could be displayed as follows:

$$k_e = R_f + \text{ERP} + \text{FSP} + \text{IND} + \text{CSR} \quad (10.2)$$

where k_e , cost of equity; R_f , risk-free return; ERP, equity risk premium (market return on stocks less the risk-free rate); FSP, firm-size premium; IND, industry-risk premium; and CSR, company-specific risk premium.

¹⁷Unlike the CAPM β , which measures a security's volatility relative to the market and its correlation with the overall market, the total β measures only the volatility of the security compared to market volatility. In a linear regression, $\beta = \text{Cov}(i, m) / \sigma_m^2$ and may be rewritten as $(\sigma_i / \sigma_m)R$, since $(\sigma_i / \sigma_m) \times [\text{Cov}(i, m) / (\sigma_i \times \sigma_m)] = \text{Cov}(i, m) / \sigma_m^2$, where σ_i , the standard deviation (volatility) of an i th security; σ_m , the standard deviation of the overall stock market; and R , the correlation coefficient $[\text{Cov}(i, m) / (\sigma_i \times \sigma_m)]$ between the i th security and the overall stock market. By multiplying (σ_i / σ_m) , a measure of systematic and nonsystematic risk, by R , which lies between 0 and 1, the CAPM β provides an estimate of the systematic portion of total risk. Note that the total β will generally be larger than the CAPM β because the estimated correlation coefficient is between 0 and 1; the total β and the CAPM market β are equal only if $R = 1$.

¹⁸It is incorrect to use the total β if a private company is being acquired by a public company or is going public, since the public firm's shareholders or investors in the initial public offering (IPO) are assumed to be able to diversify away company-specific risk. If a private company investor is partially diversified (such as a hedge fund having investments in multiple industries), the investor's β would be higher than the market β but lower than the total β .

Assume the risk-free rate, equity risk premium, firm-size premium, industry-risk premium, and company-specific risk premium are 3, 5.5, 3.5, 2, and 1.5%, respectively, for a small privately held firm. An estimate of the firm's cost of equity using the buildup method would equal 15.5%, the sum of the risk-free rate and the risk premiums.

Data for firm-size and industry-risk premiums are available from Morningstar's Ibbotson *Stocks, Bonds, Bills & Inflation* from 1926 to the present and Duff & Phelps *Risk Premium Report* from 1963 to the present.¹⁹ Estimating company-specific risk premiums requires qualitative analysis, usually consisting of management interviews and site visits. The magnitude of the company-specific risk premium could be adjusted up or down to reflect such factors as leverage, size, and earnings/cash flow volatility. Other subjective factors could include management depth and acumen, customer concentration, product substitutes, potential new entrants, and product diversification.²⁰

While commonly used by practitioners, the buildup method also is problematic, because it assumes that the size and industry- and company-specific risk premiums are additive. If so, they would have to be independent or uncorrelated. It is likely that the factors captured by the size premium also are reflected in the industry- and company-specific risk premiums, potentially resulting in "double-counting" their impact in estimating the magnitude of the firm's cost of equity. Furthermore, subjective adjustments made to the company-specific risk premium based on the experience and intuition of the appraiser could also result in significant bias.

Estimating the Cost of Private-Firm Debt

Private firms seldom can access public debt markets and are usually not rated by the credit-rating agencies. Most debt is bank debt, and the interest expense on loans on the firm's books that are more than a year old may not reflect what it actually would cost the firm to borrow currently. The common solution is to assume that private firms can borrow at the same rate as comparable publicly listed firms or to estimate an appropriate bond rating for the company based on financial ratios and to use the interest rate that public firms with similar ratings pay.

An analyst can identify publicly traded company bond ratings using the various Internet bond-screening services (e.g., finance.yahoo.com/bonds) to search for bonds with various credit ratings. Royal Caribbean Cruise Lines Ltd. had a BBB rating and a 2.7 interest coverage ratio in 2009 and would have to pay 7.0%–7.5% for bonds maturing in 7–10 years. Consequently, firms with similar interest coverage ratios could have similar credit ratings. If the private firm to be valued had a similar interest coverage ratio and wanted to borrow for a similar time period, it is

¹⁹Morningstar's Ibbotson provides equity-risk premiums for 10 size deciles based on companies' market capitalizations. The 10th decile is further subdivided for firms with market caps from as low as \$1.2 million. The firm also provides 500 industry-level risk premiums. Duff & Phelps provides equity-risk premiums by grouping companies into 25 size categories based on 8 different definitions of size. The definitions include market cap, book value, 5-year average net income, market value of invested capital, 5-year average EBITDA, sales, number of employees, and total assets. Analysts can use these data to benchmark the subject company without having to estimate the market value of equity because they would use the Ibbotson data.

²⁰For an excellent discussion of how business appraisers use the buildup method, see Miller (2010).

likely that it would have had to pay a comparable rate of interest.²¹ Other sources of information about the interest rates that firms of a certain credit rating pay often are available in major financial newspapers, such as the *Wall Street Journal*, *Investors' Business Daily*, and *Barron's*.²²

Determining the Appropriate Tax Rate

Throughout this book, a corporate marginal tax rate of 40% has been used in calculating the after-tax cost of debt in valuing public firms. When the acquirer of a private firm is a public firm, using the 40% corporate marginal tax rate is generally correct. However, for acquirers that are private firms or individuals, the choice of the tax rate to use depends on the nature of the buyer. The right marginal tax rate could be as high as 40% if a public company is the acquirer or as low as zero if the buyer is a nonprofit entity. The marginal tax rate should reflect the highest marginal personal income tax rate if the buyer(s) are individuals.

If the acquirer is a sole proprietorship where the business' income is recorded on the owner's tax return, the right tax rate would be the highest marginal personal income tax rate. For partnerships, limited liability companies, and subchapter S corporations, where all income is distributed to partners, members, and owners, respectively, the correct tax rate would be a weighted average of the owners' marginal tax rates. The weights should reflect the owners' respective ownership percentages.

Estimating the Cost of Capital

In the presence of debt, the cost-of-capital method should be used to estimate the discount or capitalization rate. This method involves calculating a weighted average of the cost of equity and the after-tax cost of debt. The weights should reflect market rather than book values.

Private firms represent a greater challenge than public firms, in that the market value of their equity and debt is not readily available. A common solution is to use what the firm's management has set as its target debt-to-equity ratio in determining the weights to be used or to assume that the private firms will eventually adopt the industry average debt-to-equity ratio.²³ When the growth period for the firm's cash flow is expected to vary, the cost of capital estimated for the high-growth period can be expected to decline when the firm begins to grow at a more sustainable rate, often the industry average growth rate. At that point, the firm presumably begins to take on the risk and growth characteristics of the typical firm in the industry. Thus, the discount rate may be assumed to be the industry average cost of capital during the sustainable-growth period. [Exhibit 10.2](#) illustrates how to calculate a private firm's β , cost of equity, and cost of capital.

²¹If the maturity date, coupon rate, how frequently interest is paid, and the face value of a private firm's outstanding debt are known, the market value of such debt can be estimated using the yield to maturity on comparable debt that is currently traded for firms of similar risk.

²²Unlike the estimation of the cost of equity for small privately held firms, it is unnecessary to adjust the cost of debt for specific business risk, since it is already reflected in the interest rate charged to firms of similar risk.

²³The firm's target D/E ratio should be consistent with the debt-to-total capital and equity-to-total capital weights used in the weighted average cost of capital. This consistency can be achieved simply by dividing the target D/E (or the industry D/E if that is what is used) by $(1 + D/E)$ to estimate the implied debt-to-total capital ratio. Subtracting this ratio from 1 provides the implied equity-to-total capital ratio.

EXHIBIT 10.2 VALUING PRIVATE FIRMS

Acuity Lighting, a regional manufacturer and distributor of custom lighting fixtures, has revenues of \$10 million and an EBIT of \$2 million in the current year (i.e., year 0). The book value of the firm's debt is \$5 million. The firm's debt matures at the end of 5 years and has annual interest expense of \$400,000. The firm's marginal tax rate is 40%, the same as the industry average. Capital spending equals depreciation in year 0, and both are expected to grow at the same rate. As a result of excellent working capital management, the future change in working capital is expected to be essentially zero. The firm's revenue is expected to grow 15% annually for the next 5 years and 5% per year thereafter. The firm's current operating profit margin is expected to remain constant throughout the forecast period.

As a result of the deceleration of its growth rate to a more sustainable rate, Acuity Lighting is expected to assume the risk and growth characteristics of the average firm in the industry during the sustainable-growth period. Consequently, its discount rate during this period is expected to decline to the industry average cost of capital of 11%. The industry average β and debt-to-equity ratio are 2 and 0.4, respectively. The R^2 associated with a linear regression of the share prices of comparable publicly traded companies with the overall stock market is 0.25. The 10-year US Treasury bond rate is 4.5%, and the historical equity premium on all stocks is 5.5%. Acuity Lighting's interest coverage ratio is 2.89, equivalent to a BBB credit rating. BBB-rated firms are currently paying a pretax cost of debt of 7.5%. Acuity Lighting's management has established the firm's target debt-to-equity ratio at 0.5 based on the firm's profitability and growth characteristics. Estimate the equity value of the firm.

Solution:

Calculate Acuity's cost of equity using the methodology discussed in Chapter 7 (Table 7.5) and the weighted average cost of capital. This requires computing the average of comparable firms' unlevered β and relevering the average unlevered β using the target's debt-to-equity ratio:

1. Unlevered β for publicly traded firms in the same industry = $2 / (1 + 0.6 \times 0.4) = 1.61$, where 2 is the industry's average levered β , 0.6 is $(1 - \text{tax rate})$, and 0.4 is the average debt-to-equity ratio for firms in this industry.
2. The total β [Eq. (10.1)] is $1.61 / \sqrt{0.25} = 3.22$. (Note: The total β reflects only operating and industry risk.)
3. Acuity's levered $\beta = 3.22 \times (1 + 0.6 \times 0.5) = 4.19$, where 0.5 is the target debt-to-equity ratio established by Acuity's management.
4. Acuity's cost of equity = $4.5 + 4.19 \times 5.5 = 27.6$.
5. Acuity's after-tax cost of debt = $7.5 \times (1 - 0.4) = 4.5$, where 7.5 is the pretax cost of debt.
6. Acuity's WACC = $(27.6 \times 0.67) + (4.5 \times 0.33) = 19.98$, where the firm's debt-to-total capital ratio (D/TC) is determined by dividing Acuity's debt-to-equity target (D/E) by $1 + D/E$. Therefore,

$$\frac{D}{TC} = \frac{0.5}{1 + 0.5} = 0.33 \quad \text{and} \quad \text{Equity to total capital} = 1 - 0.33 = 0.67$$

Value Acuity by means of the free cash flow to the firm (FCFF) DCF model using the data provided in Table 10.3:

$$\begin{aligned}
 \text{Present Value of FCFF} &= \frac{\$1,380,000}{1.1998} + \frac{\$1,587,000}{(1.1998)^2} + \frac{\$1,825,050}{(1.1998)^3} \\
 &\quad + \frac{\$2,098,807}{(1.1998)^4} + \frac{\$2,413,628}{(1.1998)^5} \\
 &= \$1,150,192 + \$1,102,451 + \$1,056,692 + \$1,012,831 \\
 &\quad + \$970,792 = \$5,292,958 \\
 \text{PV of Terminal value} &= \frac{\$2,534,310 / (0.11 - 0.05)}{(1.1824)^5} = \$18,276,220 \\
 \text{Total Present Value} &= \$5,292,958 + \$18,276,220 = \$23,569,178 \\
 \text{Market Value of Acuity's Debt} &= \$400,000 \times \frac{(1 - (1 / (1.075)^5))}{0.075} + \frac{\$5,000,000}{(1.075)^5} \\
 &= \$1,618,354 + \$3,482,793 = \$5,101,147 \\
 \text{Value of Equity} &= \$23,569,178 - \$5,101,147 = \$18,468,031
 \end{aligned}$$

TABLE 10.3 FCFF Model

	Year					
	1	2	3	4	5	6
EBIT ^a	\$2,300,000	\$2,645,000	\$3,041,750	\$3,498,012	\$4,022,714	\$4,223,850
EBIT (1 – tax rate) ^b	\$1,380,000	\$1,587,000	\$1,825,050	\$2,098,807	\$2,413,628	\$2,534,310

EBIT, Earnings before interest and taxes; FCFF, free cash flow to the firm.

^a EBIT grows at 15% annually for the first 5 years and 5% thereafter.

^b Capital spending equals depreciation in year 0, and both are expected to grow at the same rate. Moreover, the change in working capital is zero. Therefore, free cash flow equals after-tax EBIT.

STEP 4: APPLYING CONTROL PREMIUMS, LIQUIDITY, AND MINORITY DISCOUNTS

The maximum purchase price an acquirer should pay for a target firm (PV_{MAX}) is defined as its current market or stand-alone value (i.e., the minimum price, or PV_{MIN}) plus the value of anticipated net synergies (i.e., PV_{NS}):

$$PV_{\text{MAX}} = PV_{\text{MIN}} + PV_{\text{NS}} \quad (10.3)$$

Since the acquirer must earn more than the premium it pays for the target firm when the firms are combined to realize its required cost of capital, the purchase price paid should be less than the maximum price. Otherwise, all value created by combining the firms would be transferred to the target firm's shareholders. This is discussed in greater detail in Chapter 14.

Eq. (10.3) is a reasonable representation of the maximum offer price for firms whose shares are traded in liquid markets and where no single shareholder (i.e., block shareholder)²⁴ can direct the activities of the business. Examples of such firms could include Microsoft, IBM, and General Electric. However, when markets are illiquid and there are block shareholders with the ability to influence strategic decisions made by the firm, the maximum offer price for the firm needs to be adjusted for liquidity risk and the value of control. These concepts are explored next.

Liquidity Discounts

Liquidity is the ease with which investors can sell assets without a serious loss in the value of their investment. An investor in a private company may find it difficult to sell his or her shares quickly because of limited interest in the company. It may be necessary to sell at a significant discount from what was paid for the shares. Liquidity or marketability risk may be expressed as a *liquidity* or *marketability discount*, which equals the reduction in the offer price for the target firm by an amount equal to the potential loss of value when sold.

Empirical studies of liquidity discounts demonstrate that they exist, but there is substantial disagreement over their magnitude. While pre-1992 studies found discounts as high as 50%,²⁵ studies since 1999 indicate more modest discounts, ranging from 5 to 35%, with an average discount of about 20%.²⁶ The decline in the discount since 1990 reflects a reduction in the Rule 144 holding period for restricted shares²⁷ and improved market liquidity. The latter is due to better business governance practices, lower transaction costs, greater access to information via the Internet, and the emergence of markets for trading nonpublic stocks.²⁸

Purchase Price Premiums, Control Premiums, and Minority Discounts

For many transactions, the purchase price premium includes both a premium for anticipated synergy and a premium for control. The value of control is different from the value of synergy, which represents revenue increases and cost savings that result from combining two firms. In contrast, the value of control provides the right to direct the activities of the target firm on an ongoing basis. While control is often assumed to require a greater-than-50% ownership stake, effective control can be achieved at less than 50% ownership if other shareholders own relatively smaller stakes and do not vote as a block. An investor may be willing

²⁴Insider block shareholders tend to exert a negative influence on firm value as they may make decisions (e.g., making large acquisitions) that may not be in the best interests of shareholders in order to retain their senior management or board positions, increase compensation, or as an expression of hubris. Block shareholders who are not insiders tend to have a positive impact on firm value because of their aggressive monitoring of firm performance (Basu et al., 2016).

²⁵Pratt and Niculita (2008).

²⁶Loughran and Ritter (2002), Officer (2007), and Comment (2012).

²⁷Restricted shares are those issued by public firms, with the caveat that they not be traded for a specific time period; as such, such shares can be sold only through a private placement under the provisions of the SEC's Rule 144, usually at a discount because of their lack of marketability. In 1997, the SEC reduced the holding period for restricted stock from 2 years to 1, making such shares more liquid.

²⁸Examples of markets for nonpublic companies include secondmarket.com, sharespost.com, and peqx.com.

to pay a significant premium to purchase a less-than-50% stake if the investor believes that effective control over key decisions can be achieved.

Control includes the ability to select management, determine compensation, set policy, acquire²⁹ and liquidate assets, award contracts, make acquisitions, sell or recapitalize the company, and register the company's stock for a public offering. The more control a block investor has, the less influence a minority investor has and the less valuable is the minority investor's stock. Therefore, a *control premium* is the amount an investor is willing to pay to direct the activities of the firm. A *minority discount* is the reduction in the value of the investment because the minority owners have little control over the firm's operations.

Purchase price premiums may reflect only control premiums when a buyer acquires a target firm and manages it as an independent operating subsidiary. The *pure control premium* is the value the acquirer believes can be created by replacing incompetent management, changing the strategic direction of the firm, gaining a foothold in a market not currently served, or achieving unrelated diversification.³⁰ The empirical evidence available to measure the control premium is limited, resulting in considerable disagreement about its size. Country comparison studies indicate a huge variation in median control premiums from as little as 2%–5% in countries where corporate ownership often is widely dispersed and investor protections are effective to as much as 60%–65% in countries where ownership tends to be concentrated and governance practices are poor. Median estimates across countries are 10%–12%.³¹ A recent empirical study pegs the average premium paid by investors for a block of stock in the United States at 9.6%, based on 114 publicly disclosed US acquisitions of blocks of more than 35% but less than 90% of the shares of a company between 1990 and 2010.³²

The Relationship Between Liquidity Discounts and Control Premiums

Market liquidity and the value of control tend to move in opposite directions—that is, whenever it is easy for shareholders to sell their shares, the benefits of control diminish. Why? Because shareholders who are dissatisfied with the decisions made by controlling shareholders may choose to sell their shares, thereby driving down the value of the controlling shareholder's interest. When it is difficult for shareholders to sell without incurring significant losses (i.e., the market is illiquid), investors place a greater value on control. Minority shareholders have no easy way to dispose of their investment, since they cannot force the sale of the firm and the controlling shareholder has little incentive to acquire their shares, except at a steep discount. The controlling shareholder can continue to make decisions that may not

²⁹Elon Musk, controlling shareholder through his holdings of supervoting shares in both solar panel supplier Solar City and electric car and battery manufacturer Tesla Motors, proposed merging the two money losing firms in mid-2016. He argued that the merger would lower the cost of sales for both firms by enabling the bundling of products and services (i.e., the installation of car charger, solar panels, and a battery pack could be heavily discounted from their cost if sold separately).

³⁰Another example of a pure control premium is that paid for a firm going private through a leveraged buyout, in that the target firm generally is merged into a shell corporation, with no synergy being created, and managed for cash after having been recapitalized. While the firm's management team may remain intact, the board of directors usually consists of representatives of the financial sponsor (i.e., equity or block investor).

³¹Weifeng et al. (2008), Massari et al. (2006), and Dyck and Zingales (2004).

³²Albuquerque and Schroth (2015).

be in the best interests of the minority shareholders, with minimal consequences. Therefore, the sizes of control premiums and liquidity discounts tend to be positively correlated, since the value of control increases as market liquidity decreases (i.e., liquidity discounts increase).

Eq. (10.3) can be rewritten to reflect the interdependent relationship between the control premium (CP) and the liquidity discount (LD) as follows:

$$\begin{aligned} PV_{\text{MAX}} &= (PV_{\text{MIN}} + PV_{\text{NS}})(1 + \text{CP}\%)(1 - \text{LD}\%) \\ &= (PV_{\text{MIN}} + PV_{\text{NS}})(1 - \text{LD}\% + \text{CP}\% - \text{LD}\% \times \text{CP}\%) \\ &= (PV_{\text{MIN}} + PV_{\text{NS}})[1 - \text{LD}\% + \text{CP}\%(1 - \text{LD}\%)] \end{aligned} \quad (10.4)$$

where CP%, control premium expressed as a percentage of the maximum purchase price; and LD%, liquidity discount expressed as a percentage of the maximum purchase price.

The multiplicative form of Eq. (10.2) results in a term (i.e., LD% $\times$ CP%) that serves as an estimate of the interaction between the control premium and the liquidity discount.³³ This interaction term reflects the potential reduction in the value of control [i.e., CP%(1 - LD%)] resulting from disaffected minority shareholders' taking a more active role in monitoring the firm's performance. This could result in proxy contests to change decisions made by the board and management or the composition of the board as well as litigation.³⁴

Estimating Liquidity Discounts, Control Premiums, and Minority Discounts

There is no such thing as a standard liquidity discount or control premium because the size of the discount or premium should reflect firm-specific factors. These are discussed in the subsequent text.

Factors Affecting the Liquidity Discount

The median liquidity discount for empirical studies since the early 1990s is about 20%. Table 10.4 suggests a methodology for adjusting a private firm for liquidity risk, where an analyst starts with the median liquidity discount of 20% and adjusts for factors specific to the target firm. Such factors include firm size, liquid assets as a percent of total assets, financial returns, and cash flow growth and leverage as compared to the industry. While not intended to be an exhaustive list, these factors were selected based on the findings of empirical studies of restricted stocks.

The liquidity discount should be smaller for more highly liquid firms, since liquid assets generally can be converted quickly to cash with minimal loss of value. Furthermore, firms whose financial returns exceed significantly the industry average have an easier time attracting investors and should be subject to a smaller liquidity discount than firms that are underperforming the industry. Likewise, firms with relatively low leverage and high cash

³³If control premiums and minority discounts and control premiums and liquidity discounts are positively correlated, minority discounts and liquidity discounts must be positively correlated.

³⁴PV_{MAX} may also be adjusted for illiquidity and value of control by adjusting the cost of equity (k_e). Assume $k_e = k(1 + \text{CP}\%)(1 - \text{LD}\%)$, where k , the cost of equity, including the effects of illiquidity and the value of control; then $k = k_e / (1 + \text{CP}\%)(1 - \text{LD}\%)$. That is, k decreases with an increasing value of control (PV_{MAX} increases) and increases with increasing illiquidity (PV_{MAX} decreases).

TABLE 10.4 Estimating the Size of the Liquidity Discount

Factor	Guideline	Adjust 20% median discount as follows
Firm size	• Large • Small	• Reduce discount • Increase discount
Liquid assets as percent of total assets	• >50% • <50%	• Reduce discount • Increase discount
Financial returns	• $2 \times$ industry median^a • $0.5 \times$ industry median	• Reduce discount • Increase discount
Cash-flow growth rate	• $2 \times$ industry median • $0.5 \times$ industry median	• Reduce discount • Increase discount
Leverage	• $0.5 \times$ industry median • $2 \times$ industry median	• Reduce discount • Increase discount
Estimated firm-specific liquidity discount		=20% $\pm$ adjustments

^a Industry median financial information often is available from industry trade associations, conference presentations, Wall Street analysts' reports, Yahoo! Finance, Barron's, Investor's Business Daily, The Wall Street Journal, and similar publications and websites.

flow growth should be subject to a smaller liquidity discount than more leveraged firms with slower cash flow growth because they have a lower breakeven point and are less likely to default or become insolvent.

Factors Affecting the Control Premium

Factors affecting the size of the control premium include the perceived ability of the target's current management, the extent to which operating expenses are discretionary, the value of nonoperating assets, and the net present value (NPV) of currently unexploited business opportunities. The value of replacing incompetent management is difficult to quantify, since it reflects the potential for better future decision making. The value of nonoperating assets and discretionary expenses are quantified by estimating the after-tax sale value of redundant assets and the pretax profit improvement from eliminating redundant personnel. While relatively easy to measure, such actions may be impossible to implement without having control of the business.³⁵

If the target business is to be run as currently managed, no control premium should be added to the purchase price. If the acquirer intends to take actions possible only if the acquirer has control, the purchase price should include a control premium sufficient to gain a controlling interest. Table 10.5 provides a methodology for adjusting a control premium to be applied to a specific business. The 10% premium in the table is for illustrative purposes only and is intended to provide a starting point. The actual premium selected should reflect the analyst's perception of what is appropriate given the country's legal system and propensity to enforce laws and the extent to which the firm's ownership tends to be concentrated or widely dispersed.

³⁵This is true because such decisions could involve eliminating the positions of members of the family owning the business or selling an asset owned by the business but used primarily by the family owning the business.

TABLE 10.5 Estimating the Size of the Control Premium to Reflect the Value of Changing the Target's Business Strategy and Operating Practices

Factor	Guideline	Adjust 10% median control premium as follows ^a
Target management	• Retain • Replace	• No change in premium • Increase premium
Discretionary expenses	• Cut if potential savings >5% of total expenses • Do not cut if potential savings <5% of total expenses	• Increase premium • No change in premium
Nonoperating assets	• Sell if potential after-tax gain >10% of purchase price^b • Defer decision if potential after-tax gain <10% of purchase price	• Increase premium • No change in premium
Alternative business opportunities	• Pursue if NPV >20% of target's stand-alone value • Do not pursue if NPV <20% of target's stand-alone value	• Increase premium • No change in premium
Estimated firm-specific control premium		=10% + adjustments

NPV, Net present value.

^a The 10% premium represents the median estimate from the Nenova (2003) and Dyck and Zingales (2004) study for countries perceived to have relatively stronger investor protection and law enforcement.

^b The purchase price refers to the price paid for the controlling interest in the target.

The percentages applied to the discretionary expenses' share of total expenses, nonoperating assets as a percent of total assets, and the NPV of alternative strategies reflect risks inherent in cutting costs, selling assets, and pursuing other investment opportunities. These risks include a decline in morale and productivity following layoffs, the management time involved in selling assets and the possible disruption of the business, and the potential for overestimating the NPV of other investments. In other words, the perceived benefits of these decisions should be large enough to offset the associated risks. Additional adjustments not shown in Table 10.5 may be necessary to reflect state statutes affecting the rights of controlling and minority shareholders.³⁶

As a practical matter, business appraisers frequently rely on the *Control Premium Study*, published annually by FactSet Mergerstat. Another source is Duff & Phelps. The use of these data is problematic, since the control-premium estimates provided by these firms include the estimated value of synergy as well as the amount paid to gain control.

Factors Affecting the Minority Discount

Minority discounts reflect the loss of influence due to the power of a controlling-block investor. Intuitively, the magnitude of the discount should relate to the size of the control premium. The larger the control premium, the greater the perceived value of being able to direct the activities of the business and the value of special privileges that come at the

³⁶In more than one-half of the states, major corporate actions, such as a merger, sale, liquidation, or a recapitalization of a firm, may be approved by a simple majority vote of the firm's shareholders. Other states require at least a two-thirds majority to approve such decisions. A majority of the states have dissolution statutes that make it possible for minority shareholders to force dissolution of a corporation if they can show there is a deadlock in their negotiations with the controlling shareholders or that their rights are being violated.

expense of the minority investor. Reflecting the relationship between control premium and minority discounts, FactSet Mergerstat estimates minority discounts by using the following formula:

$$\text{Implied Median Minority Discount} = 1 - \frac{1}{1 + \text{median premium paid}} \quad (10.5)$$

Eq. (10.5) implies that an investor would pay a higher price for control of a company and a lesser amount for a minority stake (i.e., larger control premiums are associated with larger minority discounts). While Eq. (10.5) is used routinely by practitioners to estimate minority discounts, there is little empirical support for this largely intuitive relationship.³⁷

Exhibit 10.3 shows what an investor should pay for a controlling interest and for a minority interest. The example assumes that 50.1% ownership is required for a controlling interest. In practice, control may be achieved with less than a majority ownership position if there are numerous other minority investors or the investor is buying supervoting shares. The reader should note how the 20% median liquidity discount rate (based on recent empirical studies) is adjusted for the specific risk and return characteristics of the target firm. Furthermore, the control premium is equal to what the acquirer believes is the minimum increase in value created by achieving a controlling interest. Also, observe how the direct relationship between control premiums and minority discounts is used to estimate the size of the minority discount. Finally, see how median estimates of liquidity discounts and control premiums can serve as guidelines in valuation analyses.

EXHIBIT 10.3 INCORPORATING LIQUIDITY RISK, CONTROL PREMIUMS, AND MINORITY DISCOUNTS IN VALUING A PRIVATE BUSINESS

Lighting Group Incorporated (LGI), a holding company, wants to acquire a controlling interest in Acuity Lighting, whose estimated stand-alone equity value equals \$18,468,031 (Exhibit 10.2). LGI believes that the present value of synergies due to cost savings is \$2,250,000 (PV_{SYN}) related to the potential for bulk purchase discounts and cost savings related to eliminating duplicate overhead and combining warehousing operations. LGI believes that the value of Acuity, including synergy, can be increased by at least 10% by applying professional management methods (and implicitly by making better management decisions). To achieve these efficiencies, LGI must gain control of Acuity. LGI is willing to pay a control premium of as much as 10%. The minority discount is derived from Eq. (10.5). The factors used to adjust the 20% median liquidity discount are taken from Table 10.4. The magnitudes of the adjustments are the opinion of the analyst. LGI's analysts have used Yahoo! Finance to obtain the industry data in Table 10.6 for the home furniture and fixtures industry.

What is the maximum purchase price LGI should pay for a 50.1% controlling interest in the business? For a minority 20% interest in the business?

To adjust for presumed liquidity risk of the target due to lack of a liquid market, LGI discounts its offer to purchase 50.1% of the firm's equity by 16%.

³⁷Minority rights are protected in some states by requiring two-thirds voting approval of certain major corporate decisions, implying that minority ownership interests may be subject to a smaller discount in such states.

Using Eq. (10.4), we get:

$$\begin{aligned}
 PV_{\text{MAX}} &= (PV_{\text{MIN}} + PV_{\text{NS}})(1 - \text{LD}\%)(1 + \text{CP}\%) \\
 &= [(\$18,468,031 + \$2,250,000)(1 - 0.16)(1 + 0.10)] \times 0.501 \\
 &= \$20,718,031 \times 0.924 \times 0.501 \\
 &= \$9,590,873 \text{ (maximum purchase price for 50.1\%)}
 \end{aligned}$$

If LGI were to acquire only a 20% stake in Acuity, it is unlikely that there would be any synergy, because LGI would lack the authority to implement potential cost-saving measures without the approval of the controlling shareholders. Because it is a minority investment, there is no control premium, but a minority discount for lack of control should be estimated. This is accomplished by using Eq. (10.5)—that is, $1 - [1/(1 + 0.10)] = 9.1$.

$$\begin{aligned}
 PV_{\text{MAX}} &= [\$18,468,873 \times (1 - 0.16)(1 - 0.091)] \times 0.2 \\
 &= \$2,820,419 \text{ (maximum purchase price for 20\%)}
 \end{aligned}$$

TABLE 10.6 Industry Data

Industry data factor	Acuity lighting	Home furniture and fixtures industry	Adjustments to 20% median liquidity discount
Median liquidity discount ^a	NA	NA	20.0%
Firm size	Small	NA	+2.0
Liquid assets as percent of total assets	>50%	NA	-2.0
Return on equity	19.7%	9.7%	-2.0
Cash flow growth rate	15%	12.6%	0.0
Leverage (debt to equity)	0.22 ^b	1.02	-2.0
Estimated liquidity discount for Acuity Lighting			16.0%

IPO, Initial public offering; NA, not available or not applicable.

^a Median estimate of the liquidity discount of empirical studies (excluding pre-IPO studies) since 1992.

^b From Exhibit 10.2: $\$5,101,147/\$23,569,178 = 0.27$.

TAKING PRIVATE COMPANIES PUBLIC

IPOs represent the traditional way of taking a private firm public and refer to the first time a private firm offers shares to the public. Usually an investment bank (underwriter) is hired by the firm wishing to sell the shares to determine the type and number of shares to be offered and at what price. The investment bank collects data for a registration statement to be filed with the Securities and Exchange Commission (SEC). This statement provides detailed information about the offering and company including financial statements, managers' backgrounds, how the money raised is to be used, and who owns the firm's stock before it goes public. Considerable time is spent verifying the accuracy of the information and that all relevant financial data has been disclosed.

Nontraditional ways of “going public” include reverse mergers and special-purpose acquisition companies. These are discussed next.

Reverse Mergers

In a *reverse merger*, a private firm merges with a publicly traded target (often a corporate shell) in a statutory merger in which the public firm survives. Even though the private firm becomes a wholly owned subsidiary of the public shell firm, the former shareholders of the private firm have a majority ownership stake in the public company. This is the reverse of most mergers, in that shareholders of the surviving firm end up with a majority interest in the combined firms.

Merging with an existing corporate shell of a publicly traded company may be a reasonable alternative for a firm wanting to go public that either is unable to provide the 2 years of audited financial statements required by the SEC or is unwilling to incur the costs of an IPO. After the private company acquires a majority of the shell’s stock and completes the reverse merger, it appoints new management and elects a new board of directors. The owners of the private firm receive most of the shares of the shell corporation, often more than 90%, and control the shell’s board of directors. The new firm must have a minimum of 300 shareholders to be listed on the NASDAQ Small Cap Market. Shell corporations usually are of two types. The first type is a failed public company whose shareholders want to sell what remains to recover some of their losses. The second type is a shell that has been created for the sole purpose of being sold as a shell in a reverse merger. The latter type typically carries less risk of having unknown liabilities. See the case study at the end of this chapter for an example of a company taken public via a reverse merger.

Wealth Effects: Reverse Mergers Versus IPOs and Sellouts

Shareholders in privately held firms commonly exit their ownership positions by an IPO, sale of the firm to a public operating company (sometimes referred to as a sellout), or through a reverse merger. An exit through any one of these mechanisms does not necessarily mean that the shareholders in the privately held firm have completely cashed out their shareholdings. Such shareholders may continue to own a portion of the firm’s equity following an IPO, sellout, or reverse merger. Of these exit strategies, which results in the greatest postexit wealth gain for privately held firm shareholders? The typical IPO generates significantly more wealth for its shareholders than the typical reverse merger or sellout.³⁸ Why? Because firms that have less financial transparency and lower growth potential are more likely to choose reverse mergers than IPOs or sellouts. When information availability is the same for a reverse merger, IPO, or sellout, the wealth difference disappears.

Reverse mergers typically cost between \$50,000 and 100,000, about one-quarter of the expense of an IPO, and can be completed in about 60 days, or one-third of the time to complete a typical IPO.³⁹ Despite these advantages, reverse mergers may take as long as IPOs and are sometimes more complex. The acquiring company must still perform due diligence on the target and communicate information on the shell corporation to the exchange on which its

³⁸Greene (2016).

³⁹Sweeney (2005).

stock will be traded and prepare a prospectus. It can often take months to settle outstanding claims against the shell corporation. Public exchanges often require the same level of information for companies going through reverse mergers as those undertaking IPOs. The principal concern is that the shell company may contain unseen liabilities, such as unpaid bills or pending litigation, which in some instances can make the reverse merger far more costly than an IPO. Indeed, private firms that have gone public through a reverse merger have been delisted from public exchanges because they could not meet the exchange's listing requirements at a faster rate than those using an IPO.⁴⁰

In recent years, reverse mergers have been subject to increasing abuse. In late 2011, the SEC moved to increase shareholder protections by prohibiting reverse-merger firms from applying to list on the NASDAQ, the New York Stock Exchange (NYSE), and NYSE Amex until they had completed a 1-year "seasoning period" by trading on the OTC Bulletin Board or on another regulated US or foreign exchange. The firm also must file all required reports with the SEC and maintain a minimum share price for at least 30 of the 60 trading days before its listing application can be submitted to an exchange and the exchange can approve the listing.

Financing Reverse Mergers

PIPE is a commonly used method of financing reverse mergers. In a PIPE offering, a firm with publicly traded shares sells, usually at a discount, newly issued but unregistered securities, typically stock or debt convertible into stock, directly to investors in a private transaction. Hedge funds are common buyers of such issues. The issuing firm is required to file a shelf registration statement, Form S-3, with the SEC as quickly as possible (usually between 10 and 45 days after issuance) and to use its "best efforts" to complete registration within 30 days after filing. PIPEs often are used in conjunction with a reverse merger to provide companies with not just an alternative way to go public but also financing once they are listed on the public exchange. For example, assume a private company is merged into a publicly traded firm through a reverse merger. As the surviving entity, the public company raises funds through PIPE financing. The private firm is now a publicly traded company with the funds to finance future capital requirements.⁴¹

Special-Purpose Acquisition Corporations

Less common than reverse mergers, special-purpose acquisition corporations (SPACs) or so-called "blank check" companies represent another nontraditional means of taking a private firm public. SPACs are shell corporations established to raise investor funds through an IPO for the purpose of acquiring privately owned firms. The money raised is placed in a trust fund until the SPAC identifies an investment opportunity. SPAC shares often are sold as units consisting of one share of SPAC common stock and a warrant providing the holder with the

⁴⁰Cyree and Walker (2008).

⁴¹To issuers, PIPEs offer the advantage of being able to be completed more quickly, cheaply, and confidentially than a public stock offering, which requires registration upfront and a more elaborate investor "road show" to sell the securities to public investors. Frequently sold as private placements, PIPEs are most suitable for raising small amounts of financing, typically in the range of \$5–10 million.

right to buy additional common shares at a preset price. SPACs usually have 24 months in which to complete an acquisition. Once an acquisition is completed, the SPAC is transformed from an investment into an operating company whose shares trade on a public exchange. If unsuccessful in making an acquisition in the allotted time, the SPAC is dissolved and the money raised is returned to investors.

As is true of reverse mergers, SPACs offer some advantages over IPOs for the firm seeking a public listing. SPACs have substantial cash on hand and as such are less dependent on stock market conditions than IPOs. SPACs also have the ability to offer target firm shareholders cash, stock, or a combination for their shares. Like reverse mergers, SPACs do not have to undergo the lengthy and costly process of SEC registration as the SPAC did this when it went public to raise funds. However, SPACs have significant disadvantages for private firms. When the number of SPAC shareholders is large, the private firm's owners are faced with the possibility that the SPAC shareholders will not approve the deal. Firms going public through reverse mergers usually do not have this concern because the number of shareholders in the shell corporation often is few in number making approval more likely. With SPACs, private firm shareholders can see their ownership position diluted in deals in which they exchanged their shares for SPAC shares when SPAC shareholders exercise their warrants to buy more shares.

In the 1980s, instances of fraud made SPACs unpopular. New regulations in the early 2000s created a new generation of SPACs less opaque than earlier generations. Firms going public through IPOs often show long-term underperformance when compared to similar firms because of the excessive optimism shown by investors in bidding up the firm's price on the first day. The extent of underperformance tends to be larger for those firms taken public by SPACs than for those choosing IPOs.⁴² Why? Higher-quality firms (i.e., those with significant growth opportunities and less leverage) tend to use IPOs while lower-quality firms (which tend to be smaller, have limited growth opportunities, and have more leverage) use SPACs. SPACs may also underperform the broad stock market indices, particularly if their acquisitions are made close to the 2-year holding period during which the SPAC sponsors are required to complete an acquisition.⁴³ The time crush may cause them to make bad acquisition decisions. Reverse mergers may also underperform IPOs long-term because they frequently involve lower-quality firms.

USING LEVERAGED EMPLOYEE STOCK OWNERSHIP PLANS TO BUY PRIVATE COMPANIES

An ESOP is a trust established by an employer on behalf of its employees; its assets are allocated to employees and are not taxed until withdrawn by employees. ESOPs generally must invest at least 50% of their assets in employer stock. Employees frequently use leveraged ESOPs to buy out owners of private companies who have most of their net worth in the firm. For firms with ESOPs, the business owner sells at least 30% of their stock to the ESOP, which pays for the stock with borrowed funds. The owner may invest the proceeds and defer taxes if the investment is made within 12 months of the sale of the stock to the ESOP, the ESOP

⁴²Kolb and Tykvova (2016).

⁴³Dimitrova (2017).

owns at least 30% of the firm, and neither the owner nor his or her family participates in the ESOP. The firm makes tax-deductible contributions to the ESOP in an amount sufficient to repay interest and principal. Shares held by the ESOP, which serve as collateral for the loan, are distributed to employees as the loan is repaid. As the outstanding loan balance is reduced, the shares are allocated to employees, who eventually own the firm.⁴⁴

EMPIRICAL STUDIES OF SHAREHOLDER RETURNS

As noted in Chapter 1, target shareholders of both public and private firms routinely experience abnormal positive returns when a bid is announced for the firm. In contrast, acquirer shareholders may experience abnormal negative returns on the announcement date, particularly when using stock to purchase large publicly traded firms. However, substantial empirical evidence shows that public acquirers using their stock to buy unlisted firms (i.e., both privately held firms and subsidiaries of publicly traded firms) experience significant abnormal positive returns around the transaction announcement date. Other studies suggest that acquirers of private firms often experience abnormal positive returns regardless of the form of payment. In general, acquirers tend to show better performance and have better growth opportunities over their corporate life cycle (i.e., high growth, stable growth, and declining growth periods) when they acquire private (rather than publicly traded) firms.⁴⁵ These studies are discussed next.

Public-company shareholders earn an average positive 2.6% abnormal return when using stock rather than cash to acquire privately held firms.⁴⁶ Ownership of privately held companies tends to be highly concentrated, so an exchange of stock tends to create a few very large block stockholders. Close monitoring of management may contribute to these returns. These findings are consistent with studies conducted in Canada, the United Kingdom, and Western Europe.⁴⁷

Firms acquiring private firms often earn excess returns regardless of the form of payment. Acquirers can also earn excess returns of as much as 2.1% when buying private firms or 2.6% for subsidiaries of public companies.⁴⁸ The abnormal returns may reflect the tendency of acquirers to pay less for nonpublicly traded companies, due to the relative difficulty in valuing private firms or subsidiaries of public companies.⁴⁹ In both cases, shares are not publicly traded and access to information is limited. Moreover, there may be fewer bidders for nonpublicly traded companies. Cash-starved or illiquid parents of public companies may be

⁴⁴Only C and S corporations generating pretax incomes of at least \$100,000 annually are eligible to form ESOPs.

⁴⁵Arikan and Stulz (2016).

⁴⁶Chang (1998).

⁴⁷(Ben-Amar and Andre, 2006; Bigelli and Mengoli, 2004; Draper and Paudyal, 2006; Dumontier and Pecherot, 2001). These results are consistent with studies of returns to companies that issue stock and convertible debt in private placements (Hertzel and Smith, 1993). In private placements, large shareholders are effective monitors of managerial performance, thereby enhancing the prospects of the issuing firm (Demsetz and Lehn, 1996). Wruck and Yilin (2009) argue that relationships such as board representation developed between investors and issuers contribute to improved firm performance due to increased monitoring of performance and improved corporate governance.

⁴⁸Fuller et al. (2002).

⁴⁹Capron and Shen (2007) and Madura and Ngo (2012).

forced to sell to gain access to liquidity. For these reasons, private firm shareholders seeking to liquidate their shareholdings or parent firms seeking liquidity may be forced to sell at a discount from their true economic value due to their weak bargaining positions. This allows the acquirer to realize a larger share of the anticipated synergies, which is reflected in their positive abnormal announcement date returns.

Other factors that may contribute to these positive abnormal returns for acquirers of private companies include the introduction of more professional management into the privately held firms and tax considerations. Public companies may introduce more professional management systems into the target firms, thereby enhancing the target's value. The acquirer's use of stock rather than cash may also induce the seller to accept a lower price, since it allows sellers to defer taxes on any gains until they decide to sell their shares.⁵⁰

There is some evidence that premiums paid for family-owned firms may be higher than for nonfamily-owned private firms. Acquirers buying private firms controlled by non-family members average announcement date returns of 1.6 versus 1.1% when the target is a family-owned firm.⁵¹ This is consistent with the notion that acquirers must pay more to get family members to surrender the benefits that accrue to ownership such as family pride, the opportunity to employ other family members, and the ability to set their own salaries and pay dividends.

While announcement date financial returns tend to be higher for acquirers of private than of public targets, there is little difference in their ongoing operating performance following closing.⁵² The higher announcement date returns may reflect the tendency for acquirers to pay smaller premia for private targets than are paid for public targets. For private target acquirers, postclosing performance improvements are greatest when they make relatively large acquisitions; for public target acquirers, performance improvement is greatest when they make relatively small acquisitions.

Despite the various studies attempting to explain why acquirers of unlisted firms achieve higher announcement date returns than acquirers of public targets, the true explanation for this differing performance around announcement date returns remains elusive. A recent study found little empirical support for unlisted firms selling at a discount from their true economic value due to their need for liquidity or because they were difficult to value.⁵³ These results may reflect the use of different samples, time periods, and methodologies.

SOME THINGS TO REMEMBER

Valuing private firms is more challenging than valuing public firms, due to the absence of published share price data and the unique problems associated with private companies. When markets are illiquid and block shareholders exert control over the firm, the offer price for the target must be adjusted for liquidity risk and the value of control. In contrast to studies involving acquisitions of US public firms, buyers of private firms in the United States and abroad often realize significant abnormal positive returns, particularly in share-for-share deals.

⁵⁰Poulsen and Stegemoller (2002).

⁵¹Gonenc et al. (2013).

⁵²Shams and Gunasekarage (2016).

⁵³Jaffe et al. (2015).

DISCUSSION QUESTIONS

- 10.1 What is the capitalization rate?
- 10.2 What are the common ways of estimating the capitalization rate?
- 10.3 What is the liquidity discount, and what are common ways of estimating this discount?
- 10.4 Give examples of private company costs that might be understated, and explain why.
- 10.5 How can an analyst determine if the target's costs and revenues are understated or overstated?
- 10.6 Why might shell corporations have value?
- 10.7 Why might succession planning be more challenging for a family firm?
- 10.8 What are some of the reasons a family-owned or privately owned business may want to go public? What are some of the reasons that discourage such firms from going public?
- 10.9 Why are family-owned firms often attractive to private equity investors?
- 10.10 Rank from the highest to lowest the liquidity discount you would apply if you, as a business appraiser, had been asked to value the following businesses: (1) a local, profitable hardware store; (2) a money-losing laundry; (3) a large privately owned firm with significant excess cash balances and other liquid short-term investments; and (4) a pool cleaning service whose primary tangible assets consist of a 2-year-old truck and miscellaneous equipment. Explain your ranking.

Answers to these Chapter Discussion Questions are available in the Online Instructor's Manual for instructors using this book (<https://textbooks.elsevier.com/web/Manuals.aspx?isbn=9780128016091>).

PRACTICE PROBLEMS AND ANSWERS

- 10.11 An analyst constructs a privately held firm's cost of equity using the "buildup" method. The 10-year Treasury bond rate is 4% and the historical equity risk premium for the S&P 500 stock index is 5.5%. The risk premium associated with firms of this size is 3.8% and for firms within this industry is 2.4%. Based on due diligence, the analyst estimates the risk premium specific to this firm to be 2.5%. What is the firm's cost of equity based on this information? *Answer: 18.2%.*
- 10.12 An investor is interested in making a minority equity investment in a small privately held firm. Because of the nature of the business, she concludes that it would be difficult to sell her interest in the business quickly. She believes the discount for the lack of marketability to be 25%. She also estimates that if she were to acquire a controlling interest in the business, the control premium would be 15%. Based on this information, what should be the discount rate for making a minority investment in this firm? What should she pay for 20% of the business if she believes the value of the entire business to be \$1 million? *Answer: Discount rate = 9.78% and purchase price for a 20% interest = \$180,440.*
- 10.13 Based on its growth prospects, a private investor values a local bakery at \$750,000. She believes that cost savings having a PV of \$50,000 can be achieved by changing staffing levels and store hours. She believes the appropriate liquidity discount is 20%. A recent transaction in the same city required the buyer to pay a 5% premium to the average

price for similar businesses to gain a controlling interest in a bakery. What is the most she should be willing to pay for a 50.1% stake in the bakery? *Answer: \$336,672.*

- 10.14** You have been asked by an investor to value a restaurant. Last year, the restaurant earned pretax operating income of \$300,000. Income has grown 4% annually during the past 5 years, and it is expected to continue growing at that rate into the foreseeable future. The annual change in working capital is \$20,000, and capital spending for maintenance exceeded depreciation in the prior year by \$15,000. Both working capital and the excess of capital spending over depreciation are projected to grow at the same rate as operating income. By introducing modern management methods, you believe the pretax operating-income growth rate can be increased to 6% beyond the second year and sustained at that rate into the foreseeable future. The 10-year Treasury bond rate is 5%, the equity-risk premium is 5.5%, and the marginal federal, state, and local tax rate is 40%. The β and debt-to-equity ratio for publicly traded firms in the restaurant industry are 2 and 1.5, respectively. The business's target debt-to-equity ratio is 1, and its pretax cost of borrowing, based on its recent borrowing activities, is 7%. The business-specific risk premium for firms of this size is estimated to be 6%. The liquidity-risk premium is believed to be 15%, relatively low for firms of this type due to the excellent reputation of the restaurant. Since the current chef and the staff are expected to remain when the business is sold, the quality of the restaurant is expected to be maintained. The investor is willing to pay a 10% premium to reflect the value of control.
- What is free cash flow to the firm in year 1? *Answer: \$150,800.*
 - What is free cash flow to the firm in year 2? *Answer: \$156,832.*
 - What is the firm's cost of equity? *Answer: 20.2%.*
 - What is the firm's after-tax cost of debt? *Answer: 4.2%.*
 - What is the firm's target debt-to-total capital ratio? *Answer: 0.5.*
 - What is the weighted average cost of capital? *Answer: 12.2%.*
 - What is the business worth? *Answer: \$2,226,448.*

Solutions to these practice exercises and problems are available in the Online Instructor's Manual for instructors using this book (<https://textbooks.elsevier.com/web/Manuals.aspx?isbn=9780128016091>).

END OF CHAPTER CASE STUDY: CATALYST ACQUIRES TARGACEPT IN REVERSE MERGER

Case Study Objectives: To Illustrate

- Motivations for “going public”
- The mechanics of reverse mergers
- Why reverse mergers may be preferred to IPOs for firms wanting to “go public”

Biotech companies often partner with major pharmaceutical firms to fund the development of new drugs. Biotech firms can attract talent and unlike big pharmaceutical firms have relatively little bureaucracy that often impedes research and development activities at bigger firms. Without

funding from the big drug companies, small biotech firms must find alternative sources of funds often by listing on a major stock exchange. This is commonly done by taking a private biotech company public through an IPO or by merging with an existing public company through a reverse merger.

In the years following the 2008–09 recession, biotech firms have been able to successfully go public through IPOs due to the robust rise in stock prices and the desire for investors to achieve greater returns in the wake of record low interest rates. However, when the stock market stalled in 2015, investors were less receptive to IPOs. Biotech firms, wanting to go public, have had to seek alternative means of doing so. Reverse mergers represented one such alternative.

Biotech firm Catalyst Biosciences (Catalyst) had early success in partnering with Pharmaceutical giant, Wyeth, having reached an agreement to license its drug designed to control bleeding in late 2009. But the results of the partnership in the ensuing years were modest. Catalyst had drugs in development (in the so-called pipeline) and other drugs that were at various stages of clinical testing. But the firm needed money and was unable to get financing from big pharmaceutical firms. By 2015, Catalyst went public in a reverse merger with publicly traded Targacept, the beleaguered biotech that had suffered a number of clinical trial failures in recent years. Targacept had little to attract investment from big drug companies and in late 2014 its partnership with AstreZeneca fell apart diminishing its royalty revenue stream. Targacept was left to search for a new role for itself in the biotech industry.

Targacept still had substantial cash on hand but few attractive investment opportunities. Its prospects were to continue to burn cash by going it alone, seek a partner, or merge with a firm having significant growth opportunities. The firm projected that at the current rate of usage it would exhaust its cash on hand in 18–24 months and few parties seemed interested in investing in the foundering company. A merger seemed like the best hope. Targacept tried to conserve cash by cutting back on its operations. But this would simply extend the day of reckoning. By the time it was able to find a merger partner, it had laid off most of its employees. By early 2015, Targacept had just 18 full-time employees down from a peak of 144 in 2012.

In contrast to Targacept, Catalyst had a series of promising new drugs but was running short of cash. The long-lead time required to bring drugs to market means that many biotech firms experience an inability to finance aggressive R&D projects. To finance future research and development, it too had to partner with a large pharmaceutical firm, or to go public through an IPO or a reverse merger. Cutbacks at large drug companies made the likelihood of finding an investment partner slim and the lackluster stock market made an IPO impractical. Therefore, the firm decided it needed to merge with a cash-flush public firm that offered the opportunity to attract new R&D talent with the offer of stock options and the ability to raise cash through future equity issues.

Early in 2015, biotech firm Tobira Therapeutics tested the waters by going public through a reverse merger after its IPO fizzled. This successful reverse merger seemed to pave the way for Catalyst to pursue this means of going public during the choppy 2015 stock market. The merger between Catalyst and Targacept was announced in May 2015 and represented the creation of a new company named Catalyst Biosciences. The new firm contained Catalyst's protease therapeutics pipeline and financial resources came mostly from Targacept. It represented a well-funded firm hoping to develop new treatment options for patients with bleeding disorders.

While conventional IPOs can take months to complete, reverse mergers can take only a few weeks. Moreover, as the reverse merger is solely a mechanism to convert a private company into

a public entity, the process is less dependent on financial market conditions because the company often is not proposing to raise capital at the time it goes public.

At closing, the combined firms had a pipeline of protease therapeutics, four other promising drug candidates, and cash and cash equivalents of \$40 million. Of the cash on hand, \$35 million came from Targacept and the remaining \$5 million came from Catalyst. Existing Targacept shareholders received a special dividend prior to closing of about \$20 million distributed from Targacept's cash on hand and redeemable convertible notes (convertible into Catalyst Biosciences common shares) totaling \$37 million. The notes are guaranteed by the new firm Catalyst Biosciences. The Catalyst stockholders will initially own approximately 65% of the combined company, with Targacept shareholders owning the remainder.

The notes will be convertible into the combined company's common stock at any time within 2 years following closing at the discretion of those holding the notes. The conversion price of the notes is equal to \$1.31, which represents 130% of the negotiated per-share value of Targacept's assets following the anticipated distribution of the dividend of approximately \$20 and 37 million principal amount of the notes. The conversion price was determined along with the valuation of Targacept's shares during preclosing negotiations.

The notes have implications for future investment capital for the firm and for the distribution of ownership. They represent potentially a future source of cash for the new company, which will contribute from current cash flow money into an escrow fund in an amount sufficient for repayment of any notes that are not converted to stock during the 2-year conversion period. Catalyst has positive cash flow from royalty payments on drugs licensed to pharmaceutical firms prior to the merger. If the redeemable convertible notes are fully converted in common shares, an additional \$37 million held in escrow would be made available to the new company within the first 2 years following closing. Targacept shareholders' ownership would increase to 49 from 35% at closing if the notes are fully converted.

Fig. 10.1 illustrates how ownership is transferred in a typical reverse merger. Catalyst creates a wholly owned subsidiary shell corporation (Merger Sub) and exchanges the shares of the Merger Sub for \$20 million in cash and redeemable notes with a face value of \$37 million. Merger Sub is

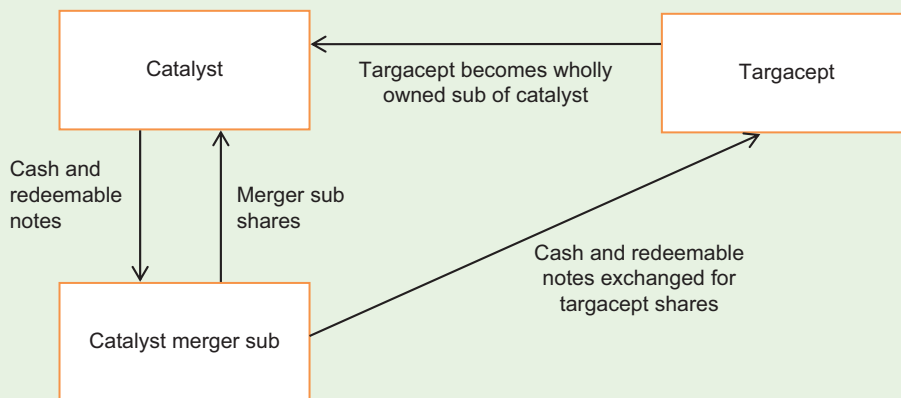


FIGURE 10.1 Reverse merger process.

merged with Targacept in a reverse triangular merger with Targacept surviving as a wholly owned subsidiary of Catalyst. The reverse triangular merger preserves valuable licenses, contracts, and intellectual property owned by Targacept. Targacept is then merged with Catalyst in a backend merger and the firm is renamed Catalyst Biosciences.

Shares of Targacept common stock were listed on the NASDAQ Global Select Market under the symbol "TRGT." Prior to completion of the merger, Targacept filed an initial listing application with the NASDAQ Global Select Market relating on behalf of the combined company, subject to NASDAQ "reverse merger" rules. After completion of the merger, Targacept was renamed "Catalyst Biosciences, Inc." and trades on the NASDAQ Global Select Market under the symbol "CBIO."

Both Catalyst and Targacept had needs that could be satisfied by combining their resources. Stock market volatility during much of 2015 made it difficult to price Catalyst shares that could be issued through an IPO. Targacept was burning through its cash on hand with few attractive investment opportunities. These complementary needs illustrate the conditions in which reverse mergers often take place. While providing access to capital, converting from a private to a public corporation represents a new array of challenges. While firms often have several options for going public, stock market conditions probably dictated the use of the reverse merger in this instance.

Discussion Questions

1. What is the purchase price of Targacept and how is it financed? How does this financing structure potentially help the combined firm Catalyst Biosciences fund future spending? How would Catalyst's original shareholders be impacted by a conversion of the notes?
2. What are common reasons for a private firm to go public? What are the advantages and disadvantages of doing so? Be specific.
3. What are corporate shells, and how can they create value? Be specific.
4. Discuss the pros and cons of a reverse merger versus an IPO.
5. What is the purpose of private firm in listing of a major stock exchange such as NASDAQ?

Solutions to this case are provided in the Online Instructor's Manual available for instructors using this book (<https://textbooks.elsevier.com/web/Manuals.aspx?isbn=9780128016091>).

ADDITIONAL CASE STUDY RECOMMENDATIONS (SEARCH HARVARD BUSINESS SCHOOL PUBLISHING SITE BY NAME OF CASE: hbsp.harvard.edu)

National Logistics Management: Founder Decisions, Lynda M. Applegate, Elizabeth Collins, Revision Date: May 1, 2008, Product Number: 807125, Source: Harvard Business School, hbsp.harvard.edu.

Subjects Covered: Private Business Exit Strategies, Decision Making, Private Equity, Venture Capital.

OPK Capital Corporation: An Introduction to Search Funds, Stewart Thornhill, Tevya

Rosenberg, Publication Date: January 7, 2009, Product Number: 909MO6-PDF-ENG, Source: Ivey Publishing, hbsp.harvard.edu.

Subjects Covered: Special Purpose Acquisition Corporations, Financing.

Jim Sharpe: Extrusion Technology, Inc., H. Kent Bowen, Barbara Feinberg, Publication Date: December 3, 2012, Product Number: 697079, Source: Harvard Business School, hbsp.harvard.edu.

Subjects Covered: LBO, Small Business Management, Change Management, Value Creation.

Namaste Solar, Anne T. Lawrence, Anthony I. Matthews, Publication Date: June 1, 2010, Product Number: 910M49-PDF-ENG, Source: Ivey Publishing, hbsp.harvard.edu.

Subjects Covered: Acquiring Small Businesses, Culture Issues, Financing Growth.

LightWorks Optics, Anne T. Lawrence, Anthony I. Mathews, Erik Noyes, Publication Date: December 12, 2008, Product Number: BAB144-PDF-ENG, Source: Babson College, hbsp.harvard.edu.

Subjects Covered: Exit Strategies for Small Business Owners, Selling to an ESOP trust, ESOPs.

PART IV

DEAL STRUCTURING AND FINANCING STRATEGIES



“Tell me straight, doctor - how many more takeover battles do I have left in me?”

CartoonStock.com

Source: Cartoonstock.com.

In a complex leveraged buyout (LBO) structure, conglomerate Berkshire Hathaway (Berkshire) and 3G Capital Management (3G) acquired food giant H.J. Heinz (Heinz) in a deal including assumed debt valued at \$28 billion. The deal structure called for the creation of a new corporation jointly owned by Berkshire and 3G and a merger subsidiary, which was merged into Heinz, with Heinz surviving. The deal was financed using a combination of \$18.24 billion in cash provided by Berkshire and its partner 3G, with the remainder consisting of bank financing. Most of Berkshire's cash was provided in exchange for high-yielding preferred stock in the new firm. The debt financing involved a combination of dollar-denominated senior secured term loans, Euro/British pounds senior secured term loans, a senior secured revolving loan facility, and a second lien bridge loan facility.

Part IV describes how deal structuring and financing are inextricably linked and how consensus is reached during the deal-structuring, or bargaining, process. The output of this process is an agreement or deal structure between two parties (the acquirer and the target firms) defining the rights and obligations of the parties involved. The chapters in this section also discuss the implications of various aspects of deal structuring in managing risk, the effects of risk on how deals are done, and the challenges of financing transactions, particularly those that are highly leveraged.

Chapter 11 outlines the major facets of the deal-structuring process, including the acquisition vehicle and postclosing organization, the form of acquisition, the form of payment, and the legal form of selling entity and how changes in one area of the deal often impact significantly other parts of the agreement. Specific ways to bridge major differences on price also are discussed. Chapter 12 addresses tax considerations, including alternative forms of taxable and non-taxable structures, and how they impact reaching agreement, as well as new regulations impacting corporate tax inversions. This chapter also discusses how business combinations are recorded for financial-reporting purposes and the impact on reported earnings.

Chapter 13 focuses on the ways in which M&A transactions are financed, the impact of near-zero/negative interest rates on M&As, and the role played by private equity firms and hedge funds in financing highly leveraged deals. This chapter also discusses how LBOs are structured. How LBOs create value and key success factors also are discussed in detail. Chapter 14 concentrates on applying financial modeling to value and structure M&As in both stock and asset deals. The strengths and limitations of such models also are discussed, as well as how models can be used to estimate the impact on EPS and credit ratios of alternative deal and financing structures.

Structuring the Deal

Payment and Legal Considerations

O U T L I N E

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If you can't convince them, confuse them. —Harry S. Truman

INSIDE M&A: THE ELUSIVE ISSUE OF PRICE

KEY POINTS

- The acquirer's cost often is more than what it pays target investors per share.
- Additional costs include liabilities assumed by the buyer.
- Assumed liabilities can be especially onerous if their future cost is difficult to estimate.
- Negotiators often focus on minimizing such risk.

The growth of cloud computing and the growing connectivity in our lives have pressured semiconductor¹ makers to achieve greater economies of scale to drive down costs and to offer a broader array of products ranging from commodity-like to highly complex chips. These market forces have resulted in an ongoing consolidation within the industry. A recent example of such consolidation is Intel's (the world's largest chipmaker) acquisition of Altera, an integrated circuits manufacturer, for \$16.7 billion. Intel's interest centered on Altera's programmable chips, a higher-margin product whose sales would help offset the declining personal computer market. Altera faced substantial capital expenditures to remain competitive and being acquired represented a reasonable way to maximize shareholder wealth.

What follows is a description of events that transpired between Altera and Intel beginning in late 2014 and ending in mid-2015 in a signed merger agreement. These events illustrate common negotiating tactics used by potential acquirers and target boards and senior managers to hammer out merger and acquisition (M&A) agreements.²

Given their long-standing business relationship dating back to the late 1980s, it was easy for Intel's Chief Executive Officer (CEO), Brian M. Krazanich, to approach Altera's CEO, John P. Daane, in late 2014 to discuss a commercial licensing deal. During the conversation, Mr. Krazanich expressed Intel's interest in acquiring the firm but he refrained from discussing a price range. Aware of his fiduciary responsibility to shareholders, Mr. Daane said he would bring Intel's expression of interest in buying Altera to the firm's board of directors.

Discussions during the early phase of the negotiating process are often nuanced. Any reference to purchase price by the potential acquirer is usually verbal, vague, expressed in a range or formula (i.e., multiple of earnings), and conditioned on performing "adequate" due diligence. The start date, length, and intrusiveness of due diligence often becomes a means for both parties to leverage their positions. Sellers routinely move aggressively to get the buyer to state as high an offer price with as few caveats as possible before granting the buyer the right to examine detailed financial statements, operations, etc. Buyers use the absence of proprietary information as a reason for giving a price estimate as a range or formula or subject to conditions allowing for revision of the initial offer price based on the outcome of due diligence.

¹Used in such products as computers, cell phones, appliances, and medical equipment, semiconductors (usually composed of silicon) conduct electricity more than an insulator but less than a pure conductor.

²The source for this information is found in Altera's Definitive Proxy Statement (Schedule 14A) filed with the Securities and Exchange Commission (SEC) on August 24, 2015.

Three weeks had passed before the two CEOs talked again. In the interim, Altera's board hired financial advisor Goldman Sachs. In mid-December the two met again with Mr. Krazanich willing to indicate a price range of \$14–15 billion or \$45–48 per share, subject to Intel performing due diligence. Mr. Daane stated that the price was too low and that the firm would not enter due diligence unless Intel revised its offer up by at least \$1 billion.

The Altera board formed a committee consisting of independent board members called the Transaction Committee whose expressed purpose was to review Intel's offer and to make recommendations to the full board. Such committees are formed to minimize the appearance of any improprieties. Goldman Sachs representatives discussed strategic options with the Altera board including contacting other potential bidders. After discussing the benefits and risks associated with a wider sale process, the Transaction Committee recommended to the full board that an Intel bid deserved further consideration and that Intel be told that their proposal was inadequate in an effort to get a higher offer price.

Informed in early January 2015 that Altera had rejected their \$45–48 per share proposal, Intel raised its bid to \$55 per share, again on the condition Altera would allow an appropriate due diligence. The Altera CEO countered that at that price his firm would not allow due diligence to begin. The Intel CEO agreed to have his board reconsider their offer and would counter with a revised offer if his board felt comfortable with the potential synergies.

All previous offers made by Intel had been verbal. On January 27, 2015, Intel submitted to the Altera Board a legally nonbinding written proposal authorized by the Intel board to acquire Altera for \$50 per share based on publicly available information about Altera. Frustrated by Altera's unwillingness to provide proprietary information, Intel hardened its position by reducing the offer price from \$55 to \$50 saying that this was the best they could do in the absence of due diligence. The proposal stated that the bid could be revised upward if a due diligence process were to validate anticipated merger benefits.

The Altera Board in discussing the proposal with its financial advisors expressed concern that Intel could make the bid public, undertake a hostile bid, or walk away, given that the talks had been underway for several months. The Altera board decided against a wider sale, since there were only a small number of potential buyers capable of paying the purchase price Altera demanded. They also believed that a wider sale process could result in rumors negatively impacting Altera's relationships with customers, suppliers, business partners, and employees.

In mid-February, Altera's Mr. Danne informed Intel's Mr. Krazanich that the Altera Board was prepared to allow Intel to begin due diligence once Mr. Krazanich confirmed in writing that the Intel Board had authorized an acquisition of Altera for \$58 per share. Mr. Daane also indicated that Altera wanted Intel to include wording in the contract that Intel would use *reasonable best efforts* to gain regulatory approval and that it would agree to a meaningful reverse termination fee (a fee paid by the buyer to the seller) if the deal could not get regulatory approval.³

The following week Mr. Krazanich emailed Mr. Daane a letter confirming that the Intel Board had approved an acquisition of Altera at \$58 per share subject to completion of due diligence, negotiation of a definitive merger agreement, and final approval by the Intel Board.

³Termination fees are those paid by the seller to the buyer if the seller chooses to accept a better offer. Reverse termination fees are paid by the buyer to the seller if the deal cannot be closed due to certain conditions not being satisfied.

In the letter, Intel stated that its proposal contemplated no termination fees to be paid by Intel under any circumstances, but Intel would use *reasonable efforts* (rather than reasonable best efforts) to obtain regulatory approvals. In contracts, words matter.⁴ This was enough for the two firms to begin the negotiation of a draft merger agreement.

At the end of March, Altera submitted a draft merger agreement containing the restatement of Altera's proposal that Intel should agree to use reasonable best efforts to get regulatory approval and that Altera should be compensated if the deal was not completed over failure to get regulatory approval. At this point, the talks stalled and the media speculated that the deal might not happen.

On May 7, 2015, Intel sent a letter to the Altera Board containing a new acquisition proposal stating that, if Intel and Altera did not reach an agreement by June, Intel would abandon discussions. Intel's proposal included a price of \$50 per share compared to its earlier \$58 price bid, arguing it was the best it could do having access only to public information. However, it did make other concessions Altera had demanded saying it would use reasonable best efforts to obtain necessary regulatory approvals and would pay a reverse termination fee of \$400 million if the acquisition could not be completed for antitrust or competition law reasons. The letter indicated that this was Intel's final offer.

The Altera board approved the terms of the Intel proposal but at a purchase price of \$56 per share. Intel responded in writing saying that \$54 per share was the highest it would go and that it would agree to a reverse termination fee of \$500 million. On June 1, 2015, the two firms announced a joint communication indicating that Intel had reached an agreement to acquire Altera on the terms previously described. After receiving regulatory approval, the deal closed on January 28, 2016, more than 1 year after Intel's CEO made first contact with Altera's CEO.

CHAPTER OVERVIEW

Once management has determined that an acquisition is the best way to implement the firm's business strategy, a target has been selected, and the preliminary financial analysis is satisfactory, it is time to consider how to structure the deal properly. A *deal structure* is an agreement between two parties (the acquirer and the target firms) defining their rights and obligations. The way in which this agreement is reached is called the *deal-structuring process*. In this chapter, this process is described in terms of seven interdependent components: acquisition vehicle, the postclosing organization, the form of payment, the legal form of the selling entity, the form of acquisition, accounting considerations, and tax considerations.

The focus in this chapter is on the form of payment, the form of acquisition, and alternative forms of legal structures in which ownership is conveyed and how they interact to impact the overall deal. The implications of alternative tax structures, how deals are recorded for financial reporting purposes, and how they might affect the deal-structuring process are discussed in detail in Chapter 12. A review of this chapter is available in the file folder entitled

⁴If a party promises "reasonable best efforts," everything that can be done should be done, but not to the point of going bankrupt. It can also imply that Intel would have to "leave no stone unturned." By contrast, "reasonable efforts" implies that what can be done should be done, in the context and purpose of the contract, but without requiring a party to leave "no stone unturned." "Reasonable efforts" is a less onerous standard than "reasonable best efforts."

“Student Study Guide” on the companion website to this book (<https://www.elsevier.com/books-and-journals/book-companion/9780128016091>).

THE DEAL-STRUCTURING PROCESS

The *deal-structuring process* involves satisfying as many of the primary acquirer and target objectives and determining how risk will be shared. *Risk sharing* refers to the extent to which the acquirer assumes the target’s liabilities. The appropriate deal structure is that which satisfies, subject to an acceptable level of risk, the primary objectives of the parties involved and clearly states their rights and obligations. The process may be highly complex, involving multiple parties, approvals, forms of payment, and sources of financing. Decisions made in one area often affect other areas of the deal. Containing risk associated with a complex deal is analogous to squeezing one end of a water balloon, which simply forces the contents to shift elsewhere.

Key Components of the Deal-Structuring Process

The process begins with addressing a set of key questions, shown on the left-hand side of Fig. 11.1. Answers to these questions help define initial negotiating positions, potential

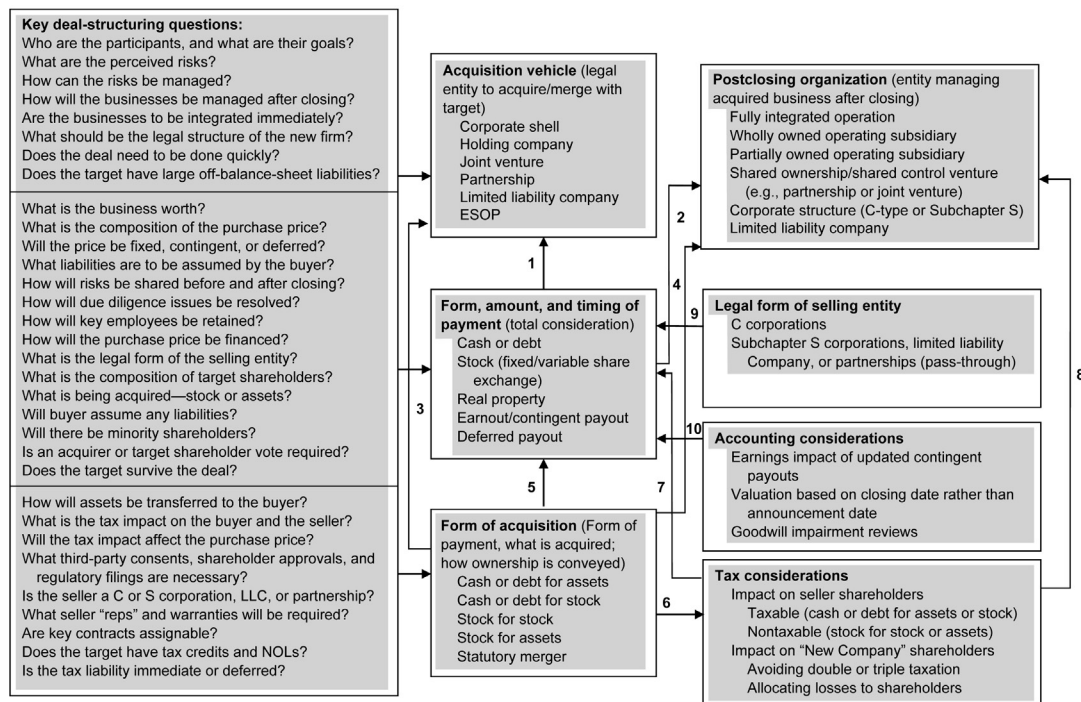


FIGURE 11.1 Mergers and acquisitions deal-structuring process. ESOP, Employee stock ownership plan.

risks, options for managing risk, levels of tolerance for risk, and conditions under which either party will “walk away” from the negotiations. The key components of the process are discussed next.

The *acquisition vehicle* refers to the legal structure created to acquire the target company. The *postclosing organization*, or structure, is the organizational and legal framework used to manage the combined businesses following the consummation of the transaction. Commonly used structures for both the acquisition vehicle and the postclosing organization include the corporate, division, holding company, joint venture (JV), partnership, limited liability company (LLC), and employee stock ownership plan (ESOP) structures. Although the two structures are often the same before and after completion of the transaction, the postclosing organization may differ from the acquisition vehicle, depending on the acquirer’s strategic objectives for the combined firms.

The *form of payment*, or total consideration, may consist of cash, common stock, debt, or a combination of all three types. The payment may be fixed at a moment in time, contingent on the target’s future performance, or payable over time. The *form of acquisition* reflects what is being acquired (stock or assets) and how ownership is conveyed. *Accounting considerations* address the impact of financial reporting requirements on the future earnings of the combined businesses. *Tax considerations* entail tax structures that determine whether a deal is taxable or nontaxable to the seller’s shareholders. The *legal form of the selling entity* also has tax implications.

Common Linkages

Fig. 11.1 explains through examples common interactions among various components of the deal structure. These are discussed in more detail later in this chapter and in Chapter 12.

Form of Payment (Fig. 11.1, Arrows 1 and 2) Affects Choice of Acquisition Vehicle and Postclosing Organization

The buyer may offer a purchase price contingent on the future performance of the target and choose to acquire and operate the target as a wholly owned subsidiary within a holding company during the term of the earnout (deferred payout). This facilitates monitoring the operation’s performance and minimizes possible postearnout litigation.

Effects of Form of Acquisition (Fig. 11.1, Arrows 3–6)

Choice of acquisition vehicle and postclosing organization: If the form of acquisition is a statutory merger, all liabilities transfer to the buyer, who may acquire and operate the target within a holding company to provide some protection from the target’s liabilities.

Form, timing, and amount of payment: The assumption of all seller liabilities in a merger or stock purchase may cause the buyer to alter the terms of the deal to include more debt or installment payments, to reduce the present value of the purchase price, or both.

Tax considerations: The transaction may be tax free to the seller if the acquirer uses its stock to acquire substantially all of the seller’s assets or stock.

Effects of Tax Considerations (Fig. 11.1, Arrows 7 and 8)

Amount, timing, and composition of the purchase price: If the deal is taxable to the target shareholders, the purchase price often is increased to offset the target shareholders' tax liability. The higher purchase price could alter the composition of the purchase price as the buyer defers a portion of the price or includes more debt to lower its present value.

Selection of postclosing organization: The desire to minimize taxes encourages the use of S corporations, LLCs, and partnerships to eliminate double taxation; tax benefits also pass through to LLC members and partners in partnerships. By 2011, 54% of business income was earned by pass-through firms, up from 21% in 1980.

Legal Form of Selling Entity (Fig. 11.1, Arrow 9) Affects Form of Payment

Because of the potential for deferring shareholder tax liabilities, target firms qualifying as C corporations often prefer to exchange their stock or assets for acquirer shares. Owners of S corporations, LLCs, and partnerships are largely indifferent to a deal's tax status because the proceeds of the sale are taxed at the owners' ordinary tax rate.

Accounting Considerations (Fig. 11.1, Arrow 10) Affect Form, Amount, and Timing of Payment

The requirement to adjust more frequently the fair value of contingent payments may make earnouts less attractive as a form of payment due to the potential increase in earnings volatility. Equity as a form of payment may be less attractive due to the potential for changes in its value between the deal announcement date and closing date. The potential for future write-downs may discourage overpayment by acquirers due to the required periodic review of fair market versus book values. Table 11.1 provides a summary of these common linkages.

TABLE 11.1 Summary of Common Linkages Within the Deal-Structuring Process

Component of deal-structuring process	Influences choice of
Form, amount, and timing of payment	Acquisition vehicle Postclosing organization Accounting considerations Tax structure (taxable or nontaxable)
Form of acquisition	Acquisition vehicle Postclosing organization Form, amount, and timing of payment Tax structure (taxable or nontaxable)
Tax considerations	Form, amount, and timing of payment Postclosing organization
Legal form of selling entity	Tax structure (taxable or nontaxable)

FORM OF ACQUISITION VEHICLE AND POSTCLOSING ORGANIZATION

Choosing an acquisition vehicle or postclosing organization requires consideration of the cost and formality of organization, ease of transferring ownership, continuity of existence, management control, ease of financing, ease of integration, method of distribution of profits, extent of personal liability, and taxation. Each form of legal entity has different risk, financing, tax, and control implications for the acquirer.⁵ The selection of the appropriate entity can help to mitigate risk, maximize financing flexibility, and minimize the net cost of the acquisition.

Choosing the Appropriate Acquisition Vehicle

The corporate structure is the most commonly used acquisition vehicle, since it offers most of the features acquirers desire, including limited liability, financing flexibility, continuity of ownership, and deal flexibility (e.g., option to engage in a tax-free deal). For small privately owned firms, an ESOP structure may be a convenient vehicle for transferring the owner's interest in the business to the employees while offering significant tax advantages. Non-US buyers intending to make additional acquisitions may prefer a holding company structure, enabling the buyer to control other companies by owning only a small portion of the company's voting stock.

A partnership may be appropriate if it is important to share risk, to involve partners with special attributes, to avoid double taxation, or in special situations.⁶ In late 2016, General Electric (GE) reached an agreement with United States-based oil services firm Baker Hughes to create a partnership in which GE contributed its oil and gas operations plus \$7.4 billion in cash and Baker Hughes contributed all of its operations. Baker Hughes's shareholders received a special cash dividend of \$7.4 billion paid by the partnership and a 37.5% stake in the partnership, with GE owning the remaining 62.5%. GE's ownership percentage reflected its operating earnings for 2014–15 fiscal year of \$2.5 and 1.5 billion (before nonrecurring expenses) for Baker Hughes [i.e., $\$2.5/(\$2.5 + \$1.5) = 62.5\%$].

Choosing the Appropriate Postclosing Organization

The postclosing organization can be the same as that chosen for the acquisition vehicle. Common postclosing structures include divisional⁷ and holding company arrangements.

⁵The various forms of potential acquisition vehicles and their specific advantages and disadvantages are discussed in considerable detail in Chapter 15.

⁶Certain situations often require specific types of partnership arrangements. For example, a *master limited partnership* (MLP) is used in industries where cash flow is relatively predictable, such as oil and gas extraction and distribution and real estate. As with other limited partnerships, it is not subject to double taxation, and its investors are subject to limited liability; unlike other partnerships, its units can be more easily bought and sold than those of private partnerships and privately owned corporations and often trade in the same manner as shares of common stock. MLPs are considered in default if all profits are not distributed.

⁷A division is not a separate legal entity but rather an organizational unit, and it is distinguished from a legal subsidiary in that it typically will not have its own stock or board of directors that meets regularly. Divisions may have managers with the same titles normally associated with separate legal entities, such as a president or chief operating officer. Because a division is not a separate legal entity, its liabilities are the responsibility of the parent.

While holding companies are often corporations, they also represent a distinct way of organizing and operating the firm. The choice of postclosing organization depends on the objectives of the acquirer. The acquiring firm may choose a structure that facilitates postclosing integration, minimizes risk from the target's known and unknown liabilities, minimizes taxes, passes through losses to shelter the owners' tax liabilities, preserves unique target attributes, maintains target independence during the duration of an earnout, or preserves the tax-free status of the deal.

If the acquirer intends to integrate the target immediately after closing, the corporate or divisional structure often is preferred because it offers the greatest control. In JVs and partnerships, the dispersed ownership may render decision making slower or more contentious. Implementation is more likely to depend on close cooperation and consensus building, which may slow efforts at rapid integration of the acquired company. Realizing synergies may be more protracted than if management control is more centralized within the parent.

A holding company structure may be preferable when the target has significant liabilities, an earnout is involved, the target is a foreign firm, or the acquirer is a financial investor. The parent may be able to isolate target liabilities within the subsidiary, and the subsidiary could be forced into bankruptcy without jeopardizing the parent. When the target is a foreign firm, operating it separately from the rest of the acquirer's operations may minimize disruption from cultural differences. Finally, a financial buyer may use a holding company structure because the buyer has no interest in operating the target firm for any length of time. A partnership or JV structure may be appropriate if the risk and the value of tax benefits are high. The total investment in the target is shared. The acquired firm may benefit because of the expertise that the different partners or owners might provide. A partnership or LLC eliminates double taxation and passes current operating losses, tax credits, and loss carryforwards and carrybacks to the owners.

LEGAL FORM OF THE SELLING ENTITY

Seller concerns about the form of the transaction may depend on whether it is an S corporation, a LLC, a partnership, or a C corporation. C corporations are subject to double taxation, whereas owners of S corporations, partnerships, and LLCs are not ([Exhibit 11.1](#)).

FORM OF PAYMENT

The fraction of all-stock deals peaked in the late 1990s at more than 60% before plunging in recent years to about 20%. In contrast, all-cash deals bottomed out at about 25% in the late 1990s before rising to about 50% in recent years. Mixed payment deals (i.e., those involving both stock and cash) have risen from about 10% in the late 1990s to about 30% most recently.⁸ This section addresses the different forms of payment used and the circumstances in which one form may be preferred over another.

⁸Boone et al. (2014).

EXHIBIT 11.1 HOW SELLER'S LEGAL FORM AFFECTS FORM OF PAYMENT

Assume that a business owner starting with an initial investment of \$100,000 sells her business for \$1 million. Different legal structures have different tax impacts:

1. After-tax proceeds of a stock sale are $(\$1,000,000 - \$100,000) \times (1 - 0.15) = \$765,000$. The S corporation shareholder or LLC member holding shares for more than 1 year pays a maximum capital gains tax equal to 15% of the gain on the sale.^a
2. After-tax proceeds from an asset sale are $(\$1,000,000 - \$100,000) \times (1 - 0.4) \times (1 - 0.15) = \$900,000 \times 0.51 = \$459,000$. A C corporation typically pays tax equal to 40% (i.e., 35% federal and 5% state and local), and the shareholder pays a maximum capital gains tax equal to 15%, resulting in double taxation of the gain on sale.

Implications

1. C corporation shareholders generally prefer acquirer's stock for their stock or assets to avoid double taxation.
2. S corporation and LLC owners often are indifferent to an asset sale or stock sale because 100% of the corporation's income passes through the corporation untaxed to the owners, who are subject to their own personal tax rates. The S corporation shareholders or LLC members still may prefer a share-for-share exchange if they are interested in deferring their tax liability or are attracted by the long-term growth potential of the acquirer's stock.

^aThe capital gains tax rate at the time of this writing is 15% if an individual's taxable income falls in the 25, 28, 33, or 35% marginal tax brackets.

Cash

Acquirers may use cash if the firm has significant borrowing capacity, a high credit rating, and undervalued shares and wishes to maintain control. Surprisingly, there is little correlation between the size of an acquirer's cash balances and the likelihood it would make a cash offer in a takeover. In fact, cash-rich acquirers are often more likely to make stock rather than cash offers than acquirers with smaller cash holdings. This seeming anomaly may reflect the target's preference for acquirer's stock due to its perceived growth potential or for a tax-free deal.⁹ A cash purchase is more likely to be financed from borrowing if the firm has a high credit rating due to its comparatively low borrowing costs.¹⁰ Highly leveraged acquirers are less likely to offer all-cash deals and more likely to pay less cash in mixed payment offers consisting of cash and stock. Undervalued shares could result in substantial dilution of the acquirer's current shareholders. A bidder may use cash rather than shares if the voting control of its dominant shareholder is threatened as a result of the issuance of voting stock to acquire the target.¹¹

⁹Pinkowitz et al. (2013).

¹⁰Karampatsas et al. (2014).

¹¹Faccio and Masulis (2005).

The preference for using cash appears to be much higher in Western European countries, where ownership tends to be more heavily concentrated in publicly traded firms, than in the United States. In Europe, 63% of publicly traded firms have a single shareholder directly or indirectly controlling 20% or more of the voting shares; the US figure is 28%.¹² The seller's shareholders may prefer cash if they believe the acquirer's shares have limited appreciation potential and have a high tax basis in their stock.¹³ The high basis implies lower capital gains and less need to defer the payment of taxes.

Noncash

The use of stock is more complicated than cash because of the need to comply with prevailing securities laws. The acquirer may choose to use stock if it is believed to be overvalued and has limited borrowing capacity and excess cash balances. Acquirer's stock also may be used as the primary form of payment when the integration of the target firm is expected to be lengthy in order to minimize the amount of indebtedness required to complete the takeover. By maintaining the ability to borrow, the acquirer is able to finance unanticipated cash outlays during the integration period and to pursue investment opportunities that might arise.¹⁴ Firms whose actual leverage exceeds their desired leverage are more likely to use some form of payment other than cash in making acquisitions.¹⁵ Furthermore, acquirer's stock may be a useful form of payment when valuing the target firm is difficult, such as when the target has hard-to-value intangible assets, new product entries, or large R&D outlays. In accepting acquirer's stock, a seller may have less incentive to negotiate an overvalued purchase price if it wishes to participate in any appreciation of the stock it receives.¹⁶ Other forms of noncash payment include real property, rights to intellectual property, royalties, earnouts, and contingent payments.

Overvalued stock has been shown to be an important predictor of the form of payment chosen by acquirers. The extent to which a firm's share price is overvalued can be measured by the amount of short interest¹⁷ in the stock. Stock acquirers have significantly higher short interest in their shares prior to the announcement of a merger, up to 6 months prior to the merger, than do cash acquirers.¹⁸

Sellers often demand acquirer shares as the primary form of payment due to the ability to defer the payment of taxes. Acquirer shares might be especially attractive if their growth prospects are favorable.¹⁹ There is the ever-present danger to selling shareholders that the

¹²Faccio and Lang (2002).

¹³Burch et al. (2012).

¹⁴Huang et al. (2011).

¹⁵Uysal (2011).

¹⁶(Officer, 2007). Note that simply accepting acquirer's stock does not guarantee the seller will not attempt to negotiate an overvalued purchase price if the seller intends to sell the acquirer shares immediately following closing.

¹⁷Short interest is the quantity of shares investors have sold short but not yet covered or closed out and is viewed as an indicator of whether investors believe a stock's price is likely to fall. Short interest is calculated by dividing the number of shares sold short by the total number of outstanding shares. For example, 3% short interest means that 3% of the outstanding shares are held short.

¹⁸Ben-David et al. (2015).

¹⁹Ismail and Krause (2010).

acquirer shares may be overvalued and decline in value over time toward their true value.²⁰ Seller shareholders may find debt unattractive because of the acquirer's perceived high risk of default. Debt or equity securities issued by nonpublic firms may also be illiquid because of the small size of the resale market for such securities.

Acquirers, such as small or emerging firms, may not have access to relatively inexpensive debt financing. Consequently, they may be inclined to finance their cash bids for targets by issuing equity. Because equity is a higher cost source of financing, its use to finance the cash bid can result in lower purchase price premiums. In contrast, acquirers having access to inexpensive debt financing are prone to borrow to finance their cash bids and tend to overbid for target firms.²¹

Cash and Stock in Combination

Offering target shareholders multiple payment options may encourage more participation in tender offers. Some target shareholders may want a combination of acquirer's stock and cash if they are unsure of the appreciation potential of the acquirer's stock. Others may prefer a combination of cash and stock if they need the cash to pay taxes due on the sale of their shares. Also, acquirers, unable to borrow to finance an all-cash offer or unwilling to absorb the dilution in an all-stock offer, may choose to offer the target firm a combination of stock and cash.

Acquirers also may be motivated to offer their shares if they believe they are overvalued, since they are able to issue fewer shares. Overvaluation refers to the excess of the acquirer's current share price over its intrinsic value. Target firm shareholders may be willing to accept overvalued acquirer shares because the overvaluation may not be obvious or the acquirer's stock may reduce the degree of postmerger leverage of the combined firms.²² If investors believe the combined firms are less risky because of the reduction in leverage, the intrinsic value of the acquirer shares may rise reflecting the combined firm's lower cost of capital. The resulting rise in their intrinsic value may reduce or eliminate the overvaluation of the acquirer shares.

The multiple-option bidding strategy creates uncertainty, since the amount of cash the acquirer ultimately will have to pay to target shareholders is unclear, because the number of shareholders choosing the all-cash or cash-and-stock option is not known prior to completion of the tender offer. Acquirers resolve this issue by including a *proration clause* in tender offers and merger agreements that allows them to fix—at the time the tender offer is initiated—the amount of cash they will ultimately have to pay out.²³

²⁰Higgins (2013).

²¹Vladimirov (2015).

²²Vermaelen and Xu (2014).

²³Assume the acquisition cost is \$100 million, the acquirer wishes to limit cash paid to target firm shareholders to one-half of that amount, and the acquirer offers the target firm's shareholders a choice of stock or cash. If the amount paid to target shareholders who choose to receive cash exceeds \$50 million, the proration clause enables the acquirer to pay all target firm shareholders tendering their shares one-half of the purchase price in cash and the remainder in stock.

Convertible Securities

An acquirer and a target often have inadequate information about the other, even after completing due diligence. The acquirer is anxious about overpaying, and target shareholders are concerned about whether the offer price reflects the fair value of their shares. The use of acquirer's stock as the primary form of payment may mitigate some of this concern because target shareholders hoping to participate in any future appreciation are less likely to withhold important information. However, this does not address the issue of the fairness of the purchase price to target shareholders.

Convertible securities²⁴ offer the potential of resolving the concerns of the acquirer and the target when both are lacking in critical information about the other. Bidders believing their shares are undervalued are reluctant to use stock, to avoid diluting their current shareholders. To communicate their belief, such bidders may offer convertible debt as a form of payment. Target shareholders may find such offers attractive, because they provide a floor equal to the value of the debt at maturity plus accumulated interest payments as well as the potential for participating in future share appreciation. In contrast, bidders believing their shares are overvalued are more inclined to offer stock rather than cash or convertible securities. If the convertible securities are unlikely to be converted due to the limited share price appreciation of the bidder's stock, the securities will remain as debt and burden the firm with substantial leverage. There is empirical evidence that the use of convertible securities when both parties are lacking information can benefit both the bidder and the seller. Bidder and target abnormal announcement date returns for such deals are 1.86 and 6.89%, respectively.²⁵

MANAGING RISK AND REACHING CONSENSUS ON PURCHASE PRICE

Balance-sheet adjustments and escrow accounts, earnouts, contingent value rights (CVRs), rights to intellectual property and licensing fees, and consulting agreements may be used to close the deal when the buyer and seller cannot reach agreement on price.

Postclosing Balance-Sheet Price Adjustments and Escrow Accounts

About four-fifths of M&As require some purchase price adjustment, resulting most often from a restatement of operating earnings or cash flow or working capital.²⁶ Escrow or holdback accounts and adjustments to the target's balance sheet are most often used in cash rather than stock-for-stock purchases (particularly when the number of target shareholders is large). They rely on an audit of the target firm to determine its "true or fair" value and are applicable only

²⁴Convertible bonds and preferred stock can be converted into a predetermined number of a firm's common shares if the shares exceed the price per share at which a convertible security can be converted into common stock. These types of securities are explained in more detail in Chapter 14.

²⁵Finnerty et al. (2012).

²⁶RSM McGladrey, Inc., survey of 75 middle-market private equity investors (2011).

TABLE 11.2 Working Capital Guarantee Balance-Sheet Adjustments (\$ Million)

	Purchase price		Purchase price reduction	Purchase price increase
	At time of negotiation	At closing		
If working capital equals	110	100	10	
If working capital equals	110	125		15

when what is being acquired is clearly identifiable, such as in a purchase of tangible assets. The buyer and seller typically share the cost of the audit. With *escrow accounts*, the buyer retains a portion of the purchase price until completion of a postclosing audit of the target's financial statements. Escrow accounts may also be used to cover continuing claims beyond closing.

Balance-sheet adjustments are used when the elapsed time between the agreement on price and the actual closing date is lengthy. The balance sheet may change significantly, so the purchase price is adjusted up or down. Such adjustments can be used to guarantee the value of the target firm's shareholder equity or, more narrowly, the value of working capital. With a shareholder equity guarantee, both parties agree at signing to an estimate of the target's equity value on the closing date. The purchase price is then increased or decreased to reflect any change in the book value of the target's equity between the signing and closing dates due to net profit earned (or lost) during this period. Agreement may be reached more easily between the buyer and the seller with a working capital guarantee, which ensures against changes in the firm's net current operating assets.²⁷ As Table 11.2 indicates, the buyer reduces the total purchase price by an amount equal to the decrease in net working capital or shareholders' equity of the target and increases the purchase price by any increase in these measures during this period.

Earnouts and Other Contingent Payments

Earnouts and warrants frequently are used whenever the buyer and the seller cannot agree on price or when the parties involved wish to participate in the upside potential of the business. Earnout agreements may also be used to retain and motivate key target firm managers. An *earnout agreement* is a financial contract whereby a portion of the purchase price of a company is to be paid in the future, contingent on realizing the future earnings level or some other performance measure agreed on earlier. A subscription warrant, or simply *warrant*, is a type of security—often issued with a bond or preferred stock—that entitles the holder to purchase an amount of common stock at a stipulated price. The exercise price is usually higher than the price at the time the warrant is issued. Warrants may be converted over a period of many months to many years.

²⁷It is critical to define clearly what constitutes working capital and equity in the agreement of purchase and sale, since—similar to equity—what constitutes working capital may be ambiguous.

The earnout typically requires that the acquired business be operated as a wholly owned subsidiary of the acquiring company under the management of the former owners or key executives.²⁸ Earnouts differ substantially in terms of the performance measure on which the contingent payout is based, the period over which performance is measured, and the form of payment for the earnout.²⁹ Some earnouts are payable only if a certain performance threshold is achieved; others depend on average performance over several periods; and still others may involve periodic payments, depending on the achievement of interim performance measures rather than a single, lump-sum payment at the end of the earnout period. The value of the earnout is often capped. In some cases, the seller may have the option to repurchase the company at some predetermined percentage of the original purchase price if the buyer is unable to pay the earnout at maturity.

Earnouts consist of two parts: a payment up front and a deferred payment. The initial payment must be large enough to induce the target firm shareholders to enter into the agreement and the deferred payment must be of sufficient size to keep them motivated to exceed agreed-upon performance measures. Relatively large deferred payments and longer earnout periods are associated with higher takeover premia paid at closing than the premia paid in comparable nonearnout deals. Why? Target firm shareholders in earnouts are compensated for sharing the postacquisition integration risk with the acquiring firm by receiving a higher premium than they would have received had they received the entire payment up front.³⁰

Exhibit 11.2 illustrates how an earnout formula could be constructed reflecting these considerations. The purchase price has two components. At closing, the seller receives a lump-sum payment of \$100 million. The seller and the buyer agree to a baseline projection for a 3-year period and that the seller will receive a fixed multiple of the average annual performance of the acquired business in excess of the baseline projection. Thus, the earnout provides an incentive for the seller to operate the business as efficiently as possible.³¹ By multiplying the anticipated multiple investors will pay for operating cash flow at the end of the 3-year period by projected cash flow, it is possible to estimate the potential increase in shareholder value.³²

Used in 3% of deals, earnouts are more common when the targets are small private firms or subsidiaries of larger firms rather than large publicly traded firms. Such contracts are more easily written and enforced when there are relatively few shareholders.³³ Earnouts are most common in high-tech and service industries, when the acquirer and target firms are in different industries, when the target firm has a significant number of assets not recorded on the

²⁸The calculation of such goals and the resulting payments should be kept simple to avoid disputes.

²⁹Cain et al. (2014).

³⁰Barbopoulos et al. (2016).

³¹The baseline projection often is what the buyer used to value the seller's business. Shareholder value for the buyer is created whenever the acquired business's actual performance exceeds the baseline projection and the multiple applied by investors at the end of the 3-year period exceeds the multiple used to calculate the earnout payment. This assumes that the baseline projection values the business accurately and that the buyer does not overpay.

³²Earnouts may demotivate management if the acquired firm does not perform well enough to achieve any payout under the earnout formula or if the acquired firm exceeds the performance targets substantially, effectively guaranteeing the maximum payout under the plan. The management of the acquired firm may cut back on training expenses or make only those investments that improve short-term profits. To avoid such pitfalls, it may be appropriate to set multiple targets including revenue, income, and investment.

³³Srikant et al. (2001).

EXHIBIT 11.2 HYPOTHETICAL EARNOUT AS PART OF THE PURCHASE PRICE

Purchase Price

1. *Lump-sum payment at closing:* The seller receives \$100 million.
2. *Earnout payment:* The seller receives four times the excess of the actual average annual net operating cash flow over the baseline projection after 3 years, not to exceed \$35 million.

	Base year (first full year of ownership)		
	Year 1	Year 2	Year 3
Baseline projection (net cash flow) (\$)	10	12	15
Actual performance (net cash flow) (\$)	<u>15</u>	<u>20</u>	<u>25</u>

Earnout at the end of 3 years^a:

$$\frac{(\$15 - \$10) + (\$20 - \$12) + (\$25 - \$15)}{3} \times 4 = \$30.67$$

Potential increase in shareholder value^b:

$$\left\{ \frac{(\$15 - \$10) + (\$20 - \$12) + (\$25 - \$15)}{3} \times 10 \right\} - \$30.67 = \$46$$

^aThe cash flow multiple of 4 applied to the earnout is a result of negotiation before closing.

^bThe cash flow multiple of 10 applied to the potential increase in shareholder value for the buyer is the multiple the buyer anticipates that investors would apply to a 3-year average of actual operating cash flow at the end of the 3-year period.

balance sheet, when buyer access to information is limited, and when little integration will be attempted.

Earnouts on average account for 45% of the price paid for private firms and 33% for subsidiary acquisitions, and target firm shareholders tend to realize about 62% of the potential earnout amount. In deals involving earnouts, acquirers earn abnormal returns, ranging from 1.5%³⁴ to 5.4%,³⁵ around the announcement date, much more than deals not involving earnouts. Positive abnormal returns to acquiring company shareholders may be a result of investor perception that, with an earnout, the buyer is less likely to overpay and more likely to retain key target firm talent.

Contingent Value Rights

CVR securities issued by the acquirer commit it to pay additional cash or securities to the holder of the CVR (i.e., the seller) if the acquirer's share price (ASP) falls below a specified level at some future date. They can be traded on public exchanges. Their use suggests

³⁴Barbopoulos and Sudarsanam (2012) and Barbopoulos et al. (2016).

³⁵Kohers and Ang (2000).

that the acquirer believes that its shares are unlikely to fall below their current level. CVRs are sometimes granted when the buyer and the seller are far apart on the purchase price. A CVR is more suitable for a public company or a private firm with many shareholders than is an earnout, because it can be transferred to many investors. Earnouts are more often used with sales of private firms rather than for sales of public firms, since they are designed to motivate a firm's managers who have a significant degree of control over the firm's future performance.³⁶

Drug companies frequently use CVRs as a portion of the payment made to acquire other drug companies whose products do not have a proven track record, to reduce the risk of overpaying. In 2016, Irish drug manufacturer paid US biotechnology firm Dyax Corporation shareholders \$37.30 per share in cash at closing. Dyax shareholders would also receive an additional cash payment of \$4 per share if the firm's leading treatment drug for hereditary angioedema, DX-2930, received approval by the Federal Drug Administration by the end of 2019.

In 2016, potential conflicts of interest associated with CVRs were highlighted in a shareholder lawsuit against French Pharmaceutical firm, Sanofi, which acquired Genzyme, a United States-based biotech firm, in 2011 for \$20 billion. Genzyme had been conducting clinical trials for a promising multiple sclerosis treatment called Lemtrada and estimated the value of each CVR at \$5.58. The merger contract required Sanofi to make "diligent efforts" to guide Lemtrada through the US Federal Drug Administration regulatory process and to "ignore any cost of potential CVR payments." The merger agreement, however, did not address the potential conflict arising from Sanofi developing its own multiple sclerosis drug, Aubagio, which would compete with Lemtrada. The lawsuit alleges Sanofi focused on developing Aubagio to avoid making as much as \$3.8 billion in payments to CVR holders. After 1 year on the market, Lemtrada generated sales of about \$37 million, less than one-fifth of the approximate \$180 million realized by Aubagio in its first year on the market. By the end of 2016, the CVRs traded at \$0.14.

Rights, Royalties, and Fees

Intellectual property, royalties from licenses, and fee-based consulting or employment contracts are other forms of payment used to resolve price differences between the buyer and the seller. The right to use a proprietary process or technology for free or at a below-market rate may interest former owners considering other business opportunities.³⁷ Such arrangements should be coupled with agreements not to compete in the same industry as their former firm. Table 11.3 summarizes the advantages and disadvantages of these various forms of payment.

³⁶Chatterjee and Yan (2008) document that acquirers issuing CVRs realize abnormal announcement date returns of 5.4% because investors view their use as confirmation that the acquirer believes their shares are undervalued.

³⁷Note that such an arrangement, if priced at below-market rates or free to the seller, would represent taxable income to the seller.

TABLE 11.3 Evaluating Alternative Forms of Payment

Form of payment	Advantages	Disadvantages
Cash (including highly marketable securities)	<i>Buyer:</i> Simplicity <i>Seller:</i> Ensures payment if acquirer's creditworthiness is questionable	<i>Buyer:</i> Must rely solely on protections afforded in the contract to recover claims <i>Seller:</i> Creates immediate tax liability
Stock • Common • Preferred • Convertible preferred	<i>Buyer:</i> High P/E relative to seller's P/E may increase the value of the combined firms if investors apply higher P/E to combined firms' earnings <i>Seller:</i> Defers taxes and provides potential price increase. Retains interest in the business	<i>Buyer:</i> Adds complexity; potential EPS dilution <i>Seller:</i> Potential decrease in purchase price if the value of equity received declines. May delay closing because of SEC registration requirements
Debt • Secured • Unsecured • Convertible	<i>Buyer:</i> Interest expense is tax deductible <i>Seller:</i> Defers tax liability on the principal	<i>Buyer:</i> Adds complexity and increases leverage <i>Seller:</i> Risk of default
Performance-related earnouts	<i>Buyer:</i> Shifts some portion of the risk to the seller <i>Seller:</i> Potential for a higher purchase price	<i>Buyer:</i> May limit the integration of the businesses <i>Seller:</i> Increases the uncertainty of the sales price
Purchase price adjustments	<i>Buyer:</i> Protection from eroding values of working capital before closing <i>Seller:</i> Protection from increasing values of working capital before closing	<i>Buyer:</i> Audit expense <i>Seller:</i> Audit expense. (Note that buyers and sellers often split the audit expense)
Real property • Real estate • Plant and equipment • Business or product line	<i>Buyer:</i> Minimizes use of cash <i>Seller:</i> May minimize tax liability	<i>Buyer:</i> Opportunity cost <i>Seller:</i> Real property may be illiquid
Rights to intellectual property • License • Franchise	<i>Buyer:</i> Minimizes cash use <i>Seller:</i> Gains access to valuable rights, and spreads taxable income over time	<i>Buyer:</i> Potential for setting up a new competitor <i>Seller:</i> Illiquid; income taxed at ordinary rates
Royalties from • Licenses • Franchises	<i>Buyer:</i> Minimizes cash use <i>Seller:</i> Spreads taxable income over time	<i>Buyer:</i> Opportunity cost <i>Seller:</i> Income taxed at ordinary rates

TABLE 11.3 Evaluating Alternative Forms of Payment (*cont.*)

Form of payment	Advantages	Disadvantages
Fee-based • Consulting contract • Employment agreement	<i>Buyer:</i> Uses seller's expertise and removes seller as a potential competitor <i>Seller:</i> Augments the purchase price and allows the seller to stay with the business	<i>Buyer:</i> May involve demotivated employees <i>Seller:</i> Limits ability to compete in the same business. Income taxed at ordinary rates
Contingent value rights	<i>Buyer:</i> Minimizes up-front payment <i>Seller:</i> Provides for minimum payout guarantee	<i>Buyer:</i> Commits buyer to minimum payout <i>Seller:</i> Buyer may ask for purchase price reduction
Staged or distributed payouts	<i>Buyer:</i> Reduces amount of up-front investment <i>Seller:</i> Reduces buyer angst about certain future events	<i>Buyer:</i> May result in underfunding of needed investments <i>Seller:</i> Lower present value of purchase price

SEC, Securities and Exchange Commission.

CONSTRUCTING COLLAR ARRANGEMENTS

Unlike all-cash deals, large fluctuations in the ASP can threaten to change the terms of the deal or lead to its termination in share-for-share exchanges. *Fixed share-exchange agreements*, which preclude any change in the number of acquirer shares exchanged for each target share, are commonly used in share exchanges because they involve both firms' share prices, allowing each party to share in the risk or benefit from fluctuating share prices. The acquirer's risk is that its shares will appreciate between signing and closing, raising the cost of the deal. The seller's risk is a potential drop in the value of the ASP, resulting in a lower-than-expected purchase price. While the buyer will know exactly how many shares will have to be issued to complete the deal, the acquirer and the target will be subject to significant uncertainty about the final value of the deal.

Alternatively, a *fixed-value agreement* fixes the value of the offer price per share by allowing the share-exchange ratio (SER) to vary or float. An increase in the value of the ASP results in fewer acquirer shares being issued, to keep the value of the deal unchanged, while a decrease would require that additional shares be issued.

Both fixed-value and fixed-share-exchange agreements sometimes include a collar arrangement. For fixed-value agreements, the SER is allowed to vary within a narrow range; for fixed-share-exchange agreements, the offer price per share (deal value) is allowed to fluctuate within narrow limits.³⁸ Collar arrangements can be constructed as follows:

³⁸According to Factset MergerMetrics, about 15% of deals include some form of a collar. Merger contracts often contain "material adverse-effects clauses" allowing parties to the contract to withdraw from or renegotiate the deal. Officer (2004) argues that collars reduce the likelihood of renegotiation due to unanticipated changes in share prices.

$$\begin{aligned}\text{Offer Price per Share} &= \text{SER} \times \text{ASP} \\ &= \left\{ \frac{\text{Offer Price per Share}}{\text{ASP}} \right\} \times \text{Acquirer's Share}\end{aligned}$$

$$\begin{aligned}\text{Collar Range: } \text{SER}_L \times \text{ASP}_L \text{ (lower limit)} &\leq \text{Offer Price per Share} \\ &\leq \text{SER}_U \times \text{ASP}_U \text{ (upper limit)}\end{aligned}$$

where $\text{ASP}_U > \text{ASP}_L$, $\text{SER}_U < \text{SER}_L$, and subscripts L and U refer to lower and upper limits.

Case Study 11.1 illustrates the use of both fixed-value and fixed-share-exchange agreements. Within the first collar (fixed value), the purchase price is fixed by allowing the SER to vary, giving the seller some degree of certainty inside a narrow range within which the ASP floats; the second collar (fixed share exchange) allows the ASP (and therefore deal value) to vary within a specific range with both the buyer and seller sharing the risk. Finally, if the ASP rises above a certain level, the purchase price is capped; if it falls below a floor price, the seller can walk away. **Table 11.4** illustrates the effect of a 1% increase or decrease in the acquirer's (Flextronics) \$11.73 share price on the \$6.55 offer price for the target firm's (International DisplayWorks) shares under various collar arrangements.

TABLE 11.4 Flextronics–IDW Fixed-Value and Fixed-Share-Exchange Agreements

	Percent change	Offer price	Percent change	Offer price
		$(\$6.55/\$11.73) \times \$11.73 = \$6.55$		$(\$6.55/\$11.73) \times \$11.73 = \$6.55$
Fixed value	1	$(\$6.55/\$11.85) \times \$11.85 = \$6.55$	(1)	$(\$6.55/\$11.61) \times \$11.61 = \$6.55$
	2	$(\$6.55/\$11.96) \times \$11.96 = \$6.55$	(2)	$(\$6.55/\$11.50) \times \$11.50 = \$6.55$
	3	$(\$6.55/\$12.08) \times \$12.08 = \$6.55$	(3)	$(\$6.55/\$11.38) \times \$11.38 = \$6.55$
	4	$(\$6.55/\$12.20) \times \$12.20 = \$6.55$	(4)	$(\$6.55/\$11.26) \times \$11.26 = \$6.55$
	5	$(\$6.55/\$12.32) \times \$12.32 = \$6.55$	(5)	$(\$6.55/\$11.14) \times \$11.14 = \$6.55$
	6	$(\$6.55/\$12.43) \times \$12.43 = \$6.55$	(6)	$(\$6.55/\$11.03) \times \$11.03 = \$6.55$
	7	$(\$6.55/\$12.55) \times \$12.55 = \$6.55$	(7)	$(\$6.55/\$10.91) \times \$10.91 = \$6.55$
	8	$(\$6.55/\$12.67) \times \$12.67 = \$6.55$	(8)	$(\$6.55/\$10.79) \times \$10.79 = \$6.55$
	9	$(\$6.55/\$12.79) \times \$12.79 = \$6.55$	(9)	$(\$6.55/\$10.67) \times \$10.67 = \$6.55$
Fixed SER	10	$(\$6.55/\$12.90) \times \$12.90 = \$6.55$	(10)	$(\$6.55/\$10.56) \times \$10.56 = \$6.55$
	11	$(\$6.55/\$12.90) \times \$13.02 = \$6.61$	(11)	$(\$6.55/\$10.56) \times \$10.44 = \$6.48$
	12	$(\$6.55/\$12.90) \times \$13.14 = \$6.67$	(12)	$(\$6.55/\$10.56) \times \$10.32 = \$6.40$
	13	$(\$6.55/\$12.90) \times \$13.25 = \$6.73$	(13)	$(\$6.55/\$10.56) \times \$10.21 = \$6.33$
	14	$(\$6.55/\$12.90) \times \$13.37 = \$6.79$	(14)	$(\$6.55/\$10.56) \times \$10.09 = \$6.26$
	15	$(\$6.55/\$12.90) \times \$13.49 = \$6.85$	(15)	$(\$6.55/\$10.56) \times \$9.97 = \$6.18$
	>15	SER floats based on fixed \$6.85	>(15)	IDW may terminate agreement

All changes in offer price based on a 1% change from \$11.73. IDW, International DisplayWorks; SER, share-exchange ratio.

CASE STUDY 11.1 FLEXTRONICS ACQUIRES INTERNATIONAL DISPLAYWORKS USING MULTIPLE COLLAR ARRANGEMENTS

Key Points

- Collar arrangements may involve fixed-share-exchange and/or fixed-value agreements.
- Both buyers and sellers may benefit from such arrangements.

Flextronics, a camera modules producer, acquired International DisplayWorks (IDW), an LCD maker, in a share exchange valued at \$300 million. The share-exchange ratio was calculated using the Flextronics average daily closing share price for the 20 trading days ending on the fifth trading day preceding the closing.^a Transaction terms included the following three collars:

1. *Fixed-Value Agreement*: The offer price involved an exchange ratio floating inside a 10% collar above and below a Flextronics' share price of \$11.73 and a fixed purchase price of \$6.55 for each share of IDW common stock. The range in which the exchange ratio floats can be expressed as follows^b:

$$\frac{\$6.55}{\$10.55} \times \$10.55 \leq \frac{\$6.55}{\$11.73} \times \$11.73 \leq \frac{\$6.55}{\$12.90} \times \$12.90$$

$$0.6209 \times \$10.55 \leq 0.5584 \times \$11.73 \leq 0.5078 \times \$12.90$$

If Flextronics' stock price declines by as much as 10% to \$10.55, 0.6209 share of Flextronics stock (i.e., \$6.55/\$10.55) is issued for each IDW share.

If Flextronics' stock price increases by as much as 10% to \$12.90, 0.5078 share of Flextronics' stock (i.e., \$6.55/\$12.90) is issued for each IDW share.

2. *Fixed-Share-Exchange Agreement*: The offer price involved a fixed exchange ratio inside a collar 11 and 15% above and below \$11.73, resulting in a floating purchase price if the Flextronics' stock increases or decreases between 11 and 15% from \$11.73 per share.
3. IDW has the right to terminate the agreement if Flextronics's share price falls by more than 15% below \$11.73. If Flextronics' share price increases by more than 15% above \$11.73, the exchange ratio floats based on a fixed purchase price of \$6.85 per share.^c

^aCalculating the acquirer share price as a 20-day average ending 5 days prior to closing reduces the chance of using an aberrant price per share and provides time to update the purchase agreement.

^bThe share-exchange ratio varies within $\pm 10\%$ of the Flextronics' \$11.73 share price.

^cIDW is protected against a "free fall" in the Flextronics' share price, while the purchase price is capped at \$6.85.

FORM OF ACQUISITION

What acquirers purchase (target stock or assets) and how ownership is transferred from the target to the acquirer is called the *form of acquisition*. Each form affects the deal structure differently.³⁹

³⁹For more information on this topic, see DePamphilis (2010b, Chapter 11).

An *asset purchase* involves the sale of all or a portion of the assets of the target to the buyer or its subsidiary in exchange for buyer's stock, cash, debt, or some combination. The buyer may assume all, some, or none of the target's liabilities. The purchase price is paid directly to the target firm. A *stock purchase* involves the sale of the outstanding stock of the target to the buyer or its subsidiary by the target's shareholders. Unlike an asset purchase, the purchase price is paid to the target firm's shareholders. This is the biggest difference between the two methods, and it has significant tax implications for the seller's shareholders (see Chapter 12).

A *statutory or direct merger* involves the combination of the target with the buyer or a subsidiary formed to complete the merger. One corporation survives the merger and the other disappears. The surviving corporation can be the buyer, the target, or the buyer's subsidiary. Merger terminology usually refers to the bidder as the *surviving corporation* and to the target as the *disappearing corporation*. Knowing which company is to survive is critical under merger law because of *successor liability*. This legal principle states that the surviving corporation receives by operation of law all rights and liabilities of both the bidder company and the target company in accordance with the statutes of the state in which the combined businesses will be incorporated.⁴⁰ Dissenting or minority shareholders are required to sell their shares, although some state statutes grant them the right to be paid the appraised value of their shares. *Stock-for-stock* or *stock-for-assets* deals represent alternatives to a merger.

State statutes usually require shareholder approval by both the bidder and target firms in a merger. However, no acquirer shareholder vote is required if the form of payment is cash, the number of new acquirer shares issued is less than 20% of the firm's outstanding shares, or the number of shares previously authorized is sufficient to complete the deal. These exceptions are discussed in more detail later in this chapter. The most important difference between a merger and a stock-for-stock purchase is that the latter does not require a target shareholder vote, since target shareholders are giving their assent by willingly selling their shares. By purchasing all of the target's stock for acquirer's stock or at least a controlling interest, the target firm is left intact as a wholly owned (or at least controlled) subsidiary of the bidder. [Table 11.5](#) highlights the advantages and disadvantages of these alternative forms of acquisition.

Purchase of Assets

In an asset purchase, a buyer acquires all rights a seller has to an asset for cash, stock, or some combination. An asset purchase may be the most practical way to complete the transaction when the acquirer is interested only in a product line or division of the parent firm with multiple product lines or divisions that are not organized as separate legal subsidiaries. The seller retains ownership of the shares of stock of the business. Only assets and liabilities identified in the agreement of purchase and sale are transferred to the buyer.

In a *cash-for-assets* acquisition, the acquirer pays cash for the seller's assets and may choose to accept some or all of the seller's liabilities.⁴¹ Seller shareholders must approve the transaction whenever the seller's board votes to sell all or "substantially all" of the firm's assets and

⁴⁰Because of successor liability, the bidder can realize significant cost savings by not having to transfer individual target assets and liabilities separately that would have otherwise required the payment of transfer taxes. For the creditor, all of the assets of the surviving corporation are available to satisfy its liabilities due to successor liability.

⁴¹In cases where the buyer purchases most of the assets of a target firm, courts have ruled that the buyer is also responsible for the target's liabilities.

TABLE 11.5 Advantages and Disadvantages of Alternative Forms of Acquisition

Alternative forms	Advantages	Disadvantages
Cash purchase of assets	Buyer • Allows targeted purchase of assets • Asset write-up • May renegotiate union and benefits agreements in the absence of a successor clause^a in the labor agreement • May avoid the need for shareholder approval • No minority shareholders Seller • Maintains corporate existence and ownership of assets not acquired • Retains NOLs and tax credits	Buyer • Loses NOLs^b and tax credits • Loses rights to intellectual property • May require consents to assignment of contracts • Exposed to liabilities transferring with assets (e.g., warranty claims) • Subject to taxes on any gains resulting in asset write-up • Subject to lengthy documentation of assets in the contract Seller • Potential double taxation if shell is liquidated • Subject to state transfer taxes • Necessity of disposing of unwanted residual assets • Requires shareholder approval if substantially all of the firm's assets are sold
Cash purchase of stock	Buyer • Assets/liabilities transfer automatically • May avoid the need to get consents to assignment for contracts • Less documentation • NOLs and tax credits pass to buyer • No state transfer taxes • May insulate from target liabilities if kept as a subsidiary • No shareholder approval if funded by cash or debt • Enables circumvention of target's board in hostile tender offer Seller • Liabilities generally pass to the buyer • May receive favorable tax treatment if acquirer's stock received in payment	Buyer • Responsible for known and unknown liabilities • No asset write-up unless 338 election is adopted by buyer and seller^c • Union and employee benefit agreements do not terminate • Potential for minority shareholders^d Seller • Loss of NOLs and tax credits • Favorable tax treatment is lost if buyer and seller adopt 338 election^e
Statutory merger	Buyer • Flexible form of payment (stock, cash, or debt) • Assets and liabilities transfer automatically, without lengthy documentation • No state transfer taxes • No minority shareholders because shareholders are required to tender shares (minority freeze-out) • May avoid shareholder approval	Buyer • May have to pay dissenting shareholders' appraised value of stock • May be time consuming because of the need for target shareholder and board approvals, which may delay closing

(Continued)

TABLE 11.5 Advantages and Disadvantages of Alternative Forms of Acquisition (cont.)

Alternative forms	Advantages	Disadvantages
	Seller • Favorable tax treatment if the purchase price is primarily in acquirer's stock • Allows for continuing interest in combined companies • Flexible form of payment	Seller • May be time consuming • Target firm often does not survive • May not qualify for favorable tax status
Stock-for-stock transaction	Buyer • May operate target company as a subsidiary • See purchase of stock mentioned previously	Buyer • May postpone realization of synergies • See purchase of stock mentioned previously
	Seller See purchase of stock mentioned previously	Seller See purchase of stock mentioned previously
Stock-for-assets transaction	Buyer • See purchase of assets mentioned previously	Buyer • May dilute buyer's ownership position • See purchase of assets mentioned previously
	Seller See purchase of assets mentioned previously	Seller See purchase of assets mentioned previously
Staged transactions	• Provides greater strategic flexibility	• May postpone realization of synergies

"If the employer and union negotiated a "successor clause" into their collective bargaining agreement covering the workforce in the target firm, the terms of the agreement may still apply to the workforce of the new business.

^bNet operating loss carryforwards or carrybacks.

^cIn Section 338 of the US tax code, the acquirer in a purchase of 80% or more of the stock of the target may elect to treat the acquisition as if it were an acquisition of the target's assets. The seller must agree with the election.

^dMinority shareholders in a subsidiary may be eliminated by a so-called "back-end" merger following the initial purchase of target stock. As a result of the merger, minority shareholders are required to abide by the majority vote of all shareholders and to sell their shares to the acquirer. If the acquirer owns more than 90% of the target's shares, it may be able to use a short-form merger, which does not require any shareholder vote.

the firm is liquidated. After paying for any liabilities not assumed by the buyer, the assets remaining with the seller and the cash received from the acquiring firm are transferred to the seller's shareholders in a liquidating distribution.⁴² In a *stock-for-assets* transaction, once approved by the seller's board and shareholders, the seller's shareholders receive buyer's stock in exchange for the seller's assets and assumed liabilities. In a second stage, the seller dissolves the corporation following shareholder ratification of such a move, leaving its shareholders with buyer's stock.

Advantages and Disadvantages From the Buyer's Perspective

Advantages to the buyer include being able to be selective as to which target assets to purchase and not being responsible for the seller's liabilities unless assumed under the contract.

⁴²Selling "substantially all" assets does not necessarily mean that most of the firm's assets have been sold; rather, it could refer to a small percentage of the firm's total assets that are critical to the ongoing operation of the business. Hence, the firm may be forced to liquidate if a sale of assets does not leave the firm with "significant continuing business activity"—that is, at least 25% of total pretransaction operating assets and 25% of pretransaction income or revenue. Unless required by the firm's bylaws, the buyer's shareholders do not vote to approve the transaction.

However, the buyer can be held responsible for certain liabilities, such as environmental claims, property taxes, and, in some states, substantial pension liabilities and product liability claims. To protect against such risks, buyers usually insist on *indemnification* that holds the seller responsible for payment of damages resulting from such claims.⁴³ Another advantage is that asset purchases enable buyers to revalue acquired assets to market value under the purchase method of accounting (see Chapter 12). This increase in the tax basis of the acquired assets to fair market value provides for higher depreciation and amortization expense deductions for tax purposes. Absent successor clauses in the contract, the asset purchase results in the termination of union agreements if less than 50% of the workforce in the new firm is unionized, thereby providing an opportunity to renegotiate agreements viewed as too restrictive.

Among the *disadvantages* to a purchase of assets is that the buyer loses the seller's net operating losses and tax credits, and rights to assets such as licenses, franchises, and patents cannot be transferred, which are viewed as owned by the target shareholders. The buyer often must seek the consent of customers and vendors to transfer existing contracts to the buyer. The transaction often is more complex and costly, because acquired assets must be listed in appendices to the definitive agreement, the sale of and titles to each asset transferred must be recorded, and state title *transfer taxes* must be paid. Moreover, a lender's consent may be required if the assets to be sold are being used as collateral for loans.

Advantages and Disadvantages From the Seller's Perspective

Among the *advantages*, sellers are able to maintain their corporate existence and thus ownership of tangible assets not acquired by the buyer and of intangible assets such as licenses, franchises, and patents. The seller retains the right to use all tax credits and accumulated net operating losses to shelter future income from taxes. The *disadvantages* include the potential double taxation of the seller. If the tax basis in the assets is low, the seller may experience a sizeable gain on the sale; if the corporation subsequently is liquidated, the seller may be responsible for the recapture of taxes deferred as a result of the use of accelerated rather than straight-line depreciation. If the number of assets transferred is large, the amount of state transfer taxes may become onerous. Whether the seller or the buyer actually pays the transfer taxes or they are shared is negotiable.

Purchase of Stock

In *cash-for-stock* or *stock-for-stock* transactions, the buyer purchases the seller's stock directly from the seller's shareholders. For a public company, the acquirer would make a tender offer, because public-company shareholders are likely to be too numerous to deal with individually. A purchase of stock is the approach most often taken in hostile takeovers. If the buyer is unable to convince all of the seller's shareholders to tender their shares, then a minority of seller shareholders remains outstanding. The target firm would then be viewed as a partially owned subsidiary of the acquiring company. No seller shareholder approval is required in such transactions because the seller's shareholders are expressing approval by tendering their shares.

⁴³Note that in most purchase agreements, buyers and sellers agree to indemnify each other from claims for which they are directly responsible. Liability under such arrangements usually is subject to specific dollar limits and is in force only for a specific period.

Advantages and Disadvantages From the Buyer's Perspective

Advantages include the automatic transfer of all assets with the target's stock, the avoidance of state asset transfer taxes, and the transfer of net operating losses and tax credits to the buyer. The purchase of the seller's stock provides for the continuity of contracts and corporate identity. However, the consent of some customers and vendors may be required before a contract is transferred if it is stipulated in the contract. While the acquirer's board normally approves any major acquisition, approval by shareholders is not required if the purchase is financed with cash or debt. If stock that has not yet been authorized is used, shareholder approval is required.

Among the *disadvantages*, the buyer is liable for all unknown, undisclosed, or contingent liabilities. The seller's tax basis is carried over to the buyer at historical cost⁴⁴; therefore, there is no step-up in the cost basis of assets, and no tax shelter is created. Dissenting shareholders in many states have the right to have their shares appraised, with the option of being paid the appraised value of their shares or remaining minority shareholders. The purchase of stock does not terminate existing union agreements or employee benefit plans. The existence of minority shareholders creates significant administrative costs and practical concerns.⁴⁵

Advantages and Disadvantages From the Seller's Perspective

Sellers often prefer a stock purchase to an asset purchase because the seller is free of future obligations, because all liabilities transfer to the buyer, and the seller is able to defer paying taxes if the form of payment is mostly buyer's stock. *Disadvantages* for the seller include the inability to retain certain assets and the loss of net operating losses, tax credits, and intellectual property rights.

Mergers

In a merger, two or more firms combine, with only one surviving. Unlike purchases of target stock, mergers require approval of both the target's and acquirer's boards and are subsequently submitted to both firms' shareholders for approval. However, there are some exceptions for acquirers, which are addressed later in this chapter. Usually a simple majority of all the outstanding voting shares must ratify the proposal, which is then registered with the appropriate state authority. Such deal structures are sometimes called one-step or long-form mergers.

Statutory and Subsidiary Mergers

In a *statutory merger*, the acquiring company assumes the assets and liabilities of the target in accordance with the statutes of the state in which the combined firms will be incorporated. A *subsidiary merger* involves the target becoming a subsidiary of the parent. To the public, the target firm may be operated under its brand name but will be owned and controlled by the

⁴⁴This is true unless the seller consents to take a 338 tax code election, which can create a tax liability for the seller. See Chapter 12 for more details.

⁴⁵The parent incurs significant additional expenses to submit annual reports, hold annual shareholder meetings, and conduct a formal board election process. Furthermore, implementing strategic business decisions may be inhibited by lawsuits initiated by disaffected minority shareholders.

acquirer. Most mergers are structured as subsidiary mergers in which the acquiring firm creates a new corporate subsidiary that merges with the target.

Statutory Consolidations

Technically not a merger, a *statutory consolidation* requires all legal entities to be consolidated into a new company, usually with a new name, whereas in a merger either the acquirer or the target survives. The new corporate entity created as a result of consolidation assumes ownership of the assets and liabilities of the consolidated organizations. Stockholders in merged companies typically exchange their shares for shares in the new company.

Mergers of Equals

A *merger of equals* is a deal structure usually applied whenever the participants are comparable in size, competitive position, profitability, and market capitalization—which can make it unclear whether one party is ceding control to the other and which party provides the greater synergy. Consequently, target firm shareholders rarely receive any significant premium for their shares. The new firm often is managed by the former CEOs of the merged firms as coequals and for the new firm's board to have equal representation from the boards of the merged firms.⁴⁶ However, it is relatively uncommon for the ownership split to be equally divided.⁴⁷ In mergers of equals, each firm's shareholders exchange their shares for new shares in the combined companies. The number of new company shares each shareholder receives depends on the desired pro forma ownership distribution in the new company after closing and the relative contribution to potential synergy contributed by each firm.

Actual mergers of equals are fairly rare. To reach agreement, one firm will acquire another and in the merger agreement stipulate the takeover as a merger of equals even when the target is in reality ceding control to the acquirer. Why the charade? Being taken over often has negative connotations. So making it appear that both firms are equal "partners" in the deal makes the transaction more acceptable to the target's board and senior managers. From a legal perspective, no change of control has taken place.

Such deals are more likely to work if both parties to the deal are highly motivated by what they believe are substantial and realizable synergies. In late 2013, Office Depot, Inc. and OfficeMax Inc. completed their \$18-billion merger of equals, with the combined firms using the name Office Depot. Anticipated cost synergies could total \$1–2 billion annually. Neil Austrian, Chairman and CEO of Office Depot, and Ravi Saligram, President and CEO of OfficeMax, will serve as co-CEOs. In addition to Austrian and Saligram, the new firm's board will consist of five independent directors from each of the Office Depot and OfficeMax boards. Such deals can, however, create impossible hurdles because of the lack of one party being clearly in control. Billed as a merger of equals, the \$35-billion merger of United States-based Omnicom and France's Publicis collapsed after a battle over how the firm would be organized destroyed plans to create the world's largest advertising agency. Perhaps in a rush to sign an agreement, tactical issues were left to be resolved between signing and closing. As always, the devil is in the details. Ultimately, the two parties could not agree over a centralized

⁴⁶Research by Wulf (2004) suggests that target firm CEOs often negotiate to retain a significant degree of control in the merged firm for both their board and their management in exchange for a lower premium for their shareholders.

⁴⁷According to Mallea (2008), only 14% have a 50/50 split.

or decentralized management structure. In this instance, the anticipated synergy consisting largely of projected economies of scale appeared problematic. There is no termination fee, and merger-related costs incurred such as legal and advisory fees would be split equally.

Tender Offers

An alternative to a traditional one-step (or long-form) merger is the *two-step merger*. In the first step, the acquirer buys through a stock purchase the majority of the target's outstanding stock from its shareholders in a tender offer; in the second step, a *squeeze-out/freeze-out merger* or *back-end merger* is approved by the acquirer as majority shareholder. Minority shareholders are required to sell their shares. The two-step merger usually is faster (if the buyer can get enough votes in the tender offer to qualify for a short-form merger) than the more traditional one-step merger that requires shareholder approval (with some exceptions) by both acquirer and target shareholders. The one-step merger process may take several months to close as a proxy statement must be prepared and reviewed by the SEC, mailed to shareholders, and a shareholder vote must be obtained. The length of the process creates deal uncertainty due to the potential for competing bids.

An important disadvantage of the two-step merger in the past has been the delay and cost of consummating the back-end merger necessary to acquire the shares that were not purchased in the initial tender offer. If the buyer failed to own 90% of the target's stock after the tender, the buyer was not permitted to use a short-form merger that requires a target board but not shareholder approval. Instead the buyer had to prepare, file, and mail a proxy statement following SEC review and hold a stockholder meeting. This process could result in a two-step merger taking longer than a one-step merger. Buyers and sellers have utilized a number of negotiated contract provisions to limit the risk of a protracted back-end merger. These included the top-up option and dual track structure discussed in more detail later in this chapter.

In late 2013, Delaware General Corporation Law was amended to include Section 251(h) permitting back-end mergers under certain conditions to be completed following a tender offer enabling the buyer to acquire at least enough target shares to approve the merger (but less than the 90% required to use a "short-form" merger). This means that back-end mergers can now be implemented without the lengthy and costly process described previously.

To qualify for the accelerated back-end Section 251(h) merger process, a number of conditions must be satisfied. The target must be listed on a national public exchange with at least 2000 shareholders and the buyer must be a corporation; the target's certificate of incorporation must not require shareholder approval for mergers; and the merger agreement must have been signed after August 1, 2013, and stipulate a provision requiring a back-end merger as soon as practicable following the tender offer. In addition, following the tender offer, the buyer must own at least the number of target shares required to adopt the merger agreement, usually a simple majority; the consideration in the second step must be in the same amount and form (i.e., stock for stock or cash for stock) as paid to target shareholders in the first step; and no single target shareholder at the time the merger agreement is approved by the target's board may own 15% or more of the target's shares. That is, the buyer cannot own 15% or more of the target at the time of the transaction.

While Section 251(h) of Delaware General Corporate Law makes the two-step merger more attractive for M&A deals involving public companies, one-step (long-form) mergers may still

make sense in other instances. Deals subject to extensive regulatory review and delay may benefit from the one-step process in which shareholder approval is obtained as soon as possible rather than allowing a tender offer to be subject to the receipt of regulatory approval. The shareholder approval eliminates the ability of the target's board to accept a competing bid. With a tender offer contingent on receiving approval by regulators, the target's board could accept competing bids. Other instances include the target's charter requiring a shareholder vote on all merger deals and when the target's shares are not publicly traded.

Shareholder Approvals

Target shareholders usually must give consent if all or "substantially all" of the firm's assets are being acquired.⁴⁸ While no acquirer shareholder vote is mandatory when the form of payment is cash because there is no dilution of current shareholders, there are certain instances in which no vote is required by the acquirer's shareholders in share-for-share exchanges. The first, the so-called *small-scale merger exception*, involves a transaction not considered material.⁴⁹ The second, a *short-form merger* or the *parent-submerger exception*, occurs when a subsidiary is being merged into the parent and the parent owns a substantial majority (over 90% in some states) of the subsidiary's stock before the transaction. The third exception involves use of a *triangular merger*, in which the acquirer establishes a merger subsidiary in which it is the sole shareholder. The only approval required is that of the board of directors of the subsidiary, which may be the same as that of the parent or acquiring company.⁵⁰ Finally, no shareholder approval is needed if the number of shares previously authorized under the firm's articles of incorporation is sufficient to complete the deal.

Top-Up Options and Dual Track Deal Structures

Such options are granted by the target to the bidding firm, whose tender offer is short of the 90% threshold to qualify as a short-form merger, to buy up newly issued target shares to reach the threshold. Since the option ensures that the merger will be approved, the bidder benefits by avoiding the delay associated with back-end mergers requiring a shareholder vote if the acquirer is unable to get enough target shares to implement a short-form merger. The target firm benefits by eliminating potential changes in the value of the bidder's shares that are offered in exchange for target shares that could occur between signing and closing.

Dual track deal structures include both a two-step tender offer and simultaneously file preliminary proxy materials for a one-step merger. They have been utilized in an effort to hedge against the risk of a delayed back-end merger if the tender offer does not reach 90%. The dual

⁴⁸"Substantially all" refers to the sale of assets critical to the ongoing operation of the business. Target shareholders do not get approval rights in short-form mergers in which the parent owns over 90% of a subsidiary's stock.

⁴⁹Acquiring firm shareholders cannot vote unless their ownership in the acquiring firm is diluted by more than one-sixth, or 16.67% (i.e., acquirer owns at least 83.33% of the firm's voting shares following closing). This effectively limits the acquirer to issuing no more than 20% of its total shares outstanding. For example, if the acquirer has 80 million shares outstanding and issues 16 million new shares (i.e., 0.2×80 million), its current shareholders are not diluted by more than one-sixth [i.e., $16 / (16 \text{ million} + 80 \text{ million})$ equals one-sixth, or 16.67%]. Issuing more than 16 million new shares would violate the small-scale merger exception.

⁵⁰The listing requirements of all major US stock exchanges may still force acquirer shareholder approval if the number of new shares issued to finance the transaction is greater than or equal to 20% of the acquirer's common shares outstanding prior to the deal. Such deals are deemed to be material.

track structure can be just as time consuming and expensive as using a tender offer in the first step and a long-form merger in the second step.

Special Applications of Basic Structures

While the one-step (long-form) merger deal structure is still an option, the two-step merger has become increasingly popular in *leveraged buyouts* (LBOs) due to the expectation that such deals can be closed faster. A financial sponsor (equity investor) or buyout firm creates a shell corporation funded by equity provided by the sponsor. After raising additional cash by borrowing from banks and selling debt to institutional investors, the shell corporation buys at least 90% of the target's stock for the deal to qualify as a short-form merger, squeezing out minority shareholders with a back-end merger.⁵¹ Following the 2013 changes in Delaware law described previously, the LBO buyout firm may qualify for an expedited back-end merger.

Single-firm recapitalizations are undertaken by controlling shareholders to squeeze out minority shareholders. To do so, a firm creates a wholly owned shell corporation and merges itself into the shell in a statutory merger. Stock in the original firm is cancelled, with the majority shareholders in the original firm receiving stock in the surviving firm and minority shareholders receiving cash or debt.⁵² In early 2014, the Delaware Supreme Court ruled in *Kahn v. M&F Worldwide Corp.* that a freeze-out merger between a controlling shareholder and its minority shareholders should be reviewed under the "business judgment rule" if certain procedures are followed with the burden of proving unfair treatment or valuation on minority shareholders.⁵³ These procedures include the following: the controlling shareholder relies on the advice of a special committee of the board established to review such proposals and a fully informed and without duress vote of a majority of the minority shareholders. If neither procedure is followed, the legality of the squeeze-out merger will be subject to a more rigorous standard than the business judgment rule: that is, the *entire fairness standard*, sometimes referred to as the unified fairness standard. Under this standard, the burden is on the controlling shareholder to prove that the squeeze-out was undertaken for a legitimate business purpose, the price offered for minority shares is fair,⁵⁴ and all dealings with minority shareholders are fair.

Staged transactions involve an acquirer's completing a takeover in stages spread over an extended period of time. They may be used to structure an earnout, enable the target to complete the development of a technology or process, or await regulatory approval of a license or patent.

⁵¹Alternatively, the buyout firm could negotiate with the board of the target firm for a top-up option to be exercised if 90% of the target's shares cannot be acquired in the first-step tender offer.

⁵²Minority shareholders usually arise from an acquisition in which less than 100% of the target firm shareholders tendered their shares. Consequently, those not tendering their shares become minority shareholders in the combined firms and continue to hold the target firm shares.

⁵³Under the "business judgment rule," the courts defer to managers' and board members' judgment in making decisions pertaining to the operations of a firm as long as they acted rationally. See Chapter 2 for more detail.

⁵⁴According to Ouyang and Zhu (2016), minority shareholders in countries with stronger corporate governance are more likely to receive a greater premium and a cash payment when "squeezed out" by the majority shareholders.

SOME THINGS TO REMEMBER

Deal structuring entails satisfying the key objectives of the parties involved and how risk will be shared. The process defines initial negotiating positions, risks, options for managing risk, levels of risk tolerance, and conditions under which the buyer or seller will “walk away” from the deal.

DISCUSSION QUESTIONS

- 11.1 What are the advantages and disadvantages of a purchase of assets from the perspectives of the buyer and the seller?
- 11.2 What are the advantages and disadvantages of a purchase of stock from the perspectives of the buyer and the seller?
- 11.3 What are the advantages and disadvantages of a statutory merger?
- 11.4 What are the reasons some acquirers choose to undertake a staged or multistep takeover?
- 11.5 What forms of acquisition represent common alternatives to a merger? Under what circumstances might these alternative structures be employed?
- 11.6 Comment on the following statement: A premium offered by a bidder over a target's share price is not necessarily a fair price; a fair price is not necessarily an adequate price.
- 11.7 In a year marked by turmoil in the global credit markets, Mars Corporation was able to negotiate a reverse breakup fee structure in its acquisition of Wrigley Corporation. This structure allowed Mars to walk away from the transaction at any time by paying a \$1-billion fee to Wrigley. Speculate as to the motivation behind Mars' and Wrigley's negotiating such a fee.
- 11.8 Despite disturbing discoveries during due diligence, Mattel acquired The Learning Company, a leading developer of software for toys, in a stock exchange valued at \$3.5 billion. Mattel had determined that TLC's receivables were overstated because product returns from distributors were not deducted from receivables and its allowance for bad debt was inadequate. Also, a \$50-million licensing deal also had been prematurely put on the balance sheet. Nevertheless, driven by the appeal of becoming a big player in the children's software market rapidly, Mattel closed on the transaction, aware that TLC's cash flows were overstated. Despite being aware of extensive problems, Mattel proceeded to acquire The Learning Company. Why? What could Mattel have done to protect its interests better? Be specific.
- 11.9 Describe the conditions under which an earnout may be most appropriate.
- 11.10 Deutsche Bank announced that it would buy the commercial banking assets (including a number of branches) of the Netherlands' ABN Amro for \$1.13 billion. What liabilities, if any, would Deutsche Bank have to (or want to) assume? Explain your answer.

Solutions to these Chapter Discussion Questions are found in the Online Instructor's Manual for instructors using this book (<https://textbooks.elsevier.com/web/Manuals.aspx?isbn=9780128016091>).

END OF CHAPTER CASE STUDY: DOW CHEMICAL AND DUPONT COMBINE IN A MERGER OF EQUALS

Case Study Objectives: To Illustrate

- Successful deal structures reflect the highest priority needs of the parties involved.
- Activist investors often play a key role in forcing boards and senior management to restructure their firms.
- Financial engineering often is used to restructure underperforming firms.

Two of the largest and oldest firms in the US chemical industry announced that they had reached an agreement to merge on December 11, 2015. The merger would result in the new firm having a combined market value of more than \$130 billion. Postclosing, the new firm would be named DowDuPont. The all-stock deal was motivated by a combination of factors including the effects of slumping commodity prices, weak demand for agricultural chemicals, and headwinds from a stronger dollar.

DowDuPont would be the second largest chemical company in the world, behind BASF of Germany, with more than \$92 billion in annual revenue. In an unusual display of financial restructuring linked to the merger, the deal is to be followed by a breakup of the new company into three businesses: agricultural chemicals, specialty products, and materials. The split-up of the new firm into three publicly traded companies is expected to increase their focus on their served markets and in turn improve their competitiveness, sales growth, and profit margins due to expense reduction.

Both firms are among the best known brands in the chemicals industry: Dow for plastics and agricultural chemicals and DuPont for such technical innovations as Kevlar and Teflon. DuPont has suffered from intense competition in Agriculture from Monsanto, especially in its corn seed business. DuPont's patents have kept a number of its products proprietary and profitable. In addition to agriculture, the firm's business portfolio includes electronics and communication, complex materials, and safety and protection. Dow Chemical's business portfolio is divided into two groups: specialty and basic chemicals. The firm has increased its focus on specialty chemicals that carry higher prices than the highly commoditized basic chemicals whose profitability is subject to the volatility of the energy markets.

The boards of both Dow and DuPont were under severe pressure by activist investors unhappy with the firms' subpar financial performance to increase shareholder value. In 2014, Dow agreed to appoint four independent directors to resolve a dispute with Daniel S. Loeb, CEO of hedge fund Third Point. In 2015, DuPont successfully thwarted a challenge to their board's composition by Nelson Peltz, CEO of Trian Fund Management. In both instances, Mr. Loeb and Mr. Peltz argued that the firms needed to trim costs and improve operating efficiency as well as to buy back shares and increase dividends. Win or lose, the activists had made their voices heard.

The combination of Dow and DuPont was billed as a merger of equals. Under the terms of the transaction, Dow shareholders are to receive a fixed exchange ratio of 1 share of DowDuPont for each Dow share, and DuPont shareholders would receive a fixed exchange ratio of 1.282 shares in DowDuPont for each DuPont share. At closing, Dow and DuPont shareholders would each own approximately 50% of the combined company. DuPont's Chair and CEO Edward Breen would retain his title at the new firm, while Dow's CEO Andrew N. Liveris would become Executive Chairman

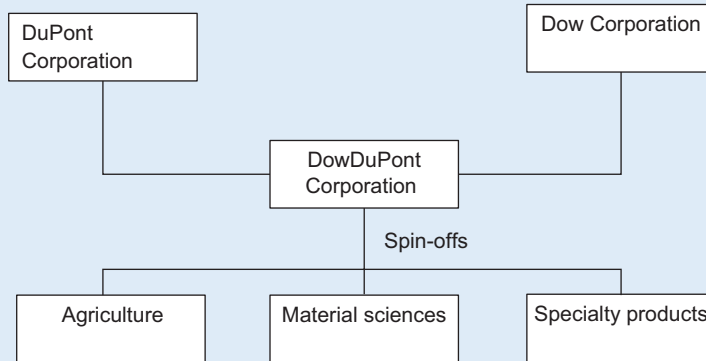


FIGURE 11.2 DuPont and Dow merger and spin-offs.

of the combined companies. The new firm's board would consist of 16 directors, consisting of 8 incumbent DuPont directors and 8 current Dow directors. The planned merger is to be followed by a breakup of the integrated company into three independent, publicly traded companies through tax-free spin-offs giving investors a choice of retaining or selling their shares in the agricultural, material science, and specialty products businesses. Each of the three businesses will have Advisory Committees. The breakup is expected to occur 18–24 months following closing. DowDuPont will have dual headquarters in Midland, MI, and Wilmington Delaware. Fig. 11.2 illustrates the merger and subsequent spin-offs.

The deal will require regulatory approval in several countries and is expected to face intense antitrust scrutiny due to its huge size and scale. Groups representing various farm and agricultural interests have expressed concerns about the merger harming competition, particularly in seeds and crop chemicals markets resulting in higher prices for these products. To get approval, the firms may have to divest significant businesses in areas where the merger is expected to limit competition. This could reduce the realization of anticipated synergies and the growth potential of some of the businesses to be spun off.

If approved by the regulators, postclosing implementation will be enormously challenging. Within 2 years following closing, DowDuPont is expected to realize cost synergies annually totaling \$3 billion in expenses. During the same time frame, the new firm must undergo extensive reorganization in order to create the proposed new subsidiaries that are to be spun off to shareholders. Given the probable interrelationships between and among the various operations, this is likely to prove to be a gargantuan task.

Reorganization involves moving people around, trimming overhead, allocating debt, renegotiating customer and supply agreements, disentangling jointly used information technology systems, and ensuring that the eventual spun-off units will be considered tax free to shareholders. The logistics of such activities often take many months and DowDuPont is expecting to implement three spin-offs in a relatively short period of time. DuPont's last spin-off, Chemours, a performance chemicals unit, has been a disaster, losing three-quarters of its value in less than a year after its separation and represents the ills that can befall a spin-off.

With a total workforce exceeding 100,000 people, the major task confronting the new firm will be in retaining and keeping motivated talented people. While it is customary to use retention bonuses to keep those workers who will be needed during the transition period leading up to the spin-offs, the resulting uncertainty, stress, anger, frustration, and confusion are likely to result in significant attrition. While such attrition may be desired from a cost savings standpoint, some of those employees leaving will be critical for the ongoing operations of the business. In businesses that have been as integrated as Dow and DuPont, layers of management will be stripped away. Management turnover typically tends to be substantially higher during this period leading to confusion among reporting relationships and disjointed communication. Also, it is likely that management talent will be stretched thin as managers are asked to maintain or improve the performance of their business units and to simultaneously implement the logistics required for the planned spin-offs.

Tax considerations are a primary driver of the deal. The tax-free treatment of the spin-offs is viewed as a highly tax-efficient alternative to selling selected businesses that could result in significant taxable gains to Dow and DuPont. Structured as a merger of equals in a share-for-share exchange, the DowDuPont deal also is tax free to shareholders. Typically, companies that have been through a change of control are liable to pay capital gains taxes on subsequent spin-offs, under section 355 of the US Internal Revenue Code (see Chapter 16 for more detail). If both companies, however, do not formally undergo a change of control, the spin-offs can be tax-free. After their merger, Dow and DuPont plan to argue that no change of control will have occurred by structuring their initial deal as a merger of equals. Bolstering their view that a change of control has not occurred is that the two companies have many shareholders in common. Vanguard Group Inc., State Street Global Advisors, Capital World Investors, and BlackRock Inc. are, in that order, the top holders of both companies' stock.⁵⁵

Investors immediately expressed skepticism following the deal's announcement on December 11, 2015, with Dow's share price falling by 2.8% to \$53.57 and DuPont's shares falling by 5.6% to \$72.91. DuPont's shares fell more precipitously on news that its 2016 sales growth would be flat. The firm also announced plans to cut its global workforce by 10% as part of its restructuring program. Investors expressed concern about the deal's complexity, the potential for the deal not to close due to regulatory issues, and the potential difficulty in implementing the breakup of the company in the time frame indicated by management.

Discussion Questions

1. Speculate as to why the deal was structured as a merger of equals. What are the advantages and disadvantages of such a structure? Be specific.
2. What are the key assumptions DowDuPont is making in arguing the merger followed by the spin-off of three businesses makes sense?
3. What is the form of payment and the form of acquisition used in this deal? What are the advantages and disadvantages of the form of payment and acquisition used in this deal?
4. In the deal, Dow shareholders will receive a fixed exchange ratio of 1.00 share of DowDuPont for each Dow share, and DuPont shareholders will receive a fixed exchange ratio of 1.282 shares in

⁵⁵The most recent precedent in which a merger of equals' structure was employed to argue successfully that a change in control had not taken place (and therefore there was not any actual sale) was in the 2007 merger of drug distributors AmersourceBergen Corp. and Kindred Healthcare Inc. Once the merger took place, the new company spun off its pharmacy businesses tax free to shareholders.

DowDuPont for each DuPont share. Dow and DuPont shareholders will each own approximately 50% of the combined company, excluding preferred shares. Common shares outstanding at Dow and DuPont at the time of the announcement were 1.160 and 0.876 billion, respectively. Using this information, show how the postclosing ownership distribution can be determined. How might these fixed SERs have been determined during the negotiation of the deal?

5. Dow's price per share on December 11, 2015, was \$54.91 and DuPont's was \$74.55. Dow shares outstanding were 1.16 billion and DuPont's outstanding shares were 0.876 billion. Assume anticipated annual cost synergies are \$3.0 billion in perpetuity and DowDuPont's cost of capital is 10%. What is DowDuPont's total market cap excluding synergy? What is the market cap including synergy using the zero-growth method of valuation (see Chapter 7)?

Solutions to these questions are provided in the Online Instructor's Manual for instructors using this book (<https://textbooks.elsevier.com/web/Manuals.aspx?isbn=9780128016091>).

ADDITIONAL CASE STUDY RECOMMENDATIONS (SEARCH HARVARD BUSINESS SCHOOL PUBLISHING SITE BY NAME OF CASE: hbsp.harvard.edu)

Acquisition of Consolidated Rail Corp., Benjamin C. Esty, Mathew Mateo Millett, July 20, 2005, HBS Premier Case Collection, Product Number: 298006-PDF-ENG, hbsp.harvard.edu.

Subjects Covered: Two-Tiered Offer, Bidding Strategy, Takeover Defenses, Breakup Fees, Valuation.

Dow's Bid for Rohm and Haas, Benjamin C. Esty, David Lane, Revision Date: February 8, 2013, Product Number: 211020-PDF-ENG, Source: Harvard Business School, hbsp.harvard.edu.

Subjects Covered: Legal and Contractual Aspects of Mergers, Merger Agreements, Financing, Valuation.

Flinder Valves and Controls Inc., Michael J. Schill, Publication Date: November 18, 2008, Product Number: UV1062-PDF-ENG, hbsp.harvard.edu.

Subjects Covered: Negotiation Strategy, Valuation, Share Exchange Ratio Calculation, Tax Issues, Earnings Dilution, and Voting Power.

Structuring the Deal

Tax and Accounting Considerations

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*When people find they can vote themselves money that will herald the end of the republic.—
Benjamin Franklin*

INSIDE M&A: THE PLANNED PFIZER AND ALLERGAN MERGER THWARTED BY CHANGING TAX REGULATIONS

KEY POINTS

- Different corporate tax rates among countries can distort the global M&A market.
- Frequent regulatory changes to close “loopholes” that should be done legislatively impede investment by creating uncertainty in corporate boardrooms.

While M&As rarely are undertaken solely for potential tax benefits, tax laws can sometimes distort the underlying economic motives for doing deals. Tax laws (and regulations) distort corporate decision making. Current US corporate tax rates, among the highest in the world, encourage US corporations to relocate to countries offering substantially more favorable tax rates. Corporations viewing taxes as any other operating expense have a fiduciary responsibility to shareholders to pare costs to remain competitive.

According to the US Congressional Budget Office, “The current (U.S.) tax system provides incentives for U.S. firms to locate their production facilities in countries with low taxes ... (and) reduce economic efficiency ... because the firms are not allocating resources to their most productive use. Those responses also reduce the income of shareholders and employees in the United States, and they lead to a loss of federal tax revenue ... in the long run, total compensation for U.S. workers is lower, and employment may be concentrated in different industries and regions (even though total employment is not significantly affected).”¹

Frustrated by a lack of movement in Congress on an overhaul of the US tax system, the Treasury tried three times to stem the flow of companies engaging in corporate tax inversions. Tax inversions involve US corporations acquiring a foreign firm or being acquired by a foreign firm and then reincorporating the combined firms in the country with the more favorable corporate tax rate. Such strategies usually entail the transfer of executive functions but not operations to the country with the favorable tax environment and therefore often have little impact on employment.

¹US Congressional Budget Office, January 8, 2013, <https://www.cbo.gov/publication/43764>.

On April 5, 2016, the Treasury announced new regulations, more far reaching than previous regulatory changes in 2014 and 2015, aimed at “serial inverters” (i.e., companies that have grown through a succession of acquisitions resulting in inversions). The new regulations consisted of two parts. First, the government would disregard US assets acquired by a foreign firm over the previous 3 years in determining the size of the firm. Second, the government would have more leeway in determining whether moving cash within a consolidated company would be viewed as intercompany lending or simply a transfer of equity. The government’s new rules would apply to all deals that close after April 6, 2016, and all intercompany loans after that date. Companies that have already closed inversion deals will be unaffected by the 3-year rule, although transferring earnings from their US subsidiaries to their foreign parents could become less attractive.

The first part of the new rules deals with the determination of whether or not a firm engaging in a corporate inversion can indeed be taxed at the lower foreign rate under current US law. As of 2015, the US Treasury regulations applying to US acquirers of foreign targets implementing corporate inversions focused on the continuing percentage ownership stake of the acquirer’s shareholders following closing. If the continuing stake is 80% or more, earnings from US operations are taxed at US rates; between 60 and 80%, some portion of the earnings are taxed at US rates; below 60%, earnings are taxed at the foreign parent’s rate.

The second part is designed to reduce the attractiveness of what is often called “earnings stripping.” Foreign parents can lend money to their US subsidiary in a transaction that has no effect on the consolidated company’s financial statements. However, interest paid by the subsidiary to the parent is tax deductible by the subsidiary, reducing the subsidiary’s taxable income. This has the effect of transferring monies earned by the subsidiary to the foreign parent to be counted as income to the parent and taxed at the parent’s lower tax rate. The new rules would give the government more authority to treat those interest payments as dividend payments, which are not tax deductible under US law. The antiearnings stripping rules aren’t just limited to inverted companies, but could hit all companies based outside the United States that have operations inside the country.

What seems to have prompted the new regulations is one of the biggest takeovers in US history. United States-based pharmaceutical giant Pfizer announced a planned merger with Dublin, Ireland-based Allergan, the maker of Botox, in late 2015. This megamerger would have been the biggest example of an American company shedding its US corporate residence to lower its tax burden. From a business perspective, Pfizer was the acquirer since it was clearly in control of the combined firms. Why? It was the larger of the two firms with a market value exceeding \$200 billion compared to Allergan’s \$125 billion, its CEO retained that position in the combined firms, the new board would be dominated by former Pfizer directors, and Allergan shareholders received a premium for their shares. However, with Allergan designated as the acquirer for tax filing purposes Pfizer would have been able to take advantage of the more favorable Irish corporate tax rates.

Incorporating the combined Pfizer and Allergan in Ireland, Allergan’s country of residence, offered sizeable tax savings for Pfizer. Pfizer’s effective tax rate averaged 25% in 2015 compared to Allergan’s 15% rate. Combining the two firms was expected to generate more than \$2 billion annually in cost-related synergies 3 years after closing by eliminating duplicate

overhead and negotiating lower prices paid to suppliers. The new firm would have had an effective tax rate of 17%–18% by the first full year after closing and no impact on earnings per share (EPS) in 2017 before adding to EPS in later years. The firm's global operating headquarters was to remain in New York, but its principal executive offices were to be moved to Ireland.

In the wake of the new rules, Pfizer announced on April 7, 2016, that it would pay a termination fee of as much as \$400 million to withdraw from the merger. Why? Merging with Allergan would no longer provide the anticipated tax savings. Allergan, perhaps the poster company for inversions, is a result of a string of cross-border deals. The first inversion started in 2013 with Ireland-based Warner Chilcott being acquired by Actavis Inc., a small New Jersey-based drug maker, with Actavis subsequently reincorporating in Ireland. What followed was a number of ever-larger deals, culminating in Actavis's \$66-billion takeover of United States-based Allergan Inc. in 2015. Under the new Treasury regulations, those deals would be disregarded for the purposes of determining Allergan's size under the tax law. The 3-year window would cover the 2015 merger of Actavis and Allergan, Actavis' \$25-billion purchase of Forest Laboratories Inc. in 2014, and the original \$5-billion Warner Chilcott deal. Deducting those deals from Allergan's market capitalization made it too small to serve as Pfizer's inversion partner and still qualify to have income generated by its US operations taxed at Irish corporate tax rates.

While both Pfizer and Allergan argued that the Treasury had overstepped its authority by changing rapidly tax laws and applying them retroactively, neither was willing to sue the government in federal courts due to the prospect of lengthy litigation and an uncertain outcome. Moreover, while the new regulations severely hamper large US firms in buying foreign entities and then inverting, it continues to appear that foreign acquirers of US firms can have earnings from these operations taxed at the parent's more favorable rate.

By changing the rules so frequently and unexpectedly in such a far-reaching way, the US Treasury added to an already uncertain economic environment and potentially discouraged corporate fixed capital investment. Congress must accept some degree of responsibility for the Treasury's actions due to its inaction on an overhaul of the highly dysfunctional US tax system. Finally, the Pfizer board and its CEO Ian Read showed excessive hubris in engaging in such high stakes and very complicated deal driven largely by the desire to avoid taxes amidst the upheaval of a contentious US election.

CHAPTER OVERVIEW

Chapter 11 continues the discussion of the deal-structuring process with a focus on tax and accounting considerations. While taxes are important, the fundamental economics of the deal should always be the deciding factor, with any tax benefits reinforcing a purchase decision. The impact of accounting considerations on deal structuring can be more subtle and can imperil the acquirer's current and future earnings performance. A review of this chapter (including practice questions and answers) is available in the file folder entitled "Student Study Guide" on the companion website to this book (<https://www.elsevier.com/books-and-journals/book-companion/9780128016091>).

TABLE 12.1 Alternative Taxable and Nontaxable Structures

Taxable transactions: immediately taxable to target shareholders	Nontaxable transactions: tax deferred to target shareholders
1. Purchase of assets with cash^a 2. Purchase of stock with cash 3. Statutory cash mergers and consolidations a. Direct merger (cash for stock) b. Forward triangular merger (cash for assets) c. Reverse triangular merger (cash for stock)	1. Type “A” reorganization a. Statutory stock merger or consolidation (mostly acquirer stock for stock)^b b. Forward triangular merger (asset purchase) c. Reverse triangular merger (stock purchase) 2. Type “B” reorganization (stock for stock) 3. Type “C” reorganization (stock for assets) 4. Type “D” divisive merger

^aThe form of payment consists mostly of consideration other than acquirer stock. Such consideration sometimes is called boot and could consist of cash, debt, or other nonequity compensation.

^bAcquirer stock usually comprises 50% or more of the total consideration. The exception for Type A reorganizations is for reverse triangular mergers.

ALTERNATIVE TAX STRUCTURES

Tax considerations generally are less important for buyers than for sellers. Buyers are concerned primarily with determining the basis of the acquired assets and avoiding any liability for tax problems the target may have. The tax basis determines future taxable gains for the buyer in the event such assets are sold and also the level from which they may be depreciated. In contrast, the seller usually is concerned about how to structure the deal to defer the payment of any taxes owed. Table 12.1 summarizes the most commonly used taxable and tax-free structures, including both statutory mergers (two-party transactions) and triangular mergers (three-party transactions). The implications of these alternative structures are explored in detail in the following sections.

TAXABLE TRANSACTIONS

A deal is taxable to target shareholders if it involves purchasing the target’s stock or assets using mostly cash, debt, or nonequity consideration.² Taxable deals include a cash purchase of target assets, a cash purchase of target stock, or a statutory cash merger or consolidation, which commonly includes direct cash mergers and triangular forward and reverse cash mergers.

Taxable Mergers

In a direct statutory cash merger (i.e., the form of payment is cash), the acquirer and target boards reach a negotiated settlement, and both firms, with certain exceptions, must receive approval from their respective shareholders. The target is then merged into the acquirer or

²Nonequity, cash, and boot are terms used to describe forms of payment other than acquirer equity.

the acquirer into the target, with only one surviving. Assets and liabilities on and off the balance sheet automatically transfer to the surviving firm. To protect themselves from target liabilities, acquirers often employ so-called triangular mergers. In such deals, the target is merged into an acquirer's operating or shell acquisition subsidiary, with the subsidiary surviving (called a forward triangular cash merger), or the subsidiary is merged into the target, with the target surviving (called a reverse triangular cash merger). Direct cash mergers and forward triangular mergers are treated as a taxable purchase of assets, with cash and reverse triangular mergers treated as a taxable purchase of stock with cash. The tax consequences of these deals are discussed next.

Taxable Purchase of Target Assets With Cash

If a transaction involves a cash purchase of target assets, with the buyer assuming none, some, or all of the target's liabilities, the target's tax cost or basis in the acquired assets is increased, or "stepped up," to its fair market value (FMV), equal to the purchase price (less any assumed liabilities) paid by the acquirer. The additional depreciation in future years reduces the present value of the tax liability of the combined firms. The target firm realizes an immediate gain or loss on assets sold equal to the difference between the FMV of the asset and the asset's net book value (i.e., book value less accumulated depreciation).

The target's shareholders could be taxed twice—once when the firm pays taxes on any gains and again when the proceeds from the sale are paid to the shareholders as either a dividend or a distribution following liquidation of the corporation. A liquidation of the target firm may occur if a buyer acquires enough of the assets of the target to cause it to cease operations.³ To compensate the target company shareholders for any tax liability they may incur, the buyer usually will have to increase the purchase price. Taxable transactions have become somewhat more attractive to acquiring firms since 1993, when a change in legislation allowed acquirers to amortize certain intangible assets for tax purposes.⁴

Taxable Purchase of Target Stock With Cash

Taxable transactions (i.e., those including something other than acquirer stock) involve the purchase of the target's voting stock to avoid double taxation of gains to the target's shareholders. An asset purchase automatically triggers a tax on any gain on the sale by the

³The Internal Revenue Service (IRS) views transactions resulting in the liquidation of the target as actual sales rather than reorganizations, in which the target shareholders have an ongoing interest in the combined firms. Thus, the target's tax attributes may not be used by the acquirer following closing because they cease to exist along with the target. However, they may be used to offset any gain realized by the target resulting from the sale of its assets.

⁴Intangible assets are addressed under Section 197 of the IRS Code. Such assets include goodwill, going concern value, books and records, customer lists, licenses, permits, franchises, and trademarks and must be amortized over 15 years for tax purposes. While no immediate loss on goodwill can be recognized for tax purposes, the basis of other intangible assets purchased in the same transaction giving rise to the goodwill must be increased by the amount of the goodwill write-down. The resulting write-up of these intangible assets is then amortized over their remaining amortizable lives. Moreover, the current tax code allows operating losses to be used to recover taxes paid in the preceding 2 years and to reduce future tax liabilities up to 20 years.

target firm and another tax on any payment of the after-tax proceeds to shareholders. Taxable stock purchases avoid double taxation because the transaction takes place between the acquirer and the target firm's shareholders. However, target shareholders may realize a gain or loss on the sale of their stock. Assets may not be stepped up to their FMV in these types of transactions. Since from the IRS's viewpoint, the target firm continues to exist, the target's tax attributes [e.g., investment tax credits and net operating losses (NOLs)] may be used by the acquirer following the transaction, but their use may be limited by Sections 382 and 383 of the Internal Revenue Code. These are explained in more detail later in this chapter. [Table 12.2](#) summarizes the key characteristics of the various forms of taxable deals.

Section 338 Election

Section 338 elections are an option with a taxable purchase of target stock. The acquirer and target firms can jointly elect Section 338 of the Internal Revenue Code allowing the buyer to record acquired assets and liabilities at their FMV for tax purposes. This allows a purchaser of 80% or more of the voting stock and market value of the target to treat the acquisition of stock as an asset purchase. The target's net acquired assets (i.e., acquired assets minus liabilities) are increased to their FMV, triggering a taxable gain when the deal is completed.⁵ For legal purposes, the sale of target stock under a 338 election still is treated as a purchase of stock by the buyer, allowing target shareholders to defer the payment of taxes on any gains realized on the sale of their shares.

Section 338 elections are rare because the tax liability triggered by the transaction often exceeds the present value of the tax savings from the step-up in the tax basis of the net acquired assets. A 338 election is most useful when the target has substantial NOLs or tax credit carryovers that the acquirer can use to offset any taxable gain triggered by the transaction.

TAX-FREE TRANSACTIONS

A deal is tax free if the form of payment is mostly acquirer stock. Deals may be partially taxable if the target shareholders receive something other than the acquirer's stock. This non-equity consideration, or boot, generally is taxable as ordinary income. If the transaction is tax free, there is no step-up of net acquired assets to their FMV.

Qualifying a Transaction for Tax-Free Treatment

To qualify as tax free, a deal must provide for continuity of ownership interests, continuity of business enterprise, and a valid business purpose and satisfy the step-transaction doctrine. To demonstrate continuity of ownership interests, target shareholders must own a substantial part of the value of the combined firms. This requires the purchase price to consist mostly

⁵Benefits to the acquirer of a 338 election include the avoidance of having to transfer assets and obtain consents to assignment of all contracts (as would be required in a direct purchase of assets) while still benefiting from the write-up of assets. Asset transfer, sales, and use taxes may also be avoided. Either the acquirer or the target must pay the taxes on any gain on the sale.

TABLE 12.2 Key Characteristics of Alternative Transaction Structures That Are Taxable (to Target Shareholders)

Transaction structure	Form of payment	Acquirer retains tax attributes of target	Target survives?	Parent exposure to target liabilities	Shareholder vote required?		Minority freeze-out?	Automatic transfer of contracts? ^a
					Acquirer	Target		
Cash purchase of stock	Mostly cash, debt, or other nonequity payment	Yes, assuming no asset step-up due to 338 election ^b	Yes	High	No ^c	No, but shareholders may not sell shares	No	Yes
Cash purchase of assets	Mostly cash, debt, other nonequity payment	No, but can step up assets (tax attributes used to offset taxable gains)	Perhaps ^d	Low, except for assumed liabilities	No ^c	Yes, if sale of assets is substantial	No minority created	No
Statutory cash merger or consolidation	Mostly cash, debt, or other nonequity payment	Yes, but no step-up in assets	No, if target merged into acquirer	High, if target merged into acquirer	Yes	Yes	Yes ^e	Yes
Forward triangular cash merger (IRS views as asset purchase)	Mostly cash, debt, or other nonequity payment	No, but can step up assets (tax attributes used to offset taxable gains)	No	Low—limited by subsidiary relationship	No ^c	Yes	Yes	No
Reverse triangular cash merger (IRS views as stock purchase)	Mostly cash, debt, or other nonequity payment	Yes	Yes	Low—limited by subsidiary	No ^c	Yes	Yes	Yes

^aContracts, leases, licenses, and rights to intellectual property automatically transfer unless contracts stipulate that consent to assignment is required.

^bAn acquirer may treat a stock purchase as an asset purchase if it and the target agree to invoke a Section 338 election. Such an election would allow a step-up in net acquired assets and result in the loss of the target's tax attributes because the target is viewed by the IRS as having been liquidated.

^cMay be required by public stock exchanges or by legal counsel if deemed material to the acquiring firm or if the parent needs to authorize new stock. In practice, most big mergers require shareholder approval.

^dThe target may choose to liquidate if the sale of assets is substantial and to distribute the proceeds to its shareholders or to continue as a shell.

^eTarget shareholders must accept terms due to a merger, although in some states dissident shareholders have appraisal rights for their shares.
IRS, Internal Revenue Service.

of acquirer stock. Continuity of business enterprise requires the acquirer to use a significant portion of the target's "historic business assets" in a business⁶ to demonstrate a long-term commitment on the part of the acquirer to the target. This usually means an acquirer must buy "substantially all" of the target's assets. Furthermore, the transaction must have a valid business purpose, such as maximizing the profits of the acquiring corporation, rather than only for tax avoidance. Finally, under the step-transaction doctrine, the deal cannot be part of a larger plan that would have constituted a taxable deal.⁷ Tax-free deals are also called tax-free reorganizations. The continuity of interests, business enterprise, and step-doctrine requirements are intended to prevent transactions that more closely resemble a sale from qualifying as a tax-free reorganization.

Alternative Tax-Free Reorganizations

The most common is the type "A" reorganization used in direct statutory mergers or consolidations (mostly acquirer stock for target stock), forward triangular mergers (asset purchases), and reverse triangular mergers (stock purchases). Type "B" reorganizations are stock-for-stock acquisitions, and type "C" reorganizations are stock-for-assets acquisitions. Type D reorganizations may be applied to acquisitions or restructuring.⁸

For a type "A" statutory merger (Fig. 12.1) or consolidation (Fig. 12.2), payment can include cash, voting or nonvoting common or preferred stock, notes, or some combination. At least 50% of the purchase price must be acquirer stock to satisfy the IRS requirement

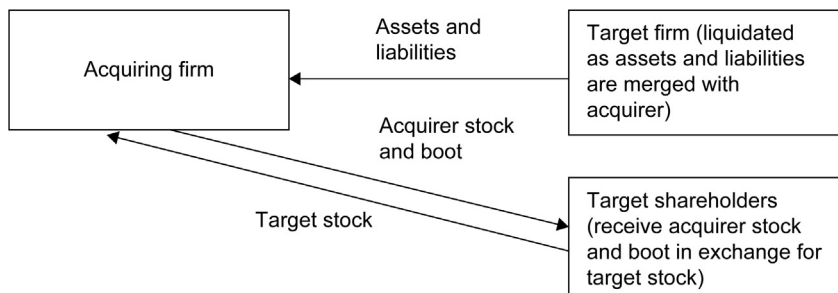


FIGURE 12.1 Direct statutory stock merger ("A" reorganization). Note that this figure depicts the acquirer surviving. In practice, either the acquirer or the target could survive the merger.

⁶The acquirer must purchase assets critical to continuing the target's business. Acquirers often purchase at least 80% of the target's assets to ensure that they are in compliance with IRS guidelines.

⁷The step-transaction doctrine might be applied by the IRS as follows: Firm A buys the stock or assets of Firm B with its stock and characterizes it as a tax-free deal. A year later, it sells B. The IRS may disallow the original deal as tax free, arguing that the merger and subsequent sale were part of a larger plan to postpone the payment of taxes.

⁸An acquisitive Type D reorganization requires that the acquiring firm receive at least 80% of the stock in the target firm in exchange for the acquirer's voting stock. Divisive Type D reorganizations are used in spin-offs, split-offs, and split-ups and involve a firm's transferring all or some of its assets to a subsidiary it controls in exchange for subsidiary stock or securities.

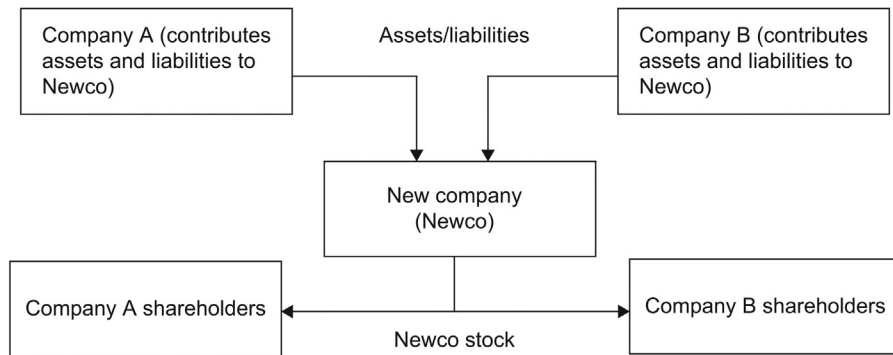


FIGURE 12.2 Statutory stock consolidation ("A" reorganization).

of continuity of interests. Type "A" reorganizations are widely used because there is no requirement to use voting stock and acquirers can avoid dilution by issuing nonvoting shares. The buyer also may acquire less than 100% of the target's net assets. Finally, there is no limit on the amount of cash that can be used in the purchase price, as is true of Type B and C reorganizations. Since some target shareholders will want cash, some stock, and some both, the acquirer is better able to satisfy the different needs of the target shareholders than in other types of reorganizations.

With a *type "A" forward triangular stock merger*, the parent funds the shell corporation by buying stock issued by the shell with its own stock (Fig. 12.3). All of the target's stock is acquired by the subsidiary with the parent's stock, the target's stock is cancelled, the acquirer subsidiary survives, and the target's assets and liabilities are merged into the subsidiary. The IRS views such deals as an asset purchase since the target does not survive. The parent's stock may be voting or nonvoting, and the acquirer must purchase "substantially all" of the target's assets and liabilities (defined as at least 70 and 90% of the FMV

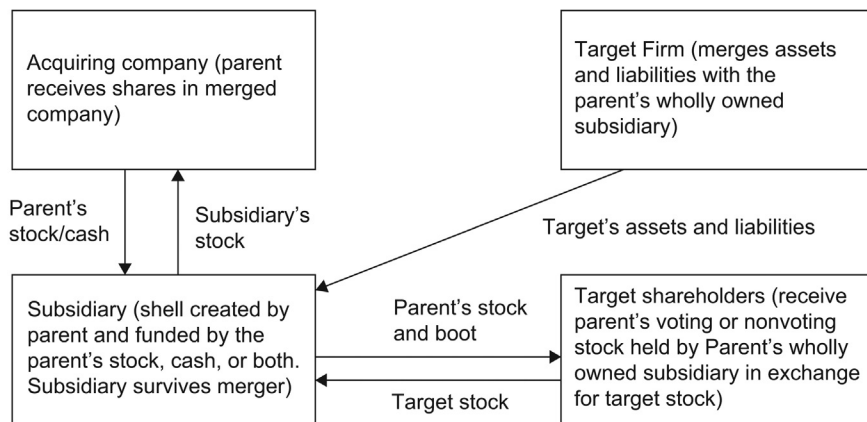


FIGURE 12.3 A forward triangular stock merger ("A" reorganization).

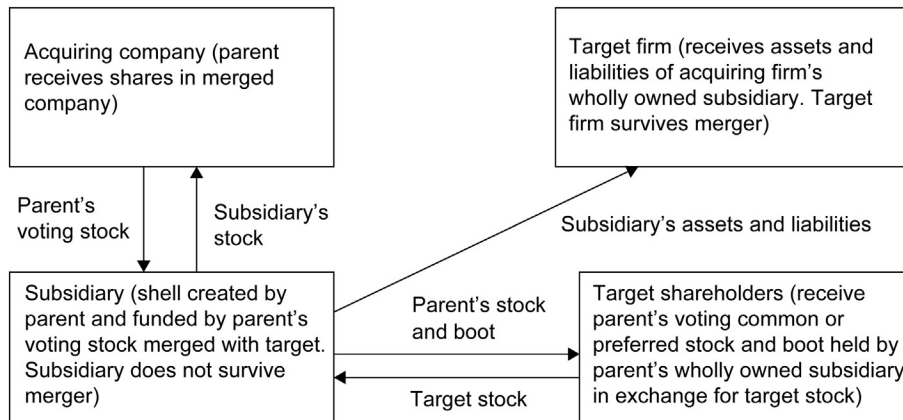


FIGURE 12.4 A reverse triangular stock merger ("A" reorganization).

of the target's gross and net assets, respectively).⁹ At least 50% of the purchase price must consist of acquirer stock.

The advantages of the forward triangular merger include the flexible form of payment and the avoidance of approval by the parent firm's shareholders. Public exchanges still may require shareholder approval if the amount of the parent stock used to acquire the target exceeds 20% of the parent's voting shares outstanding. Other advantages include the possible insulation of the parent from the target's liabilities, which remain in the subsidiary, and the avoidance of asset transfer taxes, because the target's assets go directly to the parent's wholly owned subsidiary. The target's tax attributes that transfer to the buyer are subject to limitation. Since the target disappears, contract rights do not automatically transfer to the acquirer, which must obtain the consent of the other parties to the contracts to reassign them to the buyer.

With a *type A reverse triangular stock merger*, the acquirer forms a shell subsidiary, which is merged into the target (Fig. 12.4). As the survivor, the target becomes the acquirer's wholly owned subsidiary. The target's shares are cancelled, and target shareholders receive the parent's shares. The parent, who owned all of the subsidiary stock, now owns all of the new target stock and, indirectly, all of the target's assets and liabilities. At least 80% of the total consideration paid to the target must be in acquirer voting common or preferred stock. The IRS views reverse triangular mergers as a purchase of stock, since the target survives the transaction.

The reverse triangular merger may eliminate the need for parent firm shareholder approval, because the parent is the sole shareholder in the sub. Because the target firm survives,

⁹Asset sales by the target prior to the deal may threaten the tax-free status of the deal if it is viewed as a violation of the step doctrine. While tax-free deals such as spin-offs are disallowed within 2 years before or after the merger, this rule has not been enforced consistently. In 2011, Google acquired Motorola Mobility Holdings 7 months after having been spun off by its parent Motorola Inc. Similarly, in 2006, Apollo Global Management acquired real estate broker Realogy 5 months after it had been spun off by the now defunct Cendant Corporation.

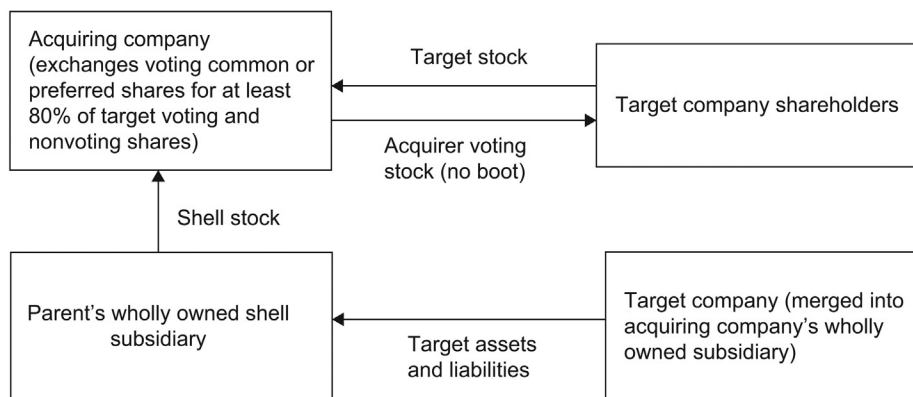


FIGURE 12.5 Type B stock-for-stock reorganization.

the target can retain any nonassignable franchise, lease, or other valuable contract rights. By not dissolving the target, the acquirer avoids accelerating¹⁰ the repayment of loans outstanding. Insurance, banking, and public utility regulators may require the target to remain in existence. The major drawback is the need to use acquirer voting shares to buy at least 80% of the target's outstanding shares.

In a *Type B stock-for-stock reorganization*, the acquirer must use voting common or preferred stock to buy at least 80% of the target's outstanding voting and nonvoting stock in a tender offer (Fig. 12.5). Any cash or debt disqualifies the deal as a Type B structure.¹¹ Type B deals are used as an alternative to a merger or consolidation. The target's stock does not have to be purchased all at once, which allows for a "creeping merger" because the target's stock may be purchased over 12 months or less as part of a formal acquisition plan. Type B reorganizations are useful if the acquirer wishes to conserve cash or its borrowing capacity. Since shares are being acquired directly from shareholders, there is no need for a target shareholder vote. Finally, contracts and licenses transfer with the stock, which obviates the need to receive consent to assignment, unless specified in contracts. The target firm is either retained as a subsidiary or merged into the parent.¹²

The *Type C stock-for-assets reorganization* is used when the acquirer does not want to assume any undisclosed liabilities (Fig. 12.6). It requires that at least 70 and 90% of the FMV of the target's gross and net assets, respectively, be acquired in exchange for acquirer voting stock. Consideration paid in cash cannot exceed 20% of the FMV of the target's assets; any liabilities assumed by the acquirer must be deducted from the 20%. Since assumed liabilities frequently exceed 20% of the FMV of the acquired assets, the form of payment generally is all stock.

¹⁰Loan agreements often require the repayment of loans if a change of control of the borrower takes place.

¹¹Cash may be used to purchase fractional shares.

¹²A type "B" stock-for-stock deal is equivalent to a reverse triangular merger, since the target firm becomes the acquirer's subsidiary. The primary difference between a reverse triangular merger and a type "B" stock-for-stock deal is the requirement to use at least 80% acquirer voting or preferred stock to buy target shares, in contrast to the need to use 100% acquirer voting common or preferred stock in a type "B" share-for-share reorganization.

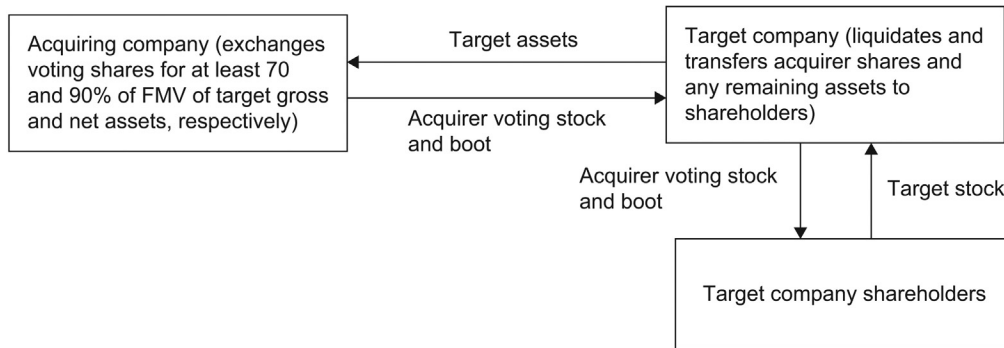


FIGURE 12.6 Type C stock-for-assets reorganization. *FMV*, Fair market value.

The target dissolves and distributes the acquirer's stock to the target's shareholders. The requirement to use only voting stock discourages the use of Type C reorganizations. [Table 12.3](#) summarizes the key characteristics of alternative tax-free deal structures.

Treatment of Target Tax Attributes in M&A Deals

Tax attributes, such as NOL carryforwards and carrybacks, capital loss carryovers, excess credit carryovers, tax basis in company assets, and tax basis in subsidiary companies, can represent considerable value to acquiring firms in terms of tax savings. The IRS allows acquirers to realize tax savings from additional depreciation resulting from the revaluation of net acquired target assets to their fair FMV¹³ or from the target's other tax attributes, but not both. Thus, acquirers can use a target's tax attributes in tax-free reorganizations and in taxable purchases of stock without a Section 338 election, since net acquired assets are not revalued to their FMV. Acquirers cannot use the target's tax attributes in taxable purchases of assets and taxable purchases of stock undertaken as a 338 election, since net acquired assets are revalued to their FMV.¹⁴

Tax-Free Transactions Arising From 1031 "Like-Kind" Exchanges

The prospect of being able to defer taxable gains is often associated with 1031 exchanges of real estate property or other income-producing properties. By postponing tax payments, investors have more money to reinvest in new assets. Assume a property was purchased 10 years ago for \$5 million and is now worth \$15 million. If the property were sold with no subsequent purchase of a similar property within the required period, the federal capital

¹³Acquirers realize additional tax savings by depreciating net acquired target assets whose value has been increased to their FMV, which is generally higher than their book value listed on the target's balance sheet.

¹⁴When tax attributes do survive and carry over (transfer) to the acquirer, their use is limited by Sections 382 (NOLs) and 383 (tax credit and capital loss carryforwards) of the tax code. When tax attributes do not survive, they may still be used to offset gains on the sale of target assets.

TABLE 12.3 Key Characteristics of Alternative Transaction Structures That Are Tax-Free (to Target Shareholders)^a

Transaction structure (type of reorganization)	Form of payment	Limitation ^b	Acquirer retains target tax attributes	Target survives?	Parent exposure to target liabilities	Shareholder vote required?		Minority freeze-out?	Automatic transfer of contracts? ^c
						Acquirer	Target		
Statutory merger or consolidation (Type A reorganization)	At least 50% parent voting or nonvoting stock	Assets and liabilities pass automatically to buyer	Yes, but no asset step-up	No	High	Yes	Yes	Yes	No, since target is liquidated
Forward triangular merger (Type A reorganization)	At least 50% parent voting or nonvoting stock	Must purchase at least 70 and 90% of FMV of gross and net assets unless LLC acquiring sub	Yes, but no asset step-up	No	Low, limited by subsidiary ^d	No ^{e,f}	Yes	Yes	No, since target is liquidated
Reverse triangular merger (Type A reorganization)	At least 80% parent voting stock (common/preferred)	Must purchase at least 80% of voting and of nonvoting shares	Yes, but no asset step-up	Yes	Low, limited by subsidiary ^d	No ^{e,f}	Yes	Yes	Yes, target retains nonassignable contracts, etc.
Purchase of stock—without a merger (Type B reorganization)	100% parent voting stock (common/preferred)	Must purchase at least 80% of voting and of nonvoting shares	Yes, but no asset step-up	Yes	Low, limited by subsidiary ^d	No ^e	No, because shares bought directly from shareholders	No	Yes
Purchase of assets (Type C reorganization)	100% voting stock ^g	Must purchase at least 70 and 90% of FMV of gross and net assets	Yes, but no asset step-up	No	Low, ^h except for assumed liabilities	No ^e	Yes, if sale of assets substantial	No minority created	No

^aTarget shareholders are taxed at ordinary rates on any “boot” received (i.e., anything other than acquiring company stock).

^bAsset sales or spin-offs 2 years prior (may reflect effort to reduce size of purchase) or subsequent (violates continuity requirement) to closing may invalidate tax-free status. Forward triangular mergers do not require any limitations on purchase of target net assets if a so-called “disregarded unit,” such as an LLC, is used as the acquiring entity and the target is a C corporation that ceases to exist as a result of the transaction.

^cDisregarded units are businesses that are pass-through entities (i.e., not subject to the double taxation of C corporations) and include LLCs or Subchapter S corporations.

^dContracts, leases, licenses, and rights to intellectual property automatically transfer with the stock unless contracts stipulate that consent to assignment is required. Moreover, target retains any nonassignable franchise, lease, or other contract rights as long as the target is the surviving entity as in a reverse triangular merger.

^eAcquirer may be insulated from a target’s liabilities as long as it is held in a subsidiary, except for liabilities such as unpaid taxes, unfunded pension obligations, and environmental liabilities.

^fMay be required by public stock exchanges or by legal counsel if deemed material to the acquiring firm or if the parent needs to authorize new stock.

^gMergers are generally ill-suited for hostile transactions because they require approval of both the target’s board and target shareholders.

^hWhile cash may be used to pay for up to 20% of the FMV of net assets, it must be offset by assumed liabilities, making the purchase price usually 100% stock.

ⁱThe parent is responsible for those liabilities conveying with the assets, such as warranty claims.

FMV, Fair market value; LLC, limited liability company.

gains tax bill would be \$1.5 million [i.e., $(\$15 - \$5) \times 0.15$], assuming a capital gains tax rate of 0.15. This ignores the potential for state taxes or depreciation recapture taxes owed if the owner took deductions for depreciation. However, by entering into a 1031 exchange, the owner could use the entire \$15 million from the sale of the property as a down payment on a more expensive property. If the investor acquires a property of a lesser value, taxes are owed on the difference.

OTHER TAX CONSIDERATIONS AFFECTING CORPORATE RESTRUCTURING

The treatment of NOLs, corporate capital gains taxes, the alternative corporate minimum tax, master limited partnerships (MLPs), and tax inversions are discussed next. The tax implications of so-called “divisive” deals such as spin-offs, split-offs, equity carve-outs, and Morris Trust transactions are discussed in detail in Chapter 16.

Net Operating Losses

NOLs are created when firms generate negative taxable income or losses and can be carried back 2 years to recover past tax payments in the form of a refund and forward 20 years to reduce future taxable income. When acquired net assets are stepped up for tax purposes, the target’s NOLs may be used immediately by the acquirer to offset the gain on an asset sale. For deals not resulting in an asset write-up for tax-reporting purposes, the target’s NOLs may be used by the acquirer in future years, subject to the limitation specified in Section 382 of the Internal Revenue Service Code. Despite annual limits to carryforwards and carrybacks, NOLs may represent a significant source of value to acquirers that should be considered in valuing a target. Google’s 2011 acquisition of Motorola Mobility enabled it to reap an expected annual \$700 million in tax savings on its consolidated future earnings and to reduce its immediate tax bill by \$1 billion due to Motorola’s accumulated NOLs.¹⁵ Because the acquirer can never be sure that future income will be sufficient to realize the value of the NOLs before they expire, loss carryforwards alone rarely justify an acquisition.

Section 382 was created to prevent acquisitions of firms with substantial NOLs to reduce acquirer’s taxable income, without having a valid business purpose other than tax avoidance. A firm’s ability to use NOLs from prior years to offset current income may be limited if the firm had a 50% change in ownership. An ownership change is one in which shareholders with stakes of 5% or more increase their ownership by more than 50 percentage points at any time during a 3-year period beginning from the date of their initial purchase of stock. For example, if a shareholder owning 30% of a firm acquired another 51% within the span of 3 years, there would be an ownership change triggering Section 382. The shareholder could still use NOLs in existence prior to the change in ownership but their annual value would be limited to a percentage of the firm’s market value on the date of the change in ownership equal to the market value of the stock times the IRS long-term tax-exempt interest rate.

¹⁵Browning and Byrnes (2011).

When an ownership change triggers Section 382, a firm may lose most of the value of their NOLs. To discourage a change in ownership from jeopardizing their NOLs, firms may adopt a poison pill takeover defense that when paired with a staggered board substantially reduces the likelihood of a takeover. While investors often view the adoption of a poison pill as an attempt to entrench management, the adoption of such a defense when justified as protecting NOLs is only modestly negative, except when the link to NOL preservation is not credible. For example, if a firm adopting a poison pill defense to protect NOLs chooses not to carry back the NOLs to get an immediate tax refund, investor reaction is much more negative.¹⁶

Corporate Capital Gains Taxes

Since both short- and long-term corporate capital gains are taxed as ordinary income subject to a maximum federal corporate tax rate of 35%, acquirers often use legal structures in which participants are taxed at their personal tax rates for the profits distributed to them directly. These include MLPs, Subchapter S corporations, and limited liability companies.

Alternative Corporate Minimum Tax

Under certain circumstances in which corporate taxes have been significantly reduced, corporations may be subject to an alternative minimum tax with a flat rate of 20%. The introduction of the alternative minimum tax has reduced returns significantly to investors in leveraged buyouts (LBOs), which—by intent—are highly leveraged and have little (if any) taxable income because of their high annual interest expense.

Master Limited Partnerships

MLPs are a type of limited partnership whose shares or units are publicly traded; its investors are subject to limited liability, and its units can be more easily bought and sold than those of private partnerships and privately owned corporations. The partnership interests are divided into units that trade in the same manner as shares of common stock. Not subject to double taxation, the MLP is treated like any other partnership for which income is allocated pro rata to the partners. Unit holders receive their proportionate share of tax-deductible expenses such as depletion and depreciation expenses as well as investment tax credits attributable to the partnership's operations. By passing on tax-deductible expenses to investors, MLP distributions may be tax free; where tax-deductible expenses exceed the amount of the MLP's cash distribution, the excess may be applied to shelter the investor's other pretax income. Unlike common stock dividends paid by corporations, quarterly payouts to investors in MLPs are mandatory. In MLPs, a missed mandatory quarterly payment constitutes an event of default. Because of these mandatory payments, MLPs are commonly found in industries that have predictable cash flows, such as natural resources and real estate.

¹⁶Sikes et al. (2014).

Reflecting their tax advantages and potentially higher financial returns, the popularity of MLPs has soared from 66 in 2009 with a combined value of \$160 billion to 110 in 2013 with an aggregate value of more than \$500 billion.¹⁷ In 2014, the formation of MLPs slowed. By mid-year, the IRS temporarily stopped issuing so-called “private letter” rulings approving such structures while they reviewed whether to tighten standards for approval.¹⁸

MLPs can be used as attractive restructuring vehicles. In 2013, activist investor, Carl Icahn, paid \$2 billion for 82% of oil refiner CVR Energy. After failing in his effort to sell the business quickly, Icahn placed the refinery into a new company structured as an MLP. Stock market investors valued the firm operating in its new structure at a premium to the overall market enabling Icahn to raise \$600 million in an IPO and to pay his firm a \$1-billion dividend from CVR’s cash flows.

Despite their significant tax advantages, the MLP structure may limit the ability of the partnership to grow. In late 2014, Kinder Morgan, the huge North American oil and gas pipeline MLP, announced that it would reorganize into a more conventional corporate structure. Since the MLP structure requires the distribution of most of its profits to shareholders, it becomes increasingly difficult for the MLP to acquire new oil and gas assets that are large enough to increase annual payouts. It was becoming more difficult for Kinder Morgan to increase its payout rate as rapidly as those of smaller MLPs. Despite its less favorable tax structure, Kinder Morgan believes that as a corporation it can finance more acquisitions and make the capital outlays required to develop new oil and gas reserves to fund future dividend increases.

Tax Inversions

At 35%, the US corporate tax rate is the third highest among the 32 developed countries that comprise the Organization for Economic Cooperation and Development. Including state tax rates, the combined tax rate for US firms can reach 40%. Including provincial rates, the top combined corporate tax rate in Canada is 26.5%, in the Netherlands 26%, in the United Kingdom 21%, and in Ireland 12.5%.

While generally not the primary motivation for a takeover, US firms have increasingly opted to reduce their tax liabilities by buying a foreign firm and subsequently restructuring such that the foreign firm becomes the parent of the US firm. Known as tax inversions, reincorporations in low-tax areas such as Bermuda, the Cayman Islands, or Ireland are not new. However, the process has become increasingly cumbersome due to new regulations preventing firms from simply opening a new office abroad or moving to a country where they have little business. Today, most inversions are a result of cross-border M&As.

Under legislation passed more than a decade ago, American company shareholders (i.e., premerger acquirer shareholders) must own less than 80% of the new combined firms. Consequently, the only effective way for an American firm to “invert” in a manner consistent

¹⁷Gelles (2013).

¹⁸MLPs are usually structured as two entities: a limited partnership that sells shares to the public and a general partnership controlled by the founders. Initially, the general partnership receives a 2% quarterly distribution paid by the company, but if distributions increase, the general partnership can receive a greater percentage of the profits.

with the law is by reincorporating abroad as part of a merger or acquisition with relatively large firms. This limits the number of the potential target firms large enough to satisfy this requirement.¹⁹

Rules announced by the US Treasury on September 23, 2014, were designed to make future tax inversions less attractive.²⁰ While making the tax advantages associated with inversions less compelling, the rules failed to slow mergers between US and foreign firms when the strategic rationale for the deal is strong.

In 2015, the US Treasury further tightened regulations pertaining to inversions. If the continuing ownership stake of a US acquirer of a foreign firm is 80% or more, the new foreign parent following an inversion is treated as a US corporation despite its new corporate address, thereby subject to US corporate tax rates. If the new continuing ownership stake is between 60 and 80%, US tax law respects the foreign status of the new foreign parent but some portion of the earnings of the US subsidiary is subject to US tax rates depending on the size of the continuing ownership stake. Consequently, to comply with these regulations, acquirers in deals structured as inversions keep their ownership stake in the combined businesses to less than 60%. The ownership percentage can be manipulated based on the share-exchange ratio agreed to by the acquirer and target or by increasing or decreasing the number of target shares outstanding by stock splits or reverse stock splits.

Despite the two rounds of regulations in 2014 and 2015, corporate inversions continued. According to Dealogic, more than 40 US firms have implemented inversions during the past several years. When Pfizer and Allergan proposed the largest inversion in history in November 2015, the stage was set for the third round of new Treasury regulations.

The Treasury announced new rules pertaining to inversions on April 6, 2016. These rules prevent a foreign firm (or recent inverter) that acquires multiple US firms in stock-based deals during the last 3 years from using the increase in size to avoid the inversion thresholds described in the 2015 regulations in making a new US acquisition. (The impact of this rule on the Pfizer–Allergan deal is described in the case study at the beginning of this chapter.) The rules also address intercompany loans made by the parents to their subsidiaries that generate large interest deductions thereby reducing the pretax profits of the US subsidiary. The IRS will have broader discretion to determine whether cash transfers between the subsidiary and the parent represent loans whose interest is tax deductible or dividends paid to the parent, which are not deductible for tax purposes. By making it more difficult for the US subsidiary to borrow

¹⁹To illustrate how this regulation forces acquirers wanting to invert to seek relatively large targets (i.e., more than one-fifth of the size of the acquirer), assume a US firm has 100 million shares outstanding and a foreign target has 10 million shares and that the 2 firms agree to exchange 1 share of acquirer stock for each target share outstanding. This deal would not qualify for a tax inversion as the acquirer (American) shareholders would own about 91% of the combined firm's total shares outstanding (i.e., 10 million new acquirer shares issued to target firm shareholders/110 million combined firm's shares outstanding). This would violate the 80% rule.

²⁰These rules prevent foreign parent firms from buying enough stock in a subsidiary owned by the former US parent in order to transfer ownership to the new foreign parent making the subsidiary now subject to the foreign parent's lower tax rate. These rules also make it difficult for acquirers to reduce their size by spinning off businesses to shareholders immediately prior to an inversion or for a foreign firm to spin off a subsidiary just the right size to enable a merger between the US firm and the spun-off subsidiary to satisfy the 80% rule.

from its foreign parent and to generate tax-deductible interest expense, a larger percentage of the subsidiary's earnings will be taxable and less cash will be available for transfer to the parent as interest payments.²¹

In 2017, the incentive for US corporations to relocate to more attractive tax environments and to maintain substantial cash holdings abroad may be lessened. The election of Donald Trump as US president means that the maximum US corporate tax rate may be reduced to as low as 15%, more in line with those prevailing elsewhere. The expectation is that much of the estimated \$2.5 trillion held by US corporations overseas at the end of 2016 will be repatriated to the United States. If the US corporate tax rates are indeed reduced significantly relative to those in other countries, a substantial portion of these holdings could return to the United States. However, it is also likely that other countries wishing to retain these cash hoards and US firms that had relocated their headquarters will lower their tax rates as well, reducing some of the justification for returning cash to the United States and moving their headquarters to the United States.

FINANCIAL REPORTING OF BUSINESS COMBINATIONS

A company maintaining its financial statements under International Financial Reporting Standards (IFRS) or Generally Accepted Accounting Principles (GAAP) needs to account for business combinations using the purchase method (also called the acquisition method).²² According to the purchase method of accounting, the purchase price or acquisition cost is determined and then, using a cost-allocation approach, assigned first to tangible and then to intangible net assets and recorded on the books of the acquiring company. Net assets (or net acquired assets) refer to acquired assets less assumed liabilities. Any excess of the purchase price over the fair value²³ of the acquired net assets is recorded as goodwill. Goodwill is an asset representing future economic benefits arising from acquired assets that were not identified individually. Current accounting standards stipulated in SFAS 141 R require an acquirer to recognize the assets acquired, the liabilities assumed, and any noncontrolling interest in the target to be measured at their fair value as of the acquisition date. The acquisition date generally corresponds to the closing date rather than to the announcement or signing date.²⁴

²¹Intercompany loans have represented a means of transferring cash earned abroad by US firms and held there to avoid paying the 35% US corporate tax rate (less any foreign taxes paid) on earnings repatriated to the United States. Cash held abroad by US firms can still be transferred to the United States by using so-called "transfer pricing." US corporate parents can charge their foreign subsidiaries licensing the rights to use patents and other forms of intellectual property as well as charging inflated prices for products sold or services provided by the US parent to its foreign subsidiary.

²²See IFRS 3 and Statements of Financial Accounting Standards (SFAS) 141, respectively.

²³According to SFAS 157, fair value is the price that would be received in selling an asset or paid to transfer a liability between willing participants on the date an asset or liability is estimated.

²⁴According to IFRS 38, goodwill arising from business combinations can be recognized for financial reporting while "internally generated" goodwill such as brands, copyrights, patents, and customer lists created within the firm cannot.

Who Is the Acquirer?

As discussed in Chapter 1, there are many business reasons why one firm wants to acquire another. The firm designated as the acquirer is usually the one that has effective control of decision making in the combined firms. However, determining which firm is the acquirer takes on added importance from an accounting perspective as this determines which firm's assets and liabilities will be revalued on the acquisition date, whether positive or negative goodwill is created, and the impact of the combined firm's future earnings.

According to SFAS 141 R, the acquirer usually is the firm retaining the largest share of voting rights following closing and is significantly larger measured in terms of assets, revenue, and earnings. In addition, the acquirer typically is the firm whose former board members make up the largest percentage of the new board, whose former management dominates the senior management of the combined firms, and in an equity exchange is the firm paying a premium for the other firm's shares.

Determining the acquirer is not always unambiguous. Take, for example, the 2008 merger between regional telecom firms CenturyTel and Embarq. Several factors suggested that CenturyTel should be viewed as the acquirer, since it issued new shares in exchange for Embarq shares, paid a premium to Embarq shareholders, and its former board members and senior managers comprised a majority of the board and senior management of the combined firm. Yet other factors suggested Embarq should be considered the acquirer since its shareholders had the largest percentage of voting rights and it is the much larger firm. Based on a consideration of these factors, CenturyTel was ultimately determined to be the acquirer for financial-reporting purposes. This designation resulted in a larger increase in net acquired assets and lower future reported earnings for the combined firms because of larger noncash expenses such as depreciation than would have been the case had Embarq been viewed as the acquirer.

Recognizing Acquired Net Assets and Goodwill at Fair Value

To make comparison of different transactions easier, current accounting rules require recognizing 100% of the assets acquired and liabilities assumed, even if the acquirer buys less than 100% of the target. This results in the recognition of the target's business in its entirety, regardless of whether 51, 100%, or any percentage of the target in between is acquired. Thus, the portion of the target that was not acquired (i.e., the noncontrolling, or minority, interest) is also recognized, causing the buyer to account for the goodwill attributable to both it and the noncontrolling interest. Noncontrolling/minority interest is reported in the consolidated balance sheet within the equity account, separately from the parent's equity. Moreover, the revenues, expenses, gains, losses, net income or loss, and other income associated with the noncontrolling interest should be reported on the consolidated income statement.

For example, if Firm A were to buy 50.1% of Firm B, reflecting its effective control, Firm A must add 100% of Firm B's acquired assets and assumed liabilities to its assets and liabilities and record the value of the 49.9% noncontrolling, or minority, interest in shareholders' equity. This treats the noncontrolling interest as simply another form of equity and recognizes that

Firm A is responsible for managing all of the acquired assets and assumed liabilities. Similarly, 100% of Firm B's earnings are included in Firm A's income statement less that portion attributable to the 49.9% minority owner and added to the retained earnings of the consolidated firms.²⁵

Recognizing and Measuring Net Acquired Assets in Step (or Stage) Transactions

Staged transactions are required to recognize the acquired net assets as well as the non-controlling interest in the target firm at the full amounts of their fair values. Net acquired assets at each step must be revalued to the current FMV. The acquirer must disclose gains or losses due to the reestimation of the formerly noncontrolling interests on the income statement.

Recognizing Contingent Considerations

Contingencies are uncertainties—such as potential legal, environmental, and warranty claims about which the future may not be fully known at the time a transaction is consummated—that may result in future assets or liabilities. The acquirer must report an asset or liability arising from a contingency to be recognized at its acquisition-date fair value. As new information becomes available, the acquirer must revalue the asset or liability and record the impact of changes in their fair values on earnings, thereby contributing to potential earnings volatility.

In-Process Research and Development Assets

An acquirer must recognize separately from goodwill the acquisition-date fair values of R&D assets acquired in the business combination. Such assets will remain on the books as an asset with an indefinite life until the project's outcome is known. If the project is a success, the firm will amortize the asset over the estimated useful life; if the research project is abandoned, the R&D asset will be expensed.

Expensing Deal Costs

Transaction-related costs such as legal, accounting, and investment banking fees are recorded as an expense on the closing date and charged against current earnings. Firms may need to explain the nature of the costs incurred in closing a deal and the impact of such costs on the earnings of the combined firms. Financing costs, such as expenses incurred as a result of new debt and equity issues, will continue to be capitalized and amortized over time.

²⁵On a nonconsolidated basis, Firm B will be operated within Firm A as a majority-owned subsidiary, with Firm A's investment in Firm B shown as cost, according to the equity method of accounting. The value of this investment will increase with Firm B's net income and decrease with dividends paid to Firm A.

IMPACT OF PURCHASE ACCOUNTING ON BUSINESS COMBINATIONS

A long-term asset is impaired if its fair value falls below its book or carrying value. Impairment could occur due to loss of customers, loss of contracts, loss of key personnel, obsolescence of technology, litigation, patent expiration, failing to achieve anticipated cost savings, overall market slowdown, and so on. When assets are impaired, the firm must report a loss equal to the difference between the asset's fair value and its carrying (or book) value. Acquirers using overvalued shares as the form of payment often tend to overpay for the target and experience subsequent write-offs of goodwill.²⁶

While publicly traded companies are required under GAAP to check goodwill for impairment annually, private companies have a choice as of December 15, 2014: either check goodwill annually or amortize goodwill using the straight-line method over 10 years (i.e., amortize goodwill equally over 10 years). If a private firm chooses to amortize goodwill, goodwill must only be tested if there is a "triggering event" indicating possible impairment.²⁷

The write-down of assets due to impairment associated with an acquisition constitutes a public admission by the firm's management of having overpaid for the acquired assets.²⁸ How often do such write-downs result in a dramatic drop in a firm's share price? Perhaps somewhat surprisingly a firm's share price declines only about one-half of the time following such announcements. The remainder of the time the share price either rises or remains largely unchanged as investors anticipate that management is prepared to take the needed corrective actions.²⁹ To increase investor confidence in management, such announcements should be accompanied by detailed explanations about why the asset has been impaired and specific actions for remedying the situation.

But Goodwill write-downs simply represent one type of the larger category of "restructuring" charges. Viewed as a one-time expense paid by the firm when it reorganizes, such charges are incurred when employees are laid off, manufacturing plants closed, or assets sold off at below book value. If investors view such charges as a result of management's implementation of a new and more effective business strategy, the firm's share price might increase following the announcement. However, if investors view such charges as a reflection of current management's incompetence, their announcement may increase the likelihood

²⁶Gu and Lev (2011).

²⁷Amortizing goodwill impacts a firm's annual earnings. While private firms do not have to worry about public shareholders, the reduction in earnings due to amortization could cause them to be in violation of certain loan covenants. Furthermore, if the private firm eventually goes public, it will have to incur the cost of having to restate its historical earnings to show what it would look like had it been a public firm. Whether goodwill for private firms is evaluated annually for impairment or amortized depends on how savings generated by not evaluating goodwill annually compare to the potential costs of amortizing goodwill.

²⁸In an effort to minimize goodwill, auditors often require that factors underlying goodwill be tied to specific intangible assets for which fair value can be estimated, such as customer lists and brand names. These intangible assets must be capitalized and shown on the balance sheet. If the anticipated cash flows associated with such assets have not materialized, the carrying value of the assets must be written down to reflect its current value.

²⁹Cao et al. (2014).

of a subsequent takeover bid.³⁰ Why? Because substantial charges signal a poorly performing firm and represent the potential for value creation if the firm's current management is removed.

Balance-Sheet Considerations

For financial-reporting purposes, the purchase price paid, including the fair value of any noncontrolling interest (FMV_{NCI}) in the target at the acquisition date, for the target company consists of the FMV of total identifiable acquired tangible and intangible assets (FMV_{TA}) less total assumed liabilities (FMV_{TL}) plus goodwill (FMV_{GW}). The difference between FMV_{TA} and FMV_{TL} is called net asset value. PP is the total consideration transferred to target firm shareholders for net acquired assets less any interest not owned by the acquirer (i.e., noncontrolling interest). These relationships can be summarized as follows:

$$\text{Purchase price (total consideration) : PP} = FMV_{TA} - FMV_{TL} + FMV_{GW} - FMV_{NCI} \quad (12.1)$$

$$\text{Goodwill : } FMV_{GW} = PP + FMV_{NCI} - FMV_{TA} + FMV_{TL} = (PP + FMV_{NCI}) - (FMV_{TA} - FMV_{TL}) \quad (12.2)$$

From Eq. (12.2), it should be noted that as net asset value increases, FMV_{GW} decreases. Also note that the calculation of goodwill can result in either a positive (i.e., $PP > \text{net asset value}$) or a negative (i.e., $PP < \text{net asset value}$). Negative goodwill arises if the acquired assets are purchased at a discount to their FMV and is referred to under SFAS 141R as a "bargain purchase."³¹

Table 12.4 illustrates how the purchase method of accounting can be applied in business combinations. Assume Acquirer buys 100% of Target's equity for \$1 billion in cash on December 31, 2014. Columns 1 and 2 present the preacquisition book values of the two firms' balance sheets. Column 3 reflects the restatement of the book value of the Target's balance sheet in column 2 to their FMV. As the sum of columns 1 and 3, column 4 presents the Acquirer's postacquisition balance sheet. This includes the Acquirer's book value of the preacquisition balance sheet plus the FMV of the Target's balance sheet. As shown in column 3, total assets are less than shareholders' equity plus total liabilities by \$100 million, reflecting the unallocated portion of the purchase price, or goodwill. This \$100 million is shown in column 4 as goodwill on the postacquisition Acquirer balance sheet to equate total assets with equity plus total liabilities. Note that the difference between the Acquirer's preacquisition and postacquisition equity is equal to the \$1 billion purchase price.

Exhibit 12.1 shows the calculation of goodwill in a transaction in which the acquirer purchases less than 100% of the target's outstanding shares but is still required to account for all

³⁰Adut et al. (2016).

³¹A "bargain" purchase is a business combination in which the total acquisition-date fair value of the acquired net assets exceeds the fair value of the purchase price plus the fair value of any noncontrolling interest in the target. Such a purchase may arise due to forced liquidation or distressed sales. SFAS 141R requires the acquirer to recognize that excess on the consolidated income statement as a gain attributable to the acquisition.

TABLE 12.4 Example of Purchase Method of Accounting

	Acquirer preacquisition book value, ^a column 1	Target preacquisition book value, ^a column 2	Target fair market value, ^a column 3	Acquirer postacquisition value, ^a column 4
Current assets	12,000	1,200	1,200	13,200
Long-term assets	7,000	1,000	1,400	8,400
Goodwill				100 ^b
Total assets	19,000	2,200	2,600	21,700
Current liabilities	10,000	1,000	1,000	11,000
Long-term debt	3,000	600	700	3,700
Common equity	2,000	300	1,000 ^c	3,000
Retained earnings	4,000	300		4,000
Equity + liabilities	19,000	2,200	2,700 ^d	21,700

^aMillions of dollars.

^bGoodwill = purchase price – FMV of net acquired assets = \$1000 – (\$2600 – \$1000 – \$700).

^cThe FMV of the target's equity is equal to the purchase price. Note that the value of the target's retained earnings is implicitly included in the purchase price paid for the target's equity.

^dThe difference of \$100 million between the FMV of the target's equity plus liabilities less total assets represents the unallocated portion of the purchase price.

FMV, Fair market value.

EXHIBIT 12.1 ESTIMATING GOODWILL

On January 1, 2014, the closing date, Acquirer Inc. purchased 80% of Target Inc.'s 1 million shares outstanding at \$50 per share, for a total value of \$40 million (i.e., $0.8 \times 1,000,000$ shares outstanding $\times$ \$50/share). On that date, the fair value of the net assets acquired from Target was estimated to be \$42 million. Acquirer paid a 20% control premium, which was already included in the \$50-per-share purchase price. The implied minority discount of the noncontrolling (minority) shares is 16.7% [i.e., $1 - (1/(1 + 0.2))$].^a What is the value of the goodwill shown on Acquirer's consolidated balance sheet? What portion of that goodwill is attributable to the noncontrolling interest retained by Target's shareholders? What is the FMV of the 20% noncontrolling interest per share reflecting the minority discount?

Goodwill shown on Acquirer's balance sheet: From Eq. (12.2), goodwill (FMV_{GW}) can be estimated as follows:

$$\text{FMV}_{\text{GW}} = (\text{PP} + \text{FMV}_{\text{NCL}}) - (\text{FMV}_{\text{TA}} - \text{FMV}_{\text{TL}}) = (\$40,000,000 + \$10,000,000) - \$42,000,000 = \$8,000,000$$

Goodwill attributable to the noncontrolling interest: Note that 20% of the total shares outstanding equals 200,000 shares, with a market value of \$10 million (\$50/share $\times$ 200,000). Therefore, the amount of goodwill attributable to the noncontrolling interest is calculated as follows:

Fair Value of Noncontrolling Interest:	\$10,000,000
Less: 20% fair value of net acquired assets ($0.2 \times \$42,000,000$):	<u>\$8,400,000</u>
Equal: Goodwill attributable to noncontrolling interest:	\$1,600,000

Fair value of the Noncontrolling Interest per share: Since the fair value of Acquirer's interest in Target and Target's retained interest are proportional to their respective ownership interest, the value of the ownership distribution of the controlling (majority) and noncontrolling (minority) owners is as follows:

Acquirer Interest ($0.8 \times 1,000,000 \times \$50/\text{share}$):	\$40,000,000
Target noncontrolling Interest ($0.2 \times 1,000,000 \times \$50/\text{share}$):	\$10,000,000
Total Market Value:	<u>\$50,000,000</u>

The FMV per share of the noncontrolling interest is \$41.65 [i.e., $(\$10,000,000/200,000) \times (1 - 0.167)$]. The noncontrolling interest share value is less than the share price of the controlling shareholders (i.e., \$50/share) because it must be discounted for the relative lack of influence of noncontrolling or minority shareholders on the firm's decision-making process.

^aSee Chapter 10 for a discussion of how to calculate control premiums and noncontrolling/minority discounts.

of the target's net acquired assets, including 100% of goodwill. [Exhibit 12.2](#) lists valuation guidelines for each major balance-sheet category.

[Table 12.5](#) illustrates the balance-sheet impacts of purchase accounting on the acquirer's balance sheet and the effects of impairment subsequent to closing. Assume that Acquirer Inc. purchases Target Inc. on December 31, 2013 (the acquisition/closing date), for \$500 million. Identifiable acquired assets and assumed liabilities are shown at their fair value on the acquisition date. The excess of the purchase price over the fair value of net acquired assets is shown as goodwill. The fair value of the "reporting unit" (i.e., Target Inc.) is determined annually to ensure that its fair value exceeds its carrying (book) value. As of December 31, 2014, it is determined that the fair value of Target Inc. has fallen below its carrying value, due largely to the loss of a number of key customers.

Income Statement and Cash Flow Considerations

For reporting purposes, an upward valuation of tangible and intangible assets, other than goodwill, raises depreciation and amortization expenses, which lowers operating and net income. For tax purposes, goodwill created after July 1993 may be amortized up to 15 years and is tax deductible. Goodwill booked before July 1993 is not tax deductible. Cash flow benefits from the tax deductibility of additional depreciation and amortization expenses that are written off over the useful lives of the assets. If the purchase price paid is less than the target's net asset value, the acquirer records a one-time gain equal to the difference on its income statement. If the carrying value of the net asset value subsequently falls below its FMV, the acquirer records a one-time loss equal to the difference.

Pending Rule Changes Affecting Revenue Recognition

Revenue recognition under GAAP determines the specific conditions under which revenue is recognized on a firm's financial statements. Generally, revenue is recognized only

EXHIBIT 12.2 GUIDELINES FOR VALUING ACQUIRED ASSETS AND LIABILITIES

1. Cash and accounts receivable, reduced for bad debt and returns, are valued at their values on the books of the target on the acquisition/closing date.
2. Marketable securities are valued at their realizable value after transaction costs.
3. Inventories are broken down into finished goods and raw materials. Finished goods are valued at their liquidation value; raw material inventories are valued at their current replacement cost. Target last-in, first-out inventory reserves are eliminated.
4. Property, plant, and equipment are valued at the FMV on the acquisition/closing date.
5. Accounts payable and accrued expenses are valued at the levels stated on the target's books on the acquisition/closing date.
6. Notes payable and long-term debt are valued at their net present value of the future cash payments discounted at the current market rate of interest for similar securities.
7. Pension fund obligations are booked at the excess or deficiency of the present value of the projected benefit obligations over the present value of pension fund assets. This may result in an asset or liability being recorded by the consolidated firms.
8. All other liabilities are recorded at their net present value of future cash payments.
9. Intangible assets are booked at their appraised values on the acquisition/closing date.
10. Goodwill is the difference between the purchase price and the FMV of the target's net asset value. Positive goodwill is recorded as an asset, whereas negative goodwill (i.e., a bargain purchase) is shown as a gain on the acquirer's consolidated income statement.

when a specific event has occurred and the amount of revenue is measureable. Revenue recognition states that revenue should not be recorded until it is earned. On May 28, 2014, the Financial Accounting Standards Board and International Accounting Standards Board (IASB) jointly issued a new standard for recognizing revenue from customer contracts, providing a uniform standard for recognizing such revenue. The old standard relied on industry-specific guidance, which created revenue recognition policies that differed by industries. The new standard must be fully implemented by 2018.

Firms must utilize substantial judgment when applying the new standard. AT&T's proposed takeover of Time Warner in late 2016 illustrates how the application of the new revenue recognition standard could impact reported financial statements for business combinations. The new accounting standard would affect AT&T's allocation of contract revenues between services and equipment like handsets and the timing of when those revenues are recognized. As of September 30, 2016, Time Warner's program licensing revenue backlog totaled \$6.9 billion of future revenue reflecting the terms of existing contracts for licensing theatrical and TV content for cable networks and syndicated TV and subscription video-on-demand. Under the new standard, licenses could be treated as rights that transfer at a point in time starting when the customer can direct the use of and obtain the benefits from the license. This could enable revenue from certain licenses to be accelerated while others could be deferred depending on the terms of the contracts. While it would not impact the timing of taxes paid, it would affect

TABLE 12.5 Balance-Sheet Impacts of Purchase Accounting

Target Inc., December 31, 2013, Purchase Price (Total Consideration)		\$500,000,000
Fair Values of Target Inc.'s Net Assets on December 31, 2013		
Current assets	\$40,000,000	
Plant and equipment	200,000,000	
Customer list	180,000,000	
Copyrights	120,000,000	
Current liabilities	(35,000,000)	
Long-term debt	(100,000,000)	
Value assigned to identifiable net assets		\$405,000,000
Value assigned to goodwill		\$95,000,000
Carrying value as of December 31, 2013		\$500,000,000
Fair Values of Target Inc.'s Net Assets on December 31, 2014		\$400,000,000^a
Current assets	\$30,000,000	
Plant and equipment	175,000,000	
Customer list	100,000,000	
Copyrights	120,000,000	
Current liabilities	(25,000,000)	
Long-term debt	(90,000,000)	
Fair value of identifiable net assets		\$310,000,000
Value of goodwill		\$90,000,000
Carrying value after impairment on December 31, 2014		\$400,000,000
Impairment loss (difference between December 31, 2014, and December 31, 2013, carrying values)		\$(100,000,000)

^aNote that the December 31, 2014, carrying value is estimated based on the discounted value of projected cash flows of the reporting unit and therefore represents the FMV of the unit on that date. The fair value is composed of the sum of the fair values of identifiable net assets plus goodwill. FMV, Fair market value.

the measurement of deferred taxes and income taxes for a specific reporting period and reported earnings.

Pending Rule Changes Affecting the Balance Sheet

Currently, operating leases need only be discussed in footnotes to the balance sheet for financial-reporting purposes. For firms using large amounts of leased assets, this often does not give analysts a clear picture of the firm's total obligations. Under present reporting requirements it is important to value a firm's operating leases and show their impact on the firm's balance sheet in calculating a firm's borrowing capacity as measured by debt to equity or total capital ratios. Once the operating leases are converted to debt, lease expense must be

added to EBIT. Why? Because it is a financial expense and EBIT represents operating income before such expenses. An estimate of depreciation expense associated with the leased asset must be deducted from EBIT as is depreciation expense associated with other fixed assets owned by the firm. The resulting “adjusted” EBIT is then used to calculate free cash flow to the firm. For more detail on operating leases and valuation, see Chapter 7.

The treatment of operating leases is to change significantly according to a 2016 ruling by the Financial Accounting Standards Board. Beginning in 2019, operating leases must be shown on firm’s balance sheet. While the change does not create new corporate obligations, some firms will look more leveraged than they do currently when evaluated in terms of debt to equity ratios. For purposes of financial analysis, these ratios are generally looked at in terms of the market value of debt and the market value of equity. Consequently, the value of a firm relying heavily on operating leases may show a large increase in the value of its debt relative to equity. The value of equity should be relatively unaffected because the addition of operating leases on the balance sheet has no impact on the firm’s cash flow generation capability and in turn the market value of its equity.

International Accounting Standards

The objective of the IASB is the convergence of accounting standards worldwide and the establishment of global standards, sometimes referred to as “global GAAP.” The IASB issues IFRS, and, since 2005, firms in the European Union have had to conform to IFRS directives. Concerns in the United States about moving to international standards from GAAP include higher taxes (if the conversion results in increases in reported earnings), increased implementation costs, and litigation. In a report issued in mid-2012, the US Securities and Exchange Commission (SEC) indicated that if the United States ultimately decides to shift to international rules, it will use a hybrid structure incorporating certain IFRS rules into the US system of accounting standards.³² The IASB is currently considering their own guidelines for the treatment of operating leases.

RECAPITALIZATION (“RECAP”) ACCOUNTING

Business combinations qualifying for recapitalization accounting do not have to be recorded using purchase accounting. “Recap” accounting is designed to record restructuring actions reflecting changes in a firm’s capital structure without having any impact on the firm’s assets and liabilities and triggering any tax liabilities. It applies to firms engaging in internal reorganizations, repurchasing their own stock, undertaking LBOs, or executing reverse mergers. The SEC views such activities as not having a material impact on the assets and liabilities of the firm and in which participants have a continuing interest in the surviving entity. Each of these scenarios is discussed next.

When two entities have the same parent, transfers of assets between these entities are viewed as reorganizations internal to the firm that do not result in a change in control impacting the value of the operating assets and liabilities of the firm. Such transfers do not require

³²U.S. Securities and Exchange Commission (2012).

any revaluation of the firm's assets and liabilities. Recap accounting also applies when a firm buys its own stock; the repurchased shares, valued at the price paid for the stock, are included in treasury stock, which is deducted from the firm's shareholders' equity. The transaction does not have any impact on the value of the firm's assets or liabilities, and it does not require any change in the book value of the corporation's assets or liabilities. The full impact of the transaction is centered in the firm's shareholders' equity.

Recap accounting also may be used for the financial reporting of LBOs. In LBOs, the buy-out firm often creates a shell subsidiary and merges it into the target, with the target surviving. Target firm assets and liabilities are shown at their pretransaction book values. Since there is no write-up (or write-down) to FMV, there is no additional depreciation and amortization that would reduce the firm's net income. The LBO buyout firm may use recap accounting rather than purchase accounting if it anticipates exiting the firm through an IPO, since reported earnings are higher than they would have been under purchase accounting and no goodwill is created. The target's shareholders' equity usually is negative, since the repurchased stock is shown as treasury stock, which is deducted from shareholders' equity. To qualify for recap accounting, the shareholders of the firm undergoing the LBO (the target) must retain an interest in the recapitalized firm of 5%–20%. The SEC views that merger of the LBO buyout firm's sub into the target, with the target surviving, as a recapitalization of the target rather than as a business combination in which the survivor gained valuable assets due to the deal.

Finally, recap accounting is employed to record reverse mergers. Reverse mergers involve a private firm's merging into a public shell corporation with nominal net assets, with the public company surviving. The owners of the private firm typically have effective or actual control of the surviving company at closing, with the former public shell shareholders having an ongoing noncontrolling interest in the recapitalized firm. The SEC views reverse mergers as changes in the acquiring firm's capital structure rather than as a business combination in which the shell corporation had significant pretransaction assets whose value was impacted by the transaction; as such, recap accounting is employed for reporting purposes.

SOME THINGS TO REMEMBER

Taxes are rarely the deciding factor in most M&A deals, which happen because they make good business sense. A deal is tax free if mostly acquirer stock is used to buy the target's stock or assets; otherwise, it is taxable. For financial-reporting purposes, M&As (except those qualifying for recapitalization accounting) must be recorded using the purchase method.

DISCUSSION QUESTIONS

- 12.1 When does the IRS consider a transaction to be nontaxable to the target firm's shareholders? What is the justification for the IRS position?
- 12.2 What are the advantages and disadvantages of a tax-free transaction for the buyer?
- 12.3 Under what circumstances can the assets of the acquired firm be increased to FMV when the transaction is deemed a taxable purchase of stock?

- 12.4 What is goodwill and how is it created?
- 12.5 Under what circumstances might an asset become impaired? How might this event affect the way in which acquirers bid for target firms?
- 12.6 Why do boards of directors of both acquiring and target companies often obtain so-called fairness opinions from outside investment advisors or accounting firms? What valuation methodologies might be employed in constructing these opinions? Should stockholders have confidence in such opinions? Why or why not?
- 12.7 Archer Daniel Midland (ADM) wants to acquire AgriCorp to augment its ethanol manufacturing capability. AgriCorp wants the deal to be tax free. ADM wants to preserve AgriCorp's investment tax credits and tax loss carryforwards so that they transfer in the transaction. Also, ADM plans on selling certain unwanted AgriCorp assets to help finance the transaction. How would you structure the deal so that both parties' objectives could be achieved?
- 12.8 Tangible assets are often increased to FMV following a transaction and depreciated faster than their economic lives. What is the potential impact on posttransaction EPS, cash flow, and balance sheet?
- 12.9 Discuss how the form of acquisition (i.e., asset purchase or stock deal) could affect the net present value or internal rate of return of the deal calculated postclosing.
- 12.10 What are some of the important tax-related issues the boards of the acquirer and target companies may need to address prior to entering negotiations? How might the resolution of these issues affect the form of payment and form of acquisition?

Solutions to these Chapter Discussion Questions are found in the Online Instructor's Manual for instructors using this book (<https://textbooks.elsevier.com/web/Manuals.aspx?isbn=9780128016091>).

PRACTICE PROBLEMS AND ANSWERS

- 12.11 Target Company has incurred \$5 million in losses during the past 3 years. Acquiring Company anticipates pretax earnings of \$3 million in each of the next 3 years. What is the difference between the taxes that Acquiring Company would have paid before the merger as compared to actual taxes paid after the merger, assuming a marginal tax rate of 40%?

Answer: \$2 million.

- 12.12 Acquiring Company buys 100% of Target Company's equity for \$5 million in cash. As an analyst, you are given the premerger balance sheets for the two companies (Table 12.6). Assuming plant and equipment are revalued upward by \$500,000, what will be the combined companies' shareholders' equity plus total liabilities? What is the difference between Acquiring Company's shareholders' equity and the shareholders' equity of the combined companies?

Answer: The combined companies' shareholders' equity plus total liabilities is \$7.1 million, and the change between the combined companies' and Acquiring Company's shareholders' equity is \$5 million. Note that the change in the acquirer's equity equals the purchase price.

Solutions to these problems are found in the Online Instructor's Manual available to instructors using this text (<https://textbooks.elsevier.com/web/Manuals.aspx?isbn=9780128016091>).

TABLE 12.6 Premerger Balance Sheets for Companies in Problem 12.12 (\$ Million)

	Acquiring company	Target company
Current assets	600,000	800,000
Plant and equipment	1,200,000	1,500,000
Total assets	1,800,000	2,300,000
Long-term debt	500,000	300,000
Shareholders' equity	1,300,000	2,000,000
Shareholders' equity + total liabilities	1,800,000	2,300,000

END OF CHAPTER CASE STUDY: ABBVIE PLACES A BIG BET ON CANCER DRUG MAKER PHARMACYCLICS

Case Study Objectives: To Illustrate

- Form of payment and of acquisition
- The application of common takeover tactics
- Tax and accounting considerations
- The importance of discipline during negotiations

Successful takeovers require a sound business strategy, an intelligent takeover plan, unwavering discipline during the negotiations, and excellent postmerger execution. The AbbVie business strategy seems to have consisted of placing a high-risk bet on a single drug intended to restore and sustain the firm's growth in revenue and profits. Prior failed takeover attempts may have made AbbVie an undisciplined bidder contributing potentially to overpaying for the target. In this case study, we discuss the circumstances leading up to the deal, how they may have affected the deal, and tactics common to transactions of this type.

Pharmaceutical company AbbVie, a leading supplier of cancer-fighting drugs, had been on the hunt for growth as its top-selling drug Humira, a treatment for rheumatoid arthritis, faced patent expiration in 2016, a dilemma faced by most major pharmaceutical firms. Humira accounted for about 56% of AbbVie's total \$22.33 billion in 2014 sales. Illustrating its dependence on Humira, AbbVie's next biggest drug, Androgel, generated only 4% of its annual revenue. The firm's earnings had been deteriorating for several years as generic drug makers cut into the firm's market share. The day of reckoning was fast approaching.

AbbVie had been frustrated in its attempt to acquire United Kingdom-based Shire for \$54 billion in 2014. The takeover would have enabled AbbVie to diversify its pharmaceutical offering and to reincorporate overseas to lower its tax bill in a "tax inversion." When US regulatory authorities changed tax rules to make such strategies less attractive, AbbVie withdrew its bid.

Against this backdrop, AbbVie moved aggressively in a bidding war to acquire Pharmacyclics, challenging Johnson & Johnson (J&J) and Novartis for the right to acquire the target, eventually winning out in mid-2015. What made Pharmacyclics attractive was its blood cancer drug called

Imbruvica, the only drug Pharmacyclics sells. What makes Imbruvica so valuable is its future cash flow generation potential. In 2014, the drug brought in \$492.4 million in sales, which AbbVie expects to double to about \$1 billion in 2015 and to top \$3.5 billion by 2018.

J&J already owns 50% of Imbruvica via a manufacturing partnership through its Janssen Biotech subsidiary. J&J was edged out of the bidding after it offered \$261 per share, slightly below AbbVie's winning bid of \$261.25 per share consisting of 58% in cash and the rest in stock. The AbbVie bid valued Pharmacyclics at more than \$21 billion and represented a 39% premium over Pharmacyclics's closing price on February 29, 2015, when the bidding war began.

AbbVie's board and management in justifying the price paid argued that the companies' shared expertise, combined with AbbVie's five late-stage oncology drugs in its development pipeline set to launch during the next several years, has the potential to transform cancer treatment protocols and improve patient outcomes and quality of life. Pharmacyclics' Imbruvica has been approved in 50 countries for mid- to late-stage cancers and offers broad international expansion.

The risk to AbbVie is clear. Can it earn enough from Imbruvica to enable it to earn back the hefty premium paid for Pharmacyclics and still earn its cost of capital? Some analysts question whether Imbruvica can reach the lofty sales goals, unless the drug can prove effective against other kinds of tumor types and different diseases. Failure to reach these ambitious sales goals could result in substantial future write-offs. But the real risk may have been one of entering into a deal when you are feeling desperate.

An important objective for AbbVie was to gain complete control of Pharmacyclics through a tender offer to gain initially majority control followed by a back-end merger to "squeeze out" any remaining target firm shareholders. A tender offer consisting of both cash and stock was used to broaden the appeal of the proposed bid to Pharmacyclics shareholders. Deal terms also included a termination fee and a fixed-value collar.

AbbVie's tender offer consisted of three options for Pharmacyclics shareholders. They could choose to receive all-cash, all-stock, or a combination for their shares. AbbVie sought to acquire all of the outstanding shares of Pharmacyclics through the tender offer that ended on May 22, 2015. By the end of the period, 87% of Pharmacyclics' outstanding shares had been tendered. Of those tendered, 24.1 million made an election to receive mixed consideration (both cash and stock), 14 million made an election to receive the all-cash option, and 29.3 million chose to receive all-stock.

The transfer of ownership was accomplished through successive mergers involving two AbbVie wholly owned subsidiaries: Merger Sub 1 and Merger Sub 2. The tender offer was the first step in AbbVie's plan to acquire a controlling interest and ultimately all outstanding shares of Pharmacyclics. Once the exchange offer was completed, Merger Sub 1 was merged into Pharmacyclics with Pharmacyclics surviving. As permissible under Delaware Corporation Law (AbbVie was incorporated in Delaware), all Pharmacyclics common shares not tendered in the share exchange were cancelled and converted into the right to exercise the same options offered in the tender offer. Immediately following the first merger, the surviving corporation (Pharmacyclics) was merged into Merger Sub 2, with Merger Sub 2 surviving the merger as a wholly owned subsidiary of AbbVie.

The tender offer qualified as a tax-free reorganization. Shareholders receiving stock will incur a taxable gain or loss only when they sell their shares, while those receiving cash will incur an immediate taxable event. Pharmacyclics would have had to pay a termination fee of 3% of the transaction value if the merger agreement were terminated because Pharmacyclics board accepted a better offer.

The equity portion of the purchase price involved an exchange ratio subject to a “collar” in which the value of AbbVie’s share price could fluctuate up or down by 10% without changing the value of the offer price. To secure financing for the cash portion of the deal and for anticipated working capital requirements, AbbVie obtained an \$18-billion 364-day senior unsecured bridge loan commitment from a consortium of major banks. The firm had the option to obtain permanent (long-term) financing during this period but chose not to do so.

Discussion Questions

1. What is the form of payment used in this deal? Why might this form have been selected? What are the advantages and disadvantages of the form of payment used in this deal?
2. What is the form of acquisition used in this deal? Why might this form have been chosen? What are the advantages and disadvantages of the form of acquisition?
3. Would you characterize this as a reverse or forward merger? Based on your answer why might this type of reorganization have been selected by AbbVie?
4. How would the fixed-value collar arrangement work to fix the value of the offer price? How would this affect AbbVie and Pharmacyclics shareholders?
5. How would this deal be treated for financial-reporting purposes? Briefly describe how the methodology you have identified might be applied to how Pharmacyclics’ financial data would be presented on AbbVie’s consolidated financial statements.
6. Assume it is determined by auditors during the next several years that AbbVie overpaid significantly for Pharmacyclics. What is the most likely reason this determination could happen? How might this impact the firm’s reported EPS and in turn its share price? Be specific.
7. What is the purpose of a termination fee in these types of deals?
8. Did the sale of Pharmacyclics require a vote by the firm’s shareholders? Explain.

Solutions to these questions are provided in the Online Instructor’s Manual for instructors using this book (<https://textbooks.elsevier.com/web/Manuals.aspx?isbn=9780128016091>).

**ADDITIONAL CASE STUDY RECOMMENDATIONS
(SEARCH HARVARD BUSINESS SCHOOL
PUBLISHING SITE BY NAME OF CASE:
hbsp.harvard.edu)**

Accounting Fraud at WorldCom, Robert S. Kaplan, David Kiron, Revision Date: September 14, 2007, HBS Premier Case Collection, Product Number: 104071-PDF-ENG, <https://cb.hbsp.harvard.edu>.

Subjects Covered: Accounting Procedures, Bankruptcy, Board of Directors, Business Ethics, Corporate Governance, Financial Accounting, Financial Statements, Fraud, Leadership, Organizational Behavior, Organizational Culture.

Flinder Valves and Controls Inc., Michael J. Schill, Publication Date: November 18, 2008, Product Number: UV1062-PDF-ENG, hbsp.harvard.edu.

Subjects Covered: Negotiation Strategy, Valuation, Share Exchange Ratio Calculation, Tax Issues, Earnings Dilution, and Voting Power.

The Treatment of Goodwill and Other Purchased Intangibles for Tax Purposes, Mary Margaret Frank, Revision Date:

January 20, 2011, Product Number: UV081-PDF-ENG, Source: Darden School of Business, hbsp.harvard.edu.

Subjects Covered: M&A Related Accounting and Taxation Issues, Allocation of Purchase Price.

Oracle Corporation's Acquisition of Siebel Systems, Inc.: The Battle of Two Silicon Valley Titans Comes to an End, Mary Margaret Frank, Michael Pozzi, Publication Date: August 28, 2007, Product Number: UV0809-PDF-ENG, Source: Darden School of Business, hbsp.harvard.edu.

Subjects Covered: Deal Structuring, Tax and Accounting issues.

Tyco: M&A Machine: Maureen McNichols, Nathan T. Blair, Publication Date: March 12, 2009, Product Number: A202-PDF-ENG, Source: Stanford Graduate School of Business, hbsp.harvard.edu.

Subjects Covered: Accounting Fraud, Earnings Management.

Financing the Deal

Private Equity, Hedge Funds, and Other Sources of Financing

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The only difference between you and someone you envy is that you settled for less. —Philip McGraw

INSIDE M&A: INFORMATICA GOES PRIVATE TO IMPLEMENT AN AGGRESSIVE SPENDING PROGRAM

KEY POINTS

- Firms hoping to spur growth through new capital investments and takeovers often find it difficult to do so as a public firm due to investor impatience.
- One option is to take the firm private.
- Leveraged buyouts (LBOs) undertaken following the 2008 recession have tended to be more conservatively financed than those prior to 2008.

The realization of sustained earnings growth often requires a sizable initial investment. Investments in software and other intellectual property must be expensed according to Generally Accepted Accounting Principles resulting in an immediate reduction in earnings. While certain types of investments can be capitalized and depreciated or amortized over their useful lives, such spending can depress near-term earnings. Similarly, acquisitions made to jump-start growth often have a short-term negative impact on earnings as firms write off acquisition-related expenses and incur substantial postacquisition integration costs.

Firms with successful track records in achieving revenue and earnings growth goals such as Facebook, Google, and Amazon.com often are able to convince investors to be patient following a major investment. However, firms with poor track records can get hammered by investors immediately following the announcement of an aggressive investment program. What options are available for such firms?

One alternative is to take the firm private by consolidating ownership among a few investors patient enough to allow the firm to realize promised returns. This public-to-private LBO requires an investor group or financial sponsor (sometimes involving a firm's management) using a combination of equity and borrowed funds to acquire publicly held shares.¹ This is exactly what data integrator Informatica did. On August 6, 2015, the firm's shares were

¹While public-to-private LBOs get the most publicity because of their size and visibility, most LBOs involve the leveraging of private firms. The reasons for this are discussed in detail later in this chapter.

removed from the NASDAQ, retiring the INFA ticker symbol, following the completion of its acquisition by private equity investors Permira and Canada Pension Plan Investment Board. The newly private firm also has several strategic investors: Microsoft and Salesforce Ventures, the investment arm of Salesforce.com. The LBO was the biggest of 2015. Public investors received \$48.75 per share held.

Informatica, once a high-flying stock, offers enterprise-wide data integration and management software enabling firms to analyze masses of data stored in offsite servers often referred to as the “cloud.” Data integration is the use of technical and business processes to combine data from disparate sources into useful information. The firm claims to have more than 5800 enterprise-wide customers.

In 1999, the firm displayed a meteoric price to earnings ratio common among internet firms during the dotcom bubble enabling the firm to reach a multibillion-dollar valuation. However, the firm’s valuation collapsed when the speculative bubble burst in 2000. It would be years before the firm would again be able to reach its pre-2000 valuation.

Like competitor Tibco, Informatica had seen its revenue growth slow due to market maturation after seeing its stock soar and then crater. Both firms have since seen their valuations grow to multibillion-dollar levels, but it has taken years to get back to where they were before the dotcom debacle. Tibco was taken private in December 2014 for \$4.3 billion.

In explaining why the firm went private, Informatica announced its intention to “grow into a multi-billion dollar leader in all things data.” As a private company, with a long view measured in years, not quarters, the firm reasoned that it will have more flexibility and more time to implement a transformative business model based in part on a string of strategic acquisitions.

Informatica had undertaken an auction process to sell itself in early 2015 attracting a range of bidders including Silver Lake Partners and Hellman & Friedman. The sale was marred by litigation initiated by shareholders alleging improprieties during the sale process. The rationale for including Microsoft and Salesforce Ventures was their prior partnership relationships with Informatica. Informatica has been working with Salesforce.com for years and utilizes Microsoft’s cloud services.

Under private ownership, Informatica will continue to focus on its main product areas, including cloud services, data security, and “big data” analysis. But the company, with the support of its new backers, will also search for potential takeover targets as part of an effort to be a consolidator in the fragmented data integration industry. The new owners will be able to provide financing for future takeovers.

Financing for the Informatica LBO consisted of \$650,000,000 of 7.125% senior notes due in 2023. The notes are fully and unconditionally guaranteed, joint and severally, on a senior unsecured basis by each of the Company’s subsidiaries and parent entities. The firm also entered into new credit facilities (lending arrangements) with a syndicate (group) of financial institutions led by Bank of America, N.A. The new credit facilities consisted of a \$1710-million term or multiyear loan and a €250-million term loan, each maturing August 6, 2022, and a \$150.0-million revolving facility (short-term line of credit) that matures August 6, 2020. The revolving loan facility is intended to satisfy short-term financing requirements for the firm. The lenders have first priority on the proceeds of any liquidation of the firm in the event it defaults on its loans. Unlike extraordinarily highly leveraged LBOs of the 2004–07 period, the Informatica capitalization is comparatively conservative with debt comprising about one-half of total capital (debt plus equity).

CHAPTER OVERVIEW

“The stock market is not conducive to taking very many companies public today” and selling highly indebted retailers is “just not an option,” said Jim Zenni, chief executive of private equity firm Z Capital Partners LLC, which invests in distressed companies.² Like other private equity investors Mr. Zenni was lamenting the unfavorable market conditions in 2016 that made “cashing out” of their investments impractical.

To understand the basis for his concern, it is necessary to understand how deals are financed. This chapter begins with a discussion of common sources of merger and acquisition (M&A) financing. The role of private equity firms in financing highly leveraged transactions is discussed in detail. Highly leveraged transactions, typically referred to as *LBOs*, are discussed in the context of a financing strategy. The terms *buyout firm* and *financial sponsor* are used interchangeably (because they are in the literature on the subject) throughout the chapter, to include a variety of investor groups. The companion website to this book (<https://www.elsevier.com/books-and-journals/book-companion/9780128016091>) contains a review of this chapter in the file folder entitled “Student Study Guide.”

HOW ARE M&A TRANSACTIONS COMMONLY FINANCED?

M&A transactions typically are financed by using cash, equity, debt, or some combination. For example, in late 2015, French telecommunications giant, Altice, in a deal valued at \$17.7 billion (including assumed debt) financed its takeover of US cable company, Cablevision, by using a combination of bank financing, cash on hand, and new equity issues. Which source(s) of financing is chosen depends on a variety of factors, including current capital market conditions, the liquidity and creditworthiness of the acquiring and target firms, the incremental borrowing capacity of the combined acquiring and target firms, the size of the deal, and the preference of the target shareholders for cash or acquirer shares.

The decision to acquire can be separated from how the deal is financed. By decoupling these decisions, an acquirer can attract different types of investors (or clientele). In the case of M&As, a firm can issue shares in advance of a bid to raise funds to finance a cash purchase of a target. By explicitly stating that the purpose of the issue is to finance future acquisitions, the firm is able to attract investors who believe that acquisitions are a better use of the proceeds than providing working capital, building liquidity, or reinvestment in the firm. As such, the abnormal acquirer returns on the announcement date of the acquisition may be higher than if the acquirer’s mix of investors was less supportive of the firm making acquisitions. Moreover, the value of the deal to the acquirer could be enhanced at least in the short run if it can time the issuance of shares to periods when they are highly valued by investors and use the proceeds to buy another firm in the same industry when firms in the industry are seen as undervalued.³

Ultimately what source of funds or combination of sources is used and the timing of when they are used depends on the specific circumstances of the deal. The range of financing sources and the context in which they are used are discussed next.

²Jarzemsky (2016).

³Ang et al. (2014a, 2014b).

Financing Options: Borrowing

An acquirer or financial sponsor may tap into an array of alternative sources of borrowing, including asset- and cash flow-based lending, long-term financing, and leveraged bank loans.

Asset-Based (Secured) Lending

Under asset-based lending, the borrower pledges certain assets as collateral. These loans are often short term (i.e., less than 1 year in maturity) and secured by assets that can be liquidated easily, such as accounts receivable and inventory. Borrowers often seek *revolving lines of credit* on which they draw on a daily basis. Under a revolving credit arrangement, the bank agrees to make loans up to a maximum for a specified period, usually a year or more. As the borrower repays a portion of the loan, an amount equal to the repayment can be borrowed again under the terms of the agreement. In addition to interest on the notes, the bank charges a fee for the commitment to make the funds available. For a fee, the borrower may choose to convert the revolving credit line into a term loan. A *term loan* usually has a maturity of 2–10 years and typically is secured by the asset that is being financed, such as new capital equipment.⁴

Loan documents define the rights and obligations of the parties to the loan. The *loan agreement* stipulates the terms and conditions under which the lender will loan the firm funds; the *security agreement* specifies which of the borrower's assets will be pledged to secure the loan; and the *promissory note* commits the borrower to repay the loan, even if the assets, when liquidated, do not fully cover the unpaid balance.⁵ Loan agreements routinely contain an *acceleration clause* allowing a lender to demand that a borrower repay all or part of an outstanding loan if the contract is breached (i.e., not honored) such as failing to pay interest and principal when due or breaking a covenant. If the borrower defaults on the loan, the lender can seize and sell the collateral to recover the value of the loan.⁶ Furthermore, loan agreements often have *cross-default provisions* that allow a lender to collect its loan immediately if the borrower is in default on a loan to another lender.

These documents contain certain security provisions and protective positive and negative covenants limiting what the borrower may do as long as the loan is outstanding. Typical *security provisions* include the assignment of payments due to the lender, an assignment of a portion of the receivables or inventories, and a pledge of marketable securities held by the borrower. An *affirmative covenant* in a loan agreement specifies the actions the borrower agrees to take during the term of the loan. These typically include furnishing periodic financial

⁴Acquiring firms often prefer to borrow funds on an unsecured basis because the added administrative costs involved in pledging assets as security raise the total cost of borrowing significantly. Secured borrowing also can be onerous because the security agreements can severely limit a company's future borrowing and ability to pay dividends, make investments, and manage working capital aggressively.

⁵The security agreement is filed at a state regulatory office in the state where the collateral is located. Future lenders can check with this office to see which assets a firm has pledged and which are free to be used as future collateral. The filing of this security agreement legally establishes the lender's security interest in the collateral.

⁶The process of determining which of a firm's assets are free from liens is made easier today by commercial credit-reporting repositories, such as Dun & Bradstreet, Experian, Equifax, and Transunion.

statements to the lender, carrying sufficient insurance to cover insurable business risks, maintaining a minimum amount of net working capital, and retaining key management personnel. A *negative covenant* restricts the actions of the borrower. They include limiting the amount of dividends that can be paid, the level of compensation that may be given to the borrower's employees, the total amount of borrower indebtedness, capital investments, and the sale of certain assets.

The existence of restrictive covenants can reduce the cost of borrowing by as much as three-quarters of 1% for highly leveraged firms. Despite incurring potentially higher borrowing costs, other firms may choose to negotiate loan agreements without such highly restrictive covenants as limitations on dividend payments or issuing additional debt without approval of existing lenders. Why? Because the perceived benefits of greater financial flexibility to pursue unanticipated investment opportunities and to adopt what the firm's board believes is an appropriate dividend policy outweigh the lower cost of borrowing.⁷ In general, lenders are willing to extend loans with relatively few restrictive covenants to firms with substantial cash balances on hand and other liquid assets such as receivables that can be rapidly converted to cash by the firm to pay outstanding loan balances.⁸

Debt covenants are frequently renegotiated, often substantially, prior to a firm being technically in default (i.e., in violation of a covenant). Over 60% of covenant renegotiations relax restrictive covenants, while the remainder tighten existing restrictions. Such renegotiations occur as lenders and borrowers attempt to avoid actual default.⁹ Renegotiation to remove onerous bond covenants may not be practical because of the sheer number of bondholders and the likelihood that a significant number of "holdouts" would remain even if agreement can be reached with the largest bondholders. Firms may be inclined to tender for these bonds offering a significant premium to their current market price as a means of "indirectly renegotiating" with their bondholders.¹⁰

Cash Flow (Unsecured) Lenders

Cash flow lenders view the borrower's future capability to generate cash flow as the primary means of recovering a loan and the borrower's assets as a secondary source of funds in the event of default. In the mid-1980s, LBO capital structures assumed increasing amounts of unsecured debt. Unsecured debt that lies between senior debt and the equity, called *mezzanine financing*, includes senior subordinated debt, subordinated debt, and bridge financing. It frequently consists of high-yield junk bonds, which may also include zero-coupon deferred-interest debentures (i.e., bonds whose interest is not paid until maturity) used to increase the postacquisition cash flow of the acquired entity. Unsecured financing often consists of several layers of debt, each subordinate in liquidation to the next-most-senior issue. Those with the lowest level of security typically offer the highest yields, to compensate for their higher level of risk in the event of default. *Bridge financing* consists of unsecured loans, often provided by investment banks or hedge funds, to supply short-term financing pending the sale of subordinated debt (i.e., long-term or "permanent" financing). Bridge financing usually is replaced 6–9 months after the closing date of the LBO transaction.

⁷Reisel (2014).

⁸Cook et al. (2015).

⁹Denis and Wang (2014).

¹⁰Billett et al. (2016).

Types of Long-Term Financing

The attractiveness of long-term debt is its relatively low after-tax cost and the potential for leverage to improve earnings per share and returns on equity. Too much debt can increase the risk of default. Excessive amounts of leverage also can reduce a firm's ability to finance unanticipated investment opportunities as they arise. Since the late 1970s, there has been a dramatic increase in the fraction of firms exhibiting low to no leverage in the United States. Firms without any debt have increased from about 7% in 1977 to about 20% in 2010; firms with less than 5% debt as a percent of total capital increased from 14% in 1977 to about 35% in 2010.¹¹ Why? Firms seem to value the flexibility that low leverage allows in financing attractive but unforeseen investment opportunities over the tax benefits associated with debt. However, merging firms, whose cash flows are relatively uncorrelated, tend to increase leverage following completion of the deal, as more stable total cash flows better enable the combined firms to pay interest and principal on the incremental debt.¹²

Long-term debt issues are classified as *senior* or *junior* in liquidation. Senior debt has a higher-priority claim to a firm's earnings and assets than junior debt. Unsecured debt also may be classified according to whether it is subordinated to other types of debt. In general, *subordinated debentures* are junior to other types of debt, including bank loans, because they are unsecured and backed only by the overall creditworthiness of the borrower.

Convertible bonds are types of debt that are convertible, at some predetermined ratio (i.e., a specific number of shares per bond), into shares of stock of the issuing company. They normally have a relatively low coupon rate. The bond buyer is compensated primarily by the ability to convert the bond to common stock at a substantial discount from the stock's market value. Current shareholders will experience earnings or ownership dilution when the bondholders convert their bonds into new shares.

The extent to which a debt issue is junior to other debt depends on the restrictions placed on the company in an agreement called an *indenture*, a contract between the firm that issues the long-term debt securities and the lenders. The indenture details the nature of the issue, specifies the way in which the principal must be repaid, and specifies affirmative and negative covenants applicable to the long-term debt issue. Debt issues often are rated by various *credit-rating agencies* according to their relative degree of risk. The agencies consider such factors as a firm's earnings stability, interest coverage ratios, debt as a percent of total capital, the degree of subordination, and the firm's past performance in meeting its debt service requirements.¹³

Junk Bonds

Junk bonds are high-yield bonds that credit-rating agencies have deemed either to be below investment grade or to have no rating.¹⁴ When originally issued, junk bonds frequently yield

¹¹D'Mello and Gniskin (2014).

¹²Agliardi et al. (2016).

¹³Rating agencies include Moody's Investors Services and Standard & Poor's (S&P) Corporation. Each has its own scale for identifying the risk of an issue. For Moody's, the ratings are Aaa (the lowest-risk category), Aa, A, Baa, Ba, B, Caa, Ca, and C (the highest risk). For S&P, AAA denotes the lowest-risk category, and risk rises progressively through ratings AA, A, BBB, BB, B, CCC, CC, C, and D.

¹⁴Moody's usually rates noninvestment-grade bonds Ba or lower; for S&P, it is BB or lower.

more than 4 percentage points above the yields on US Treasury debt of comparable maturity. Junk bond prices tend to be positively correlated with equity prices. As a firm's cash flow improves, its share price generally rises due to improving future cash flow expectations, and the firm's junk bond prices increase, reflecting the lower likelihood of default. Junk bond financing exploded in the early 1980s but has become less important due to the popularity of leveraged bank loans.

Leveraged Bank Loans

Leveraged loans are defined as unrated or noninvestment-grade bank loans and include second mortgages, which typically have a floating rate and give lenders a lower level of security than first mortgages. Some analysts include mezzanine or senior unsecured debt and *payment-in-kind notes*, for which interest is paid in the form of more debt. Leveraged loans are often less costly than junk bonds for borrowers because they are senior to high-yield bonds in a firm's capital structure. Globally, the syndicated loan market, including leveraged loans, senior unsecured debt, and payment-in-kind notes, is growing more rapidly than public markets for debt and equity. Syndicated loans are those typically issued through a consortium of institutions, including hedge funds, pension funds, and insurance companies, to individual borrowers. A syndicated loan is one structured, arranged, and administered by one or several commercial banks or investment banks known as arrangers.

Increasingly, nonbank institutional lenders are taking larger roles in the corporate syndicated leveraged loan market. Examples of nonbank institutional lenders include hedge funds, private equity funds, pension funds, mutual funds, and insurance companies. Lending alongside banks, these nonbank lenders typically charge higher fees and interest rates than banks since they generally have higher required returns.¹⁵ Firms are willing to pay the higher rates if they cannot satisfy all of their financing requirements in the traditional bank market.

The role of nonbank lenders in the leveraged loan market has been bolstered by the introduction of new lending guidelines. Worried that bank underwriting practices have eroded in recent years, bank regulators attempted to restrict risky bank loans. Taking effect in May 2013, the new guidelines updated those from 2001 and apply to leveraged loans of \$20 million or more. Leverage levels in excess of six times debt-to-EBITDA after asset sales are now classified as "criticized loans." In 2013, the share of US leveraged loans in this category was 27% as compared to the record level of 52% in 2007 according to S&P Capital IQ. Banks participating in deals regulators feel are too risky could face fines. Private equity investors that commonly use financial leverage to pump up returns are concerned that these new guidelines could curtail the size and number of LBO deals.

Financing Options: Common and Preferred Equity

There are many varieties of common stock, and some pay dividends and provide voting rights. Other common shares have multiple voting rights. In addition to voting rights, common shareholders sometimes receive rights offerings that allow them to maintain their proportional ownership in the company in the event that the company issues another stock offering. Common shareholders with rights may, but are not obligated to, acquire as many

¹⁵Lim et al. (2014).

shares of the new stock as needed to maintain their proportional ownership in the company. Rights are short-term instruments that usually expire within 30–60 days of issuance. The exercise price of rights is always set below the firm's current share price. Common shares often are used as a method of payment in mergers when the acquiring firm believes that its stock is overvalued or may be issued before or after the deal to pay off deal-related debt or to finance capital expenditures associated with mergers.¹⁶ About 15% of transactions in which sellers received only cash from publicly traded acquirers are financed by the acquirer issuing stock during the 12 months prior to the deal.¹⁷

Although preferred stockholders receive dividends rather than interest, their shares often are considered a fixed-income security. Dividends on preferred stock are generally constant over time, like interest payments on debt, but the firm is generally not obligated to pay them at a specific time.¹⁸ In liquidation, bondholders are paid first, then preferred stockholders, and lastly common stockholders. To conserve cash, LBOs frequently issue *paid-in-kind (PIK) preferred stock*, where dividends are paid in the form of more preferred stock.¹⁹

When new common shares are issued, shareholders' proportional ownership in that company is reduced. Commonly referred to as dilution, the value of existing shares may also decline unless offset by improved earnings expectations. Dilutive situations can arise as a result of conversion of options or other convertible debt and preferred securities²⁰ into common shares, secondary common share issues²¹ to raise capital, or share exchanges in mergers. The net effect of all three is to increase the number of new shares outstanding and for a given level of earnings to lower earnings per share and in turn the firm's share price.

Seller Financing

Seller financing is one way to “close the gap” between what sellers want and what a buyer is willing to pay on the purchase price. It involves the seller's deferring the receipt of a portion of the purchase price until some future date—in effect, providing a loan to the buyer. A buyer may be willing to pay the seller's asking price if a portion is deferred because the buyer

¹⁶Di Giuli (2013).

¹⁷Ang et al. (2014a, 2014b).

¹⁸Unpaid dividends cumulate for eventual payment by the issuer if the preferred stock is a cumulative issue.

¹⁹To attract investors to start-ups, preferred stock may have additional benefits or preferences; for example, if a company is sold or goes public, investors get a multiple of their initial investment before common shareholders get anything; other preferences could include board seats and veto rights over important decisions. Preferred dividends paid to corporate investors receive favorable tax treatment (i.e., the dividend received deduction). Up to 70% of preferred dividends received are tax deductible if a firm owns less than 20% of another company, 80% if the company owns more than 20% but less than 80% of the company paying the dividend, and up to 100% if it owns more than 80% of the dividend-paying firm. The purpose of this tax treatment is to soften the impact of potential “triple taxation.”

²⁰See Chapter 14 for a more detailed explanation of options and other convertible securities.

²¹Secondary equity issues are those implemented after a firm has undertaken an initial public offering (IPO) and are normally undertaken when the firm's equity price is at or near historical highs. If the price per share realized in the secondary issue is lower than the IPO price or that realized in earlier secondary issues, the price of shares held by current shareholders fall to that realized in the secondary issue.

TABLE 13.1 Alternative Financing by Type of Security and Lending Source

Type of security		Debt	
	Backed by	Lenders loan up to	Lending source
Secured Debt			
Short-term (<1 year) debt	Liens generally on receivables and inventories	50%–80%, depending on quality	Banks and finance companies
Intermediate-term (1–10 years) debt	Liens on land and equipment	Up to 80% of appraised value of equipment and 50% of real estate	Life insurance companies, private equity investors, pension and hedge funds
Unsecured or mezzanine debt (subordinated and junior subordinated debt, including seller financing)	Cash-generating capabilities of the borrower	Face value of securities	Life insurance companies, pension funds, private equity, and hedge funds
First layer			
Second layer, etc.			
Bridge financing			
Payment-in-kind			
Type of security		Equity	
Preferred stock	Cash-generating capabilities of the firm	Life insurance companies, pension funds, hedge funds, private equity, and angel investors	
• Cash dividends			
• Convertible			
• Payment-in-kind			
Common stock	Cash-generating capabilities of the firm	Same	

recognizes that the loan will reduce the present value of the purchase price. The advantages to the buyer include a lower overall risk of the transaction (because of the need to provide less capital at the time of closing) and the shifting of operational risk to the seller if the buyer ultimately defaults on the loan to the seller.²²

Earnouts and warrants also represent forms of seller financing. With the earnout, the seller agrees to defer a portion of the purchase price contingent on realizing a future earnings target or some other predetermined performance measure. Warrants may be issued to the seller enabling them to purchase an amount of the acquirer's common stock at a stipulated exercise price, which is usually higher than the price at the time the warrant is issued. Warrants may be converted over a period of many months to many years enabling the warrant holder to participate in the upside potential of the business. Table 13.1 summarizes the alternative forms of financing.

²²Many businesses do not want to use seller financing, since it requires that they accept the risk that the note will not be repaid. Such financing is necessary, though, when bank financing is not an option. The drying up of bank lending in 2008 and 2009 due to the slumping economy and the crisis of confidence in the credit markets resulted in increased reliance on seller financing to complete the sale of small- to intermediate-size businesses.

Impact of Near-Zero/Negative Interest Rates on M&As

More than \$13 trillion of sovereign debt outstanding exhibited negative interest rates by the end of 2016. While still rare, some corporations began to issue debt offering negative returns. Increasingly, investors were paying for the “privilege” of lending to companies. In late September 2016, German consumer products firm Henkel AG and French pharmaceutical company Sanofi SA sold no-interest bonds at a premium to face value resulting in investors paying more at the time of issue than they would receive when the bonds mature.

How will these developments affect business investment? Near-zero or negative interest rates should, unless offset by other factors, stimulate business investment on such things as plant and equipment as well as on M&As. Why? Projects whose expected returns were not attractive when borrowing costs were higher now become viable. Moreover, holding cash in excess of normal operating requirements offers poor returns or may even come at a cost.

But in recent years, global business investment and M&A activity has been much lower than would have been expected in such a low interest rate environment. The stimulus that should have accompanied plunging borrowing costs has been blunted in part by declining business confidence as senior managers view the near-zero/negative interest rate environment as portending continued sluggish growth or, worse, recession. Central banks seem to have exhausted all their tools in their effort to spur increased economic growth. Instead of reinvesting in their operations or seeking strategic transactions that can suppress near-term reported earnings, firms often have opted to borrow to buy back their own stock to placate yield-starved investors. This often is viewed as a less risky way of generating shareholder returns than reinvesting excess cash flow in the firm or buying other companies.

Low or negative interest rates have another insidious effect: they prop up so-called “zombie companies.” Such firms are those that are hemorrhaging cash but are able to remain in business because they can meet their near-term working capital requirements through borrowing. Thus, the low interest rate environment slows industry consolidation as these zombie firms would otherwise have sought to merge with more financially viable competitors or to reorganize under the protection of the bankruptcy court. Such firms often are acquired as part of the reorganization process.

WHAT IS THE ROLE OF PRIVATE EQUITY, HEDGE, AND VENTURE CAPITAL FUNDS IN DEAL FINANCING?

Private equity, hedge, and venture capital funds take money from large institutions such as pension funds, borrow additional cash, and buy private and public companies. Private equity funds invest for the long term and often take an active role in managing the firms they acquire. Hedge funds are viewed more as traders than as investors, investing in a wide variety of assets (be it stocks, commodities, or foreign currency), holding them for a short time, and then selling. Finally, venture capital funds take money from institutional investors and make numerous small investments in start-ups. At the end of 2015, global assets under management by private equity firms, hedge funds, and venture capital funds totaled about

\$3.7 trillion, \$2.8 trillion, and \$270 billion, respectively.²³ The amount of new financing raised by these investor groups may be leveraged by as much as \$4 for every \$1 of equity capital. In the global buyout boom of 2007 and 2008, new monies flowing into these funds exceeded \$1 trillion, suggesting that these investor groups controlled as much as \$4 trillion in potential buyout financing at that time.

In deal financing, these investor groups play the role of financial intermediaries and “lenders of last resort” for firms having limited access to capital. Moreover, private equity investors provide financial engineering and operating expertise and monitor management activities such that private equity–owned firms often show superior operational performance and are less likely to go bankrupt than comparably leveraged firms. These roles are discussed next.

Financial Intermediaries

Private equity, hedge, and venture capital funds represent conduits between investors/lenders and borrowers, pooling these resources and investing in firms with attractive growth prospects. All three types of buyout funds limit investors’ ability to withdraw funds for a number of years as they seek new investment opportunities. Both private equity and venture capital funds tend to invest almost all of the funds entrusted to them by investors within 5 years, with more than one-half of new investments made during the first 2 years of the average fund’s lifetime.²⁴

All three typically exit their investments via sales to strategic buyers, IPOs, or another buyout fund. However, their roles in financing M&A activity differ in significant ways. Private equity firms use substantial leverage to acquire firms, remain invested for up to 10 years, and often take an active operational role in firms in which they have an ownership stake. While hedge funds also use leverage to acquire firms outright, they are more likely to provide financing for takeovers through short-term loans or minority equity stakes. Finally, venture capital funds’ primary role is to finance nascent businesses. Such investments often are critical for businesses with limited access to capital markets to sustain internal growth and create employment opportunities.²⁵

Private equity, hedge, and venture capital funds usually are limited partnerships (for US investors) or offshore investment corporations (for non-US or tax-exempt investors) in which the general partner (GP) has made a substantial personal investment, allowing the GP to wield substantial control. Partnerships offer favorable tax benefits, a finite life, and investor liability limited to the amount of their investment. Institutional investors, such as pension funds, endowments, insurance companies, and private banks, as well as high-net-worth individuals, typically invest in these types of funds as limited partners. Once a partnership has reached its target size, the partnership closes to further investment, whether from new

²³Estimates of assets under management are obtained for private equity firms from prequin.com (https://www.prequin.com/docs/samples/The_2015_Preqin_Global_Private_Equity_Report_Sample_Pages.pdf), for hedge funds from BarclayHedge.com (http://www.barclayhedge.com/research/indices/ghs/mum/Hedge_Fund.html), and for venture capital firms from the National Venture Capital Association (file:///C:/Users/Donald/Downloads/NVCA_Yearbook_2015.pdf).

²⁴Giot et al. (2014).

²⁵Paglia and Harjoto (2014).

or existing investors. While GPs may invest in their own funds, the bulk of the equity funds are raised from institutional investors. Successful private equity funds raise new funds every 3–5 years to remain in business. Consequently, they must be able to demonstrate an ability to outperform alternative investments to remain in business and grow.

Private equity, hedge, and venture capital funds' revenue has both a fixed and a variable component. GPs earn most of the private equity firm's revenue through management fees, often as much as 70%.²⁶ Management fees commonly equal 2% of assets under management annually. GPs can also earn variable revenue from so-called *carried interest*, or the percentage of profits, often 20%, accruing to the GP. The carried interest percentage may be applied without the fund's having achieved any minimum financial return for investors or may be triggered only if a certain preset return is achieved, often 8%. The carried interest figure often exceeds 20% of cumulative profits since GPs seldom share in the losses the partnership incurs. For example, if the partnership earns \$40 million resulting in the GPs earning \$8 million (i.e., $0.2 \times \$40$ million) in the first year but loses \$10 million in each of the next 2 years, the effective carried interest percentage over the 3-year period is 40% [i.e., $\$8 \text{ million} / (\$40 \text{ million} - \$20 \text{ million})$]. Private equity funds also receive fees from their portfolio companies for completing transactions, arranging financing, performing due diligence, providing legal and consulting advice, and monitoring business performance.

Lenders and Investors of Last Resort

Since 1995, hedge funds and private equity funds have participated in more than half of the private equity placements (i.e., sales to a select number of investors rather than the general public) in the United States. Contributing more than one-fourth of the total capital raised, hedge funds have consistently been the largest single investor group in these types of transactions.²⁷ Such investments have frequently allowed firms in which hedge and private equity firms invest to improve profitability, increase capital expenditures, and grow revenue faster than their peers.²⁸

Publicly traded firms using private placements tend to be small, young, and poorly performing. With reliable data often lacking, these firms have difficulty obtaining financing.²⁹ Since security issues by such firms often tend to be relatively small, their limited trading volume and subsequent lack of liquidity make them unsuitable for the public stock exchanges. Consequently, such firms often undertake transactions called *private investments in public equity* (PIPEs).³⁰ With few options, firms issuing private placements of equities often have little leverage in negotiating with investors. Therefore, many of the private placements grant investors repricing rights, which protect investors from a decline in the price of their holdings by requiring firms to issue more shares if the price of the privately placed shares decreases.

Hedge funds can purchase PIPE securities that cannot be sold in public markets until they are registered with the SEC at discounts from the issuing firms and simultaneously sell short

²⁶Metrick and Yasuda (2010).

²⁷Brophy et al. (2009).

²⁸Boucly et al. (2011).

²⁹Wu (2004).

³⁰See Chapter 10 for a more detailed discussion of PIPE transactions.

the securities of the issuing firms that are already trading on public markets. Although firms obtaining funding from hedge funds perform relatively poorly, hedge funds investing in PIPE securities perform relatively well, because they buy such securities at substantial discounts (affording some protection from price declines), protect their investment through repricing rights and short selling, and sell their investments after a relatively short period. By being able to protect their investments in this manner, hedge funds are able to serve “as investors of last resort” for firms having difficulty borrowing.

Providers of Financial Engineering and Operational Expertise for Target Firms

In this context, *financial engineering* describes the creation of a viable capital structure that magnifies financial returns to equity investors. The additional leverage drives the need to improve operating performance to meet debt service requirements; in turn, the anticipated improvement in operating performance enables the firm to assume greater leverage. In this manner, leverage and operating performance are inextricably linked.

Successful private equity investors manage the relationship between leverage and operating performance, realizing superior financial returns and operating performance on average relative to their peers. Furthermore, private equity firms seem better able to survive financial distress than other, comparably leveraged, firms. These conclusions are supported by an examination of abnormal financial returns to both prebuyout shareholders, who benefit from the premium paid for their shares as a result of the LBO, and postbuyout shareholders.³¹

Prebuyout Returns to LBO Target Firm (Prebuyout) Shareholders

Numerous studies document that prebuyout shareholder abnormal financial returns often exceed 40% on the announcement date for nondivisional LBOs. The commonly cited sources of these sizeable returns to prebuyout target shareholders are the anticipated improvement in the target’s operating performance (i.e., cost reduction, productivity improvement, and revenue enhancement) due to management incentives, the discipline imposed on management to repay debt, and future tax savings.³²

Because tax benefits are highly predictable for a given future earnings stream, the value of future tax savings tends to be more predictable than future improvements in operating performance. Therefore, the impact of tax benefits often is fully reflected in premiums offered to shareholders of firms subject to LBOs while the effects of improved operating performance often are not.³³ The failure of expected improvements in operating performance to be fully reflected in premiums helps to explain the presence of sizeable postbuyout returns to LBO shareholders.

Another factor contributing to the abnormal returns to prebuyout shareholders is the elimination of prebuyout inefficient decision making in firms having significant differences among the rights of different shareholder groups. For example, firms having dual class

³¹Recall that abnormal financial returns are those realized by investors in excess of what one would expect for firms exhibiting similar risk and premiums refer to what the target firm shareholder is paid compared to the target firm’s prebuyout share price.

³²Guo et al. (2011), Renneboog et al. (2007), Weir et al. (2005), and Ofek (1994).

³³Newbould et al. (1992).

capital structures in which investors holding stock with multiple voting rights have control while investors holding another class of stock receive dividends. The first class of shareholders has control rights while the second class has rights to cash flow. Such differences among shareholder groups often create substantial differences in the way each group wants to see the firm's cash flow used: controlling shareholders may want excess cash flow reinvested in the firm while others may want it disbursed as dividends or share repurchases. As such, controlling shareholders may see significant value in buying out the other public shareholders in order to gain complete control over decisions about how the firm's cash flow will be used. Controlling shareholders may be willing to pay very attractive premiums to take public firms private (so-called public-to-private LBOs), documented to average about 36% in 18 Western European countries.³⁴ Premiums paid may be even higher when large institutional shareholders, capable of exerting substantial leverage in negotiations, are among the target firm's shareholders.³⁵

Postbuyout Returns to LBO Shareholders

Public-to-private LBOs on average improve a firm's operating profits and cash flow, irrespective of methodology, benchmarks, and time period. However, there is evidence that more recent public-to-private LBOs may have a more modest impact on operating performance than those of the 1980s.³⁶

Large-sample studies in the United States, the United Kingdom, and France consistently show that companies in private equity portfolios improve their operations more than their competitors on average, as measured by their profit margins and cash flows. Private equity funds accelerate the process of creative destruction that invigorates the economy by replacing mature, often moribund, firms with more innovative, dynamic ones, tending to increase productivity by more than 2%.³⁷ Industry and GDP growth and stock market returns also have a substantial impact on private equity financial returns, with governance playing only a limited role in value creation.³⁸ Some studies document that average private equity fund returns in the United States have exceeded those of public markets in both the short term and the long term. On average, private equity funds have earned at least 18%–20% more over the life of their investments than the S&P 500 during the same period; private equity firms also have outperformed public equities in both good and bad markets.³⁹ These higher returns compensate private equity investors for the relative illiquidity of their investments as compared to more conventional investments, such as equities.⁴⁰

³⁴Broubaker et al. (2014).

³⁵Bajo et al. (2013).

³⁶Cumming et al. (2014), in a summary of much of the literature on post-LBO performance, concluded that LBOs and especially management buyouts (MBOs) enhance firm operating performance. However, Guo et al. (2011) find that the improvement in operating performance following public-to-private LBOs has been more modest during the period from 1990 to 2006 than during the 1980s. Weir et al. (2007) found similar results over roughly the same period.

³⁷Alperovych et al. (2013), Harford and Kolasinski (2012), Davis et al. (2011), Stromberg et al. (2011), Guo et al. (2011), Lerner et al. (2011), Kaplan and Stromberg (2009), and Wright et al. (2008).

³⁸Valkama et al. (2013).

³⁹Harris et al. (2014), Robinson and Sensoy (2011), and Kaplan (2012).

⁴⁰Frazoni et al. (2012).

Contrary viewpoints note that the financial returns for private equity funds are self-reported and therefore problematic and may be distorted by measurement errors, choice of methodology, and failure to include all management fees. A widely quoted study for the period between 1980 and 2001 found that financial returns to private equity limited partners once all fees were considered were equivalent to what they could have earned if they had invested in the S&P 500.⁴¹ Others argue that once management fees, the illiquid nature of the investment, and the risk of losing money are taken into account, investors essentially break even.⁴²

Still others find that the positive improvement in operating results following an LBO occur largely in empirical studies of LBOs for which public financial statements are available due to such firms having publicly traded debt outstanding or that go public again and provide historical financial statements. Some researchers attribute the post-LBO operating improvement for such firms to sample bias. That is, such samples include only those firms that are superior performers in their industries since only the best performers are likely to be taken public and in general only higher-quality corporate borrowers issue public debt. In a recent study of US firms using Internal Revenue Service data, the average LBO firm shows little improvement in operating performance between the pre- and post-LBO periods.⁴³

Private Equity-Owned Firms and Financial Distress

Energy Future Holdings' (formerly TXU Corporation) Chapter 11 bankruptcy filing in mid-2014 represented one of the largest failures in history of a private equity-funded deal. TXU had been taken private in 2007 in a transaction financed with more than \$40 billion in debt and was based on a bet that natural gas prices would continue to escalate, a gamble that failed miserably. The private equity owners had written their investments down to zero years before the bankruptcy filing and many lenders had already sold their debt at a substantial loss. The failure of this deal seemed to confirm the precarious nature of private equity deals made during the peak of LBO activity.

Despite this headline-grabbing announcement, the data seem to show otherwise. Firms acquired by private equity investors do not display a higher default rate than other, similarly leveraged firms. Furthermore, firms financed with private equity funds are less likely to be liquidated and exit Chapter 11 sooner than comparably leveraged firms.⁴⁴ Private equity-backed firms exhibited a default rate between 1980 and 2002 of 1.2% versus Moody's Investors Services-reported default rate of 1.6% for all US corporate bond issuers during the same period.⁴⁵ Bankruptcy rates among private equity buyouts of European firms showed that experienced private equity investors were better able to manage financial distress and avoid bankruptcy than their peer companies. The success of many private equity investors in avoiding bankruptcy reflects their selection of undervalued but less financially distressed firms as buyout targets⁴⁶ and their ability manage the additional leverage once the buyout is completed.⁴⁷

⁴¹Kaplan and Schoar (2005).

⁴²Sorensen et al. (2014).

⁴³Cohn et al. (2014).

⁴⁴Stromberg et al. (2011).

⁴⁵Kaplan and Stromberg (2009).

⁴⁶Dittmar et al. (2012) document that private equity firms excel at identifying targets with high potential for operational improvement.

⁴⁷Tykova and Borell (2011).

LEVERAGED BUYOUTS AS FINANCING STRATEGIES

LBOs refer to a commonly used financing strategy often employed by private equity firms to acquire companies using a substantial amount of debt to pay for the cost of the acquisition. Such deals often result in an increased concentration of ownership and their leverage magnifies financial returns to equity (Table 13.2).

In a typical LBO transaction, the tangible assets of the firm to be acquired are used as collateral for the loans. The most highly liquid assets often are used as collateral for obtaining bank financing. Such assets commonly include receivables and inventory. The firm's fixed assets usually are used to secure a portion of long-term senior financing. Subordinated debt, either unrated or low-rated debt, is used to raise the balance of the purchase price. When a public company is subject to a LBO, it is said to be *going private* because the equity of the firm has been purchased by a small group of investors and is no longer publicly traded.

LBOs are characterized by a substantial increase in a firm's post-LBO debt-to-equity ratio, usually as a result of the substantial increase in borrowing to purchase shares held by its prebuyout private or public shareholders. However, in some instances, a firm's leverage increases even though there is no significant increase in borrowing. This may result from the way in which the target firm's assets are used to finance the buyout. The investor group initiating the takeover may use the target's excess cash balances or sell certain target assets using the proceeds to buy out current shareholders. If the amount of the target's debt outstanding remains unchanged, the target firm's debt-to-equity ratio will rise due to the decline in the firm's equity (i.e., assets decline relative to liabilities, shrinking the firm's equity).

TABLE 13.2 Impact of Leverage on Return to Shareholders^a

	All-cash purchase	50% cash/50% debt	20% cash/80% debt
Purchase price (\$)	100	100	100
Equity (cash investment)	100	50	20
Borrowings	0	50	80
Earnings before interest, taxes, depreciation, and amortization	20	20	20
Interest at 10%	0	5	8
Depreciation and amortization	2	2	2
Income before taxes	18	13	10
Less income taxes at 40%	7.2	5.2	4
Net income (\$)	10.8	7.8	6
After-tax return on equity (%)	10.8	15.6	30

^aUnless otherwise noted, all numbers are in millions of dollars.

Historically, empirical studies of LBOs have been subject to small samples due to limited data availability, survival bias,⁴⁸ and a focus on public-to-private LBO deals. Insights provided by more recent studies, often based on much larger samples over longer time periods,⁴⁹ are discussed in the following sections.⁵⁰

The Private Equity Market Is a Global Phenomenon

While US private equity investors have been more active for a longer time period, the number of non-US private equity deals has grown to be larger than that in the United States. LBO activity tends to be substantially larger in countries with stronger creditor protections due to the availability of low-cost credit. Private equity investors in cross-border deals structured as LBOs typically come from countries with strong creditor protections, where such investors are more commonplace, and acquire firms in countries with weak creditor protections where potential financial returns may be higher. Corporate debt used to finance such deals is issued in the name of the target firm since it is more likely to be recognized in the target firm's country. To protect lenders, "choice of law" contract provisions stipulate that violations of debt covenants are subject to the corporate and bankruptcy laws of a country with strong creditor protections. Examples of strong creditor rights include the right of the creditor to seize collateral once bankruptcy reorganization has been approved, the requirement that creditors consent before a debtor firm can enter bankruptcy, whether secured creditors are paid first when a debtor firm is liquidated, and whether creditors are responsible for running a firm while the firm is in bankruptcy.⁵¹

The ease with which the majority owner can squeeze out minority shareholders is another factor affecting cross-border deals. The United States, the United Kingdom, and Ireland tend to be less restrictive when it comes to squeezing out minority investors, while Italy, Denmark, Finland, and Spain tend to be far more restrictive.⁵² Other factors such as exchange rates, a country's political environment, and the potential for asset expropriation are discussed in detail in Chapter 18.

Pure Management Buyouts Are Rare

Only one in five LBOs between 1970 and 2007 involved pure MBOs, in which individual investors (typically the target firm's management) acquired the firm in a leveraged transaction. The majority were undertaken by a traditional private equity financial sponsor providing

⁴⁸Failed firms were excluded from the performance studies because they no longer existed.

⁴⁹The data for the large sample studies come from S&P's Capital IQ and the US Census Bureau databases. The studies compare a sample of LBO target firms with a "control sample." Selected for comparative purposes, firms in control samples are known to be similar to the private equity transaction sample in all respects except for not having undergone an LBO.

⁵⁰Observations in this section pertaining to changes having taken place between 1970 and 2007 are based on the findings of Kaplan and Stromberg (2009), who analyzed 21,397 private equity deals during this time period in the largest and most exhaustive study of its type.

⁵¹Cao et al. (2015).

⁵²Wright et al. (2008).

most of the equity financing. MBOs can create potential conflicts of interest. In its effort to take the firm private in 2007, the top management of oil and gas pipeline company Kinder Morgan waited more than 2 months before informing the firm's board of its desire to take the firm private. It is customary for boards under such circumstances to create a committee within the board consisting of independent members to solicit other bids. While the board did eventually create such a committee, the board's lack of awareness of the pending management proposal gave management an important lead over potential bidders in structuring a proposal.

LBO Transactions Span Many Different Industries

While private equity deals occur in a variety of industries, including chemicals, machinery, and retailing, buyout activity has shifted increasingly to the "high-tech" market segments. The shift may reflect a change in the composition of US industry or simply a shortage of targets deemed appropriate by private equity investors in the more traditional industries.

Sales to Strategic Buyers Represent the Most Common Exit Strategy

LBO financial sponsors and management are able to realize their expected financial returns on exiting the business. Constituting about 13% of total transactions since the 1970s, IPOs declined in importance as an exit strategy. At 39% of all exits, the most common way of exiting buyouts is through a sale to a strategic buyer⁵³; the second most common method, at 24%, is a sale to another buyout or private equity firm in so-called secondary buyouts (SBOs). The choice between IPOs and SBOs depends heavily on debt and equity market conditions. IPOs tend to be used when the stock market is rising; SBOs are more popular when debt is readily available and cheap making deals more attractive to private equity firms that heavily rely on debt.⁵⁴

Selling to a strategic buyer often results in the best price, because the buyer may be able to generate significant synergies by combining the firm with its existing business. However, selling to a private equity firm can provide an even more attractive price when the target is poorly performing and has few investment opportunities. Private equity firms often have greater expertise in managing underperforming firms and access to cheaper capital.⁵⁵

Buyout firms sometimes remain invested in a specific business portfolio for up to 10 years. They may sell these businesses through SBOs when their holding period comes to a close, and they have to pay off investors at the highest possible price and in the shortest possible time. Pressure to sell quickly often causes them to sell at depressed cash flow multiples making such businesses attractive to other buyout firms seeking new investment opportunities.⁵⁶ An IPO is often less attractive due to the massive amount of public disclosure required, the substantial commitment of management time, the difficulty in timing the market, and the potential for valuing the IPO incorrectly. The original investors also can cash out while management

⁵³Harford and Kolasinski (2012).

⁵⁴Jenkinson and Souza (2015).

⁵⁵Gorbenko and Malenko (2014).

⁵⁶Arcot et al. (2015).

remains in charge of the business through a *leveraged recapitalization*: borrowing additional funds to repurchase stock from other shareholders. This strategy may be employed once the firm has paid off its original debt.

Empirical studies show that strategic buyers of private equity–backed firms experience announcement-date abnormal returns of 1%–3%. Strategic acquirers of venture capital–backed firms, private equity investors who invest in firms at their earliest stage of development, display positive announcement-date returns of about 3%.⁵⁷

Most LBOs Involve Acquisitions of Private Firms

Public-to-private transactions, although the focus of most prior research, accounted for only 6.7% of all transactions between 1970 and 2007, whereas they did comprise 28% of the dollar value of such deals, since public firms usually are larger than private ones. Private-firm takeovers constituted 47% of all deals between 1970 and 2007. During the same period, buy-outs of divisions of firms accounted for 31% of the transactions and 31% of total deal value.

The Effects of LBOs on Innovation

It has long been recognized that economic growth is influenced significantly by the rate of innovation, which is in turn affected by the level of R&D spending.⁵⁸ Although early studies found a correlation between more debt and lower R&D spending,⁵⁹ this seems to be true only for the smallest firms.⁶⁰

Private equity–financed LBOs may tend to improve the rate of innovation.⁶¹ Private equity firms' expertise with respect to strategy development; operational, financial, and human resource management; marketing and sales; and M&As may create an innovative environment. Private equity sponsors' relationships with customers, suppliers, lenders, and other investors assist in leveraging the innovation process. They also play an important role in assessing incumbent management skills and those of their potential replacements.⁶² Finally, LBO targets are more likely to implement innovative marketing programs (e.g., design, packaging, and promotion) to increase sales and market share.⁶³

Private firms or firms taken private through an LBO often demonstrate higher rates of unique, higher-quality innovation than public firms as measured by the number of patent citations per firm even though public firms typically generate more patents overall. Why? Private firms tend to be more focused, less bureaucratic, and consequently more attractive to the

⁵⁷Harford and Kolasinski (2012) and Masulis and Nahata (2011).

⁵⁸Jaffe and Trajtenberg (2002).

⁵⁹Hall (1992) and Himmelberg and Petersen (1994).

⁶⁰Hao and Jaffe (1993).

⁶¹Lerner et al. (2011) found the rate of innovation, as measured by the quantity and generality of patents, does not change following private equity investments. In fact, the patents of private equity–backed firms applied for in the years following the investment by the private equity firm are more frequently cited, suggesting some improvement in the rate of innovation.

⁶²Meuleman et al. (2009).

⁶³Le Nadant and Perdreau (2012).

most talented innovators than are public firms, and they are less prone to interference from the less sophisticated shareholders of public firms.⁶⁴ When firms go public, they tend to lose a lot of internal talent, often made rich as a result of the IPO, causing a substantial decline in the uniqueness of their innovation even though the amount of innovation remains about the same as the total number of new patents shows little change. Once public, these firms tend to shift the way in which they innovate from reliance on internal resources to innovating by acquiring more innovative firms.⁶⁵

The Effects of LBOs on Employment Growth

After a buyout, employment in existing operations tends to decline relative to other companies in the same industry by about 3%. However, employment in new operations tends to increase relative to other companies in the same industry by more than 2%. Therefore, the overall impact on employment of private equity transactions is a modest 1% decline. However, the picture varies by industry, with net job losses (gains less losses) concentrated in buyouts of retailers. Excluding retailers, the overall net employment change appears to be neutral or positive. In France, private equity transactions lead to employment increases.⁶⁶ These findings are consistent with the notion that private equity groups act as catalysts to shrink inefficient segments of underperforming firms. Furthermore, new ventures undertaken by firms show substantially higher job creation rates than those in current businesses, creating the potential for higher long-term employment gains than at firms not having undergone buyouts.

A recent US government study found that in private equity-financed transactions between 2004 and 2008, employment growth typically grew following the takeover by the private equity investors as compared to the growth in employment at these firms prior to the takeover. The same report also concluded that private equity LBOs generally had a positive impact on the financial performance of the acquired companies.⁶⁷

The Changing Nature of Private Equity Firm Collaboration

To finance the increased average size of targets taken private in the early to mid-2000s, buyout firms started to bid for target firms as groups of investors.⁶⁸ Often time-consuming to set up, such transactions were referred to as *club deals*. Critics of such tactics argued that banding together to buy large LBO targets could result in lower takeover premiums for target firms by reducing the number of potential bidders. By mitigating risk and allowing for a pooling of resources, supporters countered that clubbing could increase premiums.

The empirical evidence concerning how club deals impact target firm shareholders is mixed. For deals involving large private equity firms and relatively few bidders, club bidding may

⁶⁴Kamoto (2016).

⁶⁵Bernstein (2015).

⁶⁶Davis et al. (October 1, 2011).

⁶⁷U.S. General Accountability Office (2008).

⁶⁸Boone and Mulherin (2011) found that nearly half of all acquisitions by private equity firms between 2003 and 2007 involved clubbing. Officer et al. (2008) found similar results between 2002 and 2006.

depress purchase premiums.⁶⁹ However, when the number of independent bidders is high, there is little evidence of anticompetitive activity,⁷⁰ and purchase premiums may be increased.⁷¹ Still other researchers find no correlation between purchase premiums and club deals.⁷²

In August 2014, after 7 years of litigation and mounting legal bills, three leading US private equity firms agreed to pay a combined \$325 million to settle accusations they colluded with one another to drive down prices of corporate takeover targets. Under the terms of the court settlement, the firms (Kohlberg Kravis Roberts, the Blackstone Group, and TPG) did not admit any wrongdoing. The plaintiffs, who included pension funds and individual investors, had sought billions of dollars in compensation. Three other defendants, Bain Capital, Silver Lake, and Goldman Sachs, agreed several months earlier to settle claims for \$150.5 million. The lawsuits were filed after the US Justice Department's antitrust division began investigating potential collusion relating to club deals. The government has never filed charges.

The nature of collaboration for private equity funds has changed in recent years, due in part to the smaller size of the average deal. In mid-2014, the Blackstone Group solicited financing directly from some of its fund investors to acquire auto parts manufacturer Gates Inc. for \$5.4 billion. According to a survey conducted by research firm Preqin, nearly one-third of buyout firms in 2014 offered more "coinvestment" opportunities than in 2013. Buyout firms have found that coinvestment with limited partners (often institutional investors such as pension funds and endowments) enables them to raise funds more easily when the opportunities arise. Advantages to limited partners include escaping management fees they would have incurred had they invested through a new fund and retaining the share of capital gains that would have accrued to the fund's GPs. Moreover, their capital is invested more quickly than is normally the case with a new fund that raises financing in anticipation of finding new investment opportunities. However, returns to investors that coinvest with private equity funds have tended to underperform those that could have been earned had they invested as a limited partner in one of the private equity firm's funds. It appears that the institutional investors are given the opportunity to coinvest only after the hedge funds have selected the most promising opportunities for their own investments.⁷³

Private equity (buyout funds) funds may generate returns for their limited partners less than what they could have earned had they invested in a broad stock market index when they purchase businesses for their portfolios through SBOs late in their investment period.⁷⁴ Under these circumstances, they may tend to overpay in order to utilize quickly any remaining money in the investment fund. Of course, such practices discourage future limited partner investment in the buyout firm's funds. SBOs made early in the investment period tend to generate returns similar to other buyout transactions. Finally, buyout firms with complementary skills (e.g., finance vs. operating; regional vs. global) show on average significantly higher returns than SBOs between buyout firms with similar skills.⁷⁵

⁶⁹Officer et al. (2008).

⁷⁰Boone and Mulherin (2011).

⁷¹Meuleman and Wright (2007), Guo et al. (2008), and Marquez and Singh (2013) found some evidence that "clubbing" is associated with higher target transaction prices when the number of independent bidders is large.

⁷²U.S. General Accountability Office (2008).

⁷³Fang et al. (2015).

⁷⁴Buyout firms frequently have defined periods of time in which they must invest their limited partners' money.

⁷⁵DeGeorge et al. (2016).

WHAT FACTORS ARE CRITICAL TO SUCCESSFUL LBOs?

While many factors contribute to the success of LBOs, studies suggest that target selection, not overpaying, and improving operating performance are among the most important.

Target Selection

Traditionally, firms that represent good candidates for an LBO are those that have substantial unused borrowing capacity, tangible assets, predictable positive operating cash flow, and assets that are not critical to the continuing operation of the business. Competent and highly motivated management is always crucial to the eventual success of the LBO. Finally, firms in certain types of industries or that are part of larger firms often represent attractive opportunities.

Private equity investors often argue that their ability to find (or “source”) deals in which they have some insight not widely known in the industry represents a significant source of value creation. The process for selecting the target is exhausting. For every 100 opportunities considered, the average private equity firm investigates in detail about 15, signs a purchase agreement with 8, and actually closes on 4.⁷⁶

Firms With Unused Borrowing Capacity and Redundant Assets

Factors enhancing borrowing capacity include target firm cash in excess of working capital needs, relatively low leverage, and a strong performance track record. Firms with undervalued assets may use such assets as collateral for loans from asset-based lenders. Undervalued assets also provide a significant tax shelter because they may be revalued following closing of the deal to their fair market value and depreciated or amortized over their allowable tax lives. In addition, operating assets, such as subsidiaries that are not germane to the target’s core business and that can be sold quickly for cash, can be divested to accelerate the payoff of debt.

Firms That Are Poorly Performing With Potential to Generate Cash Flow

Buyout firms initiating LBOs often have expertise to turn around such firms through aggressive reorganization and restructuring, as well as providing financial incentives to management. The reputation of the buyout firm and long-standing bank relationships may provide the firm with access to relatively low cost capital.⁷⁷

Firms With Significant Agency Problems

LBOs may alleviate conflicts between managers intent on empire building and shareholders seeking competitive financial returns. The imposition of the discipline of repaying debt forces managers to focus on operational improvements. Public firms having undertaken LBOs often are those that have exhibited high free cash flows and limited investment opportunities.

⁷⁶Gompers et al. (2016, p. 463).

⁷⁷Malenko and Malenko (2015) and Demiroglu and James (2010).

Firms Whose Management Is Competent and Motivated

While management competence is necessary for success, it does not ensure exceptional firm performance. Management must be highly motivated by the prospect of substantial financial gains in a relatively short time. Consequently, management of the firm to be taken private is normally given an opportunity to own a significant portion of the firm's equity. On average, 17% of firm's equity is allocated to the CEO and employees, with the CEO receiving about 8%. While private equity investors rarely recruit a new management team when they acquire a firm, about one-half end up doing it at some point after the takeover is completed.⁷⁸

Firms in Attractive Industries

Typical targets are in mature industries, such as manufacturing, retailing, textiles, food processing, apparel, and soft drinks. Such industries usually are characterized by large tangible book values, modest growth prospects, stable cash flow, and limited R&D, new product, or technology spending. Such industries are not dependent on technologies and production processes that are subject to rapid change. Empirical studies have shown that industries that have high free cash flows and limited growth opportunities are good candidates for LBOs.

Firms That Are Large-Company Operating Divisions

The best candidates for MBOs often are underperforming divisions of larger companies, in which the division is no longer considered critical to the parent firm's overarching strategy. Frequently, such divisions have excessive overhead, often required by the parent, and expenses are allocated to the division by the parent for services, such as legal, auditing, and treasury functions, that could be purchased less expensively from sources outside the parent firm.

Firms Without Change-of-Control Covenants

Such covenants in bond indentures either limit the amount of debt a firm can add or require the company to buy back outstanding debt, sometimes at a premium, whenever a change of control occurs. Firms with bonds lacking such covenants are twice as likely to be the target of an LBO.⁷⁹

Not Overpaying

Overpaying for LBOs can be disastrous. Failure to meet debt service obligations in a timely fashion often requires that the LBO firm renegotiate the terms of the loan agreements with the lenders. If the parties to the transaction cannot reach a compromise, the firm may be forced to file for bankruptcy, often wiping out the initial investors. Highly leveraged firms also are subject to aggressive tactics from major competitors, who understand that taking on large amounts of debt raises the breakeven point for the firm. If the amount borrowed is made even more excessive as a result of having paid more than the economic value of the target firm, competitors may gain market share by cutting product prices. The ability of the LBO firm to match such price cuts is limited because of the required interest and principal repayments.

⁷⁸Gompers et al. (2016, p. 461).

⁷⁹Billett et al. (2010).

Improving Operating Performance

Ways to improve performance include negotiating employee wage and benefit concessions in exchange for a profit-sharing or stock ownership plan and outsourcing services once provided by the parent. Other options include moving the corporate headquarters to a less expensive location, pruning unprofitable customer accounts, and eliminating such perks as corporate aircraft.

Private equity investors are more likely than nonprivate equity investors to place representatives with relevant industry experience on the boards of firms in which they make minority investments. As board members, private equity investors tend to take a much more active role in monitoring management performance. Firms with private equity investor representation on their boards are more likely to display higher announcement date returns and improved operating performance than firms without such representation.⁸⁰

Research shows that new owners choosing to retain their investment longer, such as private equity investors, have more time to put controls and reporting–monitoring systems in place, enhancing the firm’s competitive performance. Other factors contributing to post-buyout returns include professional management, willingness to make the difficult decisions, and often the private equity firm’s reputation.⁸¹ Research also suggests that public to private to public IPOs (so-called reverse LBOs) tend to show greater post-IPO performance improvement than IPOs. Why? Because investors can review the firm’s historical performance when it was public and benefit from any restructuring that had taken place while it was private.⁸²

HOW DO LBOs CREATE VALUE?

A number of factors combine to create value in a LBO. Public firms create value through LBOs by reducing underperformance related to agency conflicts between management and shareholders; for private firms, LBOs improve access to capital. For both public and private firms, LBOs create value by temporarily shielding the firm from taxes, reducing debt, improving operating performance, and timing properly the sale of the business (Fig. 13.1).

To illustrate this process, the Blackstone Group used a combination of operating margin improvement, debt reduction, and fortuitous timing in undertaking an IPO to convert what

⁸⁰Chen et al. (2014a, 2014b).

⁸¹Katz (2008) reports that private equity–sponsored firms display superior performance after they go public, due to professional ownership, tighter monitoring, and the reputations of the private equity firms. Gurung and Lerner (2008) find that private equity groups have a greater capacity to squeeze more productivity out of companies during times of financial stress than do other types of acquirers. Acharya and Kehoe (2010) conclude that private equity firms contribute the most to firms when their representatives on the boards of these firms have relevant industry experience. Guo et al. (2011) find that postbuyout performance improves due to the discipline debt imposes on management and better alignment between management shareholders due to managements typically owning a large part of the firm’s equity. Cornelli et al. (2013) show that, as private equity investors learn more about a CEO’s competence, their willingness to take corrective action adds to improved firm performance.

⁸²Datta et al. (2015).

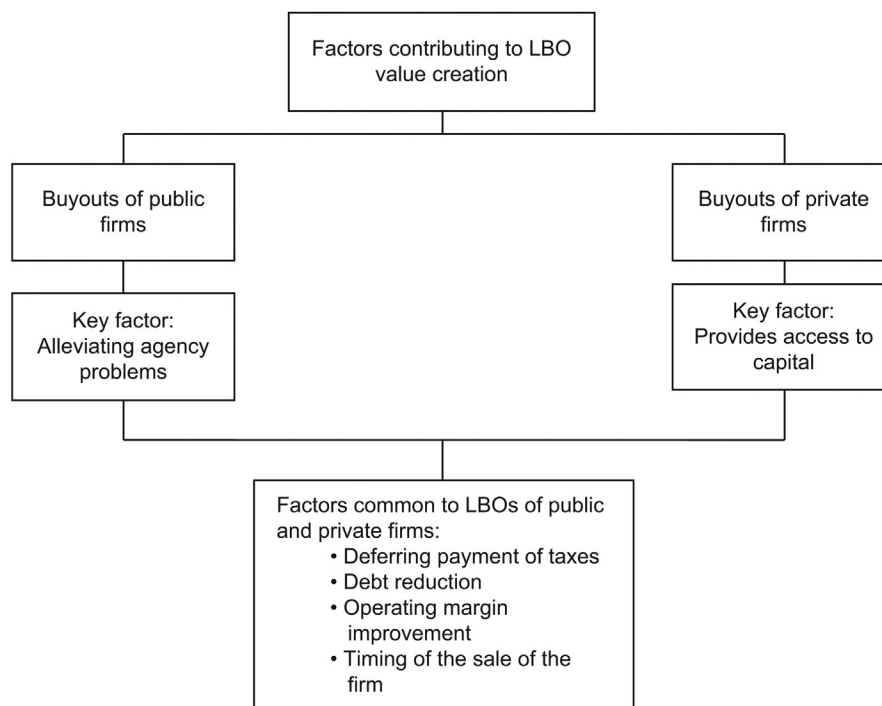


FIGURE 13.1 Factors contributing to LBO value creation. *LBO*, Leveraged buyout.

appeared to be a disastrous investment into a highly profitable one in late 2013. As financial sponsor, Blackstone paid \$26 billion to take the Hilton hotel chain private in 2007, shortly before the onset of one of the worst recessions in US history. To buy Hilton, Blackstone contributed \$5.5 billion and borrowed the rest. Over the next few years, Blackstone through disciplined management improved Hilton's operating performance and used the resulting profits to reduce debt.

Concerns about Hilton's ability to repay its debt caused the market value of its debt to plummet. In 2010, Blackstone was able to restructure Hilton's outstanding debt buying back some of the debt from lenders at discounts of as much as 65% of face value. Blackstone was also able to convince lenders to refinance the remaining debt at record low interest rates by investing another \$1 billion into the business, bringing its total equity stake in Hilton to \$6.5 billion or 76% of total equity. In an IPO on December 10, 2013, Hilton raised \$2.4 billion, most of which was used to pay off additional debt, bringing the firm's outstanding debt to \$12.5 billion. Immediately following the IPO, Hilton shares traded at \$21.50 per share, giving Hilton a market capitalization of \$21.2 billion and Blackstone's ownership stake a value of \$16.1 billion. On paper, Blackstone had a \$9.6-billion profit ($\$16.1 \text{ billion} \times 0.76 - \$6.5 \text{ billion}$).

Alleviating Public Firm Agency Problems

While access to liquid public capital markets enables a firm to lower its cost of capital, participating in public markets may create disagreements between the board and management on

one hand and shareholders on the other, so-called agency problems.⁸³ Public firms may be subject to conflicts between managers engaging in empire building and shareholders seeking competitive financial returns. Improvements in corporate governance attenuating such conflicts reduce borrowing costs and the likelihood of default.⁸⁴ The discipline imposed by leverage forces management to focus on improving performance. Public-to-private LBOs often engage in asset sales and reduced capital spending to improve performance rather than build empires.⁸⁵

While agency problems often describe conflicts between a firm's management and shareholders, similar conflicts can arise when ownership is heavily concentrated. Majority shareholders may utilize their dominant voting positions to make decisions inconsistent with those desired by minority shareholders. For example, the majority shareholder wants to increase dividends while minority shareholders want to pursue a more aggressive investment strategy reinvesting excess cash flow. Sometimes conflicts between minority and majority shareholders can be eliminated by taking a firm private in which the majority shareholder buys out the minority shareholders. In countries where ownership often is highly concentrated, pre-transaction minority shareholders often receive cumulative abnormal financial returns (the increase in the value of their shares prior to the deal announcement date) on their investment of 22% and a purchase price premium for their shares of 35%.⁸⁶

Private equity investors attempt to deal with agency conflicts through improved governance by appointing small boards of directors consisting of five to seven members. The private equity firm often takes three of the board seats, with one or two more going to management and the rest to outsiders not affiliated with the buyout firm. The presumption is that the specialized industry knowledge of the private equity investors can be helpful in growing the business and the small size of the board makes it possible to be more nimble in decision making.

Providing Access to Capital for Private Firms

For private firms, agency problems are less significant than in public firms due to the concentration of ownership and control. Private firms often undertake LBOs to gain access to capital and to enable owners and managers to take cash out of the business partially or totally.⁸⁷ Given access to additional capital provided by private equity investors, LBOs of private firms initiated by private equity investor groups often enable such firms to increase asset and revenue growth, employment, and capital expenditures. Private firms having undergone LBOs also tend to be more profitable and experience faster growth than their peers.⁸⁸ Why? Because private equity investors introduce professional management methods, more aggressively monitor performance, and are willing to take the necessary actions to improve firm performance because of the discipline imposed by the need to satisfy principal and interest payments.

⁸³Boot et al. (2008).

⁸⁴Pasal and Instefjord (2013).

⁸⁵There is evidence that the Sarbanes–Oxley Act of 2002 also encouraged LBOs by adding to the cost of governance for firms as a result of the onerous reporting requirements of the bill. This has been a particular burden to smaller firms (Engel et al., 2004; Hartman, 2005; Kamar et al., 2009). Leuz et al. (2008) document a spike in delistings of public firms attributable to the passage of the Sarbanes–Oxley Act of 2002.

⁸⁶Boubaker et al. (2014).

⁸⁷Asker et al. (2010), Gao et al. (2010), and Brav (2009).

⁸⁸Chung (2011) and Boucly et al. (2011).

Creating a Tax Shield

LBOs often do not pay taxes for 5–7 years⁸⁹ or longer following the buyout, due to the tax deductibility of interest and the additional depreciation resulting from the write-up of net acquired assets to fair market value.⁹⁰ Profits are shielded from taxes until a substantial portion of the outstanding debt is repaid and the assets depreciated. Investors in successful LBOs utilize cumulative free cash flow to increase firm value by repaying debt and improving operating performance.

Debt Reduction

When debt is repaid, the equity value of the firm increases in direct proportion to the reduction in outstanding debt—equity increases by \$1 for each \$1 of debt repaid—assuming the financial sponsor can sell the firm for at least what it paid for the company. Debt reduction contributes to cash flow by eliminating future interest and principal payments.⁹¹

Improvement in Operating Margin

When a firm reinvests cumulative free cash flow, the firm's profit margins can increase by a combination of revenue growth and cost reduction. Private equity investors tend to concentrate more on revenue growth as they focus on industries in which they have substantial experience and proprietary knowledge rather than on cost reduction.⁹² Revenue gains are achieved through a combination of new product/service introduction, enhanced marketing efforts, and by making targeted acquisitions. The margin increase augments operating cash flow, which in turn raises the firm's equity value, if the level of risk is unchanged.

Timing the Sale of the Firm

LBOs may benefit from rising industry multiples while the firm is private. The amount of the increase in firm value depends on the valuation multiple investors place on each dollar of earnings, cash flow, or EBITDA when the firm is sold. LBO investors create value by timing the sale of the firm to coincide with the decline of the firm's leverage to the industry average

⁸⁹Cohn et al. (2014).

⁹⁰This assumes that the LBO is recorded using purchase accounting rather than recapitalization accounting, which does not permit asset revaluation. Recap accounting may be used if the LBO is expected to be taken public through an IPO and the financial sponsor wishes to maximize reporting earnings. For more details, see Chapter 12.

⁹¹Not all LBOs reduce their posttakeover leverage. Cohn et al. (2014) find that some firms do not reduce their leverage even if they generate cash flow in excess of their investment needs. Such LBOs may add to leverage to pay dividends and to acquire other businesses. Private equity firms can pay dividends only when banks are willing to lend more money, which happens only when the banks expect to be paid back. Furthermore, the appearance that some LBOs do not reduce their post-LBO leverage may reflect the way such deals are financed. LBOs often use the target firm's excess cash and sell assets to finance the transaction resulting in a higher debt to total asset ratio for a longer time period following the LBO.

⁹²Gompers et al. (2016, p. 466).

TABLE 13.3 LBOs Create Value by Reducing Debt, Improving Margins, and Increasing Exit Multiples

	Case 1: debt reduction	Case 2: debt reduction + margin improvement	Case 3: debt reduction + margin improvement + higher exit multiples
LBO FORMATION YEAR			
Total debt (\$)	400,000,000	400,000,000	400,000,000
Equity	100,000,000	100,000,000	100,000,000
Transaction value (\$)	500,000,000	500,000,000	500,000,000
EXIT-YEAR (YEAR 7) ASSUMPTIONS			
Cumulative cash available for debt repayment ^a (\$)	150,000,000	185,000,000	185,000,000
Net debt ^b (\$)	250,000,000	215,000,000	215,000,000
EBITDA (\$)	100,000,000	130,000,000	130,000,000
EBITDA multiple	7.0×	7.0×	8.0×
Enterprise value ^c (\$)	700,000,000	910,000,000	1,040,000,000
Equity value ^d (\$)	450,000,000	695,000,000	825,000,000
Internal rate of return (%)	24	31.9	35.2
Cash-on-cash return ^e	4.5×	6.95×	8.25×

LBO, Leveraged buyout.

^aCumulative cash available for debt repayment and EBITDA increase between Case 1 and Case 2 due to improving margins and lower interest and principal repayments, reflecting the reduction in net debt.

^bNet debt = total debt – cumulative cash available for debt repayment = \$400 million – \$185 million = \$215 million.

^cEnterprise value = EBITDA in the seventh year × EBITDA multiple in the seventh year.

^dEquity value = enterprise value in the seventh year – net debt.

^eThe equity value when the firm is sold divided by the initial equity contribution. The internal rate of return (IRR) represents a more accurate financial return because it accounts for the time value of money.

leverage and with favorable industry conditions. This occurs when the firm assumes the risks of the average firm in the industry and when the industry in which the business competes is most attractive to investors, a point at which valuation multiples are likely to be the highest.⁹³

Table 13.3 provides a numerical example of how LBOs create value by “paying down” debt, in part using cash generated by tax savings, by improving the firm’s operating margins, and by increasing the market multiple applied to the firm’s EBITDA in the year in which the firm is sold.⁹⁴ Each case assumes that the sponsor group pays \$500 million for the target firm and finances the transaction by borrowing \$400 million and contributing \$100 million in equity. The

⁹³The annual return on equity (ROE) of the firm will decline, as the impact of leverage declines, to the industry average ROE, which usually occurs when the firm’s debt-to-total capital ratio approximates the industry average ratio. At this point, the financial sponsor is unable to earn excess returns by continuing to operate the business.

Table 13.2 illustrates this point. ROE is highest when leverage is highest and lowest when leverage is zero, subject to the caveat that ROE could decline due to escalating borrowing costs if debt were to be viewed by lenders as excessive.

⁹⁴Guo et al. (2011) find that operating performance, tax benefits, and market multiples applied when the investor group exits the business each explain about one-fourth of the financial returns to buyout investors.

sponsor group is assumed to exit the LBO at the end of 7 years. In Case 1, all cumulative free cash flow is used to reduce outstanding debt. Case 2 assumes the same exit multiple as Case 1 but that cumulative free cash flow is higher due to margin improvement and lower interest and principal repayments as a result of debt reduction. Case 3 assumes the same cumulative free cash flow available for debt repayment and EBITDA as in Case 2 but a higher exit multiple.

COMMON LBO DEAL AND CAPITAL STRUCTURES

Deal structures refer to the mechanism for transferring ownership; *capital structures* describe the way in which these deals are financed. These are discussed next.

Common Deal Structures

Due to the epidemic of bankruptcies of cash flow-based LBOs in the late 1980s, the most common form of LBO today is the asset-based LBO. This type of LBO can be accomplished in one of two ways: the sale of assets by the target to the acquiring company, with the seller using the cash received to pay off outstanding liabilities, or a merger of the target into the acquiring company (direct merger) or a wholly owned subsidiary of the acquiring company (subsidiary merger). For small companies, a reverse stock split may be used to take the firm private. An important objective of “going private” transactions is to reduce the number of shareholders to below 300 to enable the public firm to delist from many public stock exchanges.

In a *direct merger*, the firm to be taken private merges with a firm controlled by the financial sponsor, with the seller receiving cash for stock. The lender will make the loan to the buyer once the security agreements are in place and the target’s stock has been pledged against the loan. The target then is merged into the acquiring company, which is the surviving corporation. In a *subsidiary merger* (Figure 13.3), the company (i.e., the Parent) controlled by the financial sponsor creates a new shell subsidiary (Merger Sub) and contributes cash or stock in exchange for the subsidiary’s stock.⁹⁵ The subsidiary raises additional funds by borrowing from lenders whose loans are collateralized by the stock of the target firm at closing. The subsidiary then makes a tender offer for the outstanding public shares and merges with the target, often with the target surviving as a wholly owned subsidiary of the Parent. This may be done to avoid any negative impact that the new company might have on existing customer or creditor relationships. If 90% of the target firm’s shares can be acquired in the tender offer, the remaining shareholders can be squeezed out in a back-end merger. The financial sponsor may negotiate a top-up option (i.e., an option to buy as many shares as necessary to reach the 90% threshold) with the target firm’s board if there is concern the 90% figure cannot be reached in the tender offer.⁹⁶

A *reverse stock split* enables a corporation to reduce the number of shares outstanding. The total number of shares will have the same market value after the reverse split as before, but each share will be worth more. Reverse splits may be used to take a firm private where a firm

⁹⁵The Parent makes an equity contribution rather than a loan, usually in the form of cash so as not to leverage excessively the Merger Sub.

⁹⁶If the merger qualifies under Delaware General Corporation Law by satisfying a variety of conditions as required by Section 251(h), a back-end merger involving a publicly traded target firm is possible with only a simple majority of shares purchased through the tender offer.

is short of cash. The majority shareholders retain their stock after the split, while the minority shareholders receive a cash payment. MagStar Technologies, a Minnesota-based manufacturer intending to go private, announced a reverse split in which each of 2000 shares of the firm's common stock would be converted into 1 share of common stock, and holders of fewer than 2000 shares would receive cash of \$0.425 per presplit share. The split reduced the number of shareholders to less than 300, the minimum required to list on many public exchanges. Under Minnesota law, the board of directors of a company may amend the firm's articles of incorporation to conduct the reverse split without shareholder approval.

Common Capital Structures

LBOs tend to have complicated capital structures consisting of bank debt, high-yield debt, mezzanine debt, and private equity provided primarily by the financial sponsor. Fig. 13.2 illustrates a typical LBO capital structure. The degree of leverage used in LBOs is determined

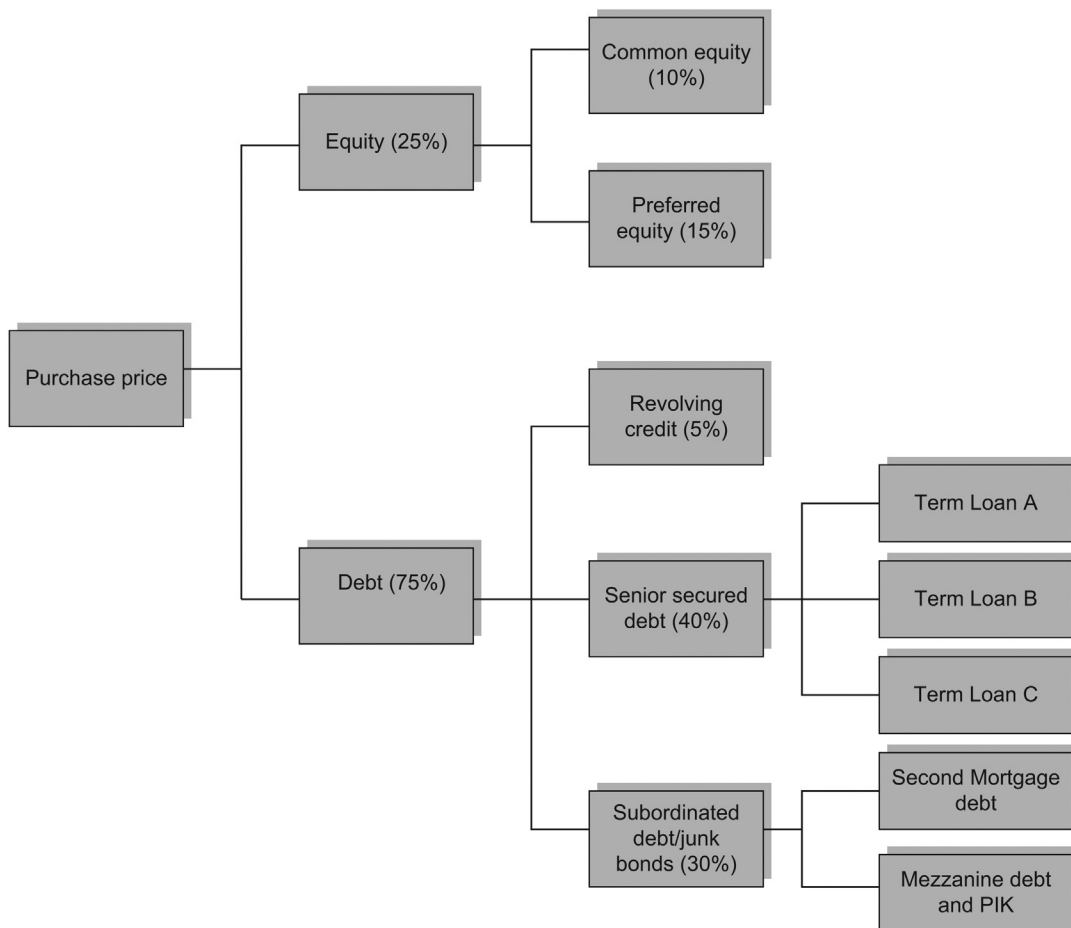


FIGURE 13.2 Typical LBO capital structure. *LBO*, Leveraged buyout; *PIK*, paid in kind.

by capital market liquidity (i.e., when interest rates are low, financial sponsors borrow more), the reputation of the financial sponsor,⁹⁷ tax benefits, and the potential for financial distress if the firm were unable to meet its obligations to pay interest and principal on a timely basis.⁹⁸

As secured debt, the bank debt generally is the most senior in the capital structure in the event of liquidation. Given that such loans usually mature within 5–7 years, interest rates on them often vary at a fixed spread or difference over the London interbank offering rate. Bank loans usually must be paid off before other types of debt. Bank credit facilities consist of revolving credit and term loans.⁹⁹ A revolving credit facility is used to satisfy daily liquidity requirements, secured by the firm's most liquid assets such as receivables and inventory. Term loans are usually secured by the firm's longer-lived assets and are granted in tranches (or slices), denoted as A, B, C, and D, with A the most senior and D the least of all bank financing. While bank debt in the A tranche usually must be amortized or paid off before other forms of debt can be paid, the remaining tranches generally involve little or no amortization and are repaid at maturity. While lenders in the A tranche often sell such loans to other commercial banks, loans in the B, C, and D tranches often are sold to hedge funds and mutual funds. Loans in B, C, and D tranches commonly are referred to as *leveraged loans*, reflecting their risk relative to loans in the A tranche.

The next layer of LBO capital structure consists of unsecured subordinated debt, also referred to as *junk bonds*. Interest is fixed and represents a constant percentage or spread over the US Treasury bond rate. The amount of the spread depends on the credit quality of the debt. Often callable at a premium, this debt usually has a 7- to 10-year maturity range, with the debt often paid off in a single payment. Such loans often are referred to as *bullet loans*. As an alternative to high-yield publicly traded junk bonds, second mortgage or lien loans became popular between 2003 and mid-2007. Often called *mezzanine debt*, such loans are privately placed with hedge funds and collateralized loan obligation (CLO) investors. They are secured by the firm's assets but are subordinated to the bank debt in liquidation. By pooling large numbers of first and second mortgage loans (so-called noninvestment-grade, or leveraged, loans) and subdividing the pool into tranches, CLO investors sell tranches to institutional investors such as pension funds. Such debt may be issued with warrants to buy equity in the firm.¹⁰⁰

The final layer of the capital structure consists of equity (common and preferred) contributed by the financial sponsor (usually a single private equity or hedge fund or a number of them) and management. Preferred stock offers a greater likelihood of recovering some portion of the financial sponsor's initial investment in the event of bankruptcy because holders of

⁹⁷Financial sponsors are more likely to be able to increase leverage if they have successful track records (De Maesseneire and Brinkhuis, 2013).

⁹⁸Gompers et al. (2016, p. 460).

⁹⁹Credit or loan facilities may represent a single loan or a collection of loans to a borrower. Such facilities vary in terms of what is being financed, the type of collateral, terms, and duration.

¹⁰⁰Warrants are long-term instruments that allow shareholders or bondholders to purchase additional shares of stock at a discounted price but they are typically issued with an exercise price above the market value of the firm's current share price. Warrants generally cannot be exercised for a period ranging from 6 months to 1 year giving the stock price time to rise in excess of the exercise price. The potential for this gain is what "sweetens" a bond deal for investors. Both rights offerings and warrants resemble market call options.

such equity are paid before common shareholders. Convertible preferred shares (or convertible debt) are commonly employed to provide investors with some minimum rate of return as well as the opportunity to participate in any future appreciation of the common shares. Convertible securities include an option for the holder to convert such shares (or debt) into a fixed number of common shares any time after a predetermined date. Convertible securities also are used to minimize agency problems arising between investors and managers: investors want some amount of current income in the form of dividends or interest and management wishes to use all cash flow to pay off debt.

SOME THINGS TO REMEMBER

M&A transactions typically are financed by using cash, equity, debt, or some combination thereof, with funding sources ranging from cash on hand to commercial banks to seller financing. Highly leveraged transactions, typically referred to as LBOs, often are structured by financial sponsors such as hedge funds, private equity firms, and venture capitalists.

DISCUSSION QUESTIONS

- 13.1 What are the primary ways in which an LBO is financed?
- 13.2 How do loan and security covenants affect the way in which an LBO is managed? Note the differences between positive and negative covenants.
- 13.3 Describe common strategies LBO firms use to exit their investment. Discuss the circumstances under which some methods of “cashing out” are preferred to others.
- 13.4 Hospital chain HCA relied heavily on revenue growth in its effort to take the firm private. On July 24, 2006, management again announced that it would “go private” in a deal valued at \$33 billion, including the assumption of \$11.7 billion in existing debt. Would you consider a hospital chain a good or bad candidate for an LBO? Explain your answer.
- 13.5 Seven private investment firms acquired 100% of the outstanding stock of SunGard Data Systems Inc. (SunGard). SunGard is a financial software firm known for providing application and transaction software services and creating backup data systems in the event of disaster. The company’s software manages 70% of the transactions made on the NASDAQ stock exchange, but its biggest business is creating backup data systems in case a client’s main systems are disabled by a natural disaster, blackout, or terrorist attack. Its large client base for disaster recovery and backup systems provides a substantial and predictable cash flow. Furthermore, the firm had substantial amounts of largely unencumbered current assets. The deal left SunGard with a nearly 5-to-1 debt-to-equity ratio. Why do you believe lenders might have been willing to finance such a highly leveraged transaction?
- 13.6 Cox Enterprises announced on August 3, 2004, a proposal to buy the remaining 38% of Cox Communications’ shares that it did not already own. Cox Enterprises stated that the increasingly competitive cable industry environment makes investment in the cable industry best done through a private company structure. Why would the firm

believe that increasing future levels of investment would be best done as a private company?

- 13.7 Following Cox Enterprises' announcement on August 3, 2004, of its intent to buy the remaining 38% of Cox Communications' shares that it did not already own, the Cox Communications board of directors formed a special committee of independent directors to consider the proposal. Why? Be specific.
- 13.8 Qwest Communications agreed to sell its slow but steadily growing yellow pages business, QwestDex, to a consortium led by the Carlyle Group and Welsh, Carson, Anderson, and Stowe for \$7.1 billion. Why do you believe the private equity groups found the yellow pages business attractive? Explain the following statement: "A business with high growth potential may not be a good candidate for an LBO."
- 13.9 Describe the potential benefits and costs of LBOs to stakeholders, including shareholders, employers, lenders, customers, and communities, in which the firm undergoing the buyout may have operations. Do you believe that on average LBOs provide a net benefit or a cost to society? Explain your answer.
- 13.10 Sony's long-term vision has been to create synergy between its consumer electronics products business and its music, movies, and games. On September 14, 2004, a consortium consisting of Sony Corp. of America, Providence Equity Partners, Texas Pacific Group, and DLJ Merchant Banking Partners agreed to acquire MGM for \$4.8 billion. In what way do you believe that Sony's objectives might differ from those of the private equity investors making up the remainder of the consortium? How might such differences affect the management of MGM? Identify possible short-term and long-term effects.

Answers to these Chapter Discussion Questions are available in the Online Instructor's Manual for instructors using this book (<https://textbooks.elsevier.com/web/Manuals.aspx?isbn=9780128016091>).

END OF CHAPTER CASE STUDY: THE LEGACY OF LEVERAGE, BAD ASSUMPTIONS, AND POOR TIMING—THE LARGEST LBO IN US HISTORY GOES BANKRUPT

Case Study Objectives: To Illustrate

- Leverage offers the prospect of outsized financial returns for investors.
- However, excessively leveraged firms often have little margin for error.
- If key assumptions underlying the deal are unrealistic, the only alternative may be bankruptcy.
- Chapter 11 reorganization can be protracted.

Energy Future Holdings Corporation emerged from bankruptcy in late 2016 bringing to a close a deal based on excessive optimism, poor timing, and unrealistic assumptions. What follows is a discussion of why the LBO seemed attractive, the deal's complex legal and financial structure, factors that ultimately pushed the firm into bankruptcy, and how the firm was ultimately reorganized.

Amid great fanfare, a consortium of storied investor groups along with highly sophisticated lenders took Texas-based electric utility holding company TXU private on October 7, 2007. Immediately following closing, TXU Corp. was renamed Energy Future Holdings (EFH). EFH consisted of two subsidiaries: Oncor, a business that sells electricity in wholesale markets to other utilities and

big businesses, and Texas Competitive Electric Holdings (TCEH), which holds TXU's public utility operating assets and liabilities. The latter firm is the one that ultimately filed for bankruptcy.

Valued at \$48 billion, the leverage buyout consisted of \$40 billion in debt and \$8 million in equity provided by the private equity consortium, subsequently referred to as the financial sponsor. The deal was fueled by record low borrowing rates and the belief that natural gas prices that had been trending lower would turn around, dramatically improving EFH's profit and cash flow. While things looked rosy at the closing, the underpinnings of what was to be the nation's largest bankruptcy of a nonfinancial firm already were underway.

The United States went into recession in December 2007 and did not emerge until June 2009 according to the National Bureau of Economic Research, the widely recognized organization that defines such things. The recession reduced the demand for electricity and forced natural gas prices lower. While the recession clearly exacerbated the situation, much of the damage done to EFH was self-inflicted by the complex financial engineering used to finance the deal and by the byzantine legal structure created to limit investors' exposure to potential liabilities. These factors made it increasingly difficult for the firm to meet its scheduled debt service payments and ultimately to reorganize in bankruptcy.

Since the 2007 closing, equity investors who put \$8 billion into the deal have seen their positions wiped out and bondholders have experienced large losses. By early 2014, those who bought the firm's \$40 billion in debt saw its market value plunge to as low as ¢20–30 on the dollar. The firm struggled for years to remain afloat, renegotiating the terms of its loans with creditors. However, the \$20-billion loan repayment due in 2014 proved the downfall of the firm. Unable to meet its commitments and with lenders running out of patience, the firm sought the protection of Chapter 11 of the US Bankruptcy Court in late spring of 2014.

Chapter 11 gives the debtor the exclusive right to formulate a reorganization plan that if acceptable to the court and lenders enables the firm to emerge from bankruptcy. The firm has 1 year to submit a plan for emerging from bankruptcy to the court and can get a 6-month extension if permitted by the court. At the end of this time, so-called creditor committees representing secured and unsecured debt and equity groups can submit their own plans. Such plans can range from the debtors swapping what they are owed for an equity stake in the business to forgiveness of much of the debt (or at least repayment on more lenient terms) to outright liquidation of the firm with the proceeds used to pay its obligations.

How could investors with sterling reputations and sophisticated lenders make such a big mistake? Simply saying it was due to greed would be overly simplistic. The investors and lenders participating in this deal were at some level victims of their own earlier success. Private equity firms seek unusually high returns on the equity they put into projects by borrowing as much as they feel can be managed. And given Federal Reserve policies that pushed interest rates to historical lows, LBO financial sponsors were encouraged to take on much more debt than would have been considered prudent had interest rates been higher. Investors and lenders were piling into LBO deals in 2007 in a search for higher financial returns. The prior successes of the LBO sponsors lent credibility to the deals they put together. The conditions were ripe for the addictive effects of overoptimism and cheap money to create a megadeal whose success was dependent on literally everything going according to plan.

A private equity consortium consisting of Kohlberg Kravis Roberts & Co., Texas Pacific Group, and Goldman Sachs (the financial sponsor group) considered TXU an attractive investment because

it was the biggest utility in the fast-growing Texas electricity market and the only one in the state that had not been broken up as a result of the state's deregulation of its electricity market. The key assumption underlying the deal was that natural gas prices would go up in line with the global price of oil as they had done for years. Electricity rates in Texas were pegged by regulators to natural gas prices, but since TXU generated most of its electricity with less-expensive coal and uranium for nuclear plants, it stood to profit from higher electricity rates. Instead natural gas prices plunged as hydraulic fracturing of shale rock unleashed a glut in the United States, pushing down natural gas prices and in turn electricity rates.

Wall Street banks were similarly enamored with the proposed deal to take TXU private. They were competing in 2007 to make loans to buyout firms on easier terms, with the banks also investing their own funds in the deal. The allure to the banks was the prospect of dividing up as much as \$1.1 billion in fees for originating the loans, repackaging such loans into pools called collateralized loan obligations (CLOs), and reselling them to long-term investors such as pension funds and insurance companies. In doing so, the loans would be removed from the banks' balance sheets, eliminating potential losses that could arise if the deal soured at a later date. Furthermore, the deal appeared to be attractive as an investment opportunity as some banks put up \$500 million of their own cash for a stake in the TXU.

Despite the sophistication of the sponsor group and lenders in this deal success was to be elusive. In fact, hubris seems to have clouded what previously had been sound economic reasoning. No one seems to have taken into account the potential for a recession and a further decline in natural gas prices. Both of these factors were beyond the control of those involved in the deal and both occurred to doom the deal.

The financial sponsor group created a shell corporation referred to as Merger Sub Parent and its wholly owned subsidiary Merger Sub. TXU was merged into Merger Sub, with Merger Sub surviving. Each outstanding share of TXU common stock was converted into the right to receive \$69.25 in cash. Total cash required for the purchase was provided by the financial sponsor group and lenders (Creditor Group) to the Merger Sub (Fig. 13.3).

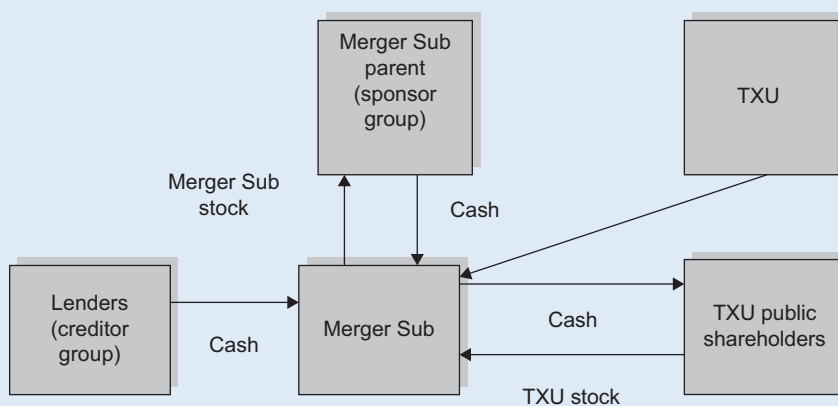


FIGURE 13.3 Forward triangular cash merger.

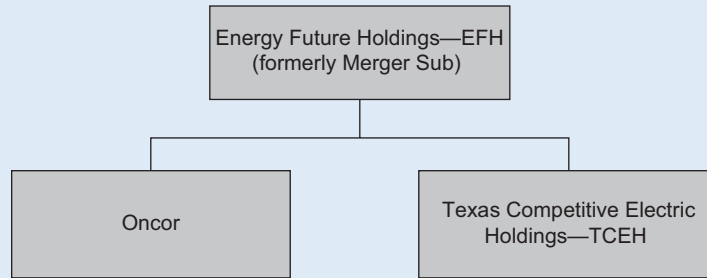


FIGURE 13.4 Postmerger organization.

Subsequent to closing, Merger Sub was reorganized into a new holding company, controlled by the Financial Sponsor Group and renamed Energy Future Holdings (EFH). EFH consisted of two subsidiaries: a regulated business, Oncor, and an unregulated business, TCEH. All TXU non-Sponsor Group-related debt incurred to finance the transaction is held by EFH (Fig. 13.4).

The firm faced an untenable financial position by 2014. Absent a turnaround in natural gas prices, EFH had to find a way to substantially reduce the burden of the pending 2014, \$20-billion loan payment with its lenders through a debt for equity swap, more favorable terms on existing debt, or pursuing Chapter 11 bankruptcy. In December 2012 in an effort to extend debt maturities to buy time for a turnaround and to reduce interest expense, EFH exchanged \$1.15 billion of new payment-in-kind notes (interest is paid with more debt) for existing notes with a face value of \$1.6 billion. However, despite this limited debt restructuring, the firm was still in violation of loan covenants on existing debt.¹⁰¹

EFH's ability to reduce its leverage was further weakened as the private equity sponsors siphoned off \$560 million in advisory and monitoring fees since the buyout's inception in late 2007. With nowhere to turn and the \$20-billion loan payment looming, EFH had run out of options. On April 29, 2014, EFH entered into Chapter 11 bankruptcy. Its initial reorganization plan was to hand control of the firm's operations to its lenders. Creditors objected to various aspects of the plan. A sticking point with creditors was how to value the unregulated subsidiary for tax purposes. Under the terms of the proposed deal, the lenders would forgive debt for ownership of the unregulated subsidiary (TCEH) through a debt for equity swap with bondholders and a subsequent tax-free spin-off to avoid a huge tax bill for EFH. EFH bondholders owed \$1.7 billion were set to take control of the regulated Oncor unit.

The bankruptcy court judge extended the company's exclusive right to solicit acceptances to its reorganization plan on October 29, 2014, to December 29, 2015. The extension represents the maximum exclusivity extension available under the US Bankruptcy Code, which limits plan filing exclusivity to the debtor to 18 months and vote solicitation to 20 months. During this period no other creditor or investor can develop its own reorganization plan for EFH and solicit others to

¹⁰¹Loan covenants limit EFH's and its subsidiaries' ability to incur additional indebtedness or issue preferred stock; pay dividends on, repurchase, or make distributions of capital stock or make other restricted payments; make investments; sell or transfer assets; consolidate, merge, sell, or dispose of all or substantially all its assets; and repay, repurchase, or modify debt. A breach of any of these covenants could result in an event of default.

vote for their plan. Arguing that EFH's plan had no creditor support, the committee representing unsecured creditors of EFH, TCEH, as well as TCEH first lien holders objected to no avail to the length of the firm's exclusivity extension. They argued for much shorter extensions ranging from 2 weeks to 2 months.

In an effort to gain support for its reorganization plan, EFH called off the bankruptcy auction of its 80% stake in Oncor on June 26, 2015, and proceeded to promote the spin-off of Oncor in a tax-free transaction. EFH would leave \$805 million in cash to pay TCEH secured creditors. The bankruptcy court judge approved the firm's reorganization plan on December 3, 2015. The tax-free spin-off of Oncor was completed on October 4, 2016, paving the way for emergence from Chapter 11, almost 2.5 years after the firm had sought court protection.

What can be learned from this investment debacle? Investors often are seduced by the potential for eye-popping financial returns made possible by the use of leverage: other people's money. However, it is easy to overlook the dark side of leverage. If everything doesn't go according to plan, as is often the case, the inability to satisfy debt service requirements can force the firm into default and subsequent bankruptcy. The financial sponsor group and the lenders involved in taking TXU private were well aware of this potential outcome but were confident that history would repeat itself: natural gas prices would rise significantly, which as we know did not happen. Also, the exceedingly low cost of borrowing made possible by the Federal Reserve coaxed borrowers to take on more debt than would have been prudent at higher rates of interest. All these factors combined to set the stage for the largest bankruptcy of a nonfinancial firm in US history.

Discussion Questions

1. This chapter identifies a number of ways in which LBOs can create value for their investors. The financial sponsor group in this case study was relying on which of the sources of value creation identified in this chapter? Be specific. In your opinion, were the financial sponsors placing too great a bet on factors that were beyond their control? Explain your answer.
2. How does the postclosing holding company structure protect the interests of the financial sponsor group and the utility's customers but potentially jeopardize creditor interests in the event of bankruptcy? Be specific.
3. What was the purpose of the preclosing covenants and the closing conditions in the merger agreement?
4. Loan covenants exist to protect the lender. How might such covenants inhibit the EFH from meeting its 2014, \$20-billion obligations?

Solutions to these case study discussion questions are available in the Online Instructor's Manual for instructors using this book (<https://textbooks.elsevier.com/web/Manuals.aspx?isbn=9780128016091>).

**ADDITIONAL CASE STUDY RECOMMENDATIONS
(SEARCH HARVARD BUSINESS SCHOOL
PUBLISHING SITE BY NAME OF CASE: `hbsp.harvard.edu`)**

Auction for Burger King, Carliss Y. Baldwin, James W. Quinn, October 10, 2012, Harvard Business School, Product Number: 906012-PDF-ENG, hbsp.harvard.edu.

Subjects Covered: Leveraged Buyouts, Acquisitions, Auctions, Bids, Decision Making, and Valuation.

BCE Inc.: World's Largest LBO Deal in Jeopardy, Stephen R. Foerster, Publication Date: June 29, 2010, Product Number: 909N29-PDF-ENG, Source: Ivey Publishing, hbsp.harvard.edu.

Subjects Covered: LBOs, Financing.
Bidding for Hertz: Leveraged Buyout, Susan Chaplinsky, Felicia C. Marston, Publication Date: October 5, 2009, Product Number: UV1056-PDF-ENG, Source: Darden School of Business, hbsp.harvard.edu.

Subjects Covered: LBOs, Club Bidding, Valuation, Financing.

The Toys "R" Us LBO, David P. Stowell, Matthew Raino, Publication Date: January 1, 2007, Product Number: Kel168-PDF-ENG, Source: Kellogg School of Business, hbsp.harvard.edu.

Subjects Covered: Model simulation, LBOs, Restructuring, Financing.
RadNet, Inc.: Financing an Acquisition, Susan Chaplinsky, Alex Droznik, Publication Date: August 5, 2011, Product Number: UV5658, Source: Darden School of Business, hbsp.harvard.edu.

Subjects Covered: Deal Financing, Choosing Financing Arrangements, Debt Management.

Applying Financial Models

To Value, Structure, and Negotiate Stock and Asset Purchases

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He who lives by the crystal ball soon learns to eat ground glass. —Edgar R. Fiedler

INSIDE MERGERS AND ACQUISITIONS: M&A FINANCIAL MODEL APPLICATIONS

KEY POINTS

- Merger and acquisition (M&A) models address valuation, deal structuring, and financing questions.
- M&A models may be used by both buyers and sellers to assess alternative deal structures.
- M&A models help define risks associated with specific options in “real time.”

In a deal fraught with tax and competitive risks, Shire PLC announced on January 11, 2016, that it had inked a deal valued at about \$32 billion to acquire Baxalta Inc., ending its 6-month pursuit of the firm. The pair had reached an agreement earlier but had difficulty overcoming fears that the combination would run afoul of US laws precluding firms created as a result of a tax-free spin-off from acquiring another firm in the 2-year period following the spin-off. As such, the deal could have created a substantial tax liability for Shire’s former parent, Baxter International, which had spun off Shire in July 2015. An additional risk in buying Baxalta was the intensifying competition to its primary cash-generating hemophilia drug from a promising series of similar treatments being developed by rivals.

Shire PLC is an Irish-headquartered specialty pharmaceutical firm with global operations in more than 100 countries. Originating in the United Kingdom, the firm has substantial operations in the United States. Following the withdrawal of America-based pharmaceutical firm AbbVie’s bid to acquire Shire due to concerns about new tax inversion rules, Shire’s stock plummeted almost 30%. To support its share price, Shire announced its intention to acquire a string of smaller firms with proven treatments for rare diseases.

What would be the likely impact of such a strategy? Sophisticated firms typically utilize long range planning as described in Chapters 4 and 5 to evaluate their ability to perform in what they perceive as their future competitive environment. Financial models are commonly used to project a “baseline” forecast or reference point of cash flow over a number of years to determine if the firm’s current strategy results in achieving its vision and long-term goals. The baseline projection can subsequently be adjusted for the impact of future investments (including M&As) on the firm’s market value. If it is determined that such investments would enhance current firm value, the baseline strategy may be altered to include the impact of investments such as M&As on the firm’s consolidated balance sheet, income statement, and cash flow statements. In this manner, the firm can assess its ability to finance future investments and takeovers by determining their impact on current loan covenants, consolidated EPS, and their ability to earn the firm’s cost of capital.

In addition to their role in the firm’s business planning process, financial models play a critical role in the decision-making process underlying M&As. Shire initiated its largest takeover attempt in August 2015 when it made an unsolicited offer to Acquire Baxalta for about \$30 billion in an all-stock bid. Although the proposal included a nearly 30% premium, Baxalta’s board rejected the offer claiming that it undervalued the firm and insisted that any bid should contain a substantial amount of cash.

Shire countered that since 80.5% of its shares¹ had been spun off from Baxter International in July 2015, any cash used in the Baxalta takeover bid could jeopardize the nontaxable status under US law of the spin-off to its shareholders.² Despite its reservations, Shire revised the cash and stock bid to include \$18 billion in cash plus 0.1482 share of its American Depository Shares³ for each outstanding common share of Baxalta in January 2016. At closing, Shire shareholders will own 66% of the combined firms and Baxalta shareholders the remainder, which appeared to preserve the tax status of the spin-off.⁴

M&A negotiations are by their nature dynamic in that the circumstances surrounding a takeover attempt can change quickly requiring decision makers to evaluate their options in “real time” to bring the negotiations to a satisfactory conclusion. Financial models often serve as an important tool in such situations as their pro forma (or adjusted) financial statements illustrate what the combined firms would look like under alternative scenarios. For example, Shire announced that the combined firms could deliver \$20 billion in revenue by 2020 and that the deal would be accretive to earnings by the second year following closing based on the firm’s estimates of the amount and timing of anticipated synergies.

Shire would be able to determine the implications of an all-stock versus a cash-and-stock deal on the combined firms’ earnings per share and credit rating due to the resulting increased leverage, as well as postclosing ownership distribution. Such models provide estimates of synergy from potential cost savings or revenue enhancements needed to determine if the proposed purchase premium could be earned back within a reasonable time period enabling the firm to earn its cost of capital. Moreover, models could be used to display on a pro forma (or adjusted) basis the impact of tax savings resulting from Baxalta paying an effective US tax rate of 23 versus 17% if incorporated in Ireland. Models also are helpful in determining the impact of concessions demanded by the regulators to approve the deal on the attractiveness of the deal.

Baxalta could have used models to evaluate the attractiveness of the various offers made by Shire and to provide their own estimate of potential synergy, allowing it to argue that Baxalta shareholders should be compensated at least for the amount of additional value they are contributing to the merged companies.

Models also assist in evaluating the impact of target defenses such as a poison pill on the cost of the deal to the acquirer. Baxalta’s poison pill defense would have been triggered when a suitor unwanted by the board acquired more than a 9.9% stake in the business. Removing

¹Baxter International retained a 19.5% interest in Shire following the spin-off.

²For spin-offs to be nontaxable to a firm’s shareholders, it must satisfy certain IRS rules. One requirement is that the parent’s shareholders must retain a continuing interest in both the parent and the subsidiary (subject to a spin-off) for a period of 4 years beginning 2 years prior to the spin-off and extending 2 years after the spin-off. The continuity of interest principle stipulates that an acquisition can be tax free to target shareholders if the acquirer’s shareholders hold an ongoing equity stake in the target firm. This requirement may be satisfied if the parent’s shareholders collectively maintain a 50% equity ownership interest in both the parent firm and the spun-off firm. If this condition is not satisfied, the parent can be subject to a tax penalty. This is called the “anti-Morris Trust rule.”

³An American Depository Share is a stock trading on a US exchange that represents a specific number of shares in a foreign firm.

⁴Shire’s revised bid is predicated on their belief that the deal will not trigger a tax liability for Baxter International as long as it can show that the deal negotiated with Baxalta was not negotiated as part of a plan developed prior to the spin-off by Baxter. As part of the spin-off agreement with Baxter, Shire would be required to reimburse Baxter for tax liability it might incur as a consequence of the spin-off.

this pill would have been particularly difficult because of Baxalta's staggered board in which its directors serve 3-year, overlapping terms, meaning that it would take Shire 2 years to gain control.

Thus, from start to finish, financial models can play a key role in the M&A process. First by providing a baseline financial projection reflecting the firm's current strategy and later the ability to see how certain acquisitions and investments could impact the baseline projection. In addition, once a target has been identified, financial models assist in valuing the target and assessing the attractiveness of alternative offers and counteroffers and the ability of the acquirer to finance the deal.

CHAPTER OVERVIEW

As illustrated in the Baxalta takeover battle, financial models are commonly used in various aspects of the M&A process discussed earlier in this book. Highly skilled specialists often develop complex, interactive models to simulate potential investment outcomes. Managers utilize the output of such models to assist in making important investment decisions. The degree of confidence they have in the reliability of such output depends on the extent to which they understand how such models operate, as well as their advantages and limitations. Consequently, it is critical that decision makers have a working knowledge of such models.

The emphasis in Chapter 9 was on how financial modeling can be used to estimate the stand-alone value of a single firm. In this chapter, the focus is on the application of financial modeling to value and structure M&As. A detailed discussion of how to construct M&A financial models is beyond the scope of this book. Rather, the intent of this chapter is to provide the reader with an appreciation of the general characteristics of such models, their data input requirements, and how they may be used to address questions relating to valuation, deal structuring, and financing (Table 14.1). Such information is critical to each side in the negotiating process in determining an appropriate purchase price and distribution of risk.

This chapter begins with a general discussion of elements common to most sophisticated M&A financial models, followed by illustrations of how M&A models may be applied to a purchase of stock and a purchase of assets. The model discussed in this chapter exhibits many of the characteristics of the highly sophisticated proprietary M&A models used by practitioners. The acquiring firm, target firm, and combined firms are referred to throughout the chapter as Acquirer, Target, and Newco. The case study at the end of this chapter provides a hypothetical illustration of how models could have been applied in the negotiation process using a recently completed deal in which lab equipment maker Thermo Fisher Scientific Inc. merged with Life Technologies Corporation. See the section "Appendix A: Debt Repayment Schedule, Convertible Securities, Interest Rates, and β " for a listing of potential sources of data inputs required to run the financial model discussed in this chapter.

The Excel worksheets of the detailed M&A model discussed in this chapter are available on the companion site to this book in a Microsoft Excel file entitled M&A Valuation and Deal Structuring Model (<https://www.elsevier.com/books-and-journals/book-companion/9780128016091>). A review of this chapter also is available in the file folder entitled "Student Study Guide" on the companion site.

TABLE 14.1 Key Deal Questions Commonly Addressed by M&A Models

Key questions:

- Valuation (see Chapters 7 and 8)
 - What are the key drivers of firm value?
 - How much is Target worth without the effects of synergy (i.e., stand-alone value)? How much is Acquirer worth on a stand-alone basis? Will the combination of the two businesses create value for Acquirer's shareholders?
 - What is the value of expected synergy?
 - What is the maximum price Acquirer should pay for Target?
- Financing (see Chapter 13)
 - Can the proposed purchase price be financed?
 - What combination of potential sources of funds, both internally generated and external sources, provides the lowest cost of funds for Acquirer, subject to existing loan covenants and credit ratios Acquirer hopes to maintain or achieve?
 - What is the acquisition's impact on Acquirer's fully diluted earnings per share?
 - Are existing loan covenants violated?
 - Is the firm's credit rating in jeopardy?
 - Will the firm's ability to finance future opportunities be impaired?
- Deal structuring (see Chapters 11 and 12)
 - What is the impact on financial performance and valuation if Acquirer is willing to assume certain Target liabilities?
 - What is the impact on Acquirer's earnings per share of alternative forms of payment?
 - What are the implications of a purchase of stock versus a purchase of assets?
 - What is the distribution of ownership of the combined businesses between Acquirer and Target shareholders following closing?
 - What is the impact on Acquirer's financial performance of a tax-free rather than a taxable deal?

M&A, Merger and acquisition.

UNDERSTANDING AND APPLYING M&A FINANCIAL MODELS

The logic underlying the Excel-based M&A model found on the companion site follows the four-step process outlined in [Table 14.2](#). The key outputs of the model in a purchase of stock deal are displayed on Acquirer Transaction Summary Worksheet ([Table 14.3](#)). This table allows for a quick review of deal terms and their implications based on a specific set of assumptions. The cells highlighted in yellow are called “input cells” and require the analyst to input data in each of these cells. The remaining cells have formulas utilizing these inputs to calculate their values automatically.

Common Elements of M&A Models

M&A models commonly require the estimation of the stand-alone value of Target and Acquirer. The stand-alone value is what the firm would be worth if it were a wholly independent entity and all revenue is valued at current market prices and all costs incurred in generating these revenues are known. The stand-alone value of Target is theoretically what the business would be worth as a going concern (i.e., in the absence of any takeover bid); Acquirer's stand-alone value represents a reference point against which the value of the combined businesses (*Newco*) must be compared. It makes sense to Acquirer shareholders to do the deal only if the value of *Newco* exceeds the value of Acquirer as a stand-alone (or going concern) business.

TABLE 14.2 M&A Model Building Process Steps

-
- Step 1: Construct historical financials for both Acquirer and Target and determine key value drivers*
- a. Collect and analyze historical data to understand the key determinants (“key value drivers”) of each firm’s historical financial performance
 - b. “Normalize” (i.e., remove anomalies) historical data for forecasting purposes
 - c. Build historical financial accounts including income statement, balance sheet, and cash flow statements
- Step 2: Project Target and Acquirer financials and estimate stand-alone values*
- a. Determine assumptions for each key input variable to the model
 - b. Input assumptions into the model to project financials
 - c. Select appropriate WACC and terminal period assumptions to estimate stand-alone values
- Step 3: Estimate value of Newco, including synergy and deal terms*
- a. Estimate synergy and investment required to realize synergy
 - b. Project Newco financials, including the impact of synergy and deal terms
 - c. Select appropriate WACC and terminal period assumptions to value Newco
- Step 4: Determine appropriateness of Target offer price and Newco’s posttransaction capital structure*
- a. Compare the offer price with the estimated value of synergy and recent comparable deals
 - b. Compare projected credit ratios with industry average ratios
 - c. Determine impact of the deal on Newco’s EPS
 - d. Determine if the deal allows Newco to meet or exceed required financial returns
-

M&A, Merger and acquisition; WACC, weighted average cost of capital.

The valuation of the combined businesses should reflect not only the sum of their stand-alone values but also the incremental value of synergy and the deal terms.

The offer price is considered appropriate if the net present value (NPV) of the investment is greater than or equal to zero. In this context, NPV is defined as the difference between the present value of Target plus anticipated synergy and the offer price including any transaction-related expenses. That is, the value received is greater than or equal to what is paid for the business. Furthermore, Acquirer’s posttransaction capital structure is suitable only if it can be supported by the future cash flows, if it does not result in a violation of current loan covenants or desired credit ratios, if it does not jeopardize the firm’s credit rating, and, for public companies, if EPS is not subject to sizeable or sustained dilution.

Value drivers are variables that exert the greatest impact on firm value, often including the revenue growth rate, cost of sales as a percent of sales, sales, general, and administrative expenses (SG&A) as a percent of sales, weighted average cost of capital (WACC) assumed during annual cash flow growth and terminal periods, and the cash flow growth rate assumed during terminal period.⁵ These variables are commonly changed to simulate alternative

⁵The constant growth method described in detail in Chapter 7 is used in this chapter to approximate the present value of cash flows beyond the annual forecast period in this chapter. However, practitioners often use so-called “exit multiples” for this purpose. This involves using a multiple of some income or cash flow measure, such as net income, free cash flow to the firm, or EBITDA. The multiple is estimated by looking at how comparable companies are valued by the market. For example, assume an analyst projects free cash flow to the firm of \$10 million and a projected price-to-cash flow multiple of 8 in the fifth year. Multiplying these figures suggests that investors would be willing to pay \$80 million in the fifth year for all those cash flows generated in perpetuity by the firm beyond the fifth year.

SG&A, Sales, general, and administrative expenses.

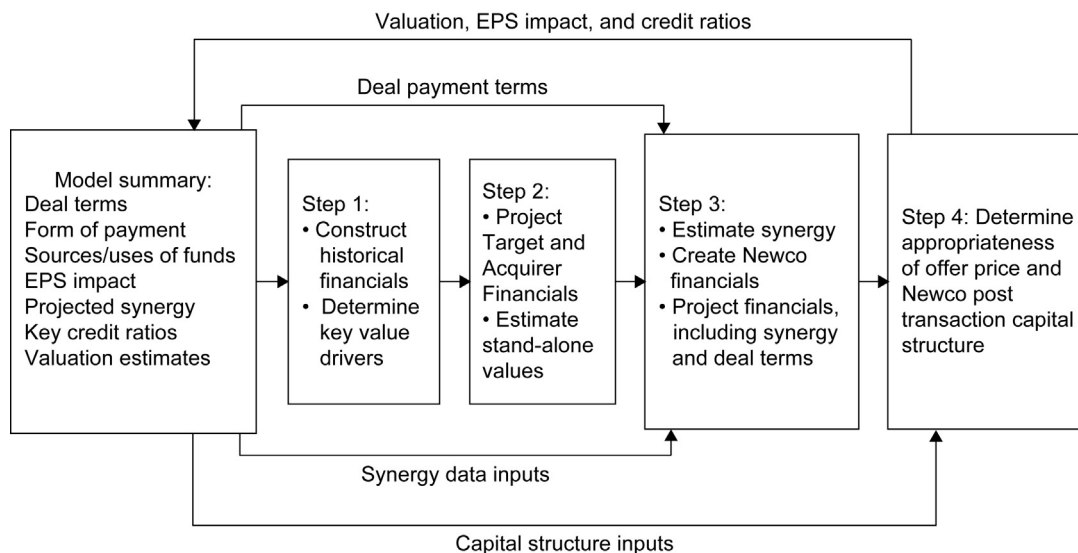


FIGURE 14.1 M&A model worksheet flow diagram. *M&A*, Merger and acquisition.

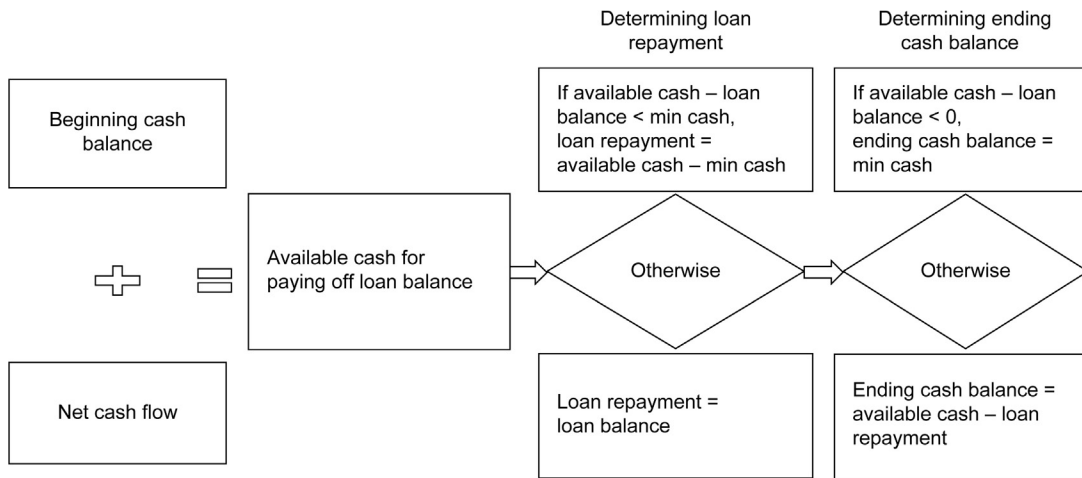
scenarios.⁶ Anyone reviewing model results can focus on these value drivers to determine if the results should be considered credible.

Key Data Linkages and Model Balancing Mechanism

Fig. 14.1 displays the important data linkages underlying the four process steps within the model. The Acquirer Transaction Summary Worksheet plays a dual role: summarizing important deal terms and performance metrics while also providing key inputs for Steps 3 and 4 of the modeling process. Fig. 14.2 illustrates the model's balancing mechanism. Financial models normally are said to be in balance when total assets equal total liabilities plus shareholders' equity. This may be done manually by inserting a "plug" value whenever the two sides of the balance sheet are not equal or automatically by building a mechanism for forcing equality. The latter has the enormous advantage of allowing the model to simulate alternative scenarios over many years without having to stop the forecast each year to manually force it to balance.

The mechanism in this model for forcing balance involves a revolving loan facility or line of credit. Such arrangements allow a firm to borrow up to a specific amount. Once the maximum has been reached, the firm can no longer borrow. To maintain the ability to borrow to meet unanticipated needs, firms have an incentive to pay off the loan as

⁶The reader should understand that these variables can be excessively manipulated by the user to result in a wide range of outcomes. Such manipulation often is counterproductive, because it may result in outcomes the user would like to see rather than realistic ones.



Definitions: Min cash = minimum cash balance required by firm

Loan balance = outstanding balance on the revolving loan credit facility

Available cash = cash available for paying off any loan balance owed on the revolving loan credit facility

FIGURE 14.2 M&A model balancing mechanism. *Available Cash*, cash available for paying off any loan balance owed on the revolving loan credit facility; *Loan Balance*, outstanding balance on the revolving loan credit facility; *M&A*, merger and acquisition; *Min Cash*, minimum cash balance required by firm.

quickly as possible. If total assets exceed total liabilities plus equity, the model borrows (i.e., the “revolver” shows a positive balance on the liability side of the balance sheet) to provide the cash needed to finance the increase in assets. If total liabilities plus equity exceed total assets, the model first pays off any outstanding “revolver” balances and then uses the remaining excess cash flow to add to cash and short-term marketable securities on the balance sheet.

How does the model determine the size of the loan repayment when the loan balance is positive? Firms consider the amount of available cash and the minimum cash balance they wish to maintain. If available cash less the loan balance is less than the desired minimum cash balance, the loan payment equals the difference between available cash and minimum cash. Loan payments greater than this amount cause the firm’s ending cash to be less than the desired minimum balance. To illustrate, consider the following:

If Available Cash = \$80 million

Beginning Loan Balance = \$75 million

Minimum Cash = \$10 million

Then

Available Cash – Loan Balance = \$80 million – \$75 million < \$10 million
(minimum cash) and

Loan Payment = \$80 – \$10 = \$70 million

Ending Loan Balance = \$75 million – \$70 million = \$5 million

However, if available cash less the loan balance exceeds the desired minimum cash balance, the loan repayment equals the loan balance, as there is more than enough cash to repay the loan and still maintain the desired minimum cash balance. Consider the following example:

If Available Cash = \$85 million

Beginning Loan Balance = \$75 million

Minimum Cash = \$10 million

Then

Available Cash – Loan Balance = \$85 million – \$75 million = \$10 million
(minimum cash)

Loan Payment = \$85 million – \$75 million = \$10 million

Ending Loan Balance = 0

How does the model determine the firm's ending cash balances? Ending cash balances will always equal minimum cash if available cash is less than the loan balance. Why? Because only that portion of the loan balance greater than minimum balance will be used to repay the loan. Conversely, if available cash exceeds the loan balance, the ending cash balance equals the difference between available cash and the loan payment, since the loan balance will not be repaid unless there is sufficient cash available to cover the minimum balance. [Table 14.4](#) provides a numerical example of how the firm's ending cash balance is determined assuming the revolving credit facility balance in the Sources and Uses section of [Table 14.3](#) is \$2 billion and that the firm requires a minimum operating cash balance of \$100 million. See the table's footnotes for a definition of each line item.

TABLE 14.4 Determining Newco's Ending Cash Balances

	Projections		
	2016	2017	2018
Cash from operating, investing, and financing activities (\$)	1899.0	229.3	363.1
Beginning cash balance	131.6	100.0	259.9
Cash available for revolving credit facility ^a	2030.6	329.3	623.0
Beginning revolving credit facility balance	2000.0	69.4 ^b	0.0
Repayment of revolving credit facility loan balance ^c	1930.6	69.4	0.0
Ending revolving credit facility balance ^d	69.4	0.0	0.0
Ending cash balance	100.0	259.9 ^e	623.0

^aCash from operating, investing, and financing activities plus the beginning cash balance.

^bEnding revolver balance.

^cCash available less minimum balance if cash available less beginning revolver balance is less than minimum cash; otherwise, total repayment equals beginning revolver balance.

^dBeginning revolver balance less total repayment.

^eMinimum cash if cash available is less than the beginning revolver balance and minimum cash; otherwise, ending cash equals cash available less total loan repayment.

M&A MODELS: STOCK PURCHASES

The three basic legal forms of M&A deals include a merger, stock purchase, or purchase of assets (see Chapter 11 for more detail). What follows is a discussion of an M&A model that applies to either a merger or a stock purchase. Such models are generally more complex than asset purchase models. A *merger* transaction is similar to a stock purchase in that the buyer will acquire all of Target company's assets, rights, and liabilities (known and unknown)⁷ and will be unable to specifically identify which assets and liabilities it wishes to assume. In contrast, in an *asset purchase*, the seller retains ownership of the firm's shares and only assets and liabilities that are specifically identified in the purchase agreement are transferred to the buyer. All other assets and liabilities remain with the seller. Asset purchases will be discussed later in this chapter and in more detail in Chapter 11.

A *merger* involves the mutual decision of two companies to combine to become a single legal entity and generally involves two firms relatively equal in size, with one disappearing. All Target assets and liabilities, known and unknown, automatically transfer to Acquirer. Target shareholders usually have their shares exchanged for Acquirer shares at some negotiated share-exchange ratio (SER), for cash, or some combination. A *stock purchase* usually involves the purchase of all the shares of another entity for cash or stock. However, Acquirer may purchase less than 100% of Target's outstanding shares as all shareholders may not agree to sell their shares. As in a merger, Target's assets and liabilities effectively transfer to Acquirer without interruption. However, unlike a merger, Acquirer may be left with minority Target shareholders and Target may continue to exist as a legal subsidiary of Acquirer.

The M&A model discussed in this chapter consists of a series of linked worksheets, each reflecting either a financial statement or a related activity. Table 14.5 illustrates how the 17 worksheets fit into each of the 4 process steps described in Table 14.2. IS, BS, and CF refer to income statement, balance sheet, and cash flow statement, respectively. The organizational structure of the following sections reflects the process steps and the activities within each process step outlined in Table 14.2.

Step 1: Construct Historical Financials and Determine Key Value Drivers

Although public firms are required to file their financial statements with the Securities and Exchange Commission (SEC) in accordance with GAAP, so-called *pro forma financial statements* are used as hypothetical representations of the potential performance of the acquirer and target firms if they had been merged.⁸ Such statements can refer to the future as well as to the past. That is, they can represent what the combined firms would look like in the future and what they could have looked like in the past based on the assumptions of the analyst who constructed the financial statements.

⁷Known liabilities are those shown on Target's balance sheet and unknown liabilities are those not recorded.

⁸Because there are no accepted standards for pro forma accounting, pro forma statements may deviate substantially from GAAP statements.

TABLE 14.5 M&A Model Worksheets^a**Model Instructions**

Acquirer transaction summary (includes deal terms, form of payment, sources/uses of funds, synergy estimates, EPS impact, and key credit ratios)

Step 1: Construct historical financials and determine key value drivers

- Target and Acquirer assumptions (historical period only)
- Target and Acquirer IS (historical period only)
- Target and Acquirer BS (historical period only)
- Target and Acquirer CF (historical period only)

Step 2: Project Target's and Acquirer's financials and estimate stand-alone value

- Acquirer assumptions (includes key value drivers)
- Acquirer IS
- Acquirer BS
- Acquirer CF

Step 3: Estimate value of combined firms (Newco), including synergy and deal terms

- Newco assumptions (includes key value drivers)
- Newco IS
- Newco BS
- Newco CF

Step 4: Determine appropriateness of offer price and Newco postclosing capital/financing structure

- Debt repayment (includes repayment schedule for Target debt assumed by Acquirer, Acquirer's pretransaction debt, and new debt issued to finance the deal)
- Options—convertibles (estimates the number of new Target shares that must be acquired due to the conversion of options as well as convertible debt and preferred equity)
- Valuation (includes the valuation of Target, Acquirer, and Newco enterprise value, equity value, and price per share)

^aEach dashed item describes a specific worksheet.

BS, Balance sheet; CF, cash flow; IS, income statement; M&A, merger and acquisition.

Step 1(a): Collect and Analyze Required Historical Data to Understand Key Value Drivers

A valuation's accuracy depends on understanding the historical competitive dynamics of the industry and of the company within the industry, as well as the reliability of the data used in the valuation. Competitive dynamics refer to the factors within the industry that determine industry profitability and cash flow. A careful examination of historical information can provide insights into key relationships among various operating variables. Examples of relevant historical relationships include seasonal or cyclical movements in the data, the relationship between fixed and variable expenses, and the impact on revenue of changes in product prices and unit sales.

While public companies are required to provide financial data for only the current and 2 prior years, it is highly desirable to use data spanning at least one business cycle (i.e., about 5–7 years) to identify trends.⁹ While actual historical data is used to build the historical Target and Acquirer financial statements, projecting key drivers such as sales and cost of sales as a percent of sales is best done using normalized historical data. This enables the analyst to

⁹For public companies, data is commonly obtained from the firm's 10Ks and 10Qs to value firms prior to signing a nondisclosure with Target. See Chapters 4 and 5 for additional data sources for both public and private firms.

identify longer-term trends and relationships in the data. For a more detailed discussion of value drivers in the context of model building, see Chapter 9.

Step 1(b): Normalize Historical Data for Forecasting Purposes

To ensure that these historical relationships can be accurately defined, *normalize* the data by removing nonrecurring changes and questionable accounting practices. Cash flow may be adjusted by adding back unusually large increases in reserves or deducting large decreases in reserves from free cash flow to the firm. An example of reserves would be accounting entries established in anticipation of a pending expense such as employee layoffs in the year following a merger. The effect of the reserve would be to lower income in the current year. However, the actual cash outlay would not occur until the following year when the layoffs actually occur.

Similar adjustments can be made for significant nonrecurring gains or losses on the sale of assets or nonrecurring expenses, such as those associated with the settlement of a lawsuit or warranty claim. Monthly revenue may be aggregated into quarterly or even annual data to minimize period-to-period distortions in earnings or cash flow resulting from inappropriate accounting practices.

Step 1(c): Build Historical Financial Statements

Once collected, input all historical financial data for both Target and Acquirer into the historical input cells in the income statement, balance sheet, and cash flow statements worksheets. Note the reconciliation line at the bottom on the balance sheet worksheet. This represents the difference between total assets and total liabilities plus shareholders' equity and should be equal to zero if the model is balancing properly.

Step 2: Project Acquirer and Target Financials and Estimate Stand-Alone Values

If the factors affecting sales, profit, and cash flow historically are expected to exert the same influence in the future, a firm's financial statements may be projected by extrapolating normalized historical growth rates in key variables such as revenue. If the factors affecting sales growth are expected to change due to the introduction of new products, total revenue growth may accelerate from its historical trend. In contrast, the emergence of additional competitors may limit revenue growth by eroding the firm's market share and selling prices. The Porter Five Forces Model discussed in Chapter 4 and illustrated in more detail in Chapter 9 can be very helpful in projecting key value drivers for both Target and Acquirer.

Key normalized financial data should be projected for at least 5 years, and possibly more, until cash flow turns positive or the growth rate slows to what is believed to be a sustainable pace. Projections should reflect the best information about product demand growth, future pricing, technological changes, new competitors, new product and service offerings from current competitors, potential supply disruptions, raw material and labor cost increases, and possible new product or service substitutes. Projections also should include the revenue and costs associated with known new product introductions and capital expenditures, as well as additional expenses required to maintain or expand operations by the acquiring and target firms.

Step 2(a): Determine Assumptions for Each Key Input Variable

Cash flow forecasts commonly involve the projection of revenue and the various components of cash flow as a percent of projected revenue. For example, cost of sales, depreciation, gross capital spending, and the change in working capital often are projected as a percent of estimated future revenue. What percentage is applied to projected revenue for these components of free cash flow to the firm may be determined by calculating their historical ratio to revenue. In this simple model, revenue drives cash-flow growth. Thus, attention must be given to projecting revenue by forecasting unit growth and selling prices, the product of which provides estimated revenue. Common projection methods include *trend extrapolation* and *scenario analysis*.¹⁰

Step 2(b): Input Assumptions into the Model and Project Financials

The Target Assumptions Worksheet in [Table 14.6](#) is an example of the financial statements used in the model. Each input cell (denoted in yellow) may be changed with the subsequent years changed automatically to reflect the new entry in the input cell. Changes to the model are made primarily by making changes in the worksheets labeled Target Assumptions and Acquirer Assumptions. The analyst should input cell values one at a time using only small changes in such values in order to assess accurately the outcome of each change on performance metrics such as net income, EPS, and NPV. In doing so, it will become evident which variables represent key value drivers. See the practice exercise in [Exhibit 14.1](#) for an illustration of how to change revenue growth, a key value driver.

Step 2(c): Select Appropriate Discount Rate and Terminal Period Assumptions to Estimate Stand-Alone Values

The actual valuation of Target and Acquirer is done on the Valuation Worksheet using inputs from Target and Acquirer Assumptions Worksheets. See Chapter 7 for a detailed discussion of how to estimate the appropriate WACC and terminal period assumptions for Target and Acquirer.

Step 3: Estimate Value of Newco, Including Synergy and Deal Terms

This process step involves adjusting the sum of Target and Acquirer financial statements to create combined company pro forma statements that purport to show what Newco would look like adjusted for synergy and the terms of the deal. *Synergy* in the popular press often is defined as the value (i.e., incremental cash flows) created as a result of combining two businesses in excess of the sum of their individual market values. In practice, the combination of businesses can create as well as destroy value measured in terms of cash flows. In this chapter, we discuss the notion of net synergy, that is, the difference between sources

¹⁰Trend extrapolation entails extending present trends into the future using historical growth rates or multiple regression techniques. Scenario analysis projects multiple outlooks, with each differing in terms of key variables (e.g., growth in gross domestic product, industry sales growth, fluctuations in exchange rates) or issues (e.g., competitive new product introductions, new technologies, and new regulations).

TABLE 14.6 Target Assumptions Worksheet

Target

Assumptions

(\$Millions, except per share data)

	Actual			Projections for the Period Ending December 31,				
	2013	2014	2015	2016	2017	2018	2019	2020
Income Statement								
Sales Growth	NA	5.2%	4.8%	5.5%	5.5%	5.5%	5.5%	5.5%
COGS as a % of Sales	41.3%	44.1%	42.0%	43.0%	43.0%	43.0%	43.0%	43.0%
SG&A % annual increase (decrease)	NA	(1.4%)	4.5%	4.0%	4.0%	4.0%	4.0%	4.0%
Other Operating Expense as a % of Sales	13.1%	12.0%	10.5%	11.0%	11.0%	11.0%	11.0%	11.0%
EBITDA Growth	NA	5.8%	27.4%	(0.1%)	7.5%	7.4%	7.4%	7.3%
EBITDA Margin	17.1%	17.2%	20.8%	19.7%	20.1%	20.5%	20.8%	21.2%
Balance Sheet								
Receivable Days	59.8	61.6	64.3	59.0	59.0	59.0	59.0	59.0
Inventory Days	79.6	82.8	88.5	84.0	84.0	84.0	84.0	84.0
Other Current Assets % of Sales	7.8%	5.2%	6.3%	5.5%	5.5%	5.5%	5.5%	5.5%
Accounts Payable Days	43.0	39.1	40.9	40.0	40.0	40.0	40.0	40.0
Other Current Liabilities % of COGS	65.6%	79.1%	60.4%	68.0%	68.0%	68.0%	68.0%	68.0%
Working Capital/Sales (Excl Cash & Debt)	1.3%	(7.5%)	4.0%	(2.4%)	(2.4%)	(2.4%)	(2.4%)	(2.4%)
Cash Flow								
Capital Expenditures	26.7	13.8	10.3	16.7	17.6	18.6	19.6	20.7
Capex as a % of Sales	0.7%	0.4%	0.3%	0.4%	0.4%	0.4%	0.4%	0.4%
Depreciation	123.0	123.6	126.0	133.6	141.0	148.7	156.9	165.6
Depreciation as a % of Sales	3.4%	3.3%	3.2%	3.2%	3.2%	3.2%	3.2%	3.2%
Goodwill Amortization (Pre-6/2001)	-	-	-	-	-	-	-	-
Amortization of Intangibles	299.6	313.9	302.9	300.0	300.0	300.0	300.0	300.0
Retirement of Senior Debt	2,320.2	350.4	450.0	300.0	300.0	300.0	300.0	300.0
Retirement of Subordinated Debt	-	-	-	-	-	-	-	-
Chg in Deferred Taxes - Asset	NA	2.0	(5.8)	-	-	-	-	-
Chg in Deferred Taxes - Liab	NA	(147.4)	(123.2)	-	-	-	-	-
Dividend from Affiliates	-	-	-	-	-	-	-	-
Payout Ratio of Affiliates	-	-	-	-	-	-	-	-
Dividends per Share	-	-	-	-	-	-	-	-
Dividend Payout Ratio	-	-	-	-	-	-	-	-
Dividends Paid	-	-	-	-	-	-	-	-
Effective Tax Rate	338.8%	244.9%	38.6%	40.0%	40.0%	40.0%	40.0%	40.0%
Other								
Shares Outstanding - Basic	-	-	170.8	170.8	170.8	170.8	170.8	170.8
Shares Outstanding - Diluted	-	-	174.5	174.5	174.5	174.5	174.5	174.5
Revolving Credit Facility Rate	-	-	-	2.00%	2.00%	2.00%	2.00%	2.00%
Senior Debt Rate	-	-	-	5.00%	5.00%	5.00%	5.00%	5.00%
Subordinated Debt	-	-	-	8.00%	8.00%	8.00%	8.00%	8.00%
Average Interest Rate	NA	6.45%	5.69%	5.00%	5.00%	5.00%	5.00%	5.00%
Marketable Securities Rate	-	-	-	-	-	-	-	-

COGS, Cost of goods sold; SG&A, selling, general, and administrative expenses.

EXHIBIT 14.1 PRACTICE EXERCISE: CHANGING TARGET REVENUE GROWTH

Using the Excel spreadsheet model in the file entitled M&A Valuation and Structuring Model on the companion website accompanying this book (see the beginning of this chapter for website address), change Target's revenue growth rate assumption. On Target's Assumptions Worksheet, to raise Target's revenue growth rate by 1 percentage point during the annual forecast period (2016–20), increase the growth rate from 5.5 to 6.5% in the yellow input cell on the Sales Growth line for the year 2016. The model will increase automatically the growth rate annually from 2016 to 2020 by 1 percentage point. The model also accommodates a variable growth rate forecast. For example, if the growth rate in 2017 is expected to increase by an additional 1 percentage point and to continue at that higher rate in subsequent years, the analyst simply increases the growth rate from 5.5 to 6.5% in 2016 and to 7.5% in 2017.

of value and destroyers of value. Sources of value add to the economic value (i.e., ability to generate future cash flows) of the combined firms; destroyers of value tend to reduce cash flows. To determine if certain cash flows result from synergy, ask if they can be generated only if the businesses are combined. If the answer is yes, then the cash flow in question is due to synergy.

Deal terms refer to the amount and composition of the form of payment (usually cash, stock, or some combination) for Target, whether Acquirer is purchasing the stock or assets of Target (form of acquisition), the number of shares being acquired, and how it is being financed. The amount of the purchase price will affect what has to be financed by borrowing, using excess cash balances, or issuing some form of equity consideration (i.e., common stock, preferred stock, or warrants). Such factors will impact interest expense on the income statement and goodwill, cash balances, and shareholders' equity on the balance sheet.

Step 3(a): Estimate Synergy and Investment Required to Realize Synergy

Common sources of value include potential cost savings resulting from shared overhead, elimination of duplicate facilities, better utilization of existing facilities (i.e., economies of scale), and minimizing overlapping distribution channels (e.g., direct sales forces, websites, agents). Synergy related to cost savings is more easily realized than synergy due to other sources.¹¹ Other sources of value include cross-selling of Acquirer's products to Target's customers and vice versa. Potential sources of value also include land and "obsolete" inventory and depreciated equipment whose value has been written down to zero. Such inventory can still be discounted and sold to raise cash and fully depreciated equipment can still have a useful life. Underutilized borrowing capacity or significant excess cash balances also can make an acquisition target more attractive. The addition of Target's assets, low level of indebtedness, and strong cash flow from operations could enable the buyer to increase substantially

¹¹(Christofferson et al., 2004). In addition to cost savings from eliminating duplicate functions, Fee et al. (2012) document that acquirers frequently cut substantially advertising and marketing budgets following closing.

the borrowing levels of the combined companies.¹² Other sources of value include access to intellectual property (e.g., patents and trade names), new technologies, and new customer groups. Likewise, income tax losses and tax credits also may represent an important source of value by reducing the combined firms' current and future tax burden.

Factors destroying value include poor product quality, excessive wage and benefit levels, low productivity, high employee turnover, and customer attrition. A lack of or badly written contracts often result in customer disputes about terms, conditions, and amounts owed. Verbal agreements made with customers by the seller's sales representatives may become unprofitable obligations for the buyer. Environmental issues, product liabilities, and unresolved lawsuits are also major potential destroyers of value for the buyer. For a more detailed discussion of how to quantify revenue and cost-related synergies, see the section "Quantifying Synergy."

In calculating synergy, it is important to include the costs associated with recruiting and training employees, achieving productivity improvements, layoffs, and exploiting revenue opportunities. Employee attrition following closing will add to recruitment and training costs. Cost savings due to layoffs frequently are offset in the early years by severance expenses. Realizing productivity gains requires more spending in new structures and equipment or redesigning work flow. Exploiting revenue-raising opportunities may require training the sales force of the combined firms in selling each firm's products or services and additional advertising expenditures to inform current or potential customers of what has taken place.

Step 3(b): Project Newco Financials Including Effects of Synergy and Deal Terms

Table 14.7 displays the key deal terms found on the Acquirer Transaction Summary Worksheet. These include the form of acquisition (stock or asset) and the amount and form of payment (Acquirer stock, cash, or some combination), as well as the timing of payment. In

TABLE 14.7 Acquirer Transaction Summary Worksheet: Deal Terms

Acquirer		Transaction Summary	
(\$Millions, except per share data)			
Transaction Value		Form of Payment	
Price Per Share	\$ 82.0	% Stock	50.0%
Target Shares Outstanding	174.5	% Cash	50.0%
Dilutive Effect: Stock Options/Security Conv	2.3		
Equity Consideration	\$ 14,494.8	Target Preannouncement Share Price	\$ 60.75
Less: Cash	\$ 276.3	Implied Purchase Price Premium	35.0%
Less: Equity in Affiliates	-	Current Shares Outstanding	358.1
Plus: Total Debt	2,060.9	Acq. Shares	71.1%
Plus: Noncontrolling Interests	0.8	Shares Issued to Target Sh.	94.0
Less Other Adjustments	-	New Common Shares Issued	51.9
Enterprise Value	\$ 16,280.2	Convertible Preferred Shares	-
		New Warrants Issued	-
		Total Shares	503.9
			100.0%
		Sources & Uses	
		Excess Cash	\$ 1,000.0
		Common Shares Issued to Target Shareholders	7,247.4
		New Common Shares Issued to Public	4,000.0
		Convertible Preferred Equity	-
		Revolving Credit Facility	4.40%
		Senior Debt	4.90%
		Subordinated Debt	8.00%
		Total Sources	\$ 15,129.8
		Equity Consideration	\$ 14,494.8
		Transaction Expenses	10 yrs
		Total Uses	\$ 15,129.8

¹²The incremental borrowing capacity can be approximated by comparing the combined firms' current debt-to-total capital ratio with the industry average. For example, assume Firm A's acquisition of Firm B results in a reduction in the combined firms' debt-to-total capital ratio to 0.25 (e.g., debt represents \$250 million of the new firm's total capital of \$1 billion). If the same ratio for the industry is 0.5, the new firm may be able to increase its borrowing by \$250 million to raise its debt-to-total capital ratio to the industry average. Such incremental borrowing often is used to finance a portion of the purchase price paid for the target firm.

EXHIBIT 14.2 PRACTICE EXERCISE: SETTING PAYMENT TERMS

Using the Excel spreadsheet model in the file folder entitled M&A Valuation and Structuring Model on the companion website accompanying this book (see the beginning of this chapter for website address), change the payment terms on the Summary Worksheet. Input the percentage of the total payment that is Acquirer stock in the Form of Payment Section and the model automatically treats the remaining portion of the payment as cash. For example, an all-cash deal would require setting the percentage of the total payment that is stock to zero; for a deal that is 30% stock and 70% cash, set the percentage of the total payment that is stock to 30%.

some transactions, payment of some portion of the purchase price may be deferred. See the practice exercise in [Exhibit 14.2](#) for an illustration of how to change payment terms.

The Transaction Summary Worksheet also displays the primary synergy inputs as shown in [Table 14.8](#). These include profit margin improvements, improvements in SG&A as a percent of revenue, and incremental revenue resulting from combining the firms. Margin improvements reflect both improvements in cost of goods sold (COGS) and increases in selling prices. Incremental sales often reflect cross-selling one firm's products into the other firm's customers. The model presumes that the SG&A associated with the incremental sales is less than the historical ratio of SG&A as a percent of revenue. Assuming the two firms are similar, the existing sales and administrative infrastructure often can support a substantial portion of the additional revenue without having to add personnel.

The additional SG&A as a percent of revenue assumed to support the incremental revenue is shown in an input cell at the bottom of the Transaction Summary Worksheet (see Model's Acquirer Transaction Summary Worksheet on the website accompanying this book). Note the synergies are phased in over time reflecting delays in realizing anticipated savings and revenue improvements, and, once fully realized, they are sustained at that level during the remainder of the forecast period.

Newco's Income Statement Worksheet ([Table 14.9](#)) displays, in the Transaction Adjustments column between the historical and projected financial data, the effects of anticipated synergy, costs incurred to realize synergy, and other acquisition-related costs in 2016. The purpose of these adjustments is to create a pro forma income statement to illustrate what the combined firms would have looked like had they been operated jointly for the entire year.

TABLE 14.8 Acquirer Transaction Summary Worksheet Synergy Assumptions: Stock Purchase

SG&A Synergies		Gross Margin Improvement			Incremental Sales Synergy		
	\$'s		%	\$'s	Gross Margin	\$'s	
2016	3.0	2016	0.0%	5.0	45.8%	\$ 25.0	
2017	5.0	2017	0.1%	10.0	46.2%	75.0	
2018	8.0	2018	0.1%	15.0	46.5%	150.0	
2019	8.0	2019	0.1%	15.0	46.5%	150.0	
2020	8.0	2020	0.1%	15.0	46.5%	150.0	

SG&A, Selling, general, and administrative expenses.

TABLE 14.9 Newco's Income Statement Worksheet Adjustments: Stock Purchase

Newco					Pro Forma Income Statement				
(\$Millions, except per share data)									
	Actual	Projected 2016		Trans	Pro Forma	Projections			
	2015	Acquirer	Target	Adj	2016	2017	2018	2019	2020
Sales	\$ 12,509.9	\$ 13,160.4	\$ 4,176.2	\$ 25.0	\$ 17,361.6	\$ 18,325.7	\$ 19,362.9	\$ 20,375.9	\$ 21,442.4
Integration Expenses				100.0	100.0	50.0	-	-	-
Cost of Goods Sold	7,214.4	7,501.4	1,795.8	8.5 ¹³	9,405.8	9,866.4	10,365.9	10,907.5	11,477.7
Gross Profit	5,295.5	5,659.0	2,380.4		7,855.9	8,409.2	8,997.0	9,468.4	9,964.7
SG&A	3,354.9	3,619.9	1,096.8	(0.5)	4,716.2	5,049.1	5,407.8	5,788.2	6,196.8
Other Operating Expense	458.5	460.6	459.4		920.0	969.2	1,021.1	1,075.7	1,133.3
Depreciation	983.7	987.0	133.6		1,120.7	1,179.3	1,241.1	1,306.1	1,374.5
Amortization	-	-	300.0	19.1	319.1	319.1	319.1	319.1	319.1
EBIT	498.4	591.4	390.6		779.9	892.6	1,008.0	979.4	941.2
Unusual (Gain) Loss	-	-	-	444.5	444.5	-	-	-	-
(Income) from Affiliates	-	-	-		-	-	-	-	-
Other Expense (Income)	212.7	-	-		-	-	-	-	-
Interest (Income)	29.2	-	-		-	-	-	-	-
Interest Expense	241.6	339.1	95.5	134.2	568.8	514.7	460.5	406.4	352.3
Earnings before Taxes	14.9	252.3	295.1		(233.3)	377.9	547.5	573.0	588.9
Noncontrolling Interest	-	-	-		-	-	-	-	-
Taxes	11.0	65.6	118.0	(177.0)	6.6	98.3	142.3	149.0	153.1
Net Income before Extra Items	\$ 3.9	\$ 186.7	\$ 177.1		\$ (240.0)	\$ 279.6	\$ 405.1	\$ 424.0	\$ 435.8
Extraordinary Items	(19.2)	-	-		-	-	-	-	-
Net Income after Extra Items	\$ (76.6)	\$ 186.7	\$ 177.1		\$ (240.0)	\$ 279.6	\$ 405.1	\$ 424.0	\$ 435.8
EPS - Basic	\$ 0.01	\$ 0.52	\$ 1.04		\$ (0.48)	\$ 0.55	\$ 0.80	\$ 0.84	\$ 0.86
EPS - Diluted	\$ 0.01	\$ 0.52	\$ 0.49		\$ (0.47)	\$ 0.68	\$ 0.98	\$ 1.03	\$ 1.05
Other Financial Data									
Depreciation & Amortization	983.7	987.0	433.6	19.1	1,439.7	1,498.4	1,560.1	1,625.1	1,693.5
Capital Expenditures	1,083.4	855.4	16.7		872.1	917.5	965.3	1,015.5	1,068.4
EBITDA	1,482.1	1,578.4	824.3		2,219.7	2,391.0	2,568.2	2,604.5	2,634.7
EPS (Excluding Unusual Items)	\$ 0.01	\$ 0.52	\$ 1.01		\$ 0.18	\$ 0.68	\$ 0.98	\$ 1.03	\$ 1.05
Cash EPS	\$ (0.98)	\$ 4.26	\$ 4.97		\$ 7.08	\$ 4.77	\$ 5.23	\$ 5.48	\$ 5.68
Dividends per share	\$ -	\$ -	\$ -		\$ -	\$ -	\$ -	\$ -	\$ -
Dividend-adjusted Cash EPS	\$ (0.98)	\$ 4.26	\$ 4.97		\$ 7.08	\$ 4.77	\$ 5.23	\$ 5.48	\$ 5.68

SG&A, Selling, general, and administrative expenses.

The incremental revenue due to synergy in 2016 of \$25 million generates an incremental \$13.6 million in COGS.¹³ The net increase in COGS (i.e., additional cost to support the increase in sales less the improvement in operating margin) is \$8.5 million and represents 34% of incremental sales (i.e., \$8.5/\$25), as compared to its 58.4% historical average during the preceding 3 years.¹⁴ The improvement in the COGS ratio reflects a \$5-million improvement in the operating margin due to a better utilization of existing capacity and savings associated with purchases of raw materials and services.¹⁵

¹³ $(1 - \text{gross margin}) \times \$25 \text{ million} = (1 - 0.458) \times \$25 \text{ million} = \$13.6 \text{ million}$: see Table 14.8, Incremental Sales Synergy section.

¹⁴See the Acquirer Transaction Worksheet in M&A Model on the companion Website accompanying this book. The 10% figure is located in a blue input cell immediately below the last line of the worksheet.

¹⁵See the Gross Margin Improvement section of Table 14.8.

The model assumes that the ratio of SG&A to incremental sales is 10% resulting in an increase of SG&A of \$2.5 million.¹⁶ However, this increase in SG&A is expected to be offset by a \$3-million reduction in SG&A overhead due to the elimination of duplicate sales, market, and administrative functions between the two firms. Integration expense incurred in the first full year of Newco operations is estimated at \$100 million and includes severance expense, lease buyouts, retraining expenses, etc. Interest expense is up by \$134.2 million, reflecting additional borrowing costs associated with closing the deal. Taxes decrease by \$151 million due to expensing of nonfinancing-related transaction closing expenses of \$444.5 million.¹⁷

Transaction adjustments for Newco's balance sheet (Table 14.10) illustrate how the transaction purchase price is financed. This data comes from the Transaction Summary Worksheet Sources and Uses section of Table 14.7. The equity consideration or purchase price of \$14,494.8 million (excluding transaction expenses) is 50% cash, with the remainder paid in newly issued Acquirer shares valued at \$7247.4. The cash portion of the purchase price including transactions expenses is \$7882.4 million¹⁸ and is financed through a combination of reducing cash on the balance sheet by \$1000 million, borrowing \$2882.4 million in senior debt, and issuing new acquirer common shares to the public valued at \$4000 million.

The adjustment entry in Table 14.10 for common stock of \$5513.7 million equals the sum of \$7247.4 million in new acquirer common stock exchanged for target shares plus \$4000 million in new shares issued to help finance the cash portion of the purchase price less \$5733.7 in Target common stock.¹⁹ Target retained earnings are eliminated as they are implicit in the purchase price. Goodwill, representing the difference between the purchase price and the book value of net acquired assets, totals \$9841.4 million.²⁰ Pretransaction adjustments to the balance sheet refer to reductions in receivables for those deemed uncollectable, inventory to reflect damaged and obsolete items, obsolete or poorly maintained equipment, and impaired goodwill.²¹

Step 3(c): Select Appropriate Discount Rate and Terminal Period Assumptions to Value Newco

Newco's enterprise value is estimated on the Model's Valuations Worksheet (as are Target and Acquirer) using inputs from the Newco Assumptions Worksheet. Enterprise value often is defined as the sum of the market value of a firm's equity, preferred shares, debt, and noncontrolling interest less total cash and cash equivalents.²² Cash in excess of working capital is commonly deducted, because it is viewed as unimportant to the ongoing operation of the business and can be used by Acquirer to finance the deal.²³ Once the enterprise value has been estimated,

¹⁶\$25 million $\times$ 0.10: see Table 14.8, SG&A Synergies section.

¹⁷Note that financing fees can be capitalized on the Newco balance sheet and amortized over the life of the loan.

¹⁸\$7882.4 = 0.5 $\times$ \$14,494.8 million in equity consideration + \$635 million in transaction fees.

¹⁹Once Target shareholders exchange their shares for Acquirer stock or cash, they are canceled.

²⁰Note that the model conservatively assumes that book value equals fair market value. This assumption may be changed once the acquirer has completed full due diligence.

²¹Goodwill is said to be impaired when its book or carrying value exceeds its current fair market value. The book value of such goodwill must be reduced by the difference between its book value and fair market value.

²²Suggestions for determining an appropriate WACC and terminal period assumptions are found in Chapter 7.

²³It is often useful to deduct other assets not germane to the ongoing operation of the combined businesses from the enterprise value if they can be easily sold for cash and subsequently used to finance the transaction.

TABLE 14.10 Newco's Balance Sheet Worksheet Adjustments: Stock Purchase

Newco

(\$Millions, except per share data)

Pro Forma Balance Sheet

	Actual 2015		Pre-Trans	Trans	Pro Forma	Projections				
	Acquirer	Target	Adj	Adj	2015	2016	2017	2018	2019	2020
Cash	\$ 855.3	\$ 276.3		\$ (1,000.0)	\$ 131.6	\$ 1,762.9	\$ 1,731.6	\$ 1,840.4	\$ 2,003.7	\$ 2,194.9
Accounts Receivable	1,804.9	697.3			2,502.2	2,517.5	2,657.5	2,808.2	2,955.3	3,110.3
Inventory	1,443.3	403.5	-		1,846.8	142.5	149.5	157.1	165.3	173.9
Other	731.3	248.1			979.4	915.4	966.2	1,020.9	1,074.4	1,130.6
Current Assets	4,834.8	1,625.2			5,460.0	5,338.3	5,504.9	5,826.6	6,198.7	6,609.7
Property, Plant, & Equipment	1,726.4	871.4	-		2,597.8	3,469.9	4,387.5	5,352.8	6,368.3	7,436.7
Accumulated Depreciation	-	-	-		-	(1,120.7)	(2,300.0)	(3,541.1)	(4,847.2)	(6,221.7)
Net Property, Plant, & Equipment	1,726.4	871.4			2,597.8	2,349.3	2,087.4	1,811.7	1,521.1	1,215.1
Goodwill	12,474.5	4,503.4	-	9,841.4	26,819.3	26,819.3	26,819.3	26,819.3	26,819.3	26,819.3
Intangible Assets	7,804.5	1,525.8			9,330.3	9,030.3	8,730.3	8,430.3	8,130.3	7,830.3
Deferred Financing Expenses	-	-		190.5	190.5	171.5	152.4	133.4	114.3	95.3
Deferred Taxes	-	23.0			23.0	23.0	23.0	23.0	23.0	23.0
Equity in Affiliates	-	-			-	-	-	-	-	-
Other	604.4	89.2			693.6	693.6	693.6	693.6	693.6	693.6
Total Assets	\$ 27,444.6	\$ 8,638.0			\$ 45,114.5	\$ 44,425.1	\$ 44,010.9	\$ 43,737.7	\$ 43,500.3	\$ 43,286.2
Accounts Payable	641.4	186.6			828.0	885.2	928.7	975.8	1,026.8	1,080.6
Other	1,451.9	1,005.8			2,457.7	2,829.1	2,969.7	3,122.2	3,287.6	3,461.9
Current Liabilities	2,093.3	1,192.4			3,285.7	3,714.3	3,898.4	4,098.0	4,314.5	4,542.5
Revolving Credit Facility	-	-		-	-	-	-	-	-	-
Senior Debt	7,031.2	2,060.9		2,882.4	11,974.5	10,886.2	9,798.0	8,709.8	7,621.5	6,533.3
Subordinated Debt	-	-		-	-	-	-	-	-	-
Total	7,031.2	2,060.9			11,974.5	10,886.2	9,798.0	8,709.8	7,621.5	6,533.3
Deferred Taxes	2,047.2	287.4			2,334.6	2,544.9	2,755.2	2,965.5	3,175.8	3,386.1
Other	808.2	443.9			1,252.1	1,252.1	1,252.1	1,252.1	1,252.1	1,252.1
Total Liabilities	11,979.9	3,984.6			18,846.9	18,397.5	17,703.7	17,025.3	16,363.9	15,714.0
Common Stock	413.5	5,733.7		5,513.7	11,660.9	11,660.9	11,660.9	11,660.9	11,660.9	11,660.9
Preferred Equity	-	-			-	-	-	-	-	-
Retained Earnings	7,697.3	1,341.8		(1,341.8)	7,697.3	7,457.3	7,737.0	8,142.1	8,566.1	9,001.9
Treasury Stock	(2,996.8)	(2,482.0)		2,482.0	(2,996.8)	(2,996.8)	(2,996.8)	(2,996.8)	(2,996.8)	(2,996.8)
Other Adjustments	10,350.7	59.1		(503.6)	9,906.2	9,906.2	9,906.2	9,906.2	9,906.2	9,906.2
Noncontrolling Interest	-	0.8		(0.8)	-	-	-	-	-	-
Total Stockholders Equity	15,464.7	4,653.4			26,267.6	26,027.6	26,307.2	26,712.4	27,136.4	27,572.2
Total Liabilities and Equity	\$ 27,444.6	\$ 8,638.0			\$ 45,114.5	\$ 44,425.1	\$ 44,010.9	\$ 43,737.7	\$ 43,500.3	\$ 43,286.2
Reconciliation	0.0	0.0			0.0	0.0 #	0.0 #	0.0 #	0.0 #	0.0

the market value of equity is then calculated by adding cash to and deducting long-term debt and noncontrolling interests from the enterprise value.²⁴ The marginal rather than the effective tax rate is used since the enterprise value is calculated prior to financing concerns.²⁵

While this definition may reasonably approximate the takeover value of a company, it does not encompass all of the significant nonequity claims on cash flow such as operating leases, unfunded pension and healthcare obligations, and loan guarantees. Thus, the common definition of enterprise value may omit significant obligations that must be paid by Acquirer and whose present value should be included in estimating Target's purchase price. When calculating the ratio of enterprise to EBITDA as a valuation multiple, the analyst needs to add back leasing and pension expenses to EBITDA in order to compare the ratio for a firm with substantial amounts of such long-term obligations with other companies.

Chapter 7 discusses alternative ways of estimating the market value of a firm's long-term debt. Commonly used methods for modeling purposes by practitioners involve valuing the book value of a firm's long-term debt at either its current market value if it is publicly traded or book value if it is not. Alternatively, the market value of similar debt at a firm exhibiting a comparable credit rating can be used to value a target firm's debt. For example, assume the book value of Target's debt with 10 years remaining to maturity is \$478 million and its current market value or the market value of comparable publicly traded debt is 1.024 per \$1000 of face value. The market value of the firm's debt can be estimated as \$489.5 million (i.e., $1.024 \times \$478$). The market value of noncontrolling interests can be estimated by multiplying the book value of such interests by the price-to-earnings ratio for comparable firms.

Step 4: Determine Appropriateness of Offer Price and Posttransaction Capital Structure

The Sources and Uses section of Acquirer Transaction Summary Worksheet displayed in [Table 14.7](#) shows how the transaction is financed. Since the form of payment in this example is 50% equity and 50% cash, the model automatically finances the equity portion of the purchase price by exchanging Acquirer for Target shares in an amount equal to one-half of the purchase price. The financing of the cash portion of the purchase price requires the analyst to input values for the amount of excess cash to be used and new common or preferred equity issues, as well as any increases in subordinated debt. Once these inputs are provided, the model automatically assumes that any additional cash to be financed will come from increase in senior debt. These inputs determine the capital structure proposed for financing the deal. See the practice exercise in [Exhibit 14.3](#) for an illustration of how to change how a transaction is financed.

This process step is a reality check. Is the offer price for Target reasonable? Is Newco's proposed capital structure sustainable? Does the financial return on the deal meet or exceed Acquirer's cost of capital? Is the capital structure consistent with the desired credit rating?

The first question can be answered by comparing the offer price to recent comparable transactions and by comparing it to the "maximum" offer price. While recent comparable transaction values were explained in detail in Chapter 8, the notion of a maximum price has

²⁴Noncontrolling interests are deducted from the enterprise value in calculating the market value of the firm's equity because they represent the portion of the consolidated financial statements not owned by the firm.

²⁵The use of the often lower effective tax rate would be impacted by interest expense associated with any borrowing undertaken to finance the deal.

EXHIBIT 14.3 PRACTICE EXERCISE: CHANGING HOW THE DEAL IS FINANCED

Using the Excel spreadsheet model in the file folder entitled M&A Valuation and Structuring Model on the companion website accompanying this book (see the beginning of this chapter for the website address), change the financing structure on the Summary Worksheet. Once the portion of the purchase price to be paid in Acquirer stock is input into the model, it is necessary to determine how the remaining cash portion of the purchase price will be financed. The model subtracts from the amount paid for Target's equity (i.e., equity consideration) plus transaction expenses the dollar value of Acquirer shares exchanged for Target shares and finances the remainder of the purchase price by some combination of other financing sources. Any amount of the cash portion of the purchase price that is not funded in some other way is assumed financed by an increase in senior debt. That is, total equity consideration + transaction expenses – dollar value of Acquirer equity exchanged for Target equity – excess cash – new common shares issues – preferred equity issued – revolving loan balance – subordinated debt = senior debt issued.

To change the financing structure shown on the Summary Worksheet to one including only Acquirer shares exchanged for Target shares and new senior debt, simply set the yellow input cells for excess cash and new common shares issued to zero. The model would subtract the \$7247.4 million (i.e., dollar value of Acquirer shares exchanged for Target shares) from \$15,129.8 million (i.e., equity consideration including transaction expenses of \$635 million) and finance the difference of \$7882.4 million by issuing senior debt equal to that amount.

As the equity portion of the purchase price is increased, senior debt can become negative. Since this is meaningless, the analyst should manually increase some other source of funds by the amount of the negative senior debt figure.

not been discussed in this text. The maximum offer price is equal to the sum of the stand-alone value (or minimum price) plus 100% of net synergy. The present value of net synergy is equal to the present value of sources of value (factors that contribute to positive cash flow) less the present value of destroyers of value (factors that reduce cash flow). The presumption is that no rational seller will sell at below the minimum price and no rational buyer will pay more than the maximum price. Consequently, a reasonable offer price is one that lies between the minimum and maximum prices. These definitions are described in more detail in the next section.

Step 4(a): Compare Offer Price With Estimated Maximum Offer Price and Recent Comparable Deals

The initial offer price for Target lies between the minimum²⁶ and maximum offer prices. The offer price also is referred to as the equity value of the target firm. In a stock purchase

²⁶The notion of a minimum price should be viewed as a starting point for determining an offer price and does not preclude circumstances in which the buyer may be able to buy a target at a significant discount to its intrinsic value. For small, privately owned firms, either the buyer or the seller may not have access to all relevant information about the economic value of the target. Markets for private firms may also be illiquid; sellers seeking to “cash out” quickly may be willing to sell at a significant discount from the firm's intrinsic value. The cost of performing due diligence and the risks associated with buying nonpublic firms often are significant and encourage the buyer to offer less than what they may believe is the target's true worth.

EXHIBIT 14.4 DETERMINING THE OFFER PRICE (PV_{OP})—PURCHASE OF STOCK

1. $PV_{MIN} = PV_T$ or MV_T , whichever is greater. MV_T is Target's current share price times the number of shares outstanding
2. $PV_{MAX} = PV_{MIN} + PV_{NS}$, where $PV_{NS} = PV$ (sources of value) – PV (destroyers of value)
3. $PV_{OP} = PV_{MIN} + \alpha PV_{NS}$, where $0 \leq \alpha \leq 1$
4. Offer price range for Target = $(PV_T \text{ or } MV_T) < PV_{OP} < (PV_T \text{ or } MV_T) + PV_{NS}$

Once the dollar value of the offer price has been determined, the offer price per share, premium, and offer (purchase) price multiple can be determined as follows:

Assumptions:

Target's predeal price per share = \$18

Target shares outstanding = 5 million

Target's current earnings per share = \$2.20

Target's minimum (stand-alone or market) value = \$100 million

PV of net synergy = \$20 million

$\alpha = 50\%$

Solution:

$$\begin{aligned} \text{Offer price per share} &= \frac{\text{Target's minimum value} + \alpha \times PV_{NS}}{\text{Target shares outstanding}} \\ &= \frac{\$100 \text{ million} + 0.5 \times \$20 \text{ million}}{5 \text{ million}} = \$22 \end{aligned}$$

Offer (purchase) price premium = $\$22/\$18 = 22.2\%$.

Offer (purchase) price multiple = $\$22/\$2.20 = 10$.^a

^a Offer price multiple, in this instance measured as a P/E ratio, can be compared to P/E ratios for recent comparable transactions to determine the reasonableness of the premium.

deal,²⁷ the minimum price is Target's stand-alone present value (PV_T) or its current market value (MV_T) (i.e., Target's current stock price times its shares outstanding). The maximum price is the sum of the minimum price plus the present value of net synergy (PV_{NS}).²⁸ The initial offer price (PV_{IOP}) is the sum of the minimum purchase price and a percentage, α between 0 and 1, of PV_{NS} . Exhibit 14.4 provides an algebraic illustration of how the initial offer price is determined and a numerical example of how the offer price premium and multiple can be determined for a given offer price.

Note that α represents the portion of net synergy shared with target shareholders and not the purchase price premium. Once the offer price has been determined, the purchase price

²⁷ Calculating the minimum and maximum offer price in an asset purchase is discussed later in this chapter.

²⁸ Note that the maximum price may be overstated if the current market value of the target firm reflects investor expectations of an impending takeover. As such, the current market value may reflect a portion of future synergies.

premium may be estimated by comparing the offer price to Target's preannouncement share price. The offer price should also be compared to similar recent deals to determine if it is excessive.²⁹

To determine α , Acquirer may estimate the portion of net synergy supplied by Target. Cash flows due to synergy are those that arise only because of the combination of the firms. The percentage of net synergy contributed by Target can be estimated by calculating the contribution to incremental operating profit attributable to cross-selling or to cost savings resulting from a reduction in the number of Target employees or elimination of other Target-related overhead such as leased facilities. Additional Target-related synergy could include intellectual property whose value is represented by the potential profit generated by selling such property to others or from new products based on Target copyrights or patents. Ultimately, what fraction of synergy is negotiated successfully by Target depends on its leverage or influence relative to Acquirer.³⁰

If it is determined that Target would contribute 30% of net synergy, Acquirer may share up to that amount with Target's shareholders. To discourage potential bidders, acquirers might make preemptive bids so attractive that Target's board could not reject the offer for fear of possible shareholder lawsuits, resulting in more than 30% of net synergy shared with Target. In other instances, Acquirer may share less than 30% if it is concerned that realizing synergy on a timely basis is problematic.

The offer price should fall between the minimum and maximum prices for three reasons. First, it is unlikely that Target can be purchased at the minimum price, because Acquirer normally has to pay a premium to induce Target's shareholders to sell their shares. In an asset purchase, the rational seller would not sell at a price below the after-tax liquidation value of acquired assets less assumed liabilities, since this represents what the seller could obtain by liquidating rather than selling the assets. Second, at the maximum end of the range, Acquirer would be ceding all of the net synergy created by combining the two firms to Target's shareholders. Finally, it often is prudent to pay significantly less than the maximum price, because of the uncertainty of realizing estimated synergy on a timely basis.

Step 4(b): Compare Projected Credit Ratios With Industry Average Ratios

Table 14.11 shows the impact of increased borrowing on Newco's projected credit ratios in comparison to current industry averages. Investors often use such comparisons to assess a firm's solvency and liquidity. This table measures the magnitude of Newco's projected debt burden (debt-to-total capital ratio) and ability to repay its debt (interest coverage ratio). The

²⁹The percent difference between purchase price multiples of the target's earnings, cash flow, sales, book value, and so on can be compared to similar multiples of recent comparable transactions to determine the relative magnitude of the price paid for the target versus those of comparable deals. If the price to earnings ratio paid for the target firm is 12 versus 10 paid for comparable recent deals, the implicit relative purchase premium paid for the target is 20%.

³⁰The contribution to the creation of synergy by each party to the deal is often subjective. For example, Target may argue that it should receive full credit for the increase in operating earnings resulting from the shutdown of their underutilized plant and the movement of its output to Acquirer's plant increasing its average operating rate. However, Acquirer could counter that the synergy would not have been realized had it not had a similar underutilized facility and further that its operation was more efficient.

higher the debt-to-total capital ratio relative to the industry average, the more investors will become concerned about the potential insolvency of the firm (i.e., the likelihood the firm will be unable to pay its outstanding debt if liquidated). Similarly, investors could view the liquidity of a firm with a low interest coverage ratio compared to the industry as problematic.

Assume that the current industry average credit ratios will prevail during the forecast period. Does Newco's projected debt-to-total capital ratio exceed significantly the average for the industry? Does the firm's projected interest coverage fall substantially below the industry average due to the increase in the firm's indebtedness? Will Newco still be in compliance with pretransaction loan covenants? Is the firm's credit rating in jeopardy? If the answer to these questions is yes, it may be impractical to finance the deal under the proposed capital structure.

One method for determining an appropriate financing or postclosing capital structure is to establish a target credit rating for Newco.³¹ Firms often desire at least an investment grade rating (for firms exhibiting a relatively low risk of default) to limit an increase in borrowing costs. Achieving a specific credit rating requires the firm to achieve certain credit ratios, measured as debt-to-total capital and interest coverage ratios. The magnitude of these ratios will be affected by the size of the firm and the industry in which it competes. Larger firms are expected to be better able to repay their debts in liquidation due to their greater asset value. Firms with stable cash flows are considered less risky than those whose cash flows are cyclical and therefore less predictable. For example, a large firm (market capitalization greater than \$5 billion) would have to achieve an interest coverage ratio of at least 2.5 (i.e., \$2.5 in earnings before interest, taxes, depreciation, and amortization per dollar of interest expense) to achieve the minimum investment grade rating of BBB. To achieve the highest rating of AAA, the interest coverage ratio would have to be at least 8.5. For firms with market caps of less than \$5 billion, a BBB rating would require an interest coverage ratio of at least 4.³²

Step 4(c): Determine Impact of Deal on Newco's EPS

Newco's EPS will be impacted by Acquirer's and Target's projected earnings plus the contribution to future earnings from net synergy. EPS will also be affected by the number of Acquirer shares exchanged for each Target share plus any Acquirer shares issued to raise cash to finance the cash portion of the purchase price. In addition to credit ratios, [Table 14.11](#) also displays Newco's projected EPS and how this compares to what Acquirer would have earned per share had it not completed the deal. Despite the issuance of a large number of Acquirer shares to complete the deal, Newco's EPS and cash flow per share are sharply higher following completion of the deal than they would have been had the transaction not been undertaken.

³¹Credit ratings represent a presumed independent assessment of the likelihood that a firm will repay its debt on a timely basis. The major credit rating agencies include Standard & Poor's, Moody's, and Fitch IBCA. Long-term credit ratings are denoted within a range as follows: from a triple A (AAA), the highest credit quality, to C or D (depending on the agency issuing the rating) as the lowest rating. Anything above a Baa for Moody's and BBB for S&P is considered investment grade (i.e., exhibiting a relatively low risk or probability of default).

³²New York University Stern School: http://pages.stern.nyu.edu/~adamodar/New_Home_Page/datafo/e/ratoomgs.htm.

TABLE 14.11 Transaction Summary Worksheet Credit Ratios and EPS Impact: Stock Purchase

Earnings per Share			Cash EPS			Accretion / (Dilution)		
Acquirer	Newco		Acquirer	Newco		EPS	Cash EPS	
2016P	\$ 0.52	\$ (0.47)	2016P	\$ 4.26	\$ 7.08	2013P	(191.6%)	66.1%
2017P	\$ 0.43	\$ 0.68	2017P	\$ 3.63	\$ 4.77	2017P	57.1%	31.4%
2018P	\$ 0.32	\$ 0.98	2018P	\$ 3.66	\$ 5.23	2018P	204.7%	42.8%
2019P	\$ 0.19	\$ 1.03	2019P	\$ 3.67	\$ 5.48	2019P	447.3%	49.3%
2020P	\$ 0.03	\$ 1.05	2020P	\$ 3.66	\$ 5.68	2020P	4,092.9%	55.1%

Valuation	Present Value \$'s	Total Debt to Total Capital			Interest Coverage (EBITDA to Interest Expense)		
		Industry Average		Newco	Industry Average		Newco
Target	\$ 16,570.9	2016P	37.8	29.5%	2016P	3.8	3.9x
Acquirer	33,454.4	2017P	37.8	27.1%	2017P	3.8	4.6x
Newco	57,412.8	2018P	37.8	24.6%	2018P	3.8	5.6x
Synergies	7,387.5	2019P	37.8	21.9%	2019P	3.8	6.4x
Net Present Value	8,828.7	2020P	37.8	19.2%	2020P	3.8	7.5x

Acquirers often adjust or normalize earnings per share during the first full year in which they operate Target for that portion of transaction-related expenses that cannot be amortized and for integration expenditures. Consistent with GAAP, such expenses would be deducted from consolidated earnings before determining EPS and reporting such figures to the SEC. However, so-called *adjusted EPS* is calculated by adding to GAAP-based EPS transaction and integration expenses per share to show what the consolidated performance would be without these nonrecurring expenses.

To calculate Newco's postclosing EPS, it is necessary to estimate the number of new Acquirer shares to be issued to complete the deal. The exchange of Acquirer's shares for Target's shares requires the calculation of the appropriate SER. The SER can be negotiated as a fixed number of shares of Acquirer's stock to be exchanged for each share of Target's stock. Alternatively, SER can be defined in terms of the dollar value of the negotiated offer price per share of Target stock (P_{OP}) to the dollar value of Acquirer's share price (P_A). The SER is calculated by the following equation:

$$SER = \frac{P_{OP}}{P_A}$$

The SER can be less than, equal to, or greater than 1, depending on the value of Acquirer's shares relative to the offer price on the date set during the negotiation for valuing the transaction. [Exhibit 14.5](#) illustrates how SERs can be used to estimate the number of Acquirer shares that must be issued in a share for share exchange and the resulting ownership distribution in the combined firms between Acquirer and former Target shareholders.

The number of new Acquirer shares that must be issued to complete a deal also is affected by such derivative securities as options issued to Target's employees and warrants, as well as convertible securities. Such securities derive all or most of their value from the firm's common stock into which they may be converted. On conversion, these securities result in additional

EXHIBIT 14.5 APPLYING SHARE-EXCHANGE RATIOS

Assume the following information:

Offer price per share = \$82

Pretransaction Acquirer share price = \$77.12

Pretransaction Acquirer shares outstanding = 358.1 million

Pretransaction Target shares outstanding = 176.8 million

Target shares outstanding: 174.5 million + 2.3 million (due to options exercised) = 176.8

What is the number of Acquirer shares exchanged for each Target share, the number of new Acquirer shares issued, and total shares outstanding of the combined firms (i.e., Newco)?

Solution:

Share-exchange ratio: $\$82 / \$77.12 = 1.0633$ (i.e., 1.0633 Acquirer shares exchanged for each Target share)

Total new acquirer shares issued:

New acquirer shares issued to Target shareholders: $1.0633 \times 176.8 \text{ million} = 188.0$

Total Newco shares outstanding: (Hint: Target shares are canceled) $358.1 + 188.0 = 546.1 \text{ million}$

common shares that must be purchased by a buyer wishing to avoid minority shareholders following a takeover. Such securities are commonly assumed to have been converted in calculating *fully diluted shares outstanding*, that is, the number of Target's "basic" shares outstanding (i.e., pretransaction shares outstanding) plus the number of shares represented by the firm's "in-the-money" options, warrants, and convertible debt and preferred securities. Basic shares are found on the cover of a firm's most recent 10Q or 10K submission to the SEC. Options and convertible securities information can be found in the firm's most recent 10K.

Granted to employees, *stock options* represent noncash compensation and offer the holder the right to buy (call) shares of the firm's common equity at a predetermined "exercise" or "strike" price. Such options can be exercised once they are vested. Option holders are said to be vested once the required holding or "vesting" period expires and can be converted into shares of the firm's common equity. An option is considered to be "in the money" whenever the firm's common share price exceeds the option's exercise price; otherwise, they are described as "out of the money." Warrants are securities often issued along with debt and entitle holders of the debt to buy the firm's common shares at a preset price during a given time period. It is common to assume that only "in-the-money" options and warrants will be converted as a result of a takeover. However, all options and warrants can be exercised, regardless of their vesting status (i.e., vested or not vested) and exercise price, in the event of a hostile takeover if these securities include change of control provisions.³³

³³Options not currently vested may become fully vested on a change in control, thereby increasing the number of options that could be converted to common shares. Such options should be added to the number of "in-the-money" options in calculating the number of fully diluted shares outstanding.

TABLE 14.12 Dilutive Impact of Target Options, Warrants, and Convertible Securities

Target Options Schedule					
Potential Options (Millions of Shares)	Strike Price	In the Money	Include	Proceeds	
4.045	\$37.46	Yes	4.045	\$151.53	
-	-	NA	-	-	
-	-	NA	-	-	
-	-	NA	-	-	
-	-	NA	-	-	
-	-	NA	-	-	
4.045			4.045	\$151.53	
Weighted Average Exercise Price				37.46	
Value of Options				180.16	
New Shares Outstanding				2.1971	

Target Convertible Preferred Schedule (\$Millions)					
Balance	Par Value	CV Ratio	CV Price	Convert	Shares
\$ 3.40	100	1.75	\$57.14	Yes	0.0595
0	100	0	0	NA	-
0	100	0	0	NA	-
0	100	0	0	NA	-
0	100	0	0	NA	-
0	100	0	0	NA	-
0	100	0	0	NA	-
\$ 3.40			New Shares Outstanding		.0595

Target Convertible Debt Schedule (\$Millions)					
Principal	Par Value	CV Ratio	CV Price	Convert	Shares
\$.44	\$1,000	20.00	\$50	Yes	.0088
0	1000	0	0	NA	-
0	1000	0	0	NA	-
0	1000	0	0	NA	-
0	1000	0	0	NA	-
0	1000	0	0	NA	-
\$.44			New Shares Outstanding		.0088

Notes: In-the-Money Options & Warrants
Current Target Share Price = Acquirer Offer Price = \$82
Value of Options = $(\$82 - \$37.46) \times 4.045 = \$180.16$
New Target Shares = $\$180.16 / \$82 = 2.1971$

Notes: Target Convertible Debt
Conversion ratio (CV) = number of target common shares when debt converted at par value = 20.00
CV Price = Par Value / CV Ratio = $\$1000 / 20 = \$50$
New Target Shares = $(\$.44 / \$1000) \times 20 = .0088$

Notes: Target Convertible Preferred
Conversion ratio (CV) = number of target common shares when converted at par value = 1.75
CV Price = $\$100 / 1.75 = \$57.14$
New Target Shares = $(\$3.40 / \$100) \times 1.75 = .0595$

The *treasury method* assumes all in-the-money options and warrants, since they are issued at different times and prices, are exercised at their weighted average exercise price³⁴ and option proceeds are assumed used to repurchase outstanding Target shares at the company's current share price. Since the exercise price is less than the current price of target shares (which has risen to approximately the level of the offer price), the dollar proceeds received by the firm when holders exercise their options and warrants enable the firm to repurchase fewer shares than had been exercised. Therefore, the number of shares outstanding will increase by the difference between the number of options exercised and those repurchased.³⁵

In Table 14.12, 4.045 options, whose weighted average exercise price is \$37.46, are assumed to be converted as they are well below Target's current share price (i.e., Acquirer's offer price of \$82 per target share). The net increase in the value of shares outstanding resulting from the exercise of options equals the dollar value of such shares valued at the firm's current share price less the value of option proceeds expressed at the weighted average exercise price of \$180.16 million [i.e., $(\$82 - \$37.46) \times 4.045$]. This figure represents the value of shares the firm is unable

³⁴The weights are the number of options issued at each exercise price as a percent of total options issued.

³⁵The treasury stock method is based on the notion that when employees exercise options, the firm has to issue the appropriate number of new shares but also receives the exercise price of the options in cash. Implicitly, the firm can use the cash to offset the cost of issuing new shares. Consequently, the dilutive effect of exercising an option is not one full share but rather a fraction of a share equal to what the firm does not receive in cash divided by the share price.

to repurchase with the proceeds received from exercised options. Therefore, the net increase in shares outstanding resulting from the exercising of options equals 2.1971 (i.e., $\$180.16/\$82$).³⁶

The same table also illustrates how other types of convertible securities must be considered when calculating the number of target shares to be acquired. If convertible securities are present, it is necessary to add to Target's basic shares outstanding the number of new shares issued following the conversion of such securities. Convertible securities commonly include preferred stock and debt. Information on the number of options outstanding, vesting periods,³⁷ and their associated exercise prices, as well as convertible securities, generally is available in the footnotes to Target's financial statements. It is reasonable to assume that such securities will be converted to common equity when the conversion price is less than the offer price for each share.

Convertible preferred stock can be exchanged for common stock at a specific price at the discretion of the shareholder. The value of the common stock for which the preferred stock is exchanged is called the conversion price. If the preferred stock is convertible into 1.75 common shares and is issued at a par value of \$100, the price at which it can be converted (i.e., its conversion price) is \$57.14 (i.e., $\$100/1.75$). That is, the preferred shareholder would receive 1.75 shares of common stock if the preferred shareholder chooses to convert when the common share price exceeds \$57.14. Similarly, *convertible debt* can be converted into a specific number of common shares and is normally denominated in units of \$1000. If when issued buyers of such debt were given the right to convert each \$1000 of debt they held into 20 common shares, the implied conversion price would be \$50 (i.e., $\$1000/20$).

Table 14.12 also illustrates the additional common shares created due to the conversion of in-the-money options and warrants as well as convertible preferred stock and debt. Following conversion, the total number of new shares into common shares that must be added to the number of basic target shares is 2.2654 million shares (i.e., $2.1971 + 0.0088 + 0.0595$). This will add \$185.75 million (i.e., $2.2653 \times \$82$) to the purchase price for 100% of Target's shares.

Step 4(d): Determine if the Deal Will Allow Newco to Meet or Exceed Required Returns

Newco's minimum required financial return is its WACC. Standard capital budgeting theory tells us that a firm will meet or exceed its cost of capital as long as the NPV of a discrete investment is greater than or equal to zero. Acquirer's investment in Target is not only the equity consideration (EQC), but also any transaction expenses (TE) associated with closing the deal. Equity consideration refers to what Acquirer pays for Target's equity. Therefore, the challenge for Acquirer is to create sufficient value by combining the two firms such that the following is true:

$$(PV_{\text{Target}} + PV_{\text{NetSynergy}}) - (EQC + TE) \geq 0 \quad (14.1)$$

where PV_{Target} and $PV_{\text{NetSynergy}}$ are the present values of Target as a stand-alone business and the net synergy resulting from combining Target and Acquirer, respectively.

³⁶The net increase in the number of shares outstanding can be summarized as follows: $[(\$82 \times 4.045) - (\$37.46 \times 4.045)]/\$82 = (\$82 - \$37.46) \times 4.045/\$82 = 2.1971$.

³⁷A firm's basic shares outstanding commonly are found on the first page of the firm's 10K or 10Q, or sometimes in proxy statements. Information on options, warrants, and convertible securities usually is found in the firm's most recent 10K.

The valuation section of Acquirer Transaction Summary Worksheet (Table 14.3) indicates that about \$7.4 billion in incremental value or net synergy is created by Acquirer's takeover of Target. This implies that the financial return on the purchase of Target is well in excess of Acquirer's WACC or minimum required rate of return on assets.

Depending on size and deal complexity, as well as how they are financed, transaction expenses often approximate 3%–5% of the purchase price, with this percentage generally decreasing for larger deals. To estimate such expenses, it is necessary to distinguish between financing-related and nonfinancing-related expenses. Financing-related expenses for M&As can equal 1%–2% of the dollar value of bank debt and include fees for arranging the loan and for establishing a line of credit. Fees for underwriting nonbank debt can average 2%–3% of the value of the debt. Nonfinancing-related fees often represent as much as 2% of the purchase price and include investment banking, legal, accounting, and other consulting fees. For accounting purposes, nonfinancing-related expenses are expensed in the year in which the deal closes, while those related to deal financing are capitalized on the balance sheet and amortized over the life of the loan.

M&A MODELS: ASSET PURCHASES

As with a stock purchase model, asset purchases begin with the estimation of Target's enterprise value. Viewed in this context as total Target assets (TA), the enterprise value is then adjusted by subtracting Target assets excluded from the deal (A_{excl})³⁸ and Target liabilities included in the deal (L_{incl}), that is, assumed by the buyer.³⁹ The end result is referred to as *net acquired assets*.⁴⁰

$$\text{Net Acquired Assets} = \text{TA} - A_{\text{excl}} - L_{\text{incl}} = A_{\text{incl}} - L_{\text{incl}} \quad (14.2)$$

A_{incl} equals Target assets included in the deal (i.e., assumed by the buyer). The purchase price is what Acquirer pays for net acquired assets and is often expressed as a multiple of net book assets (i.e., book assets less book liabilities). This multiple should be compared to recent comparable deals to determine its reasonableness. The purchase price should lie between the minimum (i.e., after-tax liquidation value of the assets less liabilities) and the maximum (i.e., minimum price plus net synergy) price.

It is common for buyers to purchase selected assets and to assume responsibility for short-term seller liabilities incurred during the operation of the acquired assets. These include current liabilities such as payables and such items as accrued vacation, employee benefits, bonuses, and commissions to ensure a smoother transition for those Target employees transferring to Acquirer. Acquirer may also assume responsibility for other liabilities such as product warranty claims that have not been satisfied to ensure that they are paid in order to retain customer loyalty.

³⁸Excluded assets are those the Target chooses to retain or the Acquirer does not want.

³⁹Recall that enterprise value can be viewed from either the asset side (total assets) or the liability side (total liabilities plus equity) of the balance sheet. In the context of an asset purchase, enterprise value equals total Target assets.

⁴⁰ $\text{TA} = A_{\text{excl}} + A_{\text{incl}} = L_{\text{excl}} + L_{\text{incl}} + \text{EQ}$ and $A_{\text{incl}} - L_{\text{incl}} = L_{\text{excl}} - A_{\text{excl}} + \text{EQ}$, where EQ, Target shareholders' equity; and $A_{\text{incl}} - L_{\text{incl}}$, Net acquired assets by Acquirer.

TABLE 14.13 Acquirer's Income Statement: Asset Purchase

	Acquirer predeal	Adjustments	Acquirer postdeal
Sales (\$)	1750.0	200.0	1950.0
Cost of sales	1488.0	190.0	1678.0
Integration expense		15.0	15.0
EBIT	262.0		257.0
Other income	0.0	10.0	10.0
Net interest expense	30.0	7.0	37.0
EBT	232.0		230.0
Tax at 0.40	92.8	(0.8)	92.0
Net income (\$)	139.2		138.0

Assume that Acquirer pays \$90 million to purchase \$75 million in net acquired assets, consisting of \$100 million of Target net property, plant, and equipment (i.e., Net PP&E) less assumed Target current liabilities of \$25 million and that the book values of Target assets and liabilities are equal to their fair market value.⁴¹ The implied purchase price multiple is 1.2 times net acquired assets (i.e., \$90 million/\$75 million), a 20% premium.

Sales, cost of sales, and operating income associated with the net acquired assets, as well as any additional interest expense incurred to finance the purchase and expenses incurred to integrate the acquired assets, are added to Acquirer's income statement (Table 14.13). For this illustration, the Adjustments column shows the addition of Target's sales, cost of sales, additional interest expense, and taxes to Acquirer's income statement. Incremental revenue generated by selling Acquirer products to Target's customers is assumed to be \$200 million. Target's cost of sales before the deal was \$195 million, which is reduced by anticipated cost-related synergy of \$5 million. Expenditures related to integrating Target assets are \$15 million. A one-time \$10 million noncash gain is added to Acquirer's income statement, because it is buying Target's assets at a discount from their book value (i.e., paying \$90 million for \$100 million in Net PP&E). Acquirer is able to negotiate the favorable purchase of Net PP&E because of its willingness to assume certain Target liabilities. Incremental interest expense related to financing the deal is \$7 million. Taxes paid for purposes of illustration are calculated at the firm's marginal tax rate of 40%. The addition of the assets is expected to increase Acquirer's net income in subsequent years due to anticipated cost savings as a result of productivity improvements and incremental revenue from cross-selling former Target products to Acquirer's customers.

⁴¹If the net acquired assets are revalued up to their fair market value, any additional depreciation expense would impact both the income statement and in turn the cash flow statement. The simplifying assumption that the book value of net acquired assets equals its fair market value implies no incremental depreciation related to this asset purchase. Efforts to assume the magnitude of potential asset write-ups (write-downs) prior to completing a full due diligence on Target is highly questionable, potentially resulting in a serious distortion of projected financial performance.

TABLE 14.14 Acquirer's Balance Sheet: Asset Purchase

	Actual	Transaction	Pro Forma
	2015	Adjustments	2016
Cash (\$)	125.00	(20.00)	105.00
Current assets (excluding cash)	550.00		550.00
Net property, plant, and equipment	1250.00	100.00	1350.00
Goodwill		15.00	15.00
Other long-term assets	450.00		450.00
Total assets (\$)	2375.00		2470.00
Current liabilities	550.00	25.00	575.00
Long-term debt	450.00	70.00	520.00
Other long-term liabilities	375.00		375.00
Total liabilities	1375.00		1470.00
Common stock	500.00		500.00
Preferred equity	50.00		50.00
Retained earnings	400.00		400.00
Other adjustments	50.00		50.00
Total shareholders' equity	1000.00		1000.00
Total liabilities and equity (\$)	2375.00		2470.00

In consolidation, the dollar value of net acquired assets is recorded on Acquirer's balance sheet by adding the purchased assets to Acquirer's assets and assumed liabilities to Acquirer's liabilities. In addition, entries are made to the liability/equity side of Acquirer's balance sheet to show how the purchase is to be financed. Table 14.14 illustrates Acquirer's balance sheet adjustments made to reflect the purchase of specific Target assets and the assumption of certain Target liabilities. Goodwill (i.e., the difference between the purchase price and the fair market value of net acquired assets) equals \$15 million (i.e., \$90 million less \$75 million). The purchase is financed by using \$20 million in Acquirer pretransaction cash balances and by borrowing \$70 million in long-term debt at a 10% interest rate. Consequently, the entries in the Adjustments column include a \$20-million reduction in cash and an increase of \$100 million in Net PP&E, \$15 million in goodwill, \$25 million for assumed current liabilities, and \$70 million in new debt.

Table 14.15 shows the cash flow statement for the purchase of the previously described net acquired assets. Ending cash balances in 2015 are reduced by \$20 million to partially finance the purchase of the \$100 million in Target Net PP&E. Acquirer net income of (\$1.2) million represents the difference between predeal net income of \$139.2 and postdeal net income of \$138.0 million. Negative net income during the first full year of operation including the net acquired assets resulted from integration expenses and incremental interest expense exceeding the positive contribution of operating income and the one-time gain. The one-time gain of \$10 million due to the purchase of Net PP&E at a discount is eliminated in the calculation of cash flow, because it does not involve the actual receipt of cash. Current liabilities increase cash flow from operations by the amount of assumed Target liabilities. Cash flow

TABLE 14.15 Statement of Cash Flows: Asset Purchase

2015 ending cash (\$)	125.00
Cash used to finance PP&E purchase	(20.00)
2016 beginning cash balance (\$)	105.00
<u>Cash from operations</u>	
Net income	(1.20)
Depreciation	0.00
(Gain)/loss	(10.00)
Current assets	0.00
Current liabilities	25.00
Net cash flow from operations	13.80
<u>Cash from investing</u>	
PP&E acquisition	(90.00)
Net cash flow from investing	(90.00)
<u>Cash from financing</u>	
Increase in debt	70.00
Net cash flow from financing	70.00
Net cash flow	(6.20)
Ending cash balance (\$)	98.80

PP&E, Property, plant, and equipment.

from investing activities decreases by the amount paid for Net PP&E, while cash flow from financing activities increases by the amount of new borrowing.

QUANTIFYING SYNERGY

One of the more commonly given reasons why acquirers sometimes overpay is a tendency to overestimate synergy.⁴² Consequently, substantial effort should be given to estimate accurately the incremental value that can be realized by combining firms. Broadly speaking, there are two general categories of synergy: revenue-related and cost savings-related synergy. Revenue-related synergy arises from sales and marketing opportunities that can be realized as a result of combining of the target and acquiring firms and improved marketing efficiency as measured by the increase in revenue per dollar of sales and marketing expense.⁴³ Similarly, cost savings-related synergy refers to the opportunities for the elimination of duplicate operations, processes, and personnel, as well as productivity improvements, resulting from combining firms.

⁴²Rodregues and Stegemoller (2014).

⁴³Rahman et al. (2016).

Revenue-Related Synergy

The customer base for the target and acquiring firms can be segmented into three categories: (1) those served only by the target, (2) those served only by the acquirer, and (3) those served by both firms. The first two segments may represent revenue enhancement opportunities by enabling the target or the acquirer to sell its current products into the other's current customer base. The third segment could represent a net increase or decrease in revenue for the new firm. Incremental revenue may result from new products that could be offered only as a result of exploiting the capabilities of the target and acquiring firms in combination. However, revenue may be lost as some customers choose to have more than one source of supply. The analysis of incremental revenue opportunities is simplified by focusing on the largest customers, because it often is true that 80% of a company's revenues come from about 20% of its customers. Incremental revenue can be estimated by having the sales force provide estimates of the potential additional revenue that could be achieved from having access to new customers and offering current customers new products. In general, such revenue can be realized over time as the target's and acquirer's sales forces must be trained to sell each other's products.

Cost Savings–Related Synergies

The cost of sales for the combined firms may be adjusted for cost savings resulting from such factors as the elimination of redundant jobs. Direct labor refers to those employees directly involved in the production of goods and services. Indirect labor refers to supervisory overhead and administrative support staff. A distinction needs to be made because of likely differences in average compensation for direct and indirect labor. SG&A may be reduced by the elimination of overlapping jobs and the closure of unneeded sales offices resulting in lease expense savings. However, leased space may be eliminated prior to the lease expiration date by paying off the balance of what is owed. The amount paid for this purpose is called the lease buyout expense. For an illustration of how to quantify revenue-related synergy; gross margin improvement; and sales, general, and administrative synergy, see [Table 14.16](#). The projected data for incremental sales, gross margin improvement, and SG&A savings serve as inputs into the synergy section of the Summary Worksheet of the model. Note that headcount reduction figures shown in 2018 are held constant in subsequent years. This does not mean that the same number of staff is being terminated in those years but rather that the savings continue indefinitely or until these employees are replaced.

SOME THINGS TO REMEMBER

M&A modeling facilitates deal valuation, structuring, and financing. Acquirers may use such models to estimate the approximate value of Target before making a formal bid and to determine the appropriate capital structure to finance the deal. Targets can use models to estimate the value of the combined businesses and their contribution to the creation of synergy. Finally, both acquirers and targets often use models to understand the implications of various proposals and counterproposals that are likely to arise before an agreement is reached.

TABLE 14.16 Quantifying Anticipated Synergy

	2016 (\$ millions)	2017 (\$ millions)	2018 (\$ millions)	2019 (\$ millions)	2020 (\$ millions)
Revenue-Related Synergy					
New customers for Acquirer products	15,000,000	30,000,000	50,000,000	50,000,000	50,000,000
New customers for Target products	20,000,000	25,000,000	40,000,000	40,000,000	40,000,000
New product revenue	0	25,000,000	60,000,000	60,000,000	60,000,000
Loss from customer attrition	−10,000,000	−5,000,000	0	0	0
Total incremental sales	25,000,000	75,000,000	150,000,000	150,000,000	150,000,000
Gross Margin Improvement					
Cost of sales					
Headcount reduction—direct labor	40	77	109	109	109
Average salary and benefits	69,000	69,515	69,910	69,910	69,910
Direct labor savings	2,760,000	5,352,655	7,620,190	7,620,190	7,620,190
Headcount reduction—indirect labor	28	57	90	90	90
Average salary and benefits	80,000	81,535	82,000	82,000	82,000
Indirect labor savings	2,240,000	4,647,495	7,380,000	7,380,000	7,380,000
Total direct and indirect labor savings	5,000,000	10,000,150	15,000,190	15,000,190	15,000,190
Sales, General, and Administrative Savings					
Headcount reduction—direct sales	16	21	38	38	38
Average salary and benefits	90,000	91,500	92,000	92,000	92,000
Selling expense savings	1,440,000	1,921,500	3,496,000	3,496,000	3,496,000
Headcount reduction—administrative	20	36	52	52	52
Average salary and benefits	78,000	79,000	80,000	80,000	80,000
General and administrative savings	1,560,000	2,844,000	4,160,000	4,160,000	4,160,000
Total SG&A savings	3,000,000	4,765,500	7,656,000	7,656,000	7,656,000
Leased space savings (net of buyout)	0	234,500	344,000	344,000	344,000
Total SG&A savings	3,000,000	5,000,000	8,000,000	8,000,000	8,000,000

SG&A, Sales, general, and administrative expenses.

DISCUSSION QUESTIONS

- 14.1. Why should a target company be valued as a stand-alone business? Give examples of the types of adjustments that might have to be made if Target is part of a larger company.
- 14.2. Why should “in-the-money” options, warrants, and convertible preferred stock and debt be included in the calculation of the purchase price to be paid for Target?
- 14.3. What are value drivers? How can they be misused in M&A models?

- 14.4. Can the offer price ever exceed the maximum purchase price? If yes, why? If no, why not?
- 14.5. Why is it important to clearly state assumptions underlying a valuation?
- 14.6. Assume two firms have little geographic overlap in terms of sales and facilities. If they were to merge, how might this affect the potential for synergy?
- 14.7. Dow Chemical, a leading manufacturer of chemicals, in announcing that it had an agreement to acquire competitor Rohm and Haas, said it expected to broaden its current product offering by offering the higher-margin Rohm and Haas products. What would you identify as possible synergies between these two businesses? In what ways could the combination of these two firms erode combined cash flows?
- 14.8. Dow Chemical's acquisition of Rohm and Haas included a 74% premium over the firm's preannouncement share price. What is the possible process Dow employed in determining the stunning magnitude of this premium?
- 14.9. For most transactions, the full impact of net synergy will not be realized for many months. Why? What factors could account for the delay?
- 14.10. How does the presence of management options and convertible securities affect the calculation of the offer price for Target?

Answers to these Chapter Discussion Questions are available in the Online Instructor's Manual for instructors using this book (<https://textbooks.elsevier.com/web/Manuals.aspx?isbn=9780128016091>).

PRACTICE PROBLEMS AND ANSWERS

- 14.11 Acquiring Company is considering the acquisition of Target Company in a share-for-share transaction in which Target Company would receive \$50.00 for each share of its common stock. Acquiring Company does not expect any change in its P/E multiple after the merger.

	Acquiring Company	Target Company
Earnings available for common stock (\$)	150,000	30,000
Number of shares of common stock outstanding	60,000	20,000
Market price per share (\$)	60.00	40.00

Using the preceding information about these two firms and showing your work, calculate the following:

- Purchase price premium. *Answer: 25%.*
- SER. *Answer: 0.8333.*
- New shares issued by Acquiring Company. *Answer: 16,666.*
- Total shares outstanding of the combined companies. *Answer: 76,666.*
- Postmerger EPS of the combined companies. *Answer: \$2.35.*
- Premerger EPS of Acquiring Company. *Answer: \$2.50.*
- Postmerger share price. *Answer: \$56.40, compared with \$60.00 premerger.*

h. Postmerger ownership distribution. *Answer:* Target shareholders = 21.7% and Acquirer shareholders = 78.3%.

- 14.12** Acquiring Company is considering buying Target Company. Target Company is a small biotechnology firm that develops products licensed to the major pharmaceutical firms. Development costs are expected to generate negative cash flows during the first 2 years of the forecast period of \$(10) and (5) million, respectively. Licensing fees are expected to generate positive cash flows during years 3–5 of the forecast period of \$5, 10, and 15 million, respectively. Because of the emergence of competitive products, cash flow is expected to grow at a modest 5% annually after the fifth year. The discount rate for the first 5 years is estimated to be 20% and then drop to the industry average rate of 10% beyond the fifth year. Also, the present value of the estimated net synergy created by combining Acquiring and Target companies is \$30 million. Calculate the minimum and maximum purchase prices for Target Company. Show your work.

Answer: Minimum price: \$128.5 million; Maximum price: \$158.5 million.

- 14.13** Using the information given below, calculate fully diluted shares. Assume the firm uses proceeds received from the conversion of options to common shares to repurchase as many of these new shares as possible.

Calculating fully diluted shares outstanding

\$ million, except per share data, shares in millions

Current share price (\$)	30.00
Basic shares outstanding	200.00
Options that can be exercised	40.0
Weighted average exercise price (\$)	20.00

- a. 224.52
- b. 263.59
- c. 213.33
- d. 256.87
- e. 233.47

Answer: c.

- 14.14** What is the fully diluted offer price (equity value) for a tender offer made to acquire a target whose pretender shares are trading for \$1.50 per share? The tender offer includes a 30% premium to the target's pretender share price. The target has basic shares outstanding of 70 and 5 million options that may be converted into common shares at \$1.60 per share.

Answer: \$138.25 million.

- 14.15** Using the M&A Valuation & Deal Structuring Model on the website accompanying this text (see the website address in the section "Chapter Overview") and the data contained in the cells as a starting point, complete the following:
- a. What is the enterprise and equity value of Target on the Valuation Worksheet?
 - b. Increase the sales growth rate by 1 percentage point (i.e., to 6.5%) on the Target Assumptions Worksheet. What is the impact on the Target's enterprise and equity

values? (Hint: See Valuation Worksheet.) Undo change or close model but do not save results in order to restore the model's original data.

Answers:

- a. Before change to revenue growth assumption by 1 percentage point:
 - Target enterprise value: \$11,582.2
 - Target equity value: \$9796.8
- b. After change in revenue growth assumption by 1 percentage point:
 - Target enterprise value: \$12,356.3
 - Target equity value: \$10,570.9

14.16 Using the M&A Valuation & Deal Structuring Model accompanying this text (see the website address in the section "Chapter Overview") and the data contained in the cells as a starting point, complete the following:

- a. What is the enterprise and equity value of Target on the Valuation Worksheet?
- b. On the worksheet named Target Assumptions, increase COGS as a percent of sales by 1 percentage point (i.e., 0.43–0.44). What is the impact on the Target's enterprise and equity values? (Hint: See Valuation worksheet.) Undo change or close the model but do not save the results in order to restore the model's original data.

Answers:

- a. Before change to COGS ratio by 1 percentage point:
 - Target enterprise value: \$11,582.2
 - Target equity value: \$9796.8
- b. After change in COGS ratio by 1 percentage point:
 - Target enterprise value: \$11,104.8
 - Target equity value: \$9319.4

14.17 Using the M&A Valuation & Deal Structuring Model accompanying this text (see the website address in the section "Chapter Overview"):

- a. On the Valuation worksheet, note the enterprise and equity values for Newco.
- b. On the Summary worksheet under Incremental Sales Synergy, change incremental revenue to \$200 million in the first year, \$250 million in the second year, and \$350 in the third year. What is the impact on Newco's enterprise and equity values? (Hint: See Valuation worksheet.) Undo changes or close the model but do not save the results.

Answers:

- a. Before incremental sales growth:
 - Newco enterprise value: \$32,813.7
 - Newco equity value: \$20,970.8
- b. After change in incremental sales:
 - Newco enterprise value: \$33,766.5
 - Newco equity value: \$21,923.6

14.18 Using the M&A Valuation & Deal Structuring Model accompanying this text (see the website address in the section "Chapter Overview"):

- a. On the Transaction Summary Worksheet, under the heading Form of Payment, change the composition of the purchase price to 100% cash. Assume the purchase

price is partially financed by reducing Acquirer excess cash by \$1 billion and by raising \$4 billion by issuing new Acquirer equity. Under the Sources and Uses heading, how is the remainder of the purchase price financed?

- b. Change the composition of the purchase price to 100% equity. What is the impact on how the purchase price is financed? Close model but do not save the results.

Answers:

- a. Form of Payment = 100% cash. Senior debt is increased by \$10,129.8 million.
 b. Form of Payment = 100% equity. Senior debt shows a negative \$4365 million, which does not make sense. Set excess cash and new common shares issued to public equal to zero. Senior Debt automatically increases by \$635 million.

Solutions to these Practice Problems are available in the Online Instructor's Manual for instructors using this book (<https://textbooks.elsevier.com/web/Manuals.aspx?isbn=9780128016091>).

END OF CHAPTER CASE STUDY: THERMO FISHER ACQUIRES LIFE TECHNOLOGIES

Case Study Objectives: To Illustrate How Acquirers Utilize Financial Models to

- Evaluate the impact of a range of offer prices for the target firm, including what constitutes the “maximum price” an acquirer would logically pay for the target firm
- Determine which financing structures are consistent with maintaining or achieving a desired credit rating
- Investigate the implications of *different payment structures* (form and composition of the purchase price)
- Identify the impact of *changes in operating assumptions* such as different revenue growth rates or the amount and timing of synergy

Almost 9 months after reaching an agreement to combine their operations, the merger between Life Technologies Corporation (Life Tech) and Thermo Fisher Scientific Inc. (Thermo Fisher) was completed on January 14, 2014. Thermo Fisher is the largest provider by market value of analytical instruments, equipment, reagents and consumables, software, and services for scientific research, analysis, discovery, and diagnostics applications. Life Tech is the second largest by market value provider of similar products and services to the scientific research and genetics analysis communities. While the fanfare surrounding the closing echoed sentiments similar to those expressed when the deal was first announced, the hard work of integrating the two firms was just beginning. What led to this moment illustrates the power of financial models.

Life Tech had been evaluating strategic options for the firm since mid-2012, concluding that putting itself up for sale would be the best way to maximize shareholder value (see the Case Study at the end of Chapter 9 titled “Life Tech Undertakes a Strategic Review” for more detail). After entering into discussions with Thermo Fisher in late 2012, the two firms announced jointly on April 15, 2013, that they had reached an agreement to merge. Exuding the usual optimism accompanying

such pronouncements, Mark N. Casper, president and chief executive officer of Thermo Fisher, stated, “We are extremely excited about this transaction, because it creates the ultimate partner for our customers and significant value for our shareholders ... enhancing all three elements of our growth strategy: technological innovation, a unique customer value proposition, and expansion in emerging markets.” Expressing similar confidence, Greg T. Lucier, chairman and chief executive officer of Life Tech, noted, “This transaction brings together two companies intent on accelerating innovation for our customers and achieving greater success in a highly competitive global industry.”

This case study utilizes the publicly announced terms of the merger of Life Tech into a wholly owned subsidiary of Thermo Fisher, with Life Tech surviving. The terms were used to develop pro forma financial statements for the combined firms. These statements are viewed as a “base case.”⁴⁴

The financial model discussed in this chapter is used to show how changes in key deal terms and financing structures impacted the base case scenario. The discussion questions following the case address how the maximum offer price for Life Tech could be determined, what the impact of an all-debt or all-equity deal would have on the combined firms’ financial statements, and the implications of failing to achieve synergy targets. Such scenarios represent the limits of the range within which the appropriate capital structure could fall and could have been part of Thermo Fisher’s predeal evaluation. As announced by Thermo Fisher, the appropriate capital structure is that which maintains an investment grade credit rating following the merger. Thermo Fisher’s senior management could have tested various capital structures between the two extremes of all-debt and all-equity before reaching agreement on the form of payment with which they were most comfortable. Therefore, the form of payment and how the deal was financed were instrumental to the deal getting done.

According to the terms of the deal, Thermo Fisher acquired all of Life Tech’s common shares outstanding, including all vested and unvested outstanding stock options, at a price of \$76 per share in cash, with the Life Tech shares canceled at closing. The actual purchase price consisted of an equity consideration (i.e., what was paid for Life Tech’s shares) of \$13.6 billion plus the assumption of \$2.2 billion of Life Tech’s outstanding debt. The purchase price was funded by a combination of new debt, equity, and cash on Thermo Fisher’s balance sheet. Thermo Fisher executed a commitment letter, dated April 14, 2013, with JPMorgan Chase Bank, N.A., J.P. Morgan Securities LLC, and Barclays Bank PLC that provided a commitment for a \$12.5-billion 364-day unsecured bridge loan facility. The facility enabled the firm to pay for much of the purchase price before arranging permanent financing by issuing new debt and equity in late 2013.

In an effort to retain an investment grade credit rating⁴⁵ by limiting the amount of new borrowing,⁴⁶ Thermo Fisher issued new common equity and equity-linked securities such as convertible debt and convertible preferred totaling \$3.25 billion to finance about one-fourth of the \$13.6-billion equity consideration. The \$3.25 billion consisted of \$2.2 billion of common stock sold in connection with its public offering prior to closing, and up to a maximum of \$1.05 billion of additional equity to be issued at a later date in the form of convertible debt and preferred shares. Thermo Fisher financed the remaining \$10.35 billion of the purchase price with the proceeds of subsequent borrowings and \$1 billion in cash on its balance sheet.

Thermo Fisher and Life Tech compete in the medical laboratory and research industry. The average debt-to-total capital ratio for firms in this industry is 44.6%,⁴⁷ and the average interest coverage ratio is 4.0.⁴⁸ Thermo Fisher expects that available free cash flow will allow for a rapid reduction in

its debt. The firm expects to be below the industry average debt-to-total capital ratio by the end of the third full year following closing and about 12 percentage points below it within 5 years after closing. The firm's interest coverage ratio is expected to be equal to the industry average by the second year and well above it by the third year and beyond. These publicly stated goals established metrics shareholders and analysts could use to track the Thermo Fisher's progress in integrating Life Tech.

Consistent with management's commitment to only make deals that immediately increase earnings per share, Thermo Fisher expects the deal to increase adjusted earnings per share during the first full year of operation by as much as \$0.70–1.00 per share. Adjusted earnings per share exclude the impact on earnings of transaction-related expenses and expenses incurred in integrating the two businesses. Including these expenses in the calculation of EPS is expected to result in \$(0.16) per share during the first full year following closing, but excluding these expenses will result in \$0.99 per share.⁴⁹

Realizing synergy on a timely basis would be critical for Thermo Fisher to realize its publicly announced goal that the deal would be accretive on an adjusted earnings per share basis at the end of the first full year of operation. Synergies anticipated by Thermo Fisher include the realization of additional gross margin of \$75 million and the realization of \$20 million in SG&A savings in 2014, the first full year following closing. Gross margin improvement and SG&A savings are projected to grow to \$225 and 100 million, respectively, by 2016, and to be sustained at these levels indefinitely. Most of the cost savings are expected to come from combining global infrastructure operations. Revenue-related synergy is expected to reach \$300 million annually from cross-selling each firm's products into the other's customer base by the third year, up from \$25 million in the first year.

Mark Fisher, CEO of Thermo Fisher, knew that the key to unlocking value for shareholders once the deal closed was realizing the anticipated synergy on a timely basis. However, rationalizing facilities by reducing redundant staff, improving gross margins, and increasing revenue was fraught with risk. Eliminating staff had to be done in such a way as not to demoralize employees retained by the firm and increasing revenue could be achieved only if the loss of existing customers due to the attrition that often follows M&As could be kept to a minimum. Having been through postmerger integrations before, he knew first-hand the challenges accompanying these types of activities. At the time of closing, many questions remained. What if synergy were not realized as quickly and in the amount expected? What if expenses and capital outlays would be required in excess of what had been anticipated? How patient would shareholders be if the projected impact on earnings per share, a performance metric widely followed by investors and Wall Street Analysts alike, was not realized? Only time would tell.

Discussion Questions

Answer questions 1–4 using as the base case the firm valuation and deal structure data in the Microsoft Excel model available on the companion site to this book entitled *Thermo Fisher Acquires Life Technologies Financial Model*. Please see the section "Chapter Overview" for the site's internet address. Assume that the base case assumptions were those used by Thermo Fisher in its merger with Life Tech. The base case reflects the input data described in this case study. To answer each question you must change selected input data in the base case, which will change significantly the base case projections. After answering a specific question, either undo the changes made or close

the model and do not save the model results. This will cause the model to revert back to the base case. In this way, it will be possible to analyze each question in terms of how it is different from the base case.

1. Thermo Fisher paid \$76 per share for each outstanding share of Life Tech. What is the maximum offer price Thermo Fisher could have made without ceding all of the synergy value to Life Tech shareholders? (Hint: Using the Transaction Summary Worksheet, increase the offer price until the NPV in the section entitled Valuation turns negative.) Why does the offer price at which NPV turns negative represent the maximum offer price for Life Tech? Undo changes to the model before answering subsequent questions.
2. Thermo Fisher designed a capital structure for financing the deal that would retain its investment grade credit rating. To do so, it targeted a debt-to-total capital and interest coverage ratio consistent with the industry average for these credit ratios. What is the potential impact on Thermo Fisher's ability to retain an investment grade credit rating if it had financed the takeover using 100% senior debt? Explain your answer. (Hint: In the Sources and Uses section of the Acquirer Transaction Summary Worksheet, set excess cash, new common shares issued, and convertible preferred shares to zero. Senior debt will automatically increase to 100% of the equity consideration plus transaction expenses.⁵⁰) Undo changes to the model before answering subsequent questions.
3. Assuming Thermo Fisher would have been able to purchase the firm in a share for share exchange, what would have happened to the EPS in the first year? Explain your answer. (Hint: In the form of payment section of the Acquirer Transaction Summary Worksheet, set the percentage of the payment denoted by "% Stock" to 100%. In the Sources and Uses Section, set excess cash, new common shares issued, and convertible preferred shares to zero.) Undo changes made to the model before answering the remaining question.
4. Mark Fisher, CEO of Thermo Fisher, asked rhetorically what if synergy were not realized as quickly and in the amount expected. How patient would shareholders be if the projected impact on earnings per share was not realized? Assume that the integration effort is far more challenging than anticipated and that only one-fourth of the expected SG&A savings, margin improvement, and revenue synergy are realized. Furthermore, assume that actual integration expenses (shown on Newco's Assumptions Worksheet) due to the unanticipated need to upgrade and colocate research and development facilities and to transfer hundreds of staff are \$150 million in 2014, \$150 million in 2015, \$100 million in 2016, and \$50 million in 2017. The model output resulting from these assumption changes is called the Impaired Integration Case.

What is the impact on Thermo Fisher's earning per share (including Life Tech) and the NPV of the combined firms? Compare the difference between the model "Base Case" and the model output from the "Impaired Integration Case" resulting from making the changes indicated in this question. [Hints: In the Synergy Section of the Acquirer (Thermo Fisher) Worksheet, reduce the synergy inputs for each year between 2014 and 2016 by 75% and allow them to remain at those levels through 2018. On the Newco Assumptions Worksheet, change the integration expense figures to reflect the new numbers for 2014, 2015, 2016, and 2017.]

Answers to these questions are found in the Online Instructor's Manual Available to instructors using this book (<https://textbooks.elsevier.com/web/Manuals.aspx?isbn=9780128016091>).

⁴⁴While this case study investigates the role of financial modeling in business combinations, the case study at the end of Chapter 11 entitled "Life Technologies Corporation Undertakes a Strategic Review" discusses the application of financial modeling to assess the impact of alternative strategic options for a single firm, Life Tech.

⁴⁵According to Bonds Online, Thermo Fisher Scientific has a BBB (the low end of the investment grade range) currently. See http://www.bondsonline.com/Todays_Market/Credit_Rating_News_.php?DA=view&RID=30687.

⁴⁶Investment grade ratings indicate that a municipal or corporate bond has a relatively low risk of default. Bond rating firms, such as Standard & Poor's, use different designations consisting of upper- and lower-case letters "A" and "B" to identify a bond's credit quality rating. "AAA" and "AA" (high credit quality) and "A" and "BBB" (medium credit quality) are considered investment grade. Credit ratings for bonds below these designations ("BB," "B," "CCC," etc.) are considered low credit quality, and are commonly referred to as "junk bonds."

⁴⁷Yahoo Finance Industry Center.

⁴⁸pages.stern.nyu.edu/~adamodar/pc/datasets/covratio.xls.

⁴⁹Per the Summary Transaction Worksheet of the *Thermo Fisher Buys Life Technologies Financial Model* on the website accompanying this textbook, transaction-related expenses impacting first-year earnings consist of total expenses less that portion that is amortizable divided by total shares outstanding $\{[\$494 \times (1 - 0.2)]/386.6\}$ and equal \$1.02 per share. Integration expenses per share equal \$50 million (see Newco Assumptions Worksheet) divided by total shares outstanding or \$0.13 per share (i.e., $\$50/386.6$). Note that \$494 million, \$50 million, 386.6 million, and 0.2% are, respectively, transaction-related expenses, integration expenses, total Thermo Fisher shares outstanding, and that portion of transaction expenses that is amortized. Therefore, adjusted earnings per share equal the preadjustment loss plus transaction expense per share plus integration expense per share [i.e., $\$(0.16) + \$1.02 + \$0.13 = \$0.99$].

⁵⁰Note that other combinations of financing could have been used. For example, transaction expenses could have been paid out of excess cash balances. If this had been done, there would have been no increase in senior debt outstanding.

ADDITIONAL CASE STUDY RECOMMENDATIONS (SEARCH HARVARD BUSINESS SCHOOL PUBLISHING SITE BY NAME OF CASE: `hbsp.harvard.edu`)

Finance Simulation: M&A in Wine Country,
Timothy A. Luerhman, W. Carl Kester,
Revision Date: June 23, 2011, Harvard
Business Publishing, Product Number:
329-HTM-ENG, hbsp.harvard.edu.
Subjects Covered: Mergers & Acquisitions,
Negotiation, Valuation, Value Creation.
Flinder Valves and Controls Inc., Michael J.
Schill, Publication Date: November 18, 2008,
Product Number: UV1062-PDF-ENG, hbsp.harvard.edu.

Subjects Covered: Negotiation Strategy,
Valuation, Share Exchange Ratio Calculation,
Tax Issues, Earnings Dilution, and Voting
Power.
The Toys "R" Us LBO, David P. Stowell,
Matthew Raino, Publication Date: January
1, 2007, Product Number: Kel168-PDF-ENG,
Source: Kellogg School of Business, hbsp.harvard.edu.
Subjects Covered: Model Simulation, LBOs,
Restructuring, Financing.

APPENDIX A: DEBT REPAYMENT SCHEDULE, CONVERTIBLE SECURITIES, INTEREST RATES, AND β

Debt Repayment Schedule

Principal repayment schedules are shown for the Acquirer's debt and Target's debt (assumed by the Acquirer) and any debt that is used to finance the deal in the Acquirer's and Target's 10Ks. In these documents under Notes to Consolidated Financial Statements, see the Note on Debt and Other Long-Term Obligations for the repayment terms associated with Acquirer and Target debt assumed by the Acquirer at the close. Debt incurred to finance the deal and related terms are required data input (see Summary worksheet) and the repayment schedule is calculated by the model.

The Note on Debt and Long-term Obligations describes the types of debt outstanding, maturity dates, and associated interest rates, and usually gives a 5-year projection of a total annual debt repayment schedule. Principal repayments beyond the fifth year are shown as an aggregate figure. Interest expense and principal usually can be estimated by using a weighted average of each type of debt (i.e., senior, subordinate, etc.) and applying the applicable amortization rate (i.e., principal repayment rate) for the largest amount of debt outstanding in each category.

Options, Warrants, and Convertible Securities

Under Notes to Consolidated Financial Statements, see the Note on Stock Options for the dollar value of outstanding options, exercise prices, and expiration dates. If the firm has convertible preferred, see the Note on Consolidated Shareholders' Equity to get the par value and amount issued. If convertible debt exists, see the Note on Debt and Other Obligations to determine the amount issued and the conversion price.

Betas

Historical β for public firms are available from a number of sources: Yahoo Finance, Google Finance, Value Line Research Center, Standard & Poor's Net Advantage, One Source, and Thomson One Banker. Go to the Yahoo.com/finance website and search in the "look up" block for the company in which you are interested. The firm's β is located below the day's closing price in the table of daily trading activity. Alternatively, go to google.com/finance and search for your company; the firm's β will be at the top of the page among the daily trading data.

Interest Rates

Information on Treasury bond rates and yield curve (i.e., interest rates on Treasury debt that varies in maturity from 1 month to 30 years) may be found at the US Department of Treasury Resource Center (<http://www.treasury.gov/resource-center/data-chart-center/interest-rates/Pages/TextView.aspx?data=yield>).

"Swap rates" arise as a result of an interest rate swap in which one party agrees to exchange a fixed interest payment stream they are paying for a variable or floating rate [usually based on the London Interbank Offered Rate (LIBOR)] another party is paying. Such deals

result from different perceptions about the future direction of interest rates. The “swap rate” is the fixed interest rate (calculated on the notational or estimated face value of the loan) that the party in an interest rate swap demands in exchange for the uncertainty of having to pay the short-term LIBOR (floating) rate over time. The market’s forecast of what LIBOR will be is reflected in the forward LIBOR curve.⁵¹ For 1-, 3-, 6-, 9-, and 12-month LIBOR rates, see <http://www.global-rates.com/interest-rates/libor/american-dollar/american-dollar.aspx>.

Swaps are typically quoted in this fixed rate, or alternatively in the “swap spread,” which is the difference between the swap rate and the US Treasury bond yield (or equivalent local government bond yield for non-US swaps) for the same maturity. Swap rate data may be found at the following website: <http://www.barchart.com/economy/swaps.php>.

Revolving credit facility interest rates equal the sum of the risk-free rate (i.e., usually the US Treasury bond rate) plus the default risk premium (i.e., the number of basis points⁵² over the Treasury bond rate) plus interest rate risk premium (i.e., the potential for future interest rate fluctuations). If we assume the 5-year US Treasury bond rate is 1.3%, the default risk premium is 250 basis points, and the swap rate is 60 basis points. The revolving credit facility rate is calculated as follows:

$$1.3\% \times 100 + \frac{60}{100} + \frac{250}{100} = 440$$

Dividing both sides by 100 results in the following expression:

$$1.3 + \frac{60}{100 \times 100} + \frac{250}{100 \times 100} = \frac{440}{100}$$

and

$$1.3 + \frac{60}{10,000} + \frac{250}{10,000} = 4.40\%$$

Finally, the default risk associated with senior debt is estimated as the spread or difference in basis points between the interest rate on senior debt and the risk-free Treasury bond rate. The Treasury bond rate is assumed to be free of default risk only.

Industry Credit Ratios

Go to Yahoo.com/finance; click on investing and then industries. Locate in the left-hand column the industry in which you are interested. Click on the industry. Scroll down the right-hand column until you find Industry Statistics, which includes the industry debt-to-total capital ratio required by the M&A model. Industry interest coverage ratios may be found by going to the following website: http://pages.stern.nyu.edu/~adamodar/New_Home_Page/data.html.

⁵¹At the time of the swap agreement, the total value of the swap’s fixed rate interest payments will be equal to the value of expected floating rate payments implied by the forward LIBOR curve (i.e., expected LIBOR rates). As forward expectations for LIBOR change, so will the fixed rate that investors demand to enter into new swaps.

⁵²One percentage point of interest equals 100 basis points. Thus, 40 basis points equal four-tenths of 1 percentage point.

P A R T V

ALTERNATIVE BUSINESS AND RESTRUCTURING STRATEGIES



"I've been restructured."

CartoonStock.com

Source: Courtesy of www.Cartoonstock.com. TCRN149.

Part V addresses strategic growth options as alternatives to domestic M&As, including cross-border M&A deals and business alliances. This section also discusses what can be done if corporations believe more value can be created by exiting certain businesses or product lines or by reorganizing or liquidating either outside of or under bankruptcy court protection.

Chapter 15 describes the common motives for entering business alliances, ranging from minority investments to joint ventures, as well as the critical success factors for establishing alliances. Reasons for employing alternative legal forms and ways of resolving common deal-structuring issues also are addressed. The advantages and disadvantages of the various types of alliances are discussed in detail as well as what a manager should consider in choosing the type of business alliance most appropriate for the circumstances.

The emphasis in Chapters 16 and 17 is on portfolio restructuring rather than on organizational (i.e., revamping a firm's internal processes) or financial restructuring (i.e., altering a firm's capital structure). Portfolio restructuring involves selling, shutting down, or spinning off money-losing operations or those not fitting with the firm's core business strategy. It is often a response to intensified competition or technological change and frequently results in firms being acquired, reorganized in bankruptcy, or liquidated, resulting in their elimination as independent corporate entities. Reflecting these factors, the average life span of S&P 500 corporations has been declining from an average of 90 years in 1935 to less than 20 years today.¹ Chapter 16 describes how corporations choose from among a range of restructuring options, including divestitures, spin-offs, split-ups, equity carve-outs, and split-offs to improve shareholder value. Chapter 17 focuses on failing firms that may attempt to preserve shareholder value by negotiating voluntarily with creditors to restructure their debt outside of bankruptcy court. Alternatively, such firms may choose or be compelled to seek the protection of the court system.

Finally, Chapter 18 outlines common motives for international expansion, describes widely used international market-entry strategies, and how to value, structure, and finance cross-border transactions. This chapter carefully notes the adjustments that should be made when valuing a target firm in an emerging or developed country. Important tax considerations associated with cross-border deals also are addressed.

¹Colvin (2014).

Business Alliances

Joint Ventures, Partnerships, Strategic Alliances, and Licensing

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Humility is not thinking less of you. It is thinking less about you. —Rick Warren

INSIDE M&A: COMCAST'S NBCUNIVERSAL INVESTS IN BUZZFEED AND VOX IN A SEARCH FOR A YOUNGER AUDIENCE

KEY POINTS

- Firms may make minority investments in other companies to gain access to skills, assets, and customers they do not currently possess.
- While money invested in alliances does matter, the eventual success of alliances often depends on the value of the intangible and tangible assets contributed by each partner.
- Large companies often attempt to hedge their investments by making a number of relatively small investments in different firms in the hope at least one will be wildly successful.

The media world is in turmoil. The median age of prime-time TV viewers rose from 46.3 to 50.5 in the past 5 years, according to Horizon Media. Less than one-quarter of people aged 18–34 watch prime-time TV today, compared to 53.1% of those over 55. Younger people are fleeing in droves to watch online content and videos. Increasingly, the big-name media firms are in a panic as they see their customers increase in age. Advertisers tend to be attracted mostly by younger viewers who tend to spend more impulsively and often more lavishly than baby boomers. Not knowing precisely what to do, large media companies are struggling to adapt to the changing demographics.

Self-described as a social news and entertainment online firm, BuzzFeed was founded in 2006. The firm has grown into a global media company providing news on a wide range of topics that have specific appeal to a younger audience. In mid-August, 2015, Comcast's NBCUniversal subsidiary invested \$200 million in BuzzFeed in an effort to gain access to younger viewers. The equity stake values BuzzFeed at almost \$1.5 billion, almost twice its mid-2014 valuation. The BuzzFeed investment comes a week after NBCUniversal made another \$200 million equity investment in BuzzFeed competitor Vox Media, the parent company of sites like The Verge, Vox, and SB Nation.

More than half of BuzzFeed's 82.4 million unique monthly visitors are between the ages of 18 and 34, according to comScore Inc. Prior to the NBCUniversal investment, BuzzFeed had raised \$96.3 million in five investment rounds. Last year, it raised \$50 million from venture capital firm Andreessen Horowitz, valuing the company at \$850 million. BuzzFeed used much of that money to invest heavily in BuzzFeed Motion Pictures, its Los Angeles-based video production unit. According to Quantcast, Vox gets about 75 million unique visitors a month to its various content sites, with about 40% of its traffic between 18 and 34 years of age. Vox is spending aggressively to grow its advertising business and as such is losing money and burning through its available cash. The NBCUniversal investment in Vox Media valued the company at almost \$1 billion. While the number of monthly visitors for both firms is impressive, both BuzzFeed and Vox are much smaller than sites like the Huffington Post that gets more than 125 million monthly visitors.

While Vox has raised considerable sums of money from venture capital firms, its appetite for additional cash seems open ended. Most of the firm's earlier funding came from venture capital firms that sometimes have short investment time horizons. The most stable and "patient" capital often comes from a strategic partner like Comcast. Substantially larger than Vox, BuzzFeed is also trying to grow extremely quickly, which means it also needs funding.

So what does Comcast's NBCUniversal get out of these kinds of deals? For the most part, it means they are hedging their future bets. There is the possibility of the cable provider using media content provided by these two firms for its various broadcast properties. The larger benefit may be the association with new media firms that gives old media companies a certain cachet and a window into content favored by millennials. Moreover, giant money machines like Comcast often lack the ability to innovate due to bone-crushing bureaucracy. They need to acquire other, more nimble businesses to infuse fresh thinking into their aging businesses.

Given the soft nature of the presumed synergy between NBCUniversal and upstart media companies, BuzzFeed and Vox, it remains to be seen how much NBCUniversal and its parent Comcast will actually benefit. At a minimum, Comcast may recover its investment and earn a return on its investments if they go public. But whether they will be able to change their much larger culture to reflect the creativity of BuzzFeed and Vox is problematic. In reality, what Comcast is really providing is cash and maybe some content, although much of what Comcast has to offer is of little interest to millennials. So Comcast is doing what many large companies do when their creativity runs dry: they throw money at smaller fast-growing firms in the hope that at least one of these relatively small bets will take off. This "big company" strategy is not very imaginative but it is sometimes successful.

CHAPTER OVERVIEW

What all business alliances have in common is that they generally involve sharing the risk, reward, and control among all participants. The term *business alliance* is used throughout this chapter to describe the various forms of cooperative relationships common in business today, including joint ventures (JVs), partnerships, strategic alliances, equity partnerships, licensing agreements, and franchise alliances. The primary theme of this chapter is that well-constructed business alliances often represent viable alternatives to mergers and acquisitions (M&As), and they always should be considered one of the many options for achieving strategic business objectives.

TABLE 15.1 Key Differences Among Business Alliances

Type	Key characteristics
Joint ventures	• Independent legal entity involving two or more parties • May be organized as a corporation, partnership, or other legal/business organization selected by the parties • Ownership, responsibilities, risks, and rewards allocated to parties • Each party retains corporate identity and autonomy • Created by parties contributing assets for a specific purpose and for a limited duration
Strategic alliances (e.g., technology transfer, R&D sharing, and cross-marketing)	• Do not involve the formation of separate legal entities • May be precursor to a joint venture, partnership, or acquisition • Generally not passive, but involve cross-training, coordinated product development, and long-term contracts based on performance metrics such as product quality rather than price
Equity partnerships	• Have all the characteristics of an alliance • Involve making minority investment in the other party (e.g., 5%–10%) • Minority investor may have an option to buy a larger stake in the other party
Licensing • Product • Process • Merchandise and trademark	• Patent, trademark, or copyright licensed in exchange for a royalty or fee • Generally no sharing of risk or reward • Generally stipulates what is being sold, how and where it can be used, and for how long • Payments usually consist of an initial fee and royalties based on a percentage of future license sales
Franchising alliances	• Network of alliances in which partners are linked by licensing agreements (e.g., fast-food chains, hardware stores) • Often grant exclusive rights to sell or distribute goods or services in specific geographic areas or markets • Licensees may be required to purchase goods and services from other firms in the alliance
Network alliances	• Interconnecting alliances among companies crossing international and industrial boundaries (e.g., airlines) • May involve companies collaborating in one market while competing in others (e.g., computers, airlines, cellular telephones) • Most often formed to access skills from different but increasingly interconnected industries
Exclusive agreements	• Usually involve rights for manufacturing or marketing specific products or services • Each party benefits from the specific skills or assets the other party brings to the relationship

R&D, Research and development.

The principal differences in the various types of business alliances were discussed in some detail in Chapter 1 and are therefore only summarized in [Table 15.1](#). This chapter discusses the wide variety of motives for business alliances and the factors common to most successful alliances. Also addressed are the advantages and disadvantages of alternative legal structures, important deal-structuring issues, and empirical studies that purport to measure the contribution of business alliances to creating shareholder wealth. A review of this chapter

(including practice questions and answers) is available in the file folder entitled “Student Study Guide” on the companion website (<https://www.elsevier.com/books-and-journals/book-companion/9780128016091>) to this book.

MOTIVATIONS FOR BUSINESS ALLIANCES

Money alone rarely provides for a successful long-term business alliance. A partner often can obtain funding from a variety of sources but may be able to obtain access to a set of skills or nonfinancial resources only from another party. The motivations for an alliance vary widely and are discussed next.

Risk Sharing

Risk often is perceived to be greater the more money, management time, or other resources a company has committed to an endeavor and the less certain the outcome. To mitigate perceived risk, companies often enter into alliances to gain access to know-how and scarce resources, to reduce the amount of resources they would have to commit if they were to do it on their own, or to limit losses if the endeavor proves unsuccessful. For example, Canada’s Valeant Pharmaceuticals agreed to help British-based pharmaceutical firm AstraZeneca by paying certain development costs incurred in bringing to market a drug designed to combat the skin ailment psoriasis in an exchange for the rights to market the drug.

Sharing Proprietary Knowledge

Given the pace at which technology changes, the risk is high that a competitor will be able to develop a superior technology before a firm can bring its own new technology to market. Consequently, high-technology companies with expertise in a specific technology often combine their efforts with those of another company or companies with complementary know-how, to reduce the risk of failing to develop the “right” technology. Such alliances often do result in knowledge sharing between alliance partners. Automakers Ford, Daimler, and Renault-Nissan announced in 2013 that each firm would invest equally in an alliance to accelerate the development of a common hydrogen fuel cell technology to power their own cars.

Sharing Management Skills, Information, and Resources

Firms often lack the management skills, information, and resources to solve complex tasks and projects. These deficiencies can be remedied by aligning with other firms that possess the requisite skills and proprietary knowledge. Building contractors and real estate developers have collaborated for years by pooling their resources to construct, market, and manage large, complex commercial projects. The contribution of Dow Chemical management personnel to a JV with Cordis, a small pacemaker manufacturer, enabled the JV to keep pace with accelerating production. Reflecting the bureaucratic inertia often found in megacorporations, large pharmaceutical firms actively seek partnerships with smaller, more nimble and innovative firms as a way of revitalizing their new-drug pipelines. Such relationships are also commonplace among biotechnology firms. Small biotechnology firms are in fact likely to fund their research and development (R&D) through JVs with large corporations, with the larger

partner receiving the controlling interest.¹ Oil and gas deep water drilling shows greater success rates when an alliance of firms undertakes the effort with alliance members combining their information and expertise.²

While it often is convenient for small start-ups to align with industry leading companies, cultural differences sometimes prove intractable. In 2011, Toyota bought a \$50-million stake in Tesla Motors Inc., sold the firm a shuttered auto assembly plant in Fremont, CA, for only \$42 million, and agreed to retrofit the Toyota RAV4 utility vehicle using Tesla technology. Tesla was motivated to do the deal for the cash infusion, gaining access to a factory at a bargain price, and the credibility that comes from working alongside an industry leader. By late 2014, the partnership was unraveling swiftly due largely to differences between the firms' engineering approaches and difficulties in sharing proprietary technologies. Moreover, Toyota distanced itself from Tesla's core electric vehicle technology and embraced fuel cells, a technology that Tesla's founder Leon Musk has ridiculed publicly. Toyota allowed the alliance to expire in 2015.

Sharing Substantial Capital Outlays

Regional and foreign cellular phone carriers were encouraged to join forces to achieve the scale necessary to support the creation of national networks. Vodafone and Verizon Communications joined forces in 1999 to form Verizon Wireless, with Verizon eventually buying out Vodafone in early 2014. Microsoft agreed in early 2012 to invest almost \$600 million over 5 years in Barnes & Noble's (B&H) e-book business to assist in the development and marketing of the firm's Nook e-book reader in exchange for a 16.8% stake in B&H. Failure of the Nook to gain wider market acceptance resulted in Microsoft selling its shares back to B&H for \$125 million.³

Securing Sources of Supply

The chemical industry is highly vulnerable to swings in energy costs and other raw materials. Chemical companies such as Dow, Hercules, and Olin have used JVs to build new plants throughout the world. When shortages of raw materials threaten future production, these firms commonly form JVs to secure future sources of supply. Similarly, CNOOC, the large Chinese oil concern, has been busily investing in oil and natural gas assets in highly diverse geographic areas to obtain reliable sources of supply. CNOOC's efforts in recent years have ranged from outright acquisition (e.g., the attempted takeover of Unocal in the United States) to long-term contracts (e.g., Canadian tar sands) to JVs in various locations in Africa (e.g., Sudan and Kenya).

Cost Reduction

In the 1980s and 1990s, retailers and financial services firms outsourced such back-office activities as information and application processing to such firms as IBM and EDS. Others outsourced payroll processing and benefits management to such firms as ADP. More recently,

¹Lerner et al. (2003).

²Beshears (2013).

³In 2015, B&H split up the company into a retail store and website unit and another housing its college bookstores and Nook unit.

package carrier FedEx and the US Post Office entered a so-called logistics alliance covering both transportation and warehousing services. Companies also may choose to combine their manufacturing operations in a single facility with the capacity to meet the production requirements of all parties involved. By building a large facility, the firms jointly can benefit from economies of scale. Examples include Hitachi and Mitsubishi's forming an \$8 billion-a-year semiconductor JV and Canon and Toshiba's spending a combined \$1.8 billion to create a joint manufacturing operation to satisfy their requirements for surface-conduction electron-emitter displays (SEDs) for TVs.

Gaining Access to New Markets

Accessing new customers is often a highly expensive effort involving substantial initial marketing costs, such as advertising, promotion, warehousing, and distribution expenses. The cost may be prohibitive unless alternative distribution channels providing access to the targeted markets can be found. A company may enter into an alliance to sell its products through another firm's direct sales force, telemarketing operation, retail outlets, or Internet site. The alliance may involve the payment of a percentage of revenue generated in this manner to the firm whose distribution channel is being used. Firms may also enter into a "cross-marketing" relationship, in which they agree to sell the other firm's products through their own distribution channels sharing the incremental revenues generated. For example, in late 2006, eBay granted Google the exclusive right to display text advertisements on eBay's auction websites outside the United States, with eBay sharing in the revenue generated by the advertisements. Google was able to expand its advertising reach without having to make substantial additional investments.

Alternatively, firms may take minority investments in other companies to increase their understanding of unfamiliar markets or to offer customers an alternative means of accessing their products and services. Apple invested \$1 billion in mid-2016 in Chinese ride-sharing giant Didi Chuxing, which has investments in San Francisco-based Lyft, Malaysian taxi app Grab, and Olacabs in Mumbai India, giving Apple an indirect stake in these companies. Apple's publicly stated intent is to learn about this segment of the Chinese economy; its unstated intent could be to position itself as a provider of self-driving taxi service software. Also in 2016, at a time when younger consumers are canceling cable subscriptions, cable and content provider Time Warner invested \$583 million for a 10% stake in online TV streaming service Hulu to provide consumers an alternative means of accessing the firm's TV programs.

Globalization

The dizzying pace of international competition increased the demand for alliances and JVs to enable companies to enter markets in which they lack production or distribution channels or in which laws prohibit 100% foreign ownership of a business. While the focus in this book is on M&As, cross-border corporate investment strategies are far more likely to involve business alliances than M&As, with alliances constituting the preferred international investment strategy almost two-thirds of the time.⁴ Many companies, such as General Motors (GM) and

⁴Bodnaruk et al. (2016).

Ford, take minority equity positions in other companies within the industry to gain access to foreign markets. By aligning with Lenovo Group as a strategic partner in 2007, IBM hoped to enlarge dramatically its market share in China. More recently, Nissan and Daimler announced in 2010 the formation of a partnership in which the firms would share the cost of developing engines and small-car technologies with projected cumulative savings totaling \$5.3 billion. As part of the arrangement, each firm will buy a 3.1% stake in the other, as an expression of the degree of their commitment to partnership.

A Prelude to Acquisition or Exit

Rather than acquire a company, a firm may choose to make a minority investment in another company. In exchange for the investment, the investing firm may receive board representation, preferred access to specific proprietary technology, and an option to purchase a controlling interest in the company. The investing firm is able to assess the quality of management, the cultural compatibility, and the viability of the other firm's technology without having to acquire a controlling interest in the firm. In mid-2012, American drugstore chain Walgreen Company (Walgreen) agreed to buy a 45% stake in Alliance Boots (Alliance), the European pharmacy retailer, for \$6.7 billion in cash and stock, with an option to buy the remaining 55% for \$9.5 billion in cash and stock sometime during the 3 years following closing. Walgreen can take advantage of Alliance Boots' operations in Europe and several emerging markets, while Alliance Boots gets a foothold in the United States. Similarly, Heineken, which already owns 42% of Asian Pacific Breweries, agreed to buy an additional 40% for \$4.1 billion in the Singapore conglomerate in August 2012 as a play to enlarge its position in emerging markets. The deal also required Heineken to buy out the remaining shareholders before the end of 2012. Deals involving the gradual accumulation of control sometimes are referred to as "creeping" takeovers.

A parent wanting to exit a subsidiary may contribute the unit to a JV or partnership and negotiate as part of the deal a put or call option with the other partners. A *call option* gives the partners the right to purchase the unit, and the *put option* gives the parent the right to sell the unit to the other partners. General Electric (GE) negotiated a put option with Comcast in 2010 when GE announced that it would be contributing its NBCUniversal subsidiary to a JV corporation in which Comcast and GE would own 51 and 49% stakes, respectively. In early 2013, Comcast acquired the portion of NBCUniversal it did not already own.

In the wake of the deteriorating financial performance of their respective operations, GE contributed its oil and gas operations along with \$7.4 billion into a partnership with oil services behemoth Baker Hughes in late 2016 to create a new entity called the New Baker Hughes. GE owned 62.5% of the partnership. With anticipated synergies having a present value of \$14 billion, the partnership gives GE a variety of strategic options: retain the business if oil and gas prices recover from their depressed levels of recent years or to sell the business, take it public, or spin it off to shareholders.

Favorable Regulatory Treatment

As noted in Chapter 2, the Department of Justice has looked on JVs far more favorably than M&As, which result in a reduction in the number of firms. JVs increase the number of

firms because the parents continue to operate while another firm is created. Project-oriented JVs often are viewed favorably by regulators. Regulatory authorities tend to encourage collaborative research, particularly when the research is shared among all the parties to the JV. Alliances may also be used to gain regulatory approval to take control of a local company. In late 2014, United States-based multinational GE agreed to partner with the French government in its takeover of French engineering group, Alstom. French regulators agreed to the tie up contingent on the government having a 20% stake in Alstom, veto rights over the JV's business strategy, and a commitment by GE to increase jobs in France.

WHAT MAKES BUSINESS ALLIANCES SUCCESSFUL?

Success depends on synergy; clarity of purpose, roles, and responsibilities; accountability; cooperation; a “win-win” situation; compatible time frames and financial expectations for the partners; and support from top management.⁵ Each of these factors is discussed next.

Synergy

Successful alliances are those in which partners either complement existing strengths or offset significant weaknesses. Examples include partners providing opportunities for realizing economies of scale and scope, access to new products, distribution channels, and proprietary know-how. Successful alliances are often those in which the partners contribute a skill or resource in addition to or other than money. Such alliances often make good economic sense and, as such, are able to get financing.

Clarity of Purpose, Roles, and Responsibilities

Early on, parties to the alliance must agree to a well-understood and well-thought-out purpose or mission for the business alliance that must be communicated to all those responsible for achieving the mission. The roles and responsibilities of the alliance partners in realizing the mission should be clearly established. How the mission is to be achieved is defined by more specific goals, milestones for achieving the goals, and commitments to achieving milestones in accordance with the timetable. Internal conflict and lethargic decision making inevitably result from poorly defined roles and responsibilities of alliance participants.

Accountability

Performance goals established for individual managers should be tied directly to the primary goals for the alliance. Incentives should be in place to reward good performance with respect to realizing their goals on a timely basis, and those failing to perform should be held accountable.

⁵Kantor (2002) and Lynch (1993).

Cooperation

A lack of cooperation contributes to poor communication and reduces the likelihood that alliance objectives will be realized. Firms with similar philosophies, goals, rewards, operating practices, and ethics are more likely to cooperate over the long run.

Win–Win Situation

Alliance partners must believe they are benefiting from the activity for it to be successful. Johnson & Johnson's (J&J's) alliance with Merck & Company in the marketing of Pepcid AC is a classic win–win situation. Merck contributed its prescription drug Pepcid AC to the alliance so that J&J could market it as an over-the-counter drug. With Merck as the developer of the upset-stomach remedy and J&J as the marketer, the product became the leader in this drug category. In contrast, the attempt by DaimlerChrysler, Ford, and GM to form an online auction network for parts failed in part because of the partners' concern that they would lose competitive information.

Compatible Time Frames and Financial Expectations

The length of time an alliance agreement remains in force depends on the partners' objectives, the availability of resources, and the accuracy of the assumptions on which the alliance's business plans are based. Incompatible time frames are a recipe for disaster. The management of a small Internet business may want to "cash out" within the next 18–24 months, whereas a larger firm may wish to gain market share over a number of years.

Support From the Top

Top management of the parents of a business alliance must involve themselves aggressively and publicly. Tepid support filters down to lower-level managers and proves to be demotivating. Managers focus their time on those activities that maximize their compensation, potentially diverting attention from the alliance.

ALTERNATIVE LEGAL FORMS OF BUSINESS ALLIANCES

The legal form of an alliance should follow the creation of a business strategy. Alliances may assume a variety of legal structures, including corporate, partnership, franchise, equity partnership, and written contract.⁶ The five basic legal structures are discussed in detail in this section. Each has implications for taxation, control by the owners, ability to trade ownership positions, limitations on liability, duration, and ease of raising capital ([Table 15.2](#)).

⁶Technically, a "handshake" agreement is also an option. Given the inordinate risk associated with the lack of a written agreement, those seeking to create an alliance are encouraged to avoid this type of arrangement. However, in some cultures, insistence on a detailed written agreement may be viewed as offensive.

TABLE 15.2 Alternative Legal Forms Applicable to Business Alliances

Legal form	Advantages	Disadvantages
Corporate Structures		
• C corporation	Continuity of ownership Limited liability Provides operational autonomy Provides for flexible financing Facilitates tax-free merger	Double taxation Inability to pass losses on to shareholders Relatively high setup costs, including charter and bylaws
• Subchapter S	Avoids double taxation Limited liability	Maximum of 100 shareholders Excludes corporate shareholders Must distribute all earnings Allows only one class of stock Lacks continuity of C corporation Difficult to raise large sums of money
Limited Liability Company (LLC)	Limited liability Owners can be managers without losing limited liability Avoids double taxation Allows an unlimited number of members (i.e., owners) Allows corporate shareholders Can own more than 80% of another company Allows flexibility in allocating investment, profits, losses, and operational responsibilities among members Duration set by owners Can sell shares to “members” without SEC registration Allows foreign corporations as investors	Owners also must be active participants in the firm Lacks continuity of a corporate structure State laws governing LLC formation differ, making it difficult for LLCs doing business in multiple states Member shares are often illiquid because the consent of members is required to transfer ownership
Partnership Structures		
• General partnerships	Avoid double taxation Allow flexibility in allocating investment, profits, losses, and operational responsibilities Life set by general partner	Partners have unlimited liability Lack continuity of corporate structure Partnership interests illiquid Partners jointly and severally liable Each partner has authority to bind the partnership to contracts
• Private limited liability partnerships^a	Limit partner liability (except for general partner) Avoid double taxation State laws consistent (covered under the Uniform Limited Partnership Act)	Partnership interests are illiquid Partnership is dissolved if a partner leaves Private partnerships are limited to 35 partners
• Master limited partnerships	Same as mentioned earlier Units/shares are publicly traded and more liquid than other types of partnership interests	Unlike corporate dividends, failure to make quarterly distributions constitutes default

(Continued)

TABLE 15.2 Alternative Legal Forms Applicable to Business Alliances (cont.)

Legal form	Advantages	Disadvantages
Franchise Alliances	Allow repeated application of a successful business model Minimize start-up expenses Facilitate communication of common brand and marketing strategy	Success depends on quality of franchise sponsor support Royalty payments (3%–7% of revenue)
Equity Partnerships	Facilitate close working relationship Potential prelude to merger May preempt competition	Limited tactical and strategic control
Written Contracts	Easy start-up Potential prelude to merger	Limited control Lack close coordination Potential for limited commitment

^aPublic limited partnerships may have an unlimited number of investors and must be registered with the SEC.

Corporate Structures

A corporation is a legal entity created under state law in the United States with an unending life and limited financial liability for its owners. From a legal perspective, corporations in certain circumstances can be considered as people. The *doctrine of corporate personhood* holds that corporations, as groups of people, may exercise certain rights under the US Constitution or under common law. For example, corporations may make contracts with other parties, sue or be sued in court in the same way as natural persons can.⁷ Corporate legal structures include a generalized corporate form (also called a C-type corporation) and the Subchapter S (S-type) corporation. S-type corporations have tax advantages intended to facilitate the formation of small businesses.

C-Type Corporations

A JV corporation normally involves a stand-alone business whose income is taxed at the prevailing corporate tax rates. Corporations other than S-type corporations are subject to “double” taxation. Taxes are paid by the corporation when profits are earned and again by the shareholders when the corporation issues dividends. Moreover, setting up a corporate legal structure may be more time consuming and costly than other legal forms because of legal expenses incurred in drafting a corporate charter and bylaws. Although the corporate legal structure has adverse tax consequences and may be more costly to establish, it does offer advantages over other legal forms. The four primary characteristics of a C-type corporate structure include managerial autonomy, continuity of ownership, ease of transferring ownership and raising money, and limited liability. These characteristics are discussed next.

Managerial autonomy refers to a high level of discretionary authority granted by owners to those managing the organization and is most often used when the JV is large or complex enough to require a separate or decentralized management structure. The corporate structure works best when the JV requires some operational autonomy to be effective. The parent

⁷This doctrine does not grant corporations certain other rights such as the right to marry, run for office, or to vote.

companies would continue to set strategy, but the JV's management would manage the day-to-day operations.

Unlike other legal forms, the corporate structure provides *continuity of ownership*, because it has an indefinite life. That is, it does not have to be dissolved due to the death of the owners or if an owner wishes to liquidate his or her ownership stake. A corporate legal structure may be warranted if the JV's goals are long term and the parties choose to contribute cash directly to the JV. In return for the cash contribution, the JV partners receive stock in the new company, enabling a partner to "cash out" by selling his or her shares. Alternatively, the partner-shareholder can withdraw from active participation in the JV but remain a passive shareholder in anticipation of potential future appreciation of the stock. A corporate structure also facilitates a tax-free merger, since the stock of the acquiring firm can be exchanged for the stock or assets of another firm.

Under a C-type corporate structure, the *ease of transferring ownership* facilitates raising money. Shares, legal claims on the assets, liabilities, cash flows, and earnings of a corporation, can be transferred from one owner to another without disrupting the operations of the business. Such structures provide a broader array of financing options than other legal forms, including the ability to sell shares and issue corporate debentures and mortgage bonds. Selling new shares enables the corporation to raise funds while still retaining control if less than 50.1% of the corporation's shares are sold.

Finally, this legal form provides for *limited liability* in that a shareholder's liability is limited to the extent of their investment. However, an owner can be held personally liable if the owner injures someone directly or personally guarantees a bank loan or a business debt on which the firm defaults. Other exceptions include failing to deposit taxes withheld from employees' wages or committing intentional fraud that causes harm to the corporation or someone else. An owner also may be liable for failing to capitalize the corporation adequately or hold regular directors and shareholders meetings or for withholding information from other owners.

Subchapter S Corporations

A firm having 100 or fewer shareholders may qualify as an S-type corporation and be taxed as if it were a partnership and thus avoid double taxation. The members of a single family may be considered a single shareholder.⁸ An ESOP maintained by an S corporation is not in violation of the requirement regarding the maximum number of shareholders because the S corporation contributes stock to the ESOP. The major disadvantages to S-type corporations are the exclusion of any corporate shareholders, the requirement to issue only one class of stock, the necessity of distributing all earnings to the shareholders each year, and that no more than 25% of the corporation's gross income may be derived from passive income.

C corporations may convert to S corporations to eliminate double taxation on dividends. Asset sales within 10 years of the conversion are subject to capital gains taxes at the prevailing corporate income tax rate. After 10 years, such gains are tax free to the S corporation but are taxable when distributed to shareholders, at their personal tax rates. Sales of assets acquired by an S corporation or after a 10-year period following conversion from one form of legal

⁸A husband and wife would be treated as a single shareholder. *Family members* refer to those with a common ancestor, lineal descendants of the ancestor, and the spouses of such lineal descendants or common ancestor.

entity to an S corporation are taxed at the capital gains tax rate, which is generally more favorable than the corporate income tax rate.⁹

As discussed next, the limited liability company (LLC) offers its owners the significant advantage of greater flexibility in allocating profits and losses and is not subject to the many restrictions of the S corporation. Consequently, the popularity of the S corporation has declined.

Limited Liability Company

LLCs can be viewed as hybrid legal entities. Like a corporation, the LLC limits the liability of its owners (called *members*) to the extent of their investment. Like a limited partnership, the LLC passes through all of the profits and losses of the entity to its owners without itself being taxed. To obtain this favorable tax status, the IRS requires that the LLC adopt an organization agreement eliminating the characteristics of a C corporation: management autonomy, continuity of ownership or life, and free transferability of shares. Management autonomy is limited by placing decisions about major issues pertaining to the management of the LLC (e.g., mergers or asset sales) in the hands of all its members. LLC agreements require that they be dissolved in case of the death, retirement, or resignation of any member, thereby eliminating continuity of ownership or life. Free transferability is limited by making a transfer of ownership subject to the approval of all members.

Unlike S-type corporations, LLCs can own more than 80% of another corporation and have an unlimited number of members. Also, corporations as well as non-US residents can own LLC shares. Equity capital is obtained through offerings to members (i.e., owners). The LLC can sell shares or interests to members without completing the costly process of registering them with the SEC, which is required for corporations that sell their securities to the public. LLC shares are not traded on public exchanges. This arrangement works well for corporate JVs or projects developed through a subsidiary or affiliate. The parent corporation can separate a JV's risk from its other businesses while getting favorable tax treatment and greater flexibility in the allocation of revenues and losses among owners. Finally, LLCs can incorporate before an IPO, tax free.

The LLC's drawbacks are evident if one owner decides to leave. All other owners must agree formally to continue the firm. Also, all the LLC's owners must take active roles in managing the firm. LLC interests are often illiquid, since transfer of ownership is subject to the approval of other members. LLCs must be set for a limited time, typically 30 years. Each state has different laws about LLC formation and governance, so an LLC that does business in several states might not meet the requirements in every state. LLCs are formed when two or more "persons" [i.e., individuals, limited liability partnerships (LLPs), corporations, etc.] agree to file articles of organization with the secretary of state's office. The most common types of firms to form LLCs are family-owned businesses, professional services firms such as lawyers, and companies with foreign investors.

⁹The 10-year "built-in-gains" period is designed by the IRS to discourage C corporations from converting to S corporations to take advantage of the more favorable capital gains tax rates on gains realized by selling corporate assets. Gains on the sale of assets by C corporations are taxed at the prevailing corporate income tax rate rather than a more favorable capital gains tax rate.

Partnership Structures

Frequently used as an alternative to a corporation, partnership structures include general partnerships and limited partnerships.

General Partnerships

Under this legal structure, investment, profits, losses, and operational responsibilities are allocated to the partners. Because profits and losses are allocated to the partners, the partnership is not subject to tax. The partnership structure also offers substantial flexibility in how the profits and losses are allocated to the partners. Typically, a corporate partner forms a special-purpose subsidiary to hold its interest. This not only limits liability but also may facilitate disposition of the JV interest in the future. The partnership structure is preferable to the other options when the business alliance is expected to have short (3–5 years) duration and if high levels of commitment and management interaction are necessary for short time periods.

The primary disadvantage of the general partnership is that all the partners have unlimited liability. Each partner is said to be jointly and severally liable for the partnership's debts. If one partner negotiates a contract resulting in a substantial loss, each partner must pay for a portion of the loss, based on a previously determined agreement on the distribution of profits and losses. Because each partner has unlimited liability for all the debts of the firm, creditors of the partnership may claim assets from one or more of the partners if the remaining partners are unable to cover their share of the loss. Another disadvantage is the ability of any partner to bind the business to a contract or other business deal. Consequently, if one partner purchases inventory at a price that the partnership cannot afford, the partnership is still obligated to pay. Partnerships also lack continuity, in that they must be dissolved if a partner dies or withdraws, unless a new partnership agreement can be drafted. To avoid this possibility, a partnership agreement should include a buy-sell condition or right of first refusal, allowing the partners to buy out a departing partner's interest so the business can continue. Finally, partnership interests may also be difficult to sell because of the lack of a public market, thus making it difficult to liquidate the partnership or to transfer partnership interests.

Limited Liability Partnerships

In an LLP, one or more of the partners can be designated as having limited liability as long as at least one partner has unlimited liability. Those who are responsible for the day-to-day operations of the partnership's activities, whose individual acts are binding on the other partners, and who are personally liable for the partnership's total liabilities are called *general partners*. Those who contribute only money and are not involved in management decisions are called *limited partners*. Usually limited partners receive income, capital gains, and tax benefits, whereas the general partner collects fees and a percentage of the capital gain and income.

Typical limited partnerships are in real estate, oil and gas, and equipment leasing, but they also are used to finance movies, R&D, and other projects. Public limited partnerships are sold through brokerage firms, financial planners, and other registered securities representatives. Public partnerships may have an unlimited number of investors, and their partnership plans must be filed with the SEC. Private limited partnerships have fewer than 35 limited partners, who each invest more than \$20,000. Their plans do not have to be filed with the SEC. The sources of equity capital for limited partnerships are the funds supplied by the general and

limited partners. The total amount of equity funds needed by the limited partnerships is typically committed when the partnership is formed; ventures that are expected to grow are not usually set up as limited partnerships. LLPs are very popular for accountants, physicians, attorneys, and consultants.

Master Limited Partnerships (MLPs)

MLPs are partnerships whose interests are separated into units that trade like shares of stock. Unlike common stock dividends paid by corporations, the failure to make quarterly payouts to investors is an act of default. Because of these mandatory payments, MLPs are used in industries with predictable cash flows, such as natural resources and real estate. To avoid being taxed as a corporation, an MLP can have only two of the four characteristics of a corporation: managerial autonomy, limited liability, an unlimited life, and freely traded shares. Generally, MLPs have freely traded shares and managerial autonomy but do not have unlimited life or unlimited liability for *all* owners, in that at least one partner has unlimited liability.

Franchise Alliance

Franchises typically involve a franchisee's making an initial investment to purchase a license, plus additional capital investment for real estate, machinery, and working capital. For this investment, the franchisor provides training, site-selection assistance, and discounts resulting from bulk purchasing. Royalty payments for the license typically run 3%–7% of annual franchisee revenue. Franchise success rates exceed 80% over a 5-year period as compared with some types of start-ups, which have success rates of less than 10% after 5 years. The franchise alliance is preferred when a given business format can be replicated many times. Moreover, franchise alliances are also appropriate when there needs to be a common, recognizable identity presented to customers of each of the alliance partners and close operational coordination is required. A franchise alliance also may be desirable when a common marketing program needs to be coordinated and implemented by a single partner. The franchisor and franchisee operate as separate entities, usually as corporations or LLCs. The four basic types of franchises are distributor (auto dealerships), processing (bottling plants), chain (restaurants), and area franchises (a geographic region is licensed to a new franchisee to subfranchise to others).

Franchising offers the prospect of converting assets owned and operated by a firm to those owned and operated by someone else. By moving toward franchising, a firm can reduce its capital expenditures and achieve a more stable revenue stream based on franchise fees. US fast-food and casual-dining restaurant chains are increasingly questioning the desirability of running rather than franchising restaurants.

Equity Partnership

Such arrangements involve a company's purchase of stock (resulting in a less-than-controlling interest) in another company or a two-way exchange of stock by the two firms.¹⁰

¹⁰Such exchanges keep both parties committed to the success of the partnership. If the partnership fails, the value of each party's partnership interest declines, as could the ownership stake each partner has in the other firm.

It is referred to as a partnership because of the equity ownership exchanged. Equity partnerships are used in purchaser–supplier relationships, technology development, and marketing alliances and when a larger firm makes an investment in a smaller firm to ensure its continued financial viability. In exchange for an equity investment, a firm often receives a seat on the board of directors and possibly an option to buy a controlling interest in the company. The equity partnership is most effective when there is a need to have a long-term or close strategic relationship, to preempt a competitor from making an alliance or acquisition, or as a prelude to a takeover.

Written Contract

The written contract is the simplest form of legal structure and is used most often with strategic alliances because it maintains an “arm’s-length” or independent relationship between the parties to the contract. The contract normally stipulates such things as how the revenue is divided, the responsibilities of each party, the duration of the alliance, and confidentiality requirements. No separate business entity is established for legal or tax purposes. The written contract most often is used when the business alliance is expected to last less than 3 years, frequent close coordination is not required, capital investments are made independently by each party to the agreement, and the parties have had little previous contact.

STRATEGIC AND OPERATIONAL PLANS

Before any deal-structuring issues are addressed, the prospective parties must agree on the basic strategic direction and purpose of the alliance as defined in the alliance’s strategic plan, as well as the financial and nonfinancial goals established in the operation’s plan. The strategic plan identifies the primary purpose or mission of the business alliance; communicates specific quantifiable targets, such as financial returns or market share and milestones; and analyzes the business alliance’s strengths and weaknesses, opportunities, and threats relative to the competition. Teams representing all parties to the alliance should be involved from the outset of the discussions in developing both a strategic plan and an operations plan for the venture. The operations plan (i.e., annual budget) should reflect the specific needs of the proposed business alliance and be written by those responsible for implementing the plan. The operations plan is typically a 1-year plan that outlines for managers what is to be accomplished, when it is to be accomplished, and what resources are required.

RESOLVING BUSINESS ALLIANCE DEAL-STRUCTURING ISSUES

The purpose of deal structuring in a business alliance is to allocate risks, rewards, resource requirements, and responsibilities among participants. [Table 15.3](#) summarizes the key issues and related questions that need to be addressed as part of the business alliance deal-structuring process. This section discusses how these issues most often are resolved.

TABLE 15.3 Business Alliance Deal-Structuring Issues

Issue	Key questions
Scope	What products are included and what are excluded? Who receives rights to distribute, manufacture, acquire, or license technology or purchase future products or technology?
Duration	How long is the alliance expected to exist?
Legal form	What is the appropriate legal structure—stand-alone entity or contractual?
Governance	How are the interests of the parent firms to be protected? Who is responsible for specific accomplishments?
Control	How are strategic decisions to be addressed? How are day-to-day operational decisions to be handled?
Resource contributions and ownership determination	Who contributes what and in what form? Cash? Assets? Guarantees/loans? Technology including patents, trademarks, copyrights, and proprietary knowledge? How are contributions to be valued? How is ownership determined?
Financing ongoing capital requirements	What happens if additional cash is needed?
Distribution	How are profits and losses allocated? How are dividends determined?
Performance criteria	How is performance to the plan measured and monitored?
Dispute resolution	How are disagreements resolved?
Revision	How will the agreement be modified?
Termination	What are the guidelines for termination? Who owns the assets on termination? What are the rights of the parties to continue the alliance activities after termination?
Transfer of interests	How are ownership interests to be transferred? What are the restrictions on the transfer of interests? How will new alliance participants be handled? Will there be rights of first refusal, drag-along, tag-along, or put provisions?
Tax	Who receives tax benefits?
Management/organization	How is the alliance to be managed?
Confidential information	How is confidential information handled? How are employees and customers of the parent firms protected?
Regulatory restrictions and notifications	What licenses are required? What regulations need to be satisfied? What agencies need to be notified?

Scope

A basic question in setting up a business alliance involves which of the partners' products are included and which excluded from the business alliance. This question deals with defining the scope of the business alliance, that is, how broadly the alliance will be applied in pursuing its purpose. For example, an alliance whose purpose is to commercialize products developed by the partners could be broadly or narrowly defined in specifying what products or services are to be offered, to whom, in what geographic areas, and for what time period.

Failure to define scope adequately can lead to situations in which the alliance may be competing with the products or services offered by the parent firms. With respect to both current and future products, the alliance agreement should identify who receives the rights to market or distribute products, manufacture products, acquire or license technology, or purchase products from the venture.

Duration

The participants need to agree on how long the business alliance is to remain in force. Participant expectations must be compatible. The expected longevity of the alliance is also an important determinant in the choice of a legal form. The corporate structure more readily provides for a continuous life than a partnership, because it is easier to transfer ownership interests. Most business alliances have a finite life, corresponding to the time required to achieve their original strategic objectives.¹¹

Legal Form

Businesses that are growth oriented or intend eventually to go public through an IPO generally become a C corporation due to its financing flexibility, unlimited life, continuity of ownership, and ability to combine on a tax-free basis with other firms. With certain exceptions concerning frequency, firms may convert from one legal structure to a C corporation before going public. The nature of the business greatly influences the legal form chosen (Table 15.4).

Governance

In the context of an alliance, *governance* may be defined broadly as an oversight function providing for efficient, informed communication between two or more parent firms. The primary responsibilities of this oversight function are to protect the interests of the corporate parents, approve changes to strategy and annual operating plans, allocate resources needed to make the alliance succeed, and arbitrate conflicts among lower levels of management. Historically, governance of business alliances has followed either a quasicorporate or a quasiproject approach. For example, the oil industry traditionally has managed alliances by establishing a board of directors to provide oversight of managers and to protect the interests of nonoperating owners. In contrast, in the pharmaceutical and automotive industries, where nonequity alliances are common, firms treat governance like project management by creating a steering committee that allows all participants to comment on issues confronting the alliance.

Resource Contributions and Ownership Determination

As part of the negotiation process, the participants must agree on a fair value for all tangible and intangible assets contributed to the business alliance. The valuation of partner contributions is important, in that it often provides the basis for determining ownership shares

¹¹Rahma and Korn (2014).

TABLE 15.4 Key Factors Affecting Choice of Legal Entity

Determining factors: businesses with	Should select
High liability risks	C corporation, LLP, or LLC
Large capital/financing requirements	C corporation
Desire for continuity of existence	C corporation
Desire for managerial autonomy	C corporation
Desire for growth through M&A	C corporation
Owners who are also active participants	LLC
Foreign corporate investors	LLC
Desire to allocate investments, profits, losses, and operating responsibilities among owners	LLC and LLP
High pretax profits	LLC and LLP
Project focus/expected limited existence	LLP
Owners who want to remain inactive	LLP and C corporation
Large marketing expenses	Franchise
Strategies that are easily replicated	Franchise
Close coordination among participants not required	Written "arm's-length" agreement
Low risk/low capital requirements	Sole proprietorship or partnership

LLC, Limited liability company; LLP, limited liability partnership; M&A, mergers and acquisitions.

in the business alliance. The shares of the corporation or the interests in the partnership are distributed among the owners in accordance with the value contributed by each participant. The partner with the largest risk, the largest contributor of cash, or the person who contributes critical tangible or intangible assets generally is given the greatest equity share in a JV.

It is relatively easy to value tangible, or "hard," contributions, such as cash, promissory cash commitments, contingent commitments, stock of existing corporations, and assets and liabilities associated with an ongoing business in terms of actual dollars or their present values. A party that contributes "hard" assets, such as a production facility, may want the contribution valued in terms of the value of increased production rather than its replacement cost or lease value. The contribution of a fully operational, modern facility to a venture interested in being first to market with a particular product may provide far greater value than if the venture attempted to build a new facility because of the delay inherent in making the facility fully operational.

Intangible, or "soft" or "in-kind," contributions, such as skills, knowledge, services, patents, licenses, distribution channels, brand names, and technology, are often much more difficult to value. Partners providing such services may be compensated by having the business alliance pay a market-based royalty or fee for such services.¹² Alternatively, contributors of

¹²If the royalties or fees paid by the alliance are below standard market prices for comparable services, the difference between the market price and what the alliance actually is paying may become taxable income to the alliance.

intellectual property may be compensated by receiving rights to future patents or technologies developed by the alliance. Participants in the business alliance that contribute brand identities, which facilitate the alliance's entry into a particular market, may require assurances that they can purchase a certain amount of the product or service, at a guaranteed price, for a specific time period.

International partnerships often involve a foreign investor (foreign partner) seeking a firm (domestic partner) within the country they hope to enter. The domestic partner may contribute to the JV such intangible assets as government contacts, distribution channels, a brand name, customer lists, or licenses to do business within the country. If the foreign partner is relatively unsure of the value of such assets, the domestic partner may be required to contribute additional cash when the JV is formed. This discourages the domestic partner from overstating the value of its contributed intangible assets during negotiations to form the JV, since the value of the JV will be less if the assets are less productive than promised. Both partners will suffer as a result.¹³ With both partners having a cash investment in the JV, they are motivated to achieve a successful outcome.

[Exhibit 15.1](#) illustrates how the distribution of ownership between GE and Vivendi Universal Entertainment may have been determined in the formation of NBCUniversal.

Financing Ongoing Capital Requirements

The business alliance may fund capital requirements that cannot be financed internally by calling on the participants to make a capital contribution, issuing additional equity or partnership interests, or borrowing. If it is decided that the alliance should be able to borrow, the participants must agree on an appropriate financial structure for the enterprise. *Financial structure* refers to the amount of equity that will be contributed to the business alliance and how much debt it will carry. Alliances established through a written contract obviate the need for such a financing decision because each party to the contract finances its own financial commitments to the alliance. Project-based JVs, particularly those that create a separate corporation, sometimes sell equity directly to the public or through a private placement.

Owner or Partner Financing

The equity owners or partners may agree to make contributions of capital in addition to their initial investments in the enterprise. The contributions usually are made in direct proportion to their equity or partnership interests. If one party chooses not to make a capital contribution, the ownership interests of all the parties are adjusted to reflect the changes in their cumulative capital contributions. This adjustment increases the ownership interest of those making the contribution while reducing the interest of those not contributing.

¹³Bowe et al. (2014).

EXHIBIT 15.1 DETERMINING OWNERSHIP DISTRIBUTION IN A JOINT VENTURE

Vivendi Universal Entertainment (VUE) contributed film and television assets valued at \$14 billion to create NBCUniversal, a joint venture with TV station NBC, which was wholly owned by GE at that time. NBCUniversal was valued at \$42 billion at closing. NBCUniversal's EBITDA was estimated to be \$3 billion, of which GE contributed two-thirds; VUE accounted for the remaining one-third. EBITDA multiples for recent transactions involving TV media firms averaged 14 times EBITDA at that time. GE provided VUE an option to buy \$4 billion in GE stock, assumed \$1.6 billion in VUE debt, and paid the remainder of the \$14 billion purchase price in the form of NBCUniversal stock. At closing, VUE converted the option to buy GE stock into \$4 billion in cash. GE owned 80% of NBCUniversal and VUE 20%. How might this ownership distribution have been determined?

Solution

Step 1: Estimate the total value of the joint venture.

$$\$3 \text{ billion} \times 14 = \$42 \text{ billion}$$

Step 2: Estimate the value of assets contributed by each partner.

Reflecting the relative contribution of each partner to EBITDA (two-thirds from GE; one-third from VUE), GE's contributed assets were valued at \$28 billion (i.e., two-thirds of \$42 billion) and VUE's at \$14 billion (i.e., one-third of \$42 billion).

Step 3: Determine the form of payment.

\$4.0 billion (GE stock)

\$1.6 billion (assumed Vivendi debt)

\$8.4 billion (value of VUE's equity position in NBCUniversal = \$14 – \$4.0 – \$1.6)

\$14.0 billion (purchase price paid by GE to Vivendi for VUE assets)

Step 4: Determine ownership distribution.

At closing, Vivendi chose to receive a cash infusion of \$5.6 billion (i.e., \$4 billion in cash in lieu of GE stock + \$1.6 billion in assumed VUE debt). Thus,

$$\begin{aligned} \text{VUE's ownership of NBCUniversal} &= \frac{\$14 \text{ billion} - \$5.6 \text{ billion}}{\$42 \text{ billion}} \\ &= \frac{\$8.4 \text{ billion}}{\$42 \text{ billion}} = 0.2 \end{aligned}$$

$$\text{GE's ownership of NBCUniversal} = 1 - 0.2 = 0.8$$

Equity and Debt Financing

JVs formed as a corporation may issue different classes of either common or preferred stock. JVs established as partnerships raise capital through the issuance of limited partnership units to investors, with the sponsoring firms becoming general partners. When a larger company aligns with a smaller company, it may make a small equity investment in the smaller firm to ensure it remains solvent or to benefit from potential equity appreciation. Such investments often include an option to purchase the remainder of the shares, or at least a controlling interest, at a predetermined price if the smaller firm or the JV satisfies certain financial targets.

Control

Control is distinguishable from ownership by the use of agreements among investors or voting rights or by issuing different classes of shares. In some instances, the majority owner may not have effective control of the alliance due to the need to get approval to do certain things from other shareholders. Effective control can be held by minority investors if the class of stock they hold or if clauses stipulated in the alliance agreement provide them with certain veto rights over key aspects of the business. For example, a minority shareholder could have veto rights over such issues as changes in the alliance's purpose and scope, overall strategy, capital expenditures over a certain amount of money, key management promotions, salary increases applying to individual managers or to the general employee population, the amount and timing of dividend payments, buyout conditions, and restructuring. Such veto rights may be given to minority shareholders in order to get a cash infusion or access to a critical resource such as proprietary software, brand name, or distribution channel.

The most successful JVs are those in which one party is responsible for most routine management decisions, with the other parties participating in decision making only when the issue is fundamental to the business alliance. The alliance agreement must define what issues are to be considered fundamental to the alliance and address how they are to be resolved, either by majority votes or by veto rights given to one or more of the parties. Operational control should be placed with the owner best able to manage the JV. The owner who has the largest equity share but not operational control is likely to insist on being involved in the operation of the business alliance by having a seat on the board of directors or steering committee as well as some of the veto rights mentioned earlier.

Distribution Issues

Such issues relate to dividend policies and how profits and losses are allocated among the owners. The dividend policy determines the cash return each partner should receive. How the cash flows of the venture will be divided generally depends on the initial equity contribution of each partner, ongoing equity contributions, and noncash contributions in the form of technical and managerial resources. Allocation of profits and losses normally follows directly from the allocation of shares or partnership interests.¹⁴

Performance Criteria

The lack of adequate performance-measurement criteria can result in significant disputes among the partners and eventually contribute to the termination of the venture. Performance criteria should be both measurable and simple enough to be understood and used by the partners and managers at all levels and spelled out clearly in the business alliance agreement.

¹⁴When the profits come from intellectual property rights contributed by one of the parties, royalties may be used to compensate the party providing the property rights. When profits are attributable to distribution or marketing efforts of a partner, fees and commission can be used to compensate the partners. Similarly, rental payments can be used to allocate profits attributable to specific equipment or facilities contributed by a partner.

Dispute Resolution

How disputes are resolved reflects the choice of law provision, the definition of what constitutes an impasse, and the arbitration clause provided in the alliance agreement. The *choice of law provision* in the agreement indicates which state's or country's laws have jurisdiction in settling disputes. This provision should be drafted with an understanding of the likely outcome of litigation in any of the participants' home countries or states and the attitude of these countries' or states' courts in enforcing choice-of-law provisions in the JV agreements. The *deadlock or impasse clause* defines events triggering dispute-resolution procedures. Such events should not be defined so narrowly that minor disagreements are subject to the dispute mechanism. Finally, an *arbitration clause* addresses disagreements by defining the type of dispute subject to arbitration and how the arbitrator will be selected.

Revision

If one party to the agreement wishes to withdraw, the participants should have agreed in advance how the withdrawing party's ownership interest would be divided among the remaining parties. Moreover, a product or technology may be developed that was not foreseen when the alliance first was conceived. The alliance agreement should indicate that the rights to manufacture and distribute the product or technology might be purchased by a specific alliance participant.

Termination

A business alliance may be terminated due to the completion of a project, successful operations resulting in merger of the partners, diverging partner objectives, or failure of the alliance to achieve stated objectives. Termination provisions in the alliance agreement should include buyout clauses enabling one party to purchase another's ownership interests, prices of the buyout, and how assets and liabilities are to be divided if the venture fails or the partners elect to dissolve the operation. A JV may convert to a simple licensing arrangement, allowing the partner to leave without losing all benefits by purchasing rights to the product or technology.

Transfer of Interests

Alliance agreements often limit how and to whom parties to the agreements can transfer their interests. This is justified by noting that each party entered the agreement with the understanding of who its partners would be. In agreements that permit transfers under certain conditions, the partners or the JV itself may have *right of first refusal* (i.e., the party wishing to leave the JV first must offer its interests to other participants in the JV). Parties to the agreement may have the right to "put" (or sell) their interests to the venture and the venture may have a call option (or right to purchase such interests). There also may be tag-along and drag-along provisions, which have the effect of a third-party purchaser's acquiring not only the interest of the JV party whose interest it seeks to acquire but also the interests of other parties. A *drag-along* provision requires a party not otherwise interested in selling its ownership interest to the third party to do so. A *tag-along* provision gives a party to the alliance who was not

originally targeted by the third party the option to join the targeted party in selling its interest to the third party.

Taxes

The primary tax concerns of the JV partners are to avoid the recognition of taxable gains on the formation of the venture and to minimize taxes on the distribution of its earnings. In addition to the double taxation of dividends discussed earlier, the corporate structure may have other adverse tax consequences. If the partner owns less than 80% of the alliance, its share of the alliance's results cannot be included in its consolidated income tax return. This has two effects. First, when earnings are distributed, they are subject to an intercorporate dividend tax, which can be 7% if the partner's ownership interest in the venture is 20% or more. Second, losses of the business alliance cannot be used to offset other income earned by the participant. For tax purposes, the preferred alternative to a corporate legal structure is to use a pass-through legal structure, such as a LLC or a partnership.

A partnership can be structured in such a way that some partners receive a larger share of the profits, whereas others receive a larger share of the losses. This flexibility in tax planning is an important factor stimulating the use of partnerships and LLCs. These entities can allocate to each JV partner a portion of a particular class of revenue, income, gain, loss, or expense. Services provided to the JV, such as accounting, auditing, legal, human resource, and treasury services, are not viewed by the IRS as being "at risk" if the JV fails. The JV should pay prevailing market fees for such services; otherwise such services may be taxable.

Business entities may change their legal form when the tax rate differences are significant. For example, if corporate tax rates are reduced to 15% (i.e., US President Donald Trump's proposal in early 2017) and personal tax rates were to remain at higher levels, corporations would have an incentive to change their legal form from pass-through entities to a corporate structure.

Management and Organizational Issues

Control of business alliances most often is accomplished through a steering committee, which has the ultimate authority for ensuring that the venture stays focused on the strategic objectives agreed to by the partners. To maintain good communication, coordination, and teamwork, the committee should meet at least monthly. The committee should provide operations managers with sufficient autonomy so that they can take responsibility for their actions and be rewarded for their initiative.

A common method of control is the *majority-minority* framework, which relies on identifying a clearly dominant partner, usually the one having at least a 50.1% ownership stake. In this scenario, the equity, control, and distribution of rewards reflect the majority-minority relationship. This type of structure promotes the ability to make rapid corrections, defines who is in charge, and is most appropriate for high-risk ventures, where quick decisions often are required. The major disadvantage of this approach is that the minority partner may feel powerless and become passive or alienated.

Another method of control is the *equal division of power* framework, which usually means that equity is split equally. This assumes that the initial contribution, distribution, decision

making, and control are split equally. This approach helps keep the partners actively engaged in the management of the venture. It is best suited for partners sharing a strong common vision for the venture and possessing similar corporate cultures. However, the approach can lead to deadlocks and the eventual dissolution of the alliance.

Under the *majority rules* framework, the equity distribution may involve three partners. Two of the partners have large equal shares, whereas the third partner may have less than 10%. The minority partner is used to break deadlocks. This approach enables the primary partners to remain engaged in the enterprise without stalemating the decision-making process.

In the *multiple party* framework, no partner has control; instead, control resides with the management of the venture. Consequently, decision making can be nimble and made by those who understand the issues best. This framework is well suited for international ventures, where a country's laws may prohibit a foreign firm from having a controlling interest in a domestic firm. It is common for a domestic company to own the majority of the equity but for the operational control of the venture to reside with the foreign partner. In addition to a proportional split of the dividends paid, the foreign company may receive additional payments in the form of management fees and bonuses.

Regulatory Restrictions and Notifications

JVs may be subject to Hart–Scott–Rodino filing requirements because the parties to the JV are viewed as acquirers and the JV as a target. For JVs between competitors, to get regulatory approval, competitors should be able to do something together that they could not do alone. Competitors can be relatively confident that a partnership will be acceptable to regulators if, in combination, they control no more than 20% of the market. Project-oriented ventures are looked at most favorably. Collaborative research is encouraged, particularly when the research is shared among all the parties to the alliance. Alliances among competitors are likely to spark a review by the regulators because they have the potential to result in price fixing and dividing up the market.

EMPIRICAL FINDINGS

Reflecting their flexibility and relatively low capital requirements, business alliances are popular ways to implement business strategies. Under the right conditions, alliances can generate significant abnormal financial returns. Empirical evidence shows that JVs and strategic alliances often create value for their participants, with average announcement-date positive abnormal returns varying from 1 to 3%.¹⁵ There is some evidence that JVs involving financial services firms are more likely to show positive abnormal returns than strategic alliances, because they often result in a separate legal entity enabling a greater degree of integration and synergy realization.¹⁶

¹⁵Das et al. (1998), Johnson et al. (2000), and Kale et al. (2002).

¹⁶Amici et al. (2013).

Partners in JVs who are in the same industry (horizontal JVs) tend to share equally in wealth creation. The wealth increase is often much greater for horizontal alliances involving the transfer of technical knowledge than for nontechnical alliances.¹⁷ For vertical JVs, suppliers experience a greater portion of the wealth created.¹⁸ Firms with greater alliance experience enjoy a greater likelihood of success and greater wealth creation than those with little experience.¹⁹

Strategic alliances can have a salutary effect on the share prices of their suppliers and customers and a negative impact on the share prices of competitors. For alliances created to share technologies or develop new technical capabilities, suppliers benefit from increased sales to the alliance and customers benefit from using the enhanced technology developed by the alliance in their products. Competitors' share prices decline due to lost sales and earnings to the alliance.²⁰ Despite rapid growth in part reflecting a loosening of antitrust regulatory policies,²¹ a majority of all business alliances fail to meet expectations.²²

Alliances may also increase firm value by alleviating agency conflicts. For example, in highly diversified firms, operating managers know that future capital allocations made by senior management will depend on the relative performance of investment projects undertaken among the various business units. Such managers may be less committed to implementing a project if they feel there is a significant chance that it will not be adequately funded due to limitations on the future availability of capital. Projects involving alliances that contractually commit the firm to making future capital investments may provide an incentive for operating managers to be more fully committed to their eventual success. In addition, firms capable of good governance practices such as treating diverse stakeholder interests fairly also may be better able to mitigate agency issues between alliance partners as dominant alliance partners are more likely to agree to a more equal sharing of power with other partners.²³

While there is substantial evidence that business alliances can create shareholder value for the participating firms, bondholders also benefit. JVs and strategic alliances have been documented to realize positive abnormal returns for bondholders of almost 1%.²⁴ Why? Because they alleviate cash constraints when partners contribute cash or make a loan or when the alliance has sufficient assets to serve as collateral to borrow on its own. Sometimes this may require the alliance partners to guarantee the loan. Synergy between partners to the alliance or JV also reduces costs and increases operating cash flow to cover the repayment of interest and principal. Finally, JVs and alliances often provide an array of "real" options (see Chapter 8) giving the participants the flexibility to manage the rate at which they invest in the JV and conditions defined in the alliance agreement under which they can exit.

¹⁷Das et al. (1998).

¹⁸Johnson et al. (2000).

¹⁹Kale et al. (2002).

²⁰Chang (2008).

²¹Robinson (2002a).

²²Klein (2004) reports that 55% of alliances fall apart within 3 years of their formation.

²³Bodnaruk et al. (2013).

²⁴Chen et al. (2015).

SOME THINGS TO REMEMBER

Business alliances may offer attractive alternatives to M&As. Motivations for alliances include risk sharing, access to new markets, new-product introduction, technology sharing, globalization, a desire to acquire (or exit) a business, and the perception that they are often more acceptable to regulators than M&As. Business alliances may assume a variety of legal structures: corporate, LLCs, partnership, franchise, equity partnership, and written contract. Key deal-structuring issues include the alliance's scope, duration, legal form, governance, and control mechanism.

DISCUSSION QUESTIONS

- 15.1 What is a LLC? What are its advantages and disadvantages?
- 15.2 Why is defining the scope of a business alliance important?
- 15.3 Discuss ways of valuing tangible and intangible contributions to a JV.
- 15.4 What are the advantages and disadvantages of the various organizational structures that could be used to manage a business alliance?
- 15.5 What are the common reasons for the termination of a business alliance?
- 15.6 Google invested \$1 billion for a 5% stake in America Online as part of a partnership that expands the firm's existing search engine deal to include collaboration on advertising, instant messaging, and video. Under the deal, Google would have the customary rights afforded a minority investor. What rights or terms do you believe Google would have negotiated in this transaction? What rights do you believe AOL might want?
- 15.7 Conoco Phillips announced the purchase of 7.6% of Lukoil's (a largely government-owned Russian oil and gas company) stock for \$2.36 billion during a government auction of Lukoil's stock. Conoco would have one seat on Lukoil's board. As a minority investor, how could Conoco protect its interests?
- 15.8 J&J sued Amgen over their 14-year alliance to sell a blood-enhancing treatment called erythropoietin. The partners ended up squabbling over sales rights and a spin-off drug and could not agree on future products for the JV. Amgen won the right in arbitration to sell a chemically similar medicine that can be taken weekly rather than daily. What could these companies have done before forming the alliance to have mitigated the problems that arose after the alliance was formed? Why do you believe they may have avoided addressing these issues at the outset?
- 15.9 GM, a United States-based global auto manufacturer, agreed to purchase 20% of Japan's Fuji Heavy Industries, Ltd., the manufacturer of Subaru vehicles, for \$1.4 billion. Why do you believe that GM initially may have wanted to limit its investment to 20%?
- 15.10 Through its alliance with Best Buy, Microsoft is selling its products—including Microsoft Network (MSN) Internet access services and handheld devices, such as digital telephones, handheld organizers, and WebTV, that connect to the web—through kiosks in Best Buy's 354 stores nationwide. In exchange, Microsoft has invested \$200 million in Best Buy. What do you believe were the motivations for this strategic alliance?

Answers to these Discussion Questions are available in the Online Instructor's Manual for instructors using this book (<https://textbooks.elsevier.com/web/Manuals.aspx?isbn=9780128016091>).

END OF CHAPTER CASE STUDY: GENERAL MOTORS HEDGES ITS BETS WITH AN INVESTMENT IN RIDE-HAILING FIRM LYFT

Case Study Objectives: To Illustrate How Business Alliances Can

- Manage risk
- Leverage financial and nonfinancial resources

In an era in which rapid changes in technologies are reshaping the long-standing business models of most companies, senior managers find themselves having to gaze into the future to anticipate rather than simply react to market changes. The automotive industry is no exception. Those that will survive long term must make educated guesses about what lies ahead in terms of how people will choose private versus public modes of transportation. While the latter has long represented an alternative in areas of high population density, new trends are emerging that represent both a threat and an opportunity to the traditional passenger vehicle.

Among the economic and social developments likely to impact the mode of transportation in high-density affluent areas is the advent of autonomous (or self-driving) cars and ride-hailing services (like Uber and Lyft).²⁵ Consequently, both firms within the car manufacturing industry and major technology companies are seeking ways to exploit changes in the giant automotive transportation market. Ride-hailing companies using autonomous driving car technology have the potential to substantially erode consumers' desire to own motor vehicles, particularly in urban areas, and in turn to reduce automakers' sales and profits.

Automotive executives are keenly aware of the potential for ride-hailing services to reduce the demand for owning or leasing cars in urban areas. However, opportunities for automakers do exist. Even if the industry's passenger car sales decline, the number of miles driven by cars can actually increase as cars remain the preferred mode of transportation nationwide. Car companies see the potential to offer paid services to take advantage of all the miles driven by the current fleet of cars, which in the United States exceeds 100 million vehicles. Such paid services could provide a significant source of future income in addition to the more traditional sale of cars and replacement parts.

The future may consist of company-owned autonomous cars constantly shuttling people back and forth rather than simply cars owned by individuals remaining in garages or parking lots a large percentage of each day. Car companies with paid mobility services see themselves earning money on the number of miles driven rather than simply on the actual sale of cars. In recognition of this emerging trend, Ford announced in 2015 that it was increasingly thinking of itself as a mobility company rather than an automotive company.

The growing popularity among consumers of ride-hailing indeed portends a major paradigm shift in the way we travel. But the capital requirements to make it happen are proving to be huge. Uber has been unable to sustain its rapid growth through internal financing. In mid-2016, Uber announced publicly plans to raise billions of dollars from investors and creditors. Smaller competitors such as Lyft acutely aware of the amount of capital required to compete with Uber pursued various options ranging from partnerships to seeking minority investors to sale of the business.

²⁵Firms like Uber and Lyft often referred to themselves as ride-sharing services. Others prefer to use the term ride-hailing services. In practice, most of what Uber and Lyft provide to users is the ability to hail a private car using a mobile phone app. In most instances, you are not actually sharing a ride with other paying customers. Consequently, in this case study, firms like Uber and Lyft are referred to as ride-hailing services.

After having tried unsuccessfully to sell itself to GM, Apple, Google, Amazon, Uber, and Chinese ride-hailing firm Didi Chuxing, United States-based Lyft Inc. initiated a new round of funding in early 2016 raising more than \$1 billion. This included a \$500 million investment by GM. Other investors in the equity offering included Saudi Arabia's Kingdom Holding Co., Janus Capital Management LLC, and Japanese e-commerce firm Rakuten. The financing valued Lyft at \$5.5 billion, more than double its valuation in its prior financing round in early 2015.

The deal marks the first time a major car maker has joined with a ride-hailing company. GM and Ford are among a cadre of car makers interested in developing their own "alternative" autonomous driving capabilities either alone or in partnership with other firms. This comes at a time when large technology firms including Uber, Alphabet (Google's parent), and Apple Inc. are seeking to increase their role in the personal transportation market.

Founded in 2012, Lyft helped promote the popularity of the ride-hailing craze in the United States. Lyft users can summon a private car using a mobile phone app. Lyft says it now completes 7 million rides per month across more than 190 cities in the United States. In October, it announced an annual gross run rate (total bookings through the Lyft app, before the driver's commission) of \$1 billion.

Despite the new round of funding in early 2016, Lyft has only a fraction of the capital available to its larger competitor, Uber, which has raised more than \$13 billion, six times more than Lyft. Moreover, Uber, which is also developing its own autonomous-vehicle technology, is valued at \$64.6 billion, a figure larger than GM's \$53 billion market value. To leverage its relatively limited financial resources, Lyft has been working to catch up to Uber by teaming up with ride-hailing competitors in Asia like Kuaidi, Ola, and GrabTaxi to expand. It has also struck deals with major brands like Starbucks and pop stars like Justin Bieber to broaden its appeal. Lyft also teamed with Hertz to offer rental cars to drivers who do not own vehicles, and it has reached an agreement with Shell Oil that gives gasoline discounts to Lyft drivers in a handful of cities.

By investing in Lyft, GM also gets a seat on Lyft's board to gain influence on Lyft's decisions. While it's too early to say whether it will be taking a hands-on role, GM's investment in Lyft is a big step beyond the in-house R&D that many automakers have been pouring into vehicle automation. In the short term, the partnership will look similar to one Lyft already has with Hertz. That is, GM will establish rental hubs around the country that will make vehicles owned by GM available to Lyft drivers on a short-term rental basis.

The longer-term vision for the partnership is that the two companies can combine GM's experience in manufacturing and autonomous technology with Lyft's mobile software and infrastructure to create a self-driving car network that might be cheaper and more ubiquitous than any existing ride-hailing business models. Such a network would be similar to the way Uber and Lyft operate today. Each offers a fleet of cars that respond to a request from a consumer's mobile phone request. However, the key difference would be the use of autonomous driving cars to replace drivers and slash labor costs while improving productivity by allowing a company to keep cars in service constantly. In concept, a company owning the proprietary technology from the artificial intelligence to make the network function efficiently to car manufacturing to consumer software and fleet ownership could have a huge advantage over other players. How? Owning all aspects of the network improves the likelihood they are operationally compatible.

GM has been developing its own autonomous car technology for several years in anticipation of launching a fleet of self-driving Chevrolet Volt plug-in hybrid cars. The investment in Lyft will provide GM with a practical means of understanding the ride-hailing market and offers an important platform for generating fees for the firm by facilitating a more cost-efficient car sharing network. It also gives GM an extra market for its vehicles. For Lyft, GM's support includes more than financial

backing. As part of the investment, GM and Lyft will work on developing an on-demand network of self-driving cars, an area of research that companies like Google, Tesla, and Uber have all devoted enormous resources to in recent years.

While the proposed network has considerable conceptual appeal, there are numerous roadblocks that must be overcome: some regulatory, some technical, some human behavior, and some cultural. Regulatory considerations entail concerns about the safety of autonomous driving cars and the potential for liability. In late 2015, California passed legislation requiring a driver to be behind the wheel of a self-driving vehicle at all times. This would preclude the labor cost reduction presumed in the GM–Lyft network concept. Like any new technology, it is likely to take years for consumers to accept the driverless car concept putting the realization of the proposed network years into the future. Finally, the behemoth GM has a large and often ponderous bureaucracy as compared to Lyft's. Lyft's corporate culture is more likely to reflect nimbleness and informality in contrast to GM's more structured and risk-averse way of decision making.

GM's \$500 million interest in Lyft is the single largest direct investment by an auto manufacturer into a ride-hailing company in the United States. But it is by no means the first attempt to partner with others to tap into the ride-hailing market. In 2011, GM teamed up with RelayRides, a website that lets GM car owners rent out their idle vehicles. Ford reached a similar agreement with Getaround. Daimler has been experimenting with Car2Go, a Zipcar-like service²⁶ that offers Daimler smart car rentals in urban areas like Brooklyn, Berlin, and Toronto.

What began as a race to turn driverless cars into a form of mainstream transportation is now moving on to its next stage. This is occurring even before the first stage has been completed. This next stage is a business model based on personal mobility in which consumers have instant access to cars you don't have to own. Will the shift to autonomously driven car networks hurt GM's traditional business? GM argues it will not as it represents a broadening of the choices for consumers not wanting to own their own cars. It is viewed as complementary to its core car manufacturing business: GM can generate a revenue stream by owning a ride-hailing operation as well as by selling cars to those who choose to own them. GM notes that the most profitable part of its business has been for years its truck and SUV business whose sales are made primarily to people living in less densely populated areas. In contrast, ride-hailing/sharing is likely to be mostly an urban phenomenon and offers a new revenue stream for the company.

Discussion Questions

1. What alternatives to a partnership with Lyft did GM have? Why was a partnership selected as the means of implementing the firm's strategy to enter the ride-hailing business?
2. Who do you believe benefited most from the partnership (GM or Lyft) and why?
3. In addition to risk sharing, what other motivations existed for GM and Lyft to partner?
4. Speculate as to why GM invested in Lyft rather than other ride-hailing services such as Uber?
5. Of the risk factors mentioned in the case study, which do you believe is the most likely to prevent the realization of the partnership's vision of achieving a car-hailing network of autonomous driving cars? Explain your answer.

Solutions to these case study questions are found in the Online Instructor's Manual for instructors using this book (<https://textbooks.elsevier.com/web/Manuals.aspx?isbn=9780128016091>).

²⁶Zipcar is an American-owned subsidiary of Avis Budget Group, which provides automobile reservations to its members, billable by the hour or day. Zipcar members pay a monthly or annual membership fee in addition to car reservation charges.

**ADDITIONAL CASE STUDY RECOMMENDATIONS
(SEARCH HARVARD BUSINESS SCHOOL
PUBLISHING SITE BY NAME OF CASE:
hbsp.harvard.edu)**

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Management, Decision-Making.

Alternative Exit and Restructuring Strategies

Divestitures, Spin-Offs, Carve-Outs, Split-Offs, and Tracking Stocks

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Experience is the name everyone gives to their mistakes —Oscar Wilde

INSIDE M&A: GENERAL ELECTRIC RETURNS TO ITS INDUSTRIAL ROOTS

KEY POINTS

- Firms often restructure to realign their business focus.
- Restructuring strategies can range from divestitures to spin-offs to split-offs of unwanted businesses.
- Companies interested in divesting specific operating units often undertake “controlled auctions” to minimize disruption to the business.

As part of GE’s strategy to focus the conglomerate on its industrial businesses, the firm announced in late 2015 that it had sold the bulk of its private equity lending business to the Canada Pension Plan Investment Board (CPIB) for \$12 billion. Known within GE as the Financial Sponsor Group (FSG), FSG finances leveraged buyouts. FSG consists of Antares Capital (a private equity lender) and a \$3 billion bank loan portfolio. The unit for years had been considered a “crown jewel” within GE’s financial services business. Under the terms of the deal, Antares Capital will retain its name and operate as a standalone business within

CPPIB. The sale represents a substantial part of GE's campaign to withdraw from its financial services arm known as GE Capital.

GE had relied on profits generated by GE Capital for the bulk of its earnings growth for more than 3 decades. However, since the financial crisis surrounding the 2007–09 recession, which savaged the conglomerate's profits, and the increase in regulation of financial services firms, GE's CEO Jeffrey Immelt has moved to restructure the firm. The goal was to create a "simpler, more valuable company" focused on its less opaque industrial operations. GE expects to retain only financial services businesses that are closely related to its core industrial businesses such as equipment leasing or financing, which often helps in selling large pieces of industrial equipment. Investors welcomed the move by bidding up its shares.

GE had a number of bidders in its "controlled auction" for FSG in which it approached potential buyers to determine if they were interested in participating in the bidding process. GE utilized this method in order to include only firms likely to realize synergy if they were to acquire FSG and firms which were perceived as qualified buyers (i.e., those with the financial ability to pay what GE believed was a fair price). Moreover, GE was not interested in a lengthy process involving numerous bidders conducting exhaustive due diligence on FSG for fear that key employees might leave for competitors during a lengthy auction process.

The deal appeared to satisfy key strategic objectives for both the seller and buyer of FSG. For GE, the sale represented a significant step in exiting much of its financial services group. For CPPIB, the acquisition enabled it to become a major lender to buyout firms that are investing in midsize US businesses. The pension fund has been increasingly active in private-equity investing and ranks as one of the most aggressive private equity lenders today. As a pension fund, CPPIB is focused on investments that generate steady returns over the long term to help fund its future pension obligations. The GE loan portfolio aligns with that goal by providing it with a bigger source of recurring interest rate income from the outstanding loans, and Antares Capital provides the infrastructure to increase substantially its origination of new loans.

CPPIB, which invests the retirement funds of 18 million Canadians, won the bidding for GE's private-equity lending business by substantially outbidding such well-regarded private equity firms as Apollo Global Management and KKR. The Canadian pension board's ability to harness the predictable flow of funds it receives from the country's workers has enabled it to have a substantial advantage over rival bidders to win big deals in real estate and private equity. Unlike US pension funds, CPPIB's strategy involves more direct investing rather than hiring private equity funds to invest on their behalf. In doing so, CPPIB will save millions of dollars in fees paid to third party private equity funds.

CHAPTER OVERVIEW

In recent years, many firms have mirrored General Electric's efforts to move away from managing a complex, diverse set of businesses to a coherent business portfolio more easily understood by investors. Most businesses, particularly large, highly diversified organizations, are constantly looking for ways in which they can enhance shareholder value by changing the composition of their assets, liabilities, equity, and operations. These activities generally are referred to as *restructuring strategies*. Restructuring may embody both growth strategies and exit strategies. Growth strategies have been discussed elsewhere in this book. The focus

in this chapter is on those strategic options allowing the firm to maximize shareholder value by redeploying assets through downsizing or refocusing the parent company. As such, this chapter discusses the myriad motives for existing businesses, the various restructuring strategies for doing so, and why firms select one strategy over other options.

In this context, equity carve-outs, spin-offs, divestitures, and split-offs are discussed separately rather than as a specialized form of a carve-out.¹ The chapter concludes with a discussion of what empirical studies say are the primary determinants of financial returns to shareholders resulting from undertaking the various restructuring strategies. Voluntary and involuntary restructuring and reorganization (both inside and outside the protection of bankruptcy court) also represent exit strategies for firms and are discussed in detail in Chapter 17. A review of Chapter 16 (including practice questions with answers) is available in the file folder entitled “Student Study Guide” on the companion website to this book (<https://www.elsevier.com/books-and-journals/book-companion/9780128016091>).

WHY DO FIRMS EXIT BUSINESSES?

Theories abound as to why corporations choose to exit certain businesses. While not an exhaustive list, some of the most common are discussed next.

Increasing Corporate Focus

Managing highly diverse and complex portfolios of businesses is both time consuming and distracting and may result in funding those businesses with relatively unattractive investment opportunities with cash flows generated by units offering more favorable opportunities. Firms often choose to simplify their business portfolio by focusing on those units with the highest growth potential and by exiting those businesses that are not germane to the firm’s core business strategy. Increasing focus often improves firm value by allocating limited resources better and by reducing competition for such resources within multidivisional firms.² CEOs managing firms with numerous diverse businesses are more likely to exit those businesses in industries in which they have less experience.³ Moreover, new CEOs are more likely to engage in restructuring but the scale and scope of the change tends to differ if the new CEO comes from within the firm rather than is an outsider. While new inside CEOs tend to sell more businesses (usually those not meeting the firm’s profit targets), they often refrain from radically altering the firm’s current business strategy, perhaps because they played a key role in developing the strategy. In contrast, new outside CEOs sell fewer businesses and tend to exit those that are unrelated.⁴

¹In some accounting texts, divestitures (referred to as *sell-offs*), spin-offs, and split-offs are all viewed as different forms of equity carve-outs and discussed in terms of how they affect the parent firm’s shareholders’ equity for financial-reporting purposes. Alternatively, some analysts describe these restructuring activities as separation strategies in which the parent is able to separate from itself all or a portion of an operating business.

²Fulghieri and Sevilir, 2011.

³Huang, 2014.

⁴Chiu et al., 2016.

Underperforming Businesses

Parent firms often exit businesses failing to meet or exceed the parent's hurdle-rate requirements. Amid plummeting readership and advertising revenues, Gannet, Tribune Company, and E.W. Scripps, firms that had historically grown as print newspapers but which had expanded into other forms of media, dumped in 2015 their print businesses through a series of spin-offs. That same year, in the wake of softening commodity prices, global metals, and mining company BHP Billiton spun off underperforming assets that contributed only 4% of the consolidated firm's profitability. The spinoff essentially undid the 2001 merger that created the global commodities firm.

Regulatory Concerns

A firm with substantial market share purchasing a direct competitor may create antitrust concerns. The combination of such firms may be viewed as anticompetitive if the combined firms' market share exceeds some threshold. Regulatory agencies still may approve the merger if the acquirer divests some of its operations, the target's, or some combination of the two, in order to establish other competitors in the industry.

Lack of Fit

Synergies anticipated by the parent among its businesses may not materialize. TRW's decision to sell its commercial and consumer information services businesses came after years of trying to find a significant fit with its space and defense businesses.

Tax Considerations

Tax benefits may be realized through a restructuring of the business. Nursing home operator Sun Healthcare Systems (Sun) contributed its nursing home real estate operations to a Real Estate Investment Trust (REIT) in 2010 through a spin-off. Because REITs do not pay taxes on income that is distributed to shareholders, Sun was able to enhance shareholder value by eliminating the double taxation of income, once by the parent and again by investors when dividends are paid. For these reasons, shareholders celebrated American retailer Sears Holdings by driving up its share price by 31% in late 2014 when the firm announced the creation of a REIT to hold its real estate assets.

Raising Funds

Parent firms may choose to fund new initiatives or reduce leverage or other financial obligations through the sale or partial sale of units no longer considered strategic. Pressured by activist shareholders, Chesapeake Energy Group announced in 2012 its intention to sell \$11.5 billion to \$14 billion in assets to reduce its leverage. Tobacco giant Reynolds American acquired its smaller rival Lorillard in late 2014 for \$27.4 billion, selling specific product lines at closing for \$7.1 billion to the Imperial Tobacco Group to help finance the deal.

Worth More to Others

Others may view a firm's operating assets as much more valuable than the parent firm. In early 2017, tool maker Stanley Black & Decker acquired financially ailing retailer Sears' Craftsman tool trademark for \$900 million (including \$250 million in future payments). Sears expects to use the proceeds to augment working capital and reduce indebtedness while Stanley intends to expand sales in the United States under the widely recognized Craftsman brand.

Risk Reduction

A firm may reduce risk associated with a unit by selling or spinning-off the business. For example, major tobacco companies have been under pressure for years to divest or spin off their food businesses because of the litigation risk associated with their tobacco subsidiaries. Altria bowed to such pressure in 2007 with the spin-off of its Kraft Food operations.

Discarding Unwanted Businesses from Prior Acquisitions

Acquirers often find themselves with certain target firm assets that do not fit their primary strategy. These redundant assets may be divested to raise funds to help pay for the acquisition and to enable management to focus on integrating the remaining businesses into the parent without the distraction of having to manage nonstrategic assets. When Northrop Grumman acquired TRW, it announced it would retain TRW's space and defense businesses and divest operations not germane to Northrop's core defense business. Nestlé acquired Adams, Pfizer's chewing gum and confectionery business, in early for \$4.6 billion, which Pfizer viewed as a noncore business acquired as part of its acquisition of Warner-Lambert in 2000.

Avoiding Conflicts with Customers

For years, many of the regional Bell operating companies (i.e., RBOCs) that AT&T spun off in 1984 have been interested in competing in the long-distance market, which would put them in direct competition with their former parent. Similarly, AT&T sought to penetrate the regional telephone markets by gaining access to millions of households by acquiring cable TV companies. In preparation for the implementation of these plans, AT&T announced in 1995 that it would divide the company into three publicly traded global companies, to avoid conflicts between AT&T's former equipment manufacturer and its main customers, the RBOCs.

Increasing Transparency

Firms may be opaque to investors due to their diverse operations. General Electric is an example, operating dozens of separate businesses in many countries. Even with access to financial and competitive information on each business, it is challenging for any analyst or investor to value properly such a diversified firm. By reducing its complexity, a firm may make it easier for investors to assess accurately its true value.

DIVESTITURES

A *divestiture* is the sale of a portion of a firm's assets to an outside party, generally resulting in a cash infusion to the parent. Such assets may include a product line, a subsidiary, or a division.

Motives for Divestitures

Divestitures often represent a way of raising cash. A firm may choose to sell an undervalued or underperforming operation that it determined to be nonstrategic or unrelated to the core business and to use the proceeds of the sale to fund investments in potentially higher-return opportunities, including paying off debt. Alternatively, the firm may choose to divest the undervalued business and return the cash to shareholders through either a liquidating dividend⁵ or share repurchase. Moreover, an operating unit may simply be worth more if sold than if retained by the parent.

Corporate Portfolio Reviews

A parent firm conducts a financial analysis to determine if its businesses are worth more to shareholders if sold and the proceeds returned to the shareholders or reinvested in more profitable opportunities. Comparing the future of certain businesses with other opportunities, GE has completed transactions valued at more than \$250 billion in buying and selling various operating units since Jeffrey Immelt became CEO in 2001.

To Sell or Not to Sell

An analysis undertaken to determine if a business should be sold involves a multistep process. These steps include determining the after-tax cash flows generated by the unit, an appropriate discount rate reflecting the risk of the business, the after-tax market value of the business, and the after-tax value of the business to the parent. The decision to sell or retain the business depends on a comparison of the after-tax value of the business to the parent with the after-tax proceeds from the sale of the business. These steps are outlined in more detail next.

Step 1: Calculating After-Tax Cash Flows

To decide if a business is worth more to the shareholder if sold, the parent must first estimate the after-tax cash flows of the business viewed on a stand-alone basis. This requires adjusting the cash flows for intercompany sales and the cost of services (e.g., legal, treasury, and audit) provided by the parent. *Intercompany sales* refer to operating unit revenue generated by selling products or services to another unit owned by the same parent. Intercompany sales

⁵A liquidating dividend is a type of payment made by a corporation to its shareholders during its partial or full liquidation. They represent a return of capital to shareholders since such payments exceed the firm's net income and as a return of capital are typically not taxable to shareholders. This distinguishes a liquidating dividend from regular dividends, which are issued from the company's operating profits or retained earnings.

should be restated to ensure they are valued at market prices.⁶ Moreover, services provided by the parent to the business may be subsidized or at a markup over actual cost. Operating profits should be reduced by the amount of any subsidies and increased by any markup over what the business would have to pay if it purchased comparable services outside of the parent firm.

Step 2: Estimating the Discount Rate

Once cash flows have been determined, a discount rate should be estimated that reflects the risk characteristics of the industry in which the business competes. The cost of capital of other firms in the same industry (or firms in other industries exhibiting similar profitability, growth, and risk characteristics) is often a good proxy for the discount rate of the business being analyzed.

Step 3: Estimating the After-Tax Market Value of the Business

The discount rate from Step 2 then is used to estimate the market value of the projected after-tax cash flows of the business determined in Step 1. Step 3 also requires the estimation of an appropriate terminal value for the business (see Chapter 7).

Step 4: Estimating the Value of the Business to the Parent

The after-tax equity value (EV) of the business as part of the parent is estimated by subtracting the market value of the business's liabilities (L) from its after-tax market value (MV) as a stand-alone operation. This relationship can be expressed as follows:

$$EV = MV - L$$

EV is a measure of the after-tax market value of the shareholder equity of the business, where the shareholder is the parent firm.

Step 5: Deciding to Sell

The decision to sell or retain the business is made by comparing the EV with the after-tax sale value (SV) of the business. Assuming other considerations do not outweigh any after-tax gain on the sale of the business, the decision to sell or retain can be summarized as follows:

If $SV > EV$, divest.

If $SV < EV$, retain.

Although the sale value may exceed the equity value of the business, the parent may choose to retain the business for strategic reasons. The parent may believe that the business's products facilitate the sale of other products the firm offers. Amazon.com breaks even on the sale of Kindle e-book readers while expecting to make money on electronic books that will be downloaded via the Kindle. In another instance, the divestiture of one subsidiary of a diversified parent may increase operating expenses for other parent operations. In 2011, one reason given

⁶In vertically integrated firms such as steelmakers, much of the revenue generated by a firm's iron ore and coal operations comes from sales to the parent firm's steelmaking unit. The parent may value this revenue for financial-reporting purposes using transfer prices. If such prices do not reflect market prices, intercompany revenue may be artificially high or low, depending on whether the transfer prices are higher or lower than market prices.

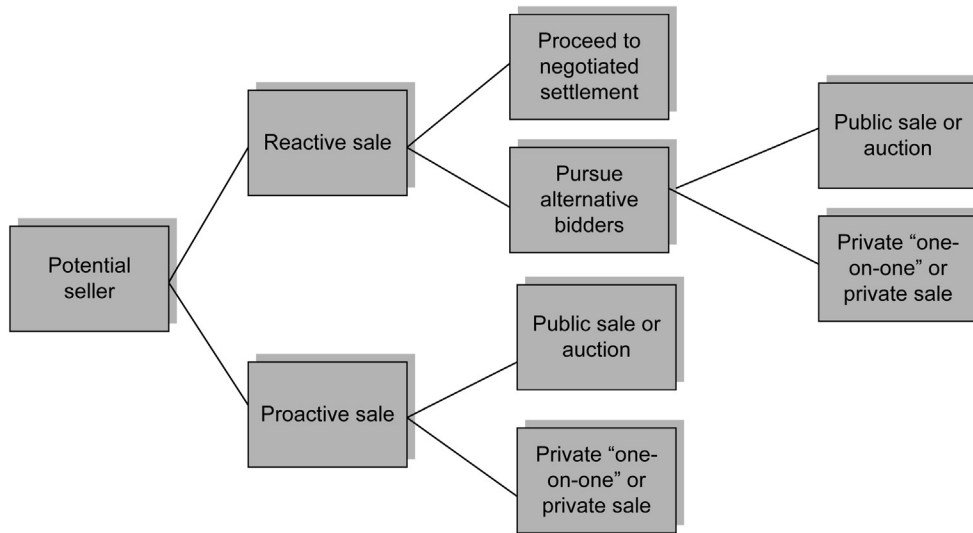


FIGURE 16.1 The selling process.

for Hewlett-Packard's decision not to sell its PC unit after publicly announcing its intention to do so was the potential for a one-time increase in expenses following the selloff of the unit.⁷

Timing of the Sale

Obviously, the best time to sell a business is when the owner does not need to sell or the demand for the business is greatest. The decision to sell also should reflect the broader financial environment. Selling when business confidence is high, stock prices are rising, and interest rates are low is likely to fetch a higher price for the unit. If the business to be sold is highly cyclical, the sale should be timed to coincide with the firm's peak-year earnings.

The Selling Process

Selling firms choose that selling process best serving their objectives and influences the types of buyers that are attracted (e.g., strategic versus private equity).⁸ The selling process may be reactive or proactive (Fig. 16.1). *Reactive sales* occur when the parent is unexpectedly approached by a buyer, either for the entire firm or for a portion of the firm such as a product line or subsidiary. If the bid is sufficiently attractive, the parent firm may choose to reach a negotiated settlement with the bidder without investigating other options. This may occur if

⁷Such expenses included the need to establish new infrastructure and systems for information technology, support, sales, and distribution channels for other businesses that had been using the PC unit's infrastructure. In addition, other HP operating businesses would lose volume discounts on purchases of components enjoyed as a result of the huge volume of such purchases made by the PC business.

⁸Fidrmuc et al., 2012.

the parent is concerned about potential degradation of its business, or that of a subsidiary, if its interest in selling becomes public knowledge. In contrast, *proactive sales* may be characterized as public or private solicitations. In a *public sale or auction*, a firm announces publicly that it is putting itself, a subsidiary, or a product line up for sale. In this instance, potential buyers contact the seller. This is a way to identify easily interested parties; however, this approach can also attract unqualified bidders (i.e., those lacking the resources necessary to complete the deal) or those seeking to obtain proprietary information through the due diligence process. In a *private or controlled sale*, the parent firm may hire an investment banker or undertake on its own to identify potential buyers to be contacted. Once a preferred potential buyer or list of what are believed to be qualified buyers has been compiled, contact is made.⁹

In either a public or a private sale, interested parties are asked to sign confidentiality agreements before being given access to proprietary information. Such information can include a financial forecast provided by the selling firm. Experienced buyers know that such forecasts tend to overly optimistic and often will discount them by 25%–30%. The challenge for the selling firm is to manage efficiently this information, which can grow into thousands of pages of documents and spreadsheets, and to provide easy and secure access to all interested parties. Such information frequently is offered online through so-called *virtual data rooms* (VDRs), particularly when the seller is represented by an investment bank.¹⁰ Because so much information is released to interested parties including competitors, there is a significant cost to the selling firm if a sale does not take place. That is, even though they are required according to the confidentiality agreement to return any proprietary information in their positions and not to use it for competitive purposes, competitors have knowledge that they can (and often do) use to gain a competitive advantage.

In private sales, bidders may be asked to sign a standstill agreement requiring them not to make an unsolicited bid. Parties willing to sign these agreements are then asked to submit preliminary, nonbinding “indications of interest” (i.e., a single number or a bid within a range). Those parties submitting preliminary bids are then ranked by the selling company by size of the bid, form of payment, the ability of the bidder to finance the transaction, form of acquisition, and anticipated ease of doing the deal. A small number of those submitting preliminary bids are then asked to submit a legally binding best and final offers. At this point, the seller may choose to initiate an auction among the most attractive bids or to go directly into negotiating a purchase agreement with a single party.

Choosing the Right Selling Process

Selling firms attempt to manage the selling process to realize the highest possible purchase price while maintaining the interest of potential acquirers. Selling firms may choose

⁹See the discussion of the screening and contacting process in Chapter 5 for more details.

¹⁰The VDR is intended to replace the traditional paper-based data room and the challenges of keeping such information current and secure. Because the VDR is searchable electronically, bidders have easier and more rapid access to the specific information they are seeking. Since multiple parties can access the information simultaneously from anywhere in the world unaware of the presence of others, the VDR provides for more efficient and thorough due diligence. VDRs also allow for online questions and answers. The major limitations of the VDR are the expense and technical expertise required and the inability to meet in person the management of the unit to be sold.

TABLE 16.1 Choosing the Right Selling Process

Selling process	Advantages/disadvantages
One-on-One negotiations (single bidder)	Enables seller to select the buyer with the greatest synergy. Minimizes disruptive due diligence. Limits the potential for loss of proprietary information to competitors. May exclude potentially attractive bidders.
Public auction (no limit on number of bidders)	Most appropriate for small, private, or hard-to-value firms. May discourage bidders concerned about undisciplined bidding by uninformed bidders. Potentially disruptive due to multiple due diligences.
Controlled auction (limited number of bidders)	Enables seller to select potential buyers with the greatest synergy. Sparks competition without the disruptive effects of public auctions. May exclude potentially attractive bidders.

to negotiate with a single firm, to control the number of potential bidders, or to engage in a public auction (Table 16.1). Large firms often choose to sell themselves, major product lines, or subsidiaries through “one-on-one” negotiations with a single bidder deemed to have the greatest synergy with the selling firm. Sellers are concerned about the deleterious effects of making the sale public and the disruptive effects of allowing many firms to perform due diligence and to receive proprietary information even though it is “protected” by confidentiality agreements. This approach also may be adopted to limit the potential for losing bidders who may also be competitors from obtaining proprietary information as a result of due diligence.

An auction may be undertaken to elicit the highest offer when selling smaller firms¹¹ that are more difficult to value and because there may be more bidders. Moreover, money-losing startups that are perceived as potential threats to current competitors may initiate an auction because an existing competitor may bid for the startup to prevent others from acquiring the firm. The winning bidder may substantially overpay fully aware that the startup is likely to continue to lose money. Examples include Newscorp’s purchase of Myspace for \$580 million, Facebook’s \$1 billion takeover of Instagram, Yahoo’s \$1.1 billion purchase of Tumblr, Google’s \$1.65 billion investment in Youtube, and eBay’s \$2.6 billion buyout of Skype.¹²

Paradoxically, in some instances, public auctions may actually discourage some firms from bidding due to the potential for overly aggressive bidding by relatively uninformed bidders to boost the bid price to excessive levels. The private or controlled sale among a small number of carefully selected bidders may spark competition to boost the selling price while minimizing the deleterious effects of public auctions.

Pfizer’s 2012 auction of its fast-growing baby food business is a recent example of a controlled auction. Pfizer sought bids from those it knew could benefit from the unit’s exposure to emerging markets and had the financial wherewithal to pay a substantial premium. The auction process involving Swiss-based Nestlé and France’s Groupe Danone went through several rounds before Nestlé’s \$11.85 billion bid was accepted by Pfizer. At 19.8 times EBITDA, the bid was considerably higher than that of the 15.7 multiple Nestlé paid for Gerber’s baby food operations in 2007.

¹¹Schlingemann and Wu (2015).

¹²Becker et al., 2016.

Approximately one-half of corporate M&A transactions involve “one-on-one” negotiations. The remaining transactions involve public or controlled auctions in which the sellers contacted an average of 10 potential bidders, with some contacting as many as 150. The financial returns to the selling firm’s shareholders appear to be about the same regardless of the way in which the business is sold. However, for larger target firms, one-on-one negotiation is more common.¹³ One-on-one negotiation may be superior to auctions when the target is large, because there are likely to be fewer potential buyers, which may result in a higher purchase price because the selling firm is able to share more proprietary information with the potential buyer. In an auction involving many bidders, the likelihood that such information could leak to competitors and be used to the competitive disadvantage of the selling firm is much higher.¹⁴

These findings seem at odds with the conventional wisdom that auctions should result, on average, in higher returns for selling-company shareholders assuming that more bidders are usually better than fewer bidders.¹⁵ This conclusion presumes that all bidders have access to the same information and have the financial ability to finance their bids. As previously noted, some qualified bidders may choose to refrain from bidding in an auction, concerned about overpaying for the target firm. Another risk to a seller of an auction is that it may attract a single viable bidder. If the potential buyer becomes aware that there are no other interested parties, negotiating leverage shifts from the seller to the buyer. This usually results in a lower premium paid for the target firm (and higher acquirer returns) than may have been achieved had the seller undertaken a one-on-one negotiation.¹⁶

The mere fact that most transactions involve relatively few bidders does not suggest that the bidding process is not competitive.¹⁷ The seller must maintain the perception throughout a one-on-one negotiation that other potential bidders exist but were not included in the process for reasons ranging from their exhibiting less potential synergy to concerns about loss of competitive information during due diligence to the potential for not receiving regulatory approval. In most cases, simply the threat of rival bids is sufficient to increase bids, even in “one-on-one” negotiations. Such latent competition tends to influence bid prices the most when market liquidity is greatest such that potential bidders have relatively inexpensive access to funds through borrowing or new equity issues. Ultimately, the premium a target firm receives is influenced by a variety of factors relating to the deal and industry characteristics.

The purchase premium is usually defined in the popular press as the excess of the offer price over the target firm’s share price immediately prior to the deal announcement date. However, a more accurate estimate of the purchase premium includes the sum of the increase in the target firm’s share price prior to the announcement (i.e., the run-up) plus the excess of the offer price over the run-up (i.e., the mark-up). The run-up in the target’s share price reflects anticipated synergy resulting from the combination of the target and acquiring firms. The bidder may be willing to mark-up the offer price above the run-up if it believes the pre-announcement date target price increase did not fully reflect anticipated synergies. [Table 16.2](#)

¹³Boone and Mulherin, 2009.

¹⁴Subramanian, 2010.

¹⁵Bulow and Klemperer, 2009.

¹⁶Volkov, 2016.

¹⁷Aktas et al., 2010.

TABLE 16.2 Factors Affecting Purchase Price Premiums

Factor	Explanation
Net synergy potential	Purchase premiums are likely to increase the greater the magnitude of perceived net synergy (see Chapter 9). Net synergy often is the greatest in highly related firms. ^a Moreover, premiums are likely to be larger if most of the synergy is provided by the target.
Desire for control	Buyers may pay more to gain control of firms exhibiting weak financial performance because of potential gains from making better business decisions (see Chapter 10).
Growth potential	Targets displaying greater growth potential relative to competitors generally command higher premiums. ^b
Information asymmetry (i.e., one bidder has more information than other bidders)	Informed bidders are likely to pay lower premiums because less informed bidders fear overpaying and either withdraw from or do not participate in the bidding process. ^c
Target Size	Buyers pay more for smaller targets due to the anticipated ease of integration. ^d
Target's Eagerness to Sell	Targets with a strong desire to sell typically receive lower premiums due to their relatively weak negotiating positions. ^e
Run-up in preannouncement target share price	While the run-up may cause bidders unsure of having adequate information to increase their offer price, ^f there is little evidence that bidders pay for anticipated synergies twice. That is, when the target's share price increases in advance of the deal's announcement plus the excess of the offer price over the run-up. ^g
Type of purchase	Hostile transactions (or the credible threat of hostile transactions) tend to command higher premiums than friendly transactions. ^h
Hubris	Excessive confidence may lead bidders to overpay. ⁱ
Type of payment	Cash purchases usually require an increased premium to compensate target shareholders for the immediate tax liability they incur. ^j Bidders using overvalued shares often overpay for target firms.
Financial leverage (debt/equity)	Highly leveraged buyers are disciplined by their lenders not to overpay; relatively unleveraged buyers often are prone to pay excessive premiums. ^k
Customer-supplier relationships	In vertical mergers, buyers substantially reliant on a target that is either a customer or a supplier and that has few alternatives will be forced to pay higher premiums than otherwise. ^l
Board connections	Acquirers realize higher announcement-date returns in transactions in which the target and the acquirer's boards share a common director, perhaps reflecting more consistent and candid communication. ^m
Investor consensus around target share price	Acquisition premiums tend to be higher whenever there is considerable disagreement among bidders as to the value of the target, possibly reflecting more active bidding for the target firm. ⁿ
Industry growth prospects	The magnitude of premiums varies substantially across industries, reflecting differences in expected growth rates. ^o
Credit rating	Rated firms on average pay a 3.3% higher premium reflecting their lower cost of capital than nonrated acquirers. ^p

(Continued)

TABLE 16.2 Factors Affecting Purchase Price Premiums (*cont.*)

Factor	Explanation
Industry structure	Targets in industries undergoing consolidation command higher premiums than other industries as acquirers attempt to eliminate industry excess capacity. ^a
Value of potential target tax attributes (e.g. NOLs)	Acquirers are willing to pay more for target tax attributes if they believe the potential tax savings can be realized relatively quickly. ^f

^aBetton et al., 2009.^bBetton et al., 2008.^cDionne et al., 2010.^dMoeller, 2005.^eAktas et al., 2010.^fBetton et al., 2009.^gBetton et al., 2015.^hCalcagno and Falconieri, 2014; Moeller, 2005.ⁱHayward and Hambrick, 1997.^jBetton et al., 2008.^kGondhalekar et al. (2004) argue that highly levered buyers are monitored closely by their lenders and are less likely to overpay. Morellec and Zhdanov find that relatively unleveraged buyers often pay more for targets.^lAhern, 2012.^mCai and Sevilir, 2012. Having a board connection often improves the information flow such that the acquirer is less likely to overpay for the target firm.ⁿChatterjee et al., 2012.^oMadura et al., 2012.^pHarford and Uysal, 2014.^qSimonyan, 2014.^rAng et al., 2014b.

provides a summary of those factors that have been found to be significant determinants of the magnitude of purchase price premiums.

Tax and Accounting Considerations for Divestitures

The divesting firm recognizes a gain or loss for financial-reporting purposes equal to the difference between the fair value of the payment received for the divested operation and its book value. For tax purposes, the gain or loss is the difference between the proceeds and the parent's tax basis in the stock or assets. Capital gains are taxed at the same rate as other business income.

SPIN-OFFS

A *spin-off* is a stock dividend paid by a firm to its current shareholders consisting of shares in an existing or newly created subsidiary. No shareholder approval is required since only the board of directors may decide the amount, type and timing of dividends. Such distributions are made in direct proportion to the shareholders' current holdings of the parent's stock. As such, the proportional ownership of shares in the subsidiary is the same as the stockholders' proportional ownership of shares in the parent firm. The new entity has its own management

and operates independent of the parent company. Unlike the divestiture or equity carve-out (explained later in this chapter), the spin-off does not result in an infusion of cash to the parent company. Following the spin-off, the firm's shareholders own both parent company shares and shares in the unit involved in the spin-off.

While spin-offs may be less cumbersome than divestitures, they are by no means simple to execute. The parent firm must make sure that the unit to be spun off is fully viable on a stand-alone basis and legally disentangled from other parent operations and that the parent has no ongoing liabilities associated with the spun-off unit. If the spun-off unit goes into bankruptcy shortly after having been separated from the parent, the parent may be held responsible for the unit's liabilities. Once the spin-off has been implemented, the former parent continues to provide "transitional" services. More than one year after Baxter International completed its spin-off of biopharmaceutical business Baxalta, Inc. the parent was still managing many of Baxalta's back office operations such as finance and IT. While receiving \$100 million annually for such services, the former parent is limited in its ability to make other changes in its ongoing operations since it needs to maintain this support infrastructure.

Motives for Spin-Offs

In addition to the motives for existing businesses discussed earlier, spin-offs provide a means of rewarding shareholders with a nontaxable dividend (if properly structured). Parent firms with a low tax basis in a business may choose to spin off the unit as a tax-free distribution to shareholders rather than sell the business and incur a substantial tax liability. Independent of the parent, the unit has its own stock to use for possible acquisitions and can focus on a growth strategy without interference from the parent's board which may not fully understand the unit's operations. The managers of the business that is to be spun off have a greater incentive to improve the unit's performance if they own stock in the unit. Now more focused and transparent to investors than when it was part of a larger diversified firm, the unit can become an attractive takeover opportunity thereby potentially creating far more value for parent shareholders holding stock in the unit than when it was part of the parent. Spin-offs also represent an easy alternative to divesting a difficult to sell business.

While there are compelling reasons for implementing spin-offs, there are significant disadvantages including the loss of both revenue and synergies associated with the unit spun off by the parent. For publicly traded firms, the elimination of a large portion of a firm through a spin-off to shareholders can result in less stock analyst coverage, removal from stock indices, and an increased likelihood of takeover of the former parent if the spin off substantially reduces the size of the parent. Finally, the costs associated with separating a unit from the parent can become substantial if the unit is well integrated into other parts of the firm.

Tax and Accounting Considerations for Spin-Offs

If properly structured, a corporation can make a tax-free distribution to its shareholders of stock in a subsidiary in which it holds a controlling interest (i.e., a controlled subsidiary). Neither the distributing corporation (i.e., parent) nor its shareholders recognize any taxable gain or loss on the distribution. Such distributions can involve a spin-off, a split-up (a series of corporate spin-offs often resulting in the dissolution of the firm), or a split-off (an exchange

offer of subsidiary stock for parent stock). Split-ups and split-offs are explained in more detail later in this chapter.

To be tax free to both the parent and its shareholders, spin-offs must satisfy certain conditions stipulated in Section 35 of the Internal Revenue Tax Code. These conditions apply to the separation of two operating businesses and not to transactions involving the distribution of cash or liquid assets or those resembling sales (a spin-off followed by an immediate acquisition of the unit). These conditions include the following:

1. the parent must control the subsidiary(ies) to be spun off, split up, or split off by owning at least 80% of each class of the unit's voting and nonvoting stock;
2. the distributing firm must distribute all of the stock of the controlled subsidiary;
3. both the parent and the controlled subsidiary must remain in the same business following the distribution in which they were actively engaged for the 5 years prior to the distribution; and
4. the transaction must be for a sound business purpose, such as to improve profitability, increase access to the capital markets for either the parent or the unit to be spun off, or enhance management focus by reducing the number of lines of business, and not for tax avoidance.¹⁸

Internet media company, Yahoo, failed to receive IRS approval for its intended tax-free spin-off of its approximate \$23 billion stake in China's biggest online commerce company, Alibaba, in late 2015. The IRS stated it was most concerned about the "balance between investment assets such as stock and operating businesses in spin-off corporations." Without such approval, any effort by Yahoo to distribute the Alibaba shares to Yahoo shareholders could result in as much as a \$9 billion tax liability to Yahoo. Why? If it simply sold the stock and returned the cash to its shareholders as a dividend because of its low tax basis in the shares, Yahoo would be taxed at a 40% rate (35% federal corporate tax rate plus an average 5% state tax rate) and its shareholders would potentially be taxed at a capital gains tax rate as high as 20% depending on their income tax bracket.

Yahoo had intended to include its small business services division along with its Alibaba shareholdings in the subsidiary called Aabaco Holdings whose shares were to be spun off to Yahoo's shareholders. While this structure has worked in other instances, the IRS decided the size of the operating unit included in Aabaco was too small to satisfy the requirements for a spin-off to be tax free. As structured the spin-off of Aabaco appeared to be primarily for tax avoidance and not for a sound business purpose. After considerable deliberation, Yahoo's board succumbed to pressure from activist investors who argued that the risk of not receiving IRS recognition that the spinoff would be nontaxable decided not to spinoff the firm's investment in Alibaba in December 2015.

For financial-reporting purposes, the parent firm should account for the spin-off of a subsidiary's stock to its shareholders at book value, with no gain or loss recognized, other than any reduction in value due to impairment.¹⁹ The reason for this treatment is that the ownership interests are essentially the same before and after the spin-off.

¹⁸A spin-off cannot be used to avoid the payment of taxes on capital gains that might have been incurred if the parent had chosen to sell a subsidiary in which it had a low tax basis.

¹⁹Impairment in an accounting context refers to degradation of the value of assets due to loss of key customers, patent or copyright protection, product obsolescence, and so forth.

EQUITY CARVE-OUTS

Equity carve-outs exhibit characteristics similar to spin-offs. Both result in the subsidiary's stock's being traded separately from the parent's stock. They also are similar to divestitures and IPOs, in that they provide cash to the parent. However, unlike the spin-off or the divestiture, the parent generally retains control of the subsidiary in a carve-out transaction. A potentially significant drawback to the carve-out is the creation of minority shareholders.

Motives for Equity Carve-Outs

Like divestitures, equity carve-outs provide an opportunity to raise funds for reinvestment in the subsidiary, paying off debt, or paying a dividend to the parent firm. Carve-outs also may be used if the parent has significant contractual obligations, such as supply agreements, with its subsidiary.²⁰ Moreover, a carve-out frequently is a prelude to a divestiture, since it provides an opportunity to value the business by selling stock on a public stock exchange. The stock created for purposes of the carve-out often is used in incentive programs for the unit's management and as an *acquisition currency* (i.e., form of payment) if the parent later decides to grow the subsidiary. By creating a market for the formerly largely illiquid subsidiary shares, the carve-out also provides a market in which shareholders can more easily sell their shares. The two basic forms of an equity carve-out are the initial public offering and the subsidiary equity carve-out.

Initial Public Offerings and Subsidiary Equity Carve-Outs

An *initial public offering* is the first offering to the public of common stock of a formerly privately held firm. The sale of the stock provides an infusion of cash to the parent and an opportunity for pre-IPO shareholders to convert their shares to cash. The cash proceeds from the IPO may be retained by the parent or returned to shareholders. Alibaba, the Chinese e-commerce giant, went public in a record setting IPO in late 2014 raising more than \$25 billion and valuing the firm at more than \$200 billion. The proceeds of the Alibaba IPO will be used to allow investors to cash out, to make acquisitions, and to build brand awareness outside of China. See [Table 16.3](#) for the timeline associated with a typical IPO.

The *subsidiary carve-out* is a transaction in which the parent creates a wholly owned, independent subsidiary, with stock and a management team that are different from the parent's, and issues a portion of the subsidiary's stock to the public. Usually, only a minority share of the parent's ownership in the subsidiary is issued to the public. Although the parent retains control, the subsidiary's shareholder base may be different than that of the parent due to the public sale of equity. The cash raised may be retained in the subsidiary or transferred to the parent as a dividend, a stock repurchase, or an intercompany loan. An example of a subsidiary carve-out is the sale to the public by Phillip Morris in 2001 of 15% of its wholly owned Kraft subsidiary. Phillip Morris' voting power over Kraft was reduced only to 97.7% because

²⁰By retaining a controlling interest in the subsidiary, a parent can better manage its contractual commitments (Jain et al., 2011). For example, for supply contracts, as the controlling owner in the subsidiary, the parent represents both sides of the contract: as supplier and buyer.

TABLE 16.3 The IPO Timeline

Steps	Comments
Step 1: Decide to go public	Why? To raise money to grow the firm, for liquidity, to reduce indebtedness, to make acquisitions, to recruit talented managers, and so on.
Step 2: Hire an investment bank(s) to guide and to underwrite the equity issue	Investment banks: • Create legal documents and satisfy regulatory requirements • Advise the client during the process • Underwrite the offering by buying up all the initial shares and selling them to the public at a predetermined price
Step 3: Register with the Securities and Exchange Commission (SEC)	Requires filing an S-1 form with the SEC which entails listing the company's plans for the funds raised, its business model, the competition, its corporate governance, and executive compensation ^a
Step 4: "Road show"	The offering is promoted to potential investors, as early as 21 days after the S-1 is approved. Prior to the "road show," the number of shares to be offered and the price per share (often within a narrow range) are announced. ^b Those attending the "road show" include hedge funds, mutual funds, banks, pension funds, endowments, and individuals. ^c
Step 5: Issue equity	Based on "road show" results, a final price and deal size are announced. Investors having submitted final bids find out if they can buy the stock.

^aMany firms are uncomfortable with a public filing since it makes sensitive data available to their competition. Now, under the JOBS Act of 2012, many firms (except the largest) can file confidentially. See Chapter 2 for more detail.

^bFirms often issue 10% to 25% of their stock. The amount issued should be large enough to ensure a liquid market for the stock.

^cInvestment bankers conducting the "road show" record offers made for the stock at various prices and adjust the price up or down depending on demand prior to the sale of the stock.

Kraft had a dual-class share structure in which only low-voting shares were issued in the public stock offering.

Before issuing shares to the public, the parent usually estimates the size of the post-IPO *public or free float*. Float represents shares trading on exchanges that can be bought and sold without restrictions, consisting of those held both by institutions and individuals. Free float excludes restricted shares or those issued by a firm that cannot be bought or sold for a certain period of time without permission by the SEC. Restricted stock is a type of stock given to insiders as part of their compensation. Why is free float important? Because the size of the float affects the degree of the parent's post-IPO control, its ability to consolidate the unit for tax purposes, the cost to the parent to reacquire its subsidiary at a later date if it chooses to do so, and the accuracy of the valuation of the shares issued.

Tax and Accounting Considerations for Equity Carve-Outs

Retention of at least 80% of the unit enables consolidation for tax purposes, and retention of more than 50% enables consolidation for financial-reporting purposes.²¹ If the parent owns

²¹Allen and McConnell (1998) found a median retention of subsidiary shares of 69%, while Vijh (2002) found a median ownership stake of 72%.

less than 50% but more than 20%, it must use the equity method for financial reporting. Below 20%, it must use the cost method.²²

For a spin-off of the remaining stock in a business following an IPO to qualify as tax-free, the parent must have retained at least 80% of the voting power of the shares of the subsidiary. Why? Because tax rules require the parent to distribute control of the subsidiary, where control for tax purposes is generally defined as 80% of the voting stock. The proceeds of an IPO distributed to the parent are tax free to the parent if the amount of the cash distributed is less than the value of the parent's investment in the stock of the controlled subsidiary (i.e., its basis) as it is considered a return of capital.

SPLIT-OFFS AND SPLIT-UPS

A *split-off* involves the parent firm making an offer to its shareholders to exchange their parent stock for all or a portion of the shares of the firm's subsidiary. It is equivalent to a share repurchase by the parent of its stock using stock in the subsidiary instead of cash. Like a spin-off, the split-off results in the parent's subsidiary becoming an independent firm and the parent firm does not generate any new cash. Unlike spin-offs, which result in the same proportionate ownership distribution before and after the spin-off, split-offs generally result in disproportionate changes in the ownership of parent shares. Split-offs normally are non-prorata stock distributions, in contrast to spin-offs, which generally are pro rata (or proportionate) distributions of shares. In a pro rata distribution, a shareholder owning 10% of the outstanding parent company stock would receive 10% of the subsidiary shares. A non-prorata distribution takes the form of a tender or exchange offer in which shareholders can accept or reject the distribution generally resulting in a disproportionate change in the ownership of parent shares outstanding. For example, if 50% of the parent shareholders exchange their parent shares for subsidiary shares the remaining half of parent shareholders will hold 100% of whatever parent shares remain outstanding.

A *split-up* refers to a restructuring strategy in which a single company splits into two or more separately managed firms. Through a series of split-offs or spin-offs, shareholders of the original or parent firm may choose to exchange their shares in the parent firm for shares in the new companies. Following the split, the original firm's shares are cancelled, and it ceases to exist.

Recent examples include United States aluminum company, Alcoa Inc., and business services firm Xerox Corp. Alcoa split the firm into separate entities in late 2016 to isolate the firm's more profitable "value added" upstream fabrication operations from its floundering downstream raw aluminum operations, which have been battered by falling raw aluminum prices. The upstream company consists of rolled sheet products, engineered products, and transportation and construction businesses. The downstream business includes the firm's bauxite-mining and aluminum ingot production operations. The decision was made to give

²²When the equity method is used to account for ownership in a company, the investor records the initial investment at cost and then periodically adjusts the value to reflect its proportionate share of income or losses generated by the company. The cost method requires recording the investment at cost, and dividends received are included in investment income.

investors the opportunity to invest in companies with a narrower product focus in an effort to boost shareholder value. Xerox reversed its effort to combine business services with copiers and printers when it split into two publicly traded companies in 2017: one contained its office machines and another contained its services operations. The split undoes the firm's largest ever acquisition in 2010 of Affiliated Computer Services Inc. (ACS) for \$6 billion.

Motives for Split-Offs

A split-offs is most appropriate when the parent firm owns less than 100% of a subsidiary's stock. This may occur when the parent acquires less than 100% of the outstanding shares of another firm or when the parent undertakes an IPO of a portion of the stock of a controlled subsidiary. Divestiture may not be an option for disposing of businesses in which the parent owns less than 100% of outstanding shares, because potential buyers often want to acquire all of a firm's outstanding stock. By acquiring less than 100%, a buyer inherits minority shareholders, who may disagree with the new owner's future business decisions.

Split-offs are commonly undertaken after a portion of the shares in a controlled subsidiary has been issued to the public in an IPO so that the value of the subsidiary's shares can be determined. Once their trading value has been established, it is used in determining the exchange ratio between subsidiary and parent shares (i.e., the split-off exchange ratio). That is, the number of subsidiary shares (which could be less than one if the trading value of the subsidiary shares exceeds that of the parent's shares) to be exchanged for each parent share. Typically, the parent offers to purchase parent stock at a premium compared to the subsidiary's trading price established following the IPO of a portion of the subsidiary's stock as an incentive for parent shareholders to exchange their shares for subsidiary shares. Split-offs are most successful when parent shareholders show a strong preference for the subsidiary's stock over the parent's stock. Any subsidiary shares not tendered during the exchange offer period may be distributed to parent shareholders through a spin-off, resulting in the subsidiary becoming totally independent of its former parent.

A split-off reduces the pressure on the spun-off firm's share price because shareholders who exchange their stock are less likely to sell the new stock. Presumably, a shareholder willing to make the exchange believes the stock in the subsidiary has greater appreciation potential than the parent's stock. The exchange also increases the earnings per share of the parent firm by reducing the number of its shares outstanding, as long as the impact of the reduction in the number of shares outstanding exceeds the loss of the subsidiary's earnings. A split-off is generally tax free to shareholders as long as it conforms to the IRS requirements previously described for spin-offs. Finally, the split-off gives the parent shareholder the option to decide whether the shareholder wants to hold parent stock, split-off company stock, or a combination of both.

Cash-Rich Split-Offs

Cash-rich split-offs are variations of a conventional split-off and commonly occur when a firm wants to reacquire stock from a large shareholder, often another firm. In this type of transaction/ the parent firm creates a new subsidiary and contributes an operating business that the parent has owned and operated for at least five years to the subsidiary as well as cash.

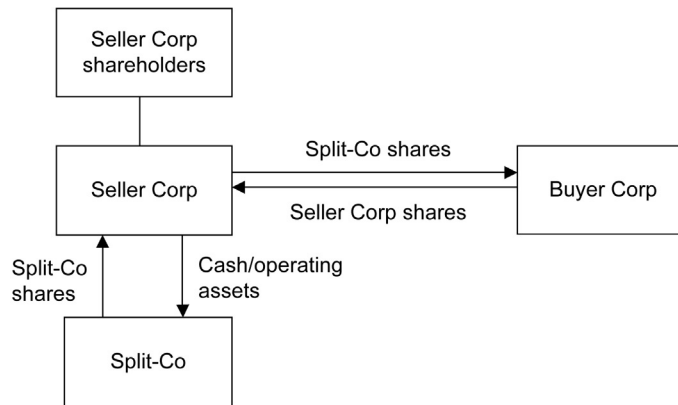


FIGURE 16.2 “Cash-Rich” split-off.

The business must comprise at least 5% to 10% of the subsidiary’s enterprise value and the subsidiary cannot contain more than 66% cash or other investment securities. Assuming there is a valid business purpose for the transaction, the parent can then exchange stock in the new subsidiary for the parent’s stock held by the large investor in a deal that is tax free.

How a cash-rich split-off may be structured is illustrated in Fig. 16.2. Assume Buyer Corp owns stock in Seller Corp and Seller Corp wishes to buy back its stock. To do so in a tax-free transaction, Seller Corp forms a new subsidiary (Split-Co) and transfers operating assets and liabilities and cash into the subsidiary in exchange for subsidiary stock. The subsidiary’s assets can consist of up to 66% cash and 33% operating assets. The fair market value of the subsidiary must be approximately equal to the market value of Seller Corp’s stock held by Buyer Corp. Seller Corp enters into a split-off in which it exchanges Split-Co stock for Seller stock held by Buyer Corp. Following the transaction, Split-Co becomes a wholly owned subsidiary of Buyer Corp. The transaction is tax free to both Seller Corp shareholders and Buyer Corp shareholders. The disadvantages of this deal are that it is complicated to execute and Buyer Corp must operate the acquired business for at least 2 years following closing.

In 2015, Warren Buffett’s Berkshire Hathaway bought Proctor & Gamble’s Duracell battery business in a deal valued at about \$3 billion and structured as a tax-free cash rich split-off. P&G received shares of its own stock held by Berkshire Hathaway with a market value of \$4.7 billion. To make the fair market value of the P&G stock and the Duracell business equal, P&G contributed \$1.7 billion in cash to the Duracell business prior to closing. News Corp. also employed a tax-free cash-rich split-off in reaching an agreement in early 2007 to buy Liberty Media’s 19%—or \$11 billion—stake in the media giant in exchange for News Corp.’s 38.6% stake in satellite TV firm DirecTV Group, \$550 million in cash, and three sports TV channels. The cash and media assets were added to ensure that Liberty Media was exchanging its stake in News Corp. for “like-kind” assets of an equivalent or higher value to qualify as a tax-free exchange. Had the assets been divested, the two firms would have had to pay \$4.5 billion in taxes due to likely gains on the sale.²³ Other recent “cash-rich” split-offs include Comcast/

²³Angwin and Drucker, 2006.

Time Warner Cable, Comcast/Liberty, KeySpan/Houston Exploration, Cox Communications/Discovery Communications, and DST Systems/Janus Capital Group.

Spin-Offs Combined With M&A Transactions

Spin-offs may be combined with a concurrent merger deal. Called “Morris Trust” and “Reverse Morris Trusts,” these structures allow the parent to transfer a business to another firm (i.e., merger partner) in a stock deal that is tax-free. In a Morris Trust deal, all of the parent’s assets, except those to be combined with the merger partner, are spun off or split off into a new public company and then the parent merges with the merger partner. In a Reverse Morris Trust, all assets to be combined with the merger partner are spun off or split off into a new public company, with the new company combining with the merger partner.

To be tax-free, the Morris and Reverse Morris Trust structures require the merger partner to be smaller than the business to be combined with the merger partner resulting in the shareholders of the parent owing a majority of the stock of the combined firms. That is, the spun-off subsidiary is the “buyer” if its shareholders (the original parent company shareholders who received the stock spun off by the parent) own more than 50% the merged firms. The former subsidiary will usually have a bigger market value than the target firm into which it is merged. This effectively reduces the number of potential merger partners. This limitation was imposed by the IRS to make such structures less attractive.

An advantage the Reverse Morris Trust is that it does not require approval by the parent shareholders for the spin-off or merger. This is so because the spin-off firm is merging or combining with the merger partner and the parent approves this merger at the time the parent is the sole shareholder of the subsidiary to be spun off. In contrast, the Morris Trust requires approval by the parent’s shareholders because the merging party (i.e., the parent) is already a public firm owned by its public shareholders at the time the merger is proposed. The major drawback of these types of deals is their complexity as each deal is dependent of the completion of the other. In addition, such transactions require lengthy predeal negotiation so that both parties understand which assets and liabilities will be spun-off in the parent’s subsidiary and which will be retained.

In June 2016, Hewlett Packard Enterprises, itself the product of the 2015 split of Hewlett Packard Corporation, announced it would spin off its business which manages client call centers and networks to its shareholders. The business will then be merged with Computer Sciences Corporation in an all-stock deal creating a new firm (to be named Computer Sciences Corp.) valued at more than \$9 billion. The deal would be tax free to both Hewlett Packard Enterprise and Computer Sciences shareholders. See the case study at the end of this chapter for a detailed discussion of both the mechanics and implications of a recent reverse Morris Trust deal involving Proctor & Gamble and Coty Cosmetics.

TRACKING, TARGETED, AND LETTER STOCKS

Such stocks are separate classes of common stock of the parent firm. The parent divides its operations into two or more subsidiaries and assigns a common stock to each. Tracking stock is a class of common stock that links the shareholders’ return to the subsidiary’s

operating performance. Tracking stock dividends rise or fall with the subsidiary's performance. Such stock represents an ownership interest in the parent rather than an ownership interest in the subsidiary. For voting purposes, holders of tracking stock with voting rights may vote their shares on issues related to the parent and not the subsidiary. The parent's board of directors and top management retain control of the subsidiary for which a tracking stock has been issued, since it is still legally part of the parent. Tracking stocks may be issued to current parent shareholders as a dividend, used as payment for an acquisition, or issued in a public offering.

Motives for Tracking Stocks

Tracking stock enables investors to value the different operations within a corporation based on their own performance. There is little empirical evidence that issuing a tracking stock for a subsidiary creates pure-play investment opportunities for investors, since the tracking stock tends to be correlated more with the parent's other outstanding stocks than with the stocks in the industry in which the subsidiary competes.²⁴ Tracking stocks provide the parent with another way of raising capital for a specific operation by selling a portion of the stock to the public and an alternative "currency" for making acquisitions. Stock-based incentive programs to attract and retain key managers also can be implemented for each operation with its own tracking stock.

Firms that have created disparate asset structures sometimes use a combination of spin-offs and tracking stocks in an effort to deliver shareholder value. In 2016, Liberty Interactive Corporation, known for its digital commerce businesses spun off two units: Commerce Hub, a service provider to e-commerce firms, and Liberty Expedia Holdings, which includes the firm's 18 percent stake in the travel booking site and Bodybuilding .com, a fitness site. The firm also reclassified its common stock into three tracking stocks: The Liberty Braves Group, which owns the Atlanta Braves baseball team; the Liberty Sirius group, which includes the satellite radio provider Sirius XM Holdings; and the Liberty Media Group, which includes the firm's remaining assets such as stakes in Live Nation Entertainment, Time Warner, and Viacom. The transactions were tax free to the firm's shareholders and were intended to give investors greater choice in which assets they wanted to invest.

Tax and Accounting Considerations for Tracking Stocks

For financial-reporting purposes, a distribution of tracking stock divides the parent firm's equity structure into separate classes of stock without a legal split-up of the firm. Unlike spin-offs, the IRS currently does not require that the business for which the tracking stock is created be at least five years old and that the parent retain a controlling interest in the business for the stock to be exempt from capital gains taxes. Unlike a spin-off or a carve-out, the parent retains complete ownership of the business. In general, a proportionate distribution by a company to its shareholders of the company's stock is tax free to shareholders.

²⁴D'Souza and Jacob, 2000.

Problems with Tracking Stocks

Few tracking stocks have been issued in recent years, perhaps due to inherent governance issues and their poor long-term performance. Conflicts among the parent's operating units often arise in determining how the parent's overhead expenses are allocated to the business units and what price one business unit is paid for selling products to other business units. Tracking stocks can stimulate shareholder lawsuits. The parent's board approves overall operating unit and capital budgets. Decisions made in support of one operating unit may appear to be unfair to those holding a tracking stock in another unit. Thus, tracking stocks can pit classes of shareholders against one another and lead to lawsuits. Tracking stocks also may not have voting rights. Further, the chances of a hostile takeover of a firm with a tracking stock are virtually zero because the firm is controlled by the parent.

In addition, tracking stocks often have inferior voting rights or none at all when compared to a firm's other common stock outstanding. Also, holders of tracking stock usually do not receive dividends and in liquidation owners of tracking shares typically do not have a legal claim on the parent firm's assets. Tracking stocks can be particularly problematic when issued by private firms such as Dell Inc.'s use of tracking shares as part of the compensation paid to shareholders in its 2016 takeover of storage company EMC. Why? Because governance issues can be greater when ownership is heavily concentrated and financial reporting may be more opaque.

RESTRUCTURING IMPLEMENTATION ISSUES

Separating a business from the parent requires the board to establish clear strategic objectives and the appropriate restructuring strategy for meeting these objectives. These decisions initiate an internal process for implementing the restructuring strategy. What follows is a partial list of some of the more important issues that should be addressed early in the process in the context of a spin-off to illustrate how they are commonly resolved. The unit to be separated from the parent will be referred to as the "spin-off company."

Once a unit has been identified for separation, the parent must determine what assets will be retained and what will go with the unit. Finance-related issues include determining the desired debt to total capital ratio, deciding which nonlong-term debt related liabilities will go with the spin-off company and which will be retained by the parent, and how best to maintain the solvency of the newly independent business. Other critical execution issues are determining the appropriate governance mechanism for the new unit and how best to address human resource issues. Each of these issues is discussed next.

What Stays and What Goes

For a subsidiary operated as a standalone unit, separating the business from the parent may be relatively straight-forward as the assets and liabilities associated with the business are easily identified. Complexities arise when the unit has formal relationships with the parent or other operating units owned by the parent including sharing common support functions such as finance, human resources, and accounting and intracompany purchase or sale arrangements. These will have to be divided, reproduced, or provided by the parent to the

spin-off company on an interim or transitional basis before the unit will be ready to operate as a standalone, publicly traded company. Spinning off a portion of business through an equity carve-out having operations that are to remain with the parent may be far more complicated as the assets to be retained by the parent must be clearly identified and a mechanism for transferring them from the spin-off company to the parent established. Such mechanisms could include a merger with or sale of assets to another business owned by the parent or an internal spin-off of selected spin-off company assets to other parent operating units.

Target Capital Structure

Target capital structure, in this context, refers to the spin-off company's and parent's mix of debt and equity immediately following the spin-off. The parent generally wants to reallocate its existing cash and debt between itself and the spin-off company and to raise additional cash if possible. A common strategy is for the spin-off company to issue new debt prior to the spin-off with the cash proceeds distributed to the parent. The parent may then use the cash to retire its outstanding debt. For example, Hewlett-Packard Enterprise raised \$14.6 billion just prior to its being spun off by its parent Hewlett-Packard Co. in late 2015, with the cash transferred to the parent. The parent used the proceeds to redeem \$8.85 billion in debt and the remainder to refinance other obligations at lower interest rates.

The mechanism for transferring the cash to the parent may involve the spin-off company making a cash distribution to the parent, buying back some of its own shares held by the parent for cash, paying off intercompany loans owed to the parent, or buying assets owned by the parent for cash. Alternatively, the spin-off company may assume some of the parent's outstanding debt. Care must be taken in selecting the right mechanism for transferring cash in order not to trigger taxable gains to the extent the cash payment for stock or assets or the assumption of debt exceeds the parent's book value in the spin-off company's stock or assets or the parent's long-term debt.

Allocation of Nonlong-Term Debt Liabilities

Which liabilities logically belong with the parent or the spin-off company? Warranty claims relating to spin-off company sales and pension fund obligations would be liabilities of the spin-off company. General corporate liabilities or shared liabilities not relating specifically to the parent or the spin-off company such as shareholder litigation could remain with the parent or other parent operating units. It is customary to include indemnification clauses in the separation and distribution agreement defining the rights and obligations of the parties to the separation. Such clauses require that the party assuming responsibility for a liability is to be reimbursed by the other party if the future actual cash cost of the liability exceeds the amount of the liability at the time it was assumed.

Solvency

Actions taken in allocating long-term debt and other liabilities should consider the impact on the solvency of the spin-off company. If the spin-off company quickly proves not to be financially viable, the parent may be compelled to cover the firm's liabilities because of

possible fraudulent conveyance or transfer. That is, the parent may be accused of attempting to avoid the payment of debt or other obligations by transferring them to the spin-off company.

In 2013, a judge ruled that Kerr-McGee had fraudulently transferred profitable oil and gas assets from its wholly owned subsidiary, Tronox, to the parent in 2004 reorganization, leaving the subsidiary undercapitalized. Tronox was later spun off by Kerr-McGee in 2005; 3 months later, Andarko acquired Kerr-McGee's oil and gas assets. Tronox went bankrupt in 2009 unable to meet its environmental cleanup and healthcare obligations. That same year, Tronox sued both Kerr-McGee (its former parent) and Andarko. Andarko eventually had to pay \$5.2 billion in 2014 to settle outstanding environmental claims.

Board Governance

The directors of the parent's board do not have a fiduciary obligation to the spin-off company. In structuring a spin-off transaction, directors of a solvent corporation have a fiduciary responsibility to the shareholders of the prespin company and may structure the transaction to maximize value for those shareholders. The parent board may unilaterally allocate assets and liabilities between the parent and spin-off company prior to executing the spin-off subject to insolvency and tax considerations. Such decisions often are honored by the courts as long as it can be demonstrated the board's decision was made for legitimate business purposes.

Human Resource Management

When a subsidiary has been operated as a standalone business, its current management usually becomes the management team after the spin-off and its employees generally remain with the spin-off company. In spin-offs of divisions that have not been operated on a standalone basis, management issues are more challenging. Existing managers of the spin-off company often have responsibilities that overlap with businesses to be retained by the parent or are valuable to both the parent and the spin-off company. In determining the roles of such managers, it is critical to consider their desires in assigning them to the parent or to the spin-off company. Other challenges in separating employee populations involve the division of pension and benefit plans and assets funding such plans, the treatment of stock options, and the impact of union contracts, which may restrict how employees and benefit plan assets are assigned between the parent and the spin-off company.

KEY RESTRUCTURE LEGAL DOCUMENTS

These typically include a separation and distribution agreement, a transition agreement (including employee matters), and tax matters agreement negotiated between the parent and spin-off companies. Additional agreements may include patent, trademark, and other intellectual property license arrangements.

Separation and Distribution Agreement

Outlining how the separation of the spin-off unit from the parent will be implemented, this agreement identifies assets to be transferred, liabilities to be assumed and contracts to be assigned to the spin-off firm and the parent. It also explains how and when transfers, liability assignments, and contract assignments will occur and governs the rights and obligations of the parent and the spin-off company regarding the distribution of the spin-off company's shares.

Transition Agreement

This agreement covers services shared by the parent and the spin-off company. These may include legal, payroll, accounting, information technology or benefits, which may have to be continued on an interim basis after the separation has taken place. The services may be provided by the parent to the spin-off company, the spin-off company to the parent or by both, with such services valued at market prices.

Tax Matters Agreement

This agreement defines the rights and obligations of the parent and the spin-off company if tax liabilities are created due to internal transactions undertaken to implement the spin-off (e.g., sale of specific spin-off company assets to other parent subsidiaries). The tax matters agreement also allocates tax liabilities between the parent and the spin-off company often by making the parent responsible for all taxes incurred before closing and the spin-off company responsible for taxes after closing.

To protect the tax-free status of the transaction, the agreement usually contains restrictions on the spin-off's ability to take actions during the two year period following closing without obtaining either the parent's consent or an IRS ruling or opinion of legal counsel that the action will not impact the tax treatment of the spin-off. Such restrictions include limitations on any transaction that would result in a significant change in ownership of the spin-off company (e.g., via merger), a liquidation of the spin-off firm, a sale of a major percentage of the spin-off company's assets, and certain repurchases of stock of the spin-off company.

COMPARING ALTERNATIVE EXIT AND RESTRUCTURING STRATEGIES

Table 16.4 summarizes the primary characteristics of each of the restructuring strategies discussed in this chapter. Note that divestitures and carve-outs provide cash to the parent, whereas spin-offs and split-ups do not. The parent remains in existence in all restructuring strategies. A new legal entity generally is created with each restructuring strategy. With the exception of the carve-out, the parent generally loses control of the division involved in the restructuring strategy. Only spin-offs, split-ups, and split-offs are generally not taxable to shareholders, if properly structured.

TABLE 16.4 Key Characteristics of Alternative Exit and Restructuring Strategies

Characteristics	Alternative Strategies					Tracking Stocks
	Divestitures	Equity Carve-Outs/IPOs	Spin-Offs	Split-Ups	Split-Offs	
Cash Infusion to Parent	Yes	Yes	No	No	No	Yes
Parent Ceases to Exist	No	No	No	Yes	No	No
New Legal Entity Created	Sometimes	Yes	Yes	Yes	No	No
New Shares Issued	Sometimes	Yes	Yes	Yes	Yes	Yes
Parent Remains in Control	No	Generally	No	No	No	Yes
Taxable to Shareholders	Yes	Yes	No	No	No	No

CHOOSING AMONG DIVESTITURE, CARVE-OUT, AND SPIN-OFF RESTRUCTURING STRATEGIES

Parent firms that engage in divestitures often are highly diversified in largely unrelated businesses and have a desire to achieve greater focus or to raise cash.²⁵ Those that use carve-out strategies usually operate businesses in related industries exhibiting some degree of synergy and have significant contractual obligations to the business and a desire to raise cash.²⁶ Consequently, the parent firm may pursue a carve-out rather than a divestiture or spin-off strategy to retain perceived synergy. Evidence shows that the timing of the carve-out is influenced by when management sees its subsidiary's assets as overvalued.²⁷ Firms engaging in spin-offs often are diversified, but less so than those that are prone to pursue divestiture strategies and have little need to raise cash.²⁸ Table 16.5 identifies characteristics of parent firm operating units that are subject to certain types of restructuring activities.

The decision to exit a business is a two-stage process. The first stage involves the firm's deciding to exit a line of business or product line. The second stage entails selecting the appropriate exit strategy. Divestitures, carve-outs, and spin-offs are the most commonly used restructuring strategy when a parent corporation is considering exiting a business partially or entirely. The decision as to which of these three strategies to use is often heavily influenced by the parent firm's need for cash, the degree of synergy between the business to be divested or spun off and the parent's other operating units, and the potential selling price of the division. However, these factors are not independent. Parent firms needing cash are more likely to divest or engage in an equity carve-out for operations exhibiting high selling prices relative to their synergy value. Parent firms not needing cash are more likely to spin off units exhibiting low selling prices and synergy with the parent. Parent firms with moderate cash needs are likely to engage in equity carve-outs when the unit's selling price is low relative to perceived synergy.

²⁵Bergh et al., 2007.

²⁶Jain et al., 2011.

²⁷Powers, 2003; Chen and Guo, 2005.

²⁸John and Ofek, 1995; Kaplan and Weisbach, 1992.

TABLE 16.5 Characteristics of Parent Company Operating Units That Undergo Divestiture, Carve-Out, or Spin-Off

Exit/Restructuring Strategy	Characteristics of Operating Unit Subject to Exit/Restructuring Strategy
Divestitures	• Usually unrelated to other businesses owned by the parent • Operating performance generally worse than the parent's performance • Slightly underperform their peers in the year before the announcement date • Generally sell at a lower price than carve-outs, as measured by the ratio of market value to book assets
Carve-outs	• Generally more profitable and faster growing than spun-off or divested businesses • Operating performance often exceeds parent's • Usually operate in industries characterized by the high ratio of market to book values • Generally outperform peers in the year before the announcement date
Spin-offs	• Generally faster growing and more profitable than divested businesses • Most often operate in industries related to other industries in which the parent operates • Operating performance worse than parent's • Slightly underperform peers in the year before the announcement date

From Ravenscraft, D.J., Scherer, F.M., 1991. *Divisional sell-off: a hazard function analysis*. *Manag. Dec. Econ.* 12 429–438; Cho, M.H., Cohen, M.A., 1997. *The economic causes and consequences of corporate divestiture*. *Manag. Dec. Econ.* 18 367–374; Kang, J.K., Shivdasani, A., 1997. *Corporate restructuring during performance declines in Japan*. *J. Fin. Econ.* 46, 29–65; Powers, E.A., 2003. *Deciphering the motives for equity carve-outs*. *J. Fin. Res.* 26 (1), 31–50; Chen, H.L., Guo, R.J., 2005. *On corporate divestitures*. *Rev. Quant. Fin. Acc.* 25, 399–421; Bergh, D., Johnson, R. Dewitt, R.L., 2007. *Restructuring through spin-off or sell-off: transforming information asymmetries into financial gain*. *Strat. Manag. J.* 29, 133–148; Prezas, A., Simmonyan, K., 2015. *Corporate divestitures: spin-offs v. sell-offs*. *J. Corp. Fin.* 34, 83–107.

It may seem that a divestiture or carve-out would be preferable to a spin-off if the after-tax proceeds from the sale of an operating unit exceed its after-tax equity value to the firm. Unlike a spin-off, a divestiture or carve-out generates a cash infusion to the firm. However, a spin-off may create greater shareholder wealth, for several reasons. First, a spin-off is tax free to the shareholders if it is properly structured. The cash proceeds from an outright sale may be taxable to the parent to the extent a gain is realized. Also, management must be able to reinvest the after-tax proceeds at or above the firm's cost of capital. If management chooses to return the cash proceeds to shareholders, the shareholders incur a tax liability. Second, a spin-off enables the shareholders to decide when to sell their shares. Third, a spin-off may be less traumatic than a divestiture for an operating unit. The divestiture process can degrade value if it is lengthy: employees leave, worker productivity suffers, and customers may not renew contracts.

DETERMINANTS OF RETURNS TO SHAREHOLDERS RESULTING FROM RESTRUCTURING STRATEGIES

Restructuring strategies can create value by increasing parent firm focus, transferring assets to those who can operate them more efficiently, and mitigating agency conflicts and financial distress. The empirical support for this statement is discussed next in terms of pre- and postannouncement financial returns to shareholders by type of restructuring strategy.

TABLE 16.6 Returns to Shareholders of Firms Undertaking Restructuring Strategies

Restructuring Strategy	Average Preannouncement Abnormal Returns (%)
Divestitures ^a	1.5
Spin-offs ^b	3.8
Tracking stocks ^c	3.0
Equity carve-outs ^d	3.9

^aAllen (2000); Mulherin and Boone (2000); Clubb and Stouraitis (2002); Bates (2005); Slovin et al. (2005); Kengelbach et al. (2014); Prezas and Simmomyan (2015).

^bLoh et al. (1995); de Vroom and van Frederikslust, 1999; Mulherin and Boone (2000); Davis and Leblond (2002); Maxwell and Rao (2003); Veld and Veld-Merkoulova (2004); McNeil and Moore (2005); Harris and Glegg (2007); Khorana et al. (2011); Kengelbach et al. (2014); Prezas and Simmomyan (2015).

^cLogue et al. (1996); D'Souza and Jacob (2000); Elder and Westra (2000); Chemmanur and Paeglis, 2001; Billett and Vijh (2004).

^dAllen and McConnell (1998); Vijh (1999); Mulherin and Boone (2000); Prezas et al. (2000); Hogan and Olson (2004); Wagner (2004); Kengelbach et al. (2014).

Preannouncement Abnormal Returns

Empirical studies indicate that the alternative restructure and exit strategies discussed in this chapter generally provide positive abnormal returns to the shareholders of the company implementing the strategy prior to and including the announcement date of such strategies. This should not be surprising, since such actions often are undertaken to correct many of the problems associated with highly diversified firms, such as having invested in underperforming businesses, having failed to link executive compensation to the performance of the operations directly under their control, and being too difficult for investors and analysts to evaluate. In addition, restructuring strategies involving a divisional or asset sale may create value simply because the asset is worth more to another investor. Table 16.6 provides a summary of the results of selected empirical studies of restructuring activities.

Divestitures

Positive abnormal returns around the announcement date of the restructure strategy average 1.5% for sellers. Buyers average positive abnormal returns of about 0.5%.²⁹ While both sellers and buyers gain from a divestiture, most of the gain appears to accrue to the seller. How the total gain is divided ultimately depends on the relative bargaining strength, negotiating skills, and knowledge of the seller and the buyer. Selling firm CEOs are less likely to divest businesses in industries with which they are more familiar. When they do, their greater familiarity seems to give them an edge in negotiating with buyers. If the seller is highly familiar with the asset to be divested, they are better able to accurately value the asset and to earn greater positive abnormal financial returns to seller shareholders, as much as 1.2% more.³⁰

²⁹Hanson and Song, 2000; John and Ofek, 1995.

³⁰Ang et al., 2014a.

When domestic capital markets are illiquid, domestic firms may find selling assets to foreign firms more lucrative than selling them to other domestic firms. Foreign firms may be willing to pay a higher purchase price than domestic firms if they have access to cheaper sources of funds, a stronger currency, or because they view the purchase as a means of entering the domestic market. Financial returns to firms selling domestic assets may be as much as .55% higher than domestic firms selling foreign assets as information leakage to domestic investors prior to the sale often is greater than for investors in foreign countries.³¹ The magnitude of the difference tends to decline for larger asset sales as such divestitures tend to attract more domestic and international attention.

INCREASING FOCUS OF THE DIVESTING FIRM

In late 2015, Google Inc. unveiled a sweeping reorganization separating its highly profitable search and advertising business from its fledgling research and development investments including robotics and self-driving cars. The resulting holding company was named Alphabet Inc. The search and advertising operations contribute almost 90% of the firm's total revenue and all of its profits. The so-called "moon-shot" investments are intended to identify the "next big thing" to propel the firm's future growth. While billed as an effort to give investors greater visibility into the cost of these investments and to facilitate managing the increasingly complex firm, the new structure will allow the firm to divest or spin-off the noncore businesses in the future.

Google is not alone in its effort to manage complexity. The difficulty in managing diverse portfolios of businesses and in valuing accurately these portfolios contributed to the breakup of conglomerates in the 1970s and 1980s. Of the acquisitions made between 1970 and 1982 by companies in industries unrelated to the acquirer's primary industry focus, 60% were divested by 1989. Abnormal returns earned by the shareholders of a firm divesting a business result largely from improved management of the assets that remain after the divestiture.³² Divesting firms tend also to improve their investment decisions in their remaining businesses following divestitures by achieving levels of investment in core businesses comparable to those of their more focused peers.³³

Some firms seem to prosper despite the growing complexity of their business portfolio. Berkshire Hathaway is a prime example. The firm has successfully managed for decades a highly diverse portfolio ranging from cowboy boots, floor enamel and Ginsu knives to ear-piercing tools, diamond rings, encyclopedias, candelabras, and refrigerated trailers. The firm also owns a variety of insurance businesses and ketchup and other condiments products. Demonstrating the firm's ongoing commitment to managing a diverse business portfolio, Berkshire Hathaway made its largest acquisition in 2015 taking control of Precision Castparts, an aerospace equipment supplier, for \$32 billion. The firm's success is perhaps a testimony more to the superb investment and management skills of Warren Buffett and the firm's management culture than to the conglomerate as a sustainable business organization. Few have been able to even come close to Berkshire Hathaway's success in managing highly diverse firms.

³¹Kaprielyan, 2016.

³²Petty et al., 1993; John and Ofek, 1995.

³³Dittmar and Shivdasani, 2003.

TRANSFERRING ASSETS TO THOSE WHO CAN USE THEM MORE EFFICIENTLY

Divestitures result in productivity gains by transferring assets from poorly managed sellers to acquirers that are on average better managed. Investors thus have a reasonable expectation that the acquirer can generate a higher financial return and bid up its share price.³⁴

RESOLVING DIFFERENCES BETWEEN MANAGEMENT AND SHAREHOLDERS (AGENCY CONFLICTS)

Conflicts arise when management and shareholders disagree about major corporate decisions. What to do with the proceeds of the sale of assets can result in such a conflict, since they can be reinvested in the seller's remaining operations, distributed to shareholders, or used to reduce the firm's outstanding debt. Abnormal returns on divestiture announcement dates tend to be positive when the proceeds are used to pay off debt³⁵ or are distributed to the shareholders.³⁶ Such results suggest shareholders mistrust management's ability to invest intelligently.

MITIGATING FINANCIAL DISTRESS

Not surprisingly, empirical studies indicate that firms sell assets when they need cash. The period before a firm announces asset sales often is characterized by deteriorating operating performance.³⁷ Firms that divest assets often have lower cash balances, cash flow, and bond credit ratings than firms exhibiting similar growth, risk, and profitability characteristics.³⁸ Firms experiencing financial distress are more likely to utilize divestitures as part of their restructuring programs than other options, because they generate cash.³⁹

Spin-Offs

At 3.8%, the average abnormal return to parent firm shareholders associated with spin-off announcements is more than twice the average excess return on divestitures. The difference in returns is smaller than it appears if we note that some portion of the total gain in wealth created by divestitures is shared with the buying firm's shareholders, who realize synergy in integrating the acquired firm into the buyer. In contrast, the jump in the parent firm's share price following the announcement of a spin-off reflects the total gain due to the spin-off. The gap between abnormal returns to shareholders from spin-offs versus divestitures also may be attributable to tax considerations. Spin-offs generally are tax free, while any gains on divested assets can be subject to double taxation. With spin-offs, shareholder value is created by increasing the focus of the parent by spinning off unrelated units, providing greater transparency, and transferring wealth from bondholders to shareholders.

³⁴Using Tobin q-ratios (i.e., the ratio of the market value of a firm to the cost of replacing the firm's assets) as a proxy for better-managed firms, Datta et al. (2003) found that announcement-period returns are highest for transactions in which the buyer's q-ratio is higher than the seller's. This implies that the assets are being transferred to a better-managed firm. Maksimovic and Phillips (2001) support this conclusion.

³⁵Kaiser and Stouraitis, 2001; Lang et al., 1995.

³⁶Slovin et al., 2005.

³⁷Lang et al., 1995; Schlingemann and Wu, 2015.

³⁸Officer, 2007.

³⁹Nixon et al., 2000; Ofek, 1993.

INCREASING FOCUS

Spin-offs that increase parent focus (i.e., those that involve unrelated businesses) improve excess financial returns more than spin-offs that do not increase focus.⁴⁰ There is also a reduction in the diversification discount when a spin-off increases corporate focus, but not for those that do not.⁴¹ Spin-offs of subsidiaries that are in the same industry as the parent firm do not result in positive announcement-date returns because they do little to enhance corporate focus.⁴² Like divestitures, spin-offs contribute to better investment decisions by eliminating the tendency to use the cash flows of efficient businesses to finance investment in less efficient business units; parent firms also are more likely to invest in their attractive businesses after the spin-off.⁴³

ACHIEVING GREATER TRANSPARENCY (ELIMINATING INFORMATION ASYMMETRIES)

Divestitures and spin-offs that tend to reduce a firm's complexity help to improve investors' ability to evaluate the firm's operating performance. By reducing complexity, financial analysts are better able to forecast earnings accurately.⁴⁴ Analysts tend to revise upward their earnings forecasts of the parent in response to a spin-off.⁴⁵

WEALTH TRANSFERS

Evidence shows that spin-offs transfer wealth from bondholders to parent stockholders, for several reasons.⁴⁶ First, spin-offs reduce the assets available for liquidation in the event of business failure: investors may view the firm's existing debt as riskier.⁴⁷ Second, the loss of the cash flow generated by the spin-off may result in less total parent cash flow to cover interest and principal repayments on the parent's current debt. In contrast, stockholders benefit from holding shares in the parent firm and shares in the unit spun off by the parent, with the latter now separate from the parent, having the potential to appreciate in value.

Equity Carve-Outs

Investors view the announcement of a carve-out as the beginning of a series of restructuring activities, such as a reacquisition of the unit by the parent, a spin-off, a secondary offering, or an M&A. The sizeable announcement-date abnormal returns to parent firm shareholders averaging 3.9% reflect investor anticipated profit from these subsequent events. These abnormal positive returns are realized when the parent firm retains a controlling interest after a carve-out announcement, allowing the parent to initiate these secondary actions.⁴⁸ Furthermore, these returns tend to increase with the size of the carve-out.⁴⁹ Announcement-date returns are

⁴⁰Desai and Jain, 1997.

⁴¹Burch and Nanda, 2001; Seoungpil and Denis, 2004.

⁴²Daley et al., 1997.

⁴³Gertner et al., 2002.

⁴⁴Gilson et al., 2001.

⁴⁵Huson and MacKinnon, 2003.

⁴⁶Maxwell and Rao (2003) note that bondholders on average suffer a negative abnormal return of 0.8% in the month of the spin-off announcement. Stockholders experience an increase of about 3.6% during the same period.

⁴⁷Assets actually pledged as collateral to current debt may not be spun off without violating loan covenants.

⁴⁸Otsubo, 2009.

⁴⁹Allen and McConnell, 1998; Vijh, 2002.

significant for both parent firm stock⁵⁰ and bond⁵¹ investors when the parent indicates that the majority of the proceeds resulting from the carve-out will be used to redeem debt.

Managers use their inside information about the subsidiary's growth prospects to decide how much of the subsidiary to issue to the public. They are more inclined to retain a larger percentage of the business if they feel the unit's growth prospects are favorable.⁵² Carve-outs may show poorer operating performance than their peers when their parents keep less than 50% of the subsidiary's equity. Either the parent chooses not to consolidate the carved-out unit due to its expected poor performance or it intends to transfer cash from minority-owned businesses through intercompany loans or dividends.⁵³ Value is created by increased parent focus, providing a source of financing, and resolving differences between the parent firm's management and shareholders (i.e., agency issues).

INCREASING FOCUS

Parents and subsidiaries involved in carve-outs often are in different industries. Positive announcement-date returns tend to be higher for carve-outs of unrelated subsidiaries. This is consistent with the common observation that carve-outs are undertaken for businesses that do not fit with the parent's business strategy. It is unclear if operating performance improves following equity carve-outs.⁵⁴ Evidence has shown that both parents and carved-out subsidiaries tend to improve their operating performance relative to their industry peers in the year following the carve-out. However, other studies have shown that operating performance deteriorates.⁵⁵

PROVIDING A SOURCE OF FINANCING

Equity carve-outs can help to finance the needs of the parent or the subsidiary. Corporations tend to choose equity carve-outs and divestitures over spin-offs when the ratio of market value to book value and revenue growth of the carved-out unit are high to maximize the amount of cash raised.⁵⁶

RESOLVING AGENCY ISSUES

There is evidence that investor reaction to the announcement of a carve-out is determined by how the proceeds are used. Firms announcing that the proceeds will be used to repay debt or pay dividends earn a 7% abnormal return, compared to minimal returns for those announcing that the proceeds will be reinvested in the firm.⁵⁷

⁵⁰Otsubo, 2013.

⁵¹The carve-out proceeds boost bondholder returns as current debt is repurchased. The reduction in outstanding debt means less interest expense is incurred and more cash is available for dividend payments and share repurchases of stock held by current shareholders. See Thompson and Apilado (2009).

⁵²Powers, 2003.

⁵³Atanasov et al., 2010.

⁵⁴Vijh, 2002.

⁵⁵Boone et al., 2003; Powers, 2003.

⁵⁶Chen and Guo, 2005.

⁵⁷Allen and McConnell, 1998.

Tracking Stocks

Reflecting initial investor enthusiasm, a number of studies show that tracking stocks experience significant positive abnormal returns around their announcement date. Studies addressing the issue of whether the existence of publicly listed tracking shares increases the demand for other stock issued by the parent give mixed results.⁵⁸ However, there is some evidence that investors become disenchanted with tracking stocks over time, with excess shareholder returns averaging 13.9% around the date of the announcement that firms would eliminate their target stock issues.⁵⁹

Post-Carve-Out and Post-Spin-Off Returns to Shareholders

Carve-outs and spin-offs are more likely to outperform the broader stock market indices because their share prices reflect speculation that they will be acquired rather than any improvement in the operating performance of the units. One-third of spin-offs are acquired within 3 years after the unit is spun off by the parent. Once those spin-offs that have been acquired are removed from the sample, the remaining spin-offs generally perform no better than their peers.⁶⁰ Spin-offs may create value by simply providing an efficient method of transferring assets to acquiring companies.⁶¹

Spin-offs involving parents and subsidiaries in different countries often show significant positive abnormal returns. The magnitude of the wealth gain accruing to holders of stock in the unit spun off by the parent is higher in countries where takeover activity is high. This reflects the increased likelihood that the spun-off units will become takeover targets.⁶² There is some evidence that spun-off units show productivity gains as a result of a reduction in total wage costs and employment, perhaps reflecting improved management attention and discipline. Such gains start immediately following the spin-off and tend to persist of as much as 5 years.⁶³

Smaller spin-offs (i.e., those with a market cap of less than \$200 million) tend to outperform larger ones (i.e., those with a market cap greater than \$200 million).⁶⁴ This may be a result of a tendency of investors who are relatively unfamiliar with the business that is spun off by the parent to undervalue the spin-off. Carve-outs that are largely independent of the parent (i.e., in which the parent tended to own less than 50% of the equity) tended to outperform the S&P 500 significantly.⁶⁵ The evidence for the long-term performance of tracking stocks is mixed.⁶⁶

⁵⁸Clayton and Qian (2004) found evidence that parent shares rise following the issuance of publicly listed tracking stocks. However, Elder and Westra (2000) find no evidence that tracking shares lead to greater interest in the parent's and other subsidiary shares.

⁵⁹Billett and Vijn, 2004.

⁶⁰Cusatis et al., 1993.

⁶¹McConnell et al., 2001.

⁶²Harris and Glegg, 2007.

⁶³Chemmanur et al., 2014.

⁶⁴Morgan, 1999.

⁶⁵Annema et al., 2002.

⁶⁶Chemmanur and Paeglis (2001) found that the stock of parent firms tends to underperform the major stock indices, while the average tracking stock outperforms its industry stock index. However, Billett and Vijn (2004) found negative financial returns following the issue date for tracking stocks and positive but statistically insignificant returns for parents.

SOME THINGS TO REMEMBER

Divestitures, spin-offs, equity carve-outs, split-ups, and split-offs are commonly used restructuring strategies to redeploy assets by returning cash or noncash assets through a special dividend to shareholders or to use cash proceeds to pay off debt. On average, these restructuring strategies create positive abnormal financial returns for shareholders around the announcement date because they tend to correct problems facing the parent. However, the longer-term performance of spin-offs, carve-outs, and tracking stocks is problematic.

CHAPTER DISCUSSION QUESTIONS

- 16.1 What are the advantages and disadvantages of tracking stocks to investors and the firm?
- 16.2 How would you decide when to sell a business?
- 16.3 What factors influence a parent firm's decision to undertake a spin-off rather than a divestiture or equity carve-out?
- 16.4 How might the form of payment affect the abnormal return to sellers and buyers?
- 16.5 How might spin-offs result in a transfer of wealth from bondholders to shareholders?
- 16.6 Explain how executing successfully a large-scale divestiture can be highly complex. This is especially true when the divested unit is integrated with the parent's functional departments and other units operated by the parent. Consider the challenges of timing, interdependencies, regulatory requirements, and customer and employee perceptions.
- 16.7 In an effort to increase shareholder value, USX announced its intention to split US Steel and Marathon Oil into two separately traded companies. The breakup gives holders of Marathon Oil stock an opportunity to participate in the ongoing consolidation within the global oil and gas industry. Holders of USX-US Steel Group common stock (target stock) would become holders of newly formed Pittsburgh-based United States Steel Corporation. What other alternatives could USX have pursued to increase shareholder value? Why do you believe they pursued the breakup strategy rather than some of the alternatives?
- 16.8 Hewlett-Packard announced in 1999 the spin-off of its Agilent Technologies unit to focus on its main business of computers and printers. HP retained a controlling interest until mid-2000, when it spun off the rest of its shares in Agilent to HP shareholders as a tax-free transaction. Discuss the reasons why HP may have chosen a staged transaction rather than an outright divestiture or spin-off of the business.
- 16.9 After months of trying to sell its 81% stake in Blockbuster Inc., Viacom undertook a spin-off in mid-2004. Why would Viacom choose to spin off rather than divest its Blockbuster unit? Explain your answer.
- 16.10 Since 2001, GE, the world's largest conglomerate, had been underperforming the S&P 500 stock index. In late 2008, the firm announced that it would spin off its consumer and industrial unit. What do you believe are GE's motives for their proposed restructuring? Why do you believe they chose a spin-off rather than an alternative restructuring strategy?

Answers to these Chapter Discussion Questions are found in the Online Instructor's Manual for instructors using this book (<https://textbooks.elsevier.com/web/Manuals.aspx?isbn=9780128016091>).

END OF CHAPTER CASE STUDY: THE ANATOMY OF A REVERSE MORRIS TRUST TRANSACTION—THE COTY COSMETICS SAGA

Key Points

- Greater shareholder value may be created by exiting rather than operating a business.
- How? By increasing the focus of the parent firm exiting the business.
- How the deal is structured also can create shareholder value.

Consumer product giant Proctor & Gamble (P&G) agreed to sell its portfolio of 43 beauty brands to beauty products maker Coty Inc. (Coty) for \$12.5 billion on July 8, 2015. Included in the deal are professional salon and retail hair products like Nice & Easy and VS Salonist, as well as cosmetics and fine fragrances from Gucci and Dolce & Gabbana. The deal is part of P&G's strategy to shed more than 100 brands and focus on 10 core product lines, like Tide, that tend to grow faster than the beauty brands.

Coty, owned by European firm JAB Cosmetics B. V., sells fragrances, skin products and cosmetics from brands including Calvin Klein, Marc Jacobs and Chloe. This transaction creates one of the world's largest beauty products companies. Coty hopes its global marketing and distribution network and widely recognized brand will reinvigorate growth for many of the beauty products acquired from P&G.

The deal was structured as a reverse Morris Trust in which P&G created a separate subsidiary spun off to its shareholders through a split-off to become a public company and subsequently merged with Coty Cosmetics. P&G shareholders post deal will own 52% of the combined company with Coty's current shareholders owning the remainder. The new firm will have \$10 billion in annual revenue. Under the Reverse Morris Trust split off, P&G shareholders could elect to participate in an offer to exchange P&G common shares they hold for common shares of a newly created subsidiary. The company's shareholders would have the option of exchanging all, some or none of their shares. Any shares not exchanged through the split-off exchange offer were transferred to P&G's current shareholders on a pro rata basis through a spin-off.

Neither the split-off nor the spin-off creates an immediate tax liability for the firm's shareholders, as any taxes owed would be deferred until shareholders sold their shares in the newly created subsidiary. The new entity created by the split off is immediately merged with a new wholly-owned merger subsidiary created by Coty. The Reverse Morris Trust acquisition combines a divisive reorganization (e.g., a spin-off or split-off) with an acquisitive reorganization (e.g., a statutory merger) to allow a tax-free transfer of a subsidiary under US law. The use of a divisive reorganization results in the creation of a public company which is subsequently merged into a shell subsidiary of another firm, with the shell surviving.

Had P&G sold these 43 brands through an asset sale, the firm would have been subject to an immediate tax liability on the difference between their sale and book values. If the proceeds of the sale had been distributed to shareholders as a special dividend, the shareholders would have been required to pay taxes on the dividend at their personal tax rates resulting in double taxation on any gains on the sale of these brands: once by P&G and again by the firm's shareholders.

The purchase price or enterprise value of \$12.5 billion included Coty's assumption of debt totaling \$1.9 billion. The \$10.6 billion (\$12.5–\$1.9) equity portion of the purchase price negotiated for the 43 P&G beauty brands reflected the present value of projected net cash flows of the brands plus an appropriate premium to justify the transfer of ownership to Coty. Based on Coty's common stock price at the time of the announcement, Coty would have to issue 411 million new shares valued at \$25.79 per share (i.e., \$10.6 billion/Coty's then share price = 411 million shares). The Coty share price was allowed to fluctuate within a \$22.06 and \$27.06 collar based on the trading price of Coty's stock prior to the close of the transaction.

The tax-efficient nature of the \$12.5 billion offer maximizes value for P&G shareholders and minimizes annual earnings dilution. P&G's earnings per share will be impacted by two offsetting factors. The loss of the earnings per share associated with the divested beauty brands will be more than offset on an annualized basis following the closing of the transaction through a combination of P&G shares retired via the split-off and a reduction in overhead expenses associated with the P&G subsidiary containing the divested brands.

Fig 16.3 illustrates the three stages of the deal: (1) the creation of the wholly owned subsidiary of P&G called RMT Brands into which the assets and liabilities associated with the 43 brands are transferred in exchange for the common stock of the subsidiary, (2) the exchange offer to P&G shareholders allowing them to exchange P&G shares for RMT Brands common shares (split-off), and (3) the reverse merger of RMT Brands into Coty's Merger Sub with Merger Sub surviving the deal. Note the numbers in parentheses in Fig. 16.3 refer to each stage of the transaction. To implement the reverse merger, the RMT Brands common shares distributed in connection with the split-off exchange offer automatically convert into the right to receive common shares of Coty Cosmetics on a one for one basis. After the reverse merger, Coty Cosmetics owned RMT Brands through its Merger Sub. P&G shareholders not exchanging their RMT Brand shares for Coty shares could be "squeezed out" by Coty through a backend merger at a later date.

Chapter Discussion Questions

- 16.1 The merger of Coty and the P&G subsidiary RMT Brands could have been achieved as a result of a P&G spin-off of RMT Brands. Explain the details of how this might have happened.
- 16.2 Speculate as to why P&G chose to split-off rather than spin-off RMT Brands as part its plan to merge RMT Brands with Coty. Be specific.
- 16.3 What are the Morris Trust tax regulations? How did they affect how this deal was structured?
- 16.4 How is value created for the P&G and Coty shareholders in this type of transaction?
- 16.5 Why is the percentage distribution of ownership in the newly created firm following closing important in a Reverse Morris Trust transaction?
- 16.6 What was the purpose of the collar arrangement used in this deal? How could it protect both P&G and Coty shareholders?

Solutions to this case study are found in the Online Instructors Manual for instructors using this book (<https://textbooks.elsevier.com/web/Manuals.aspx?isbn=9780128016091>).

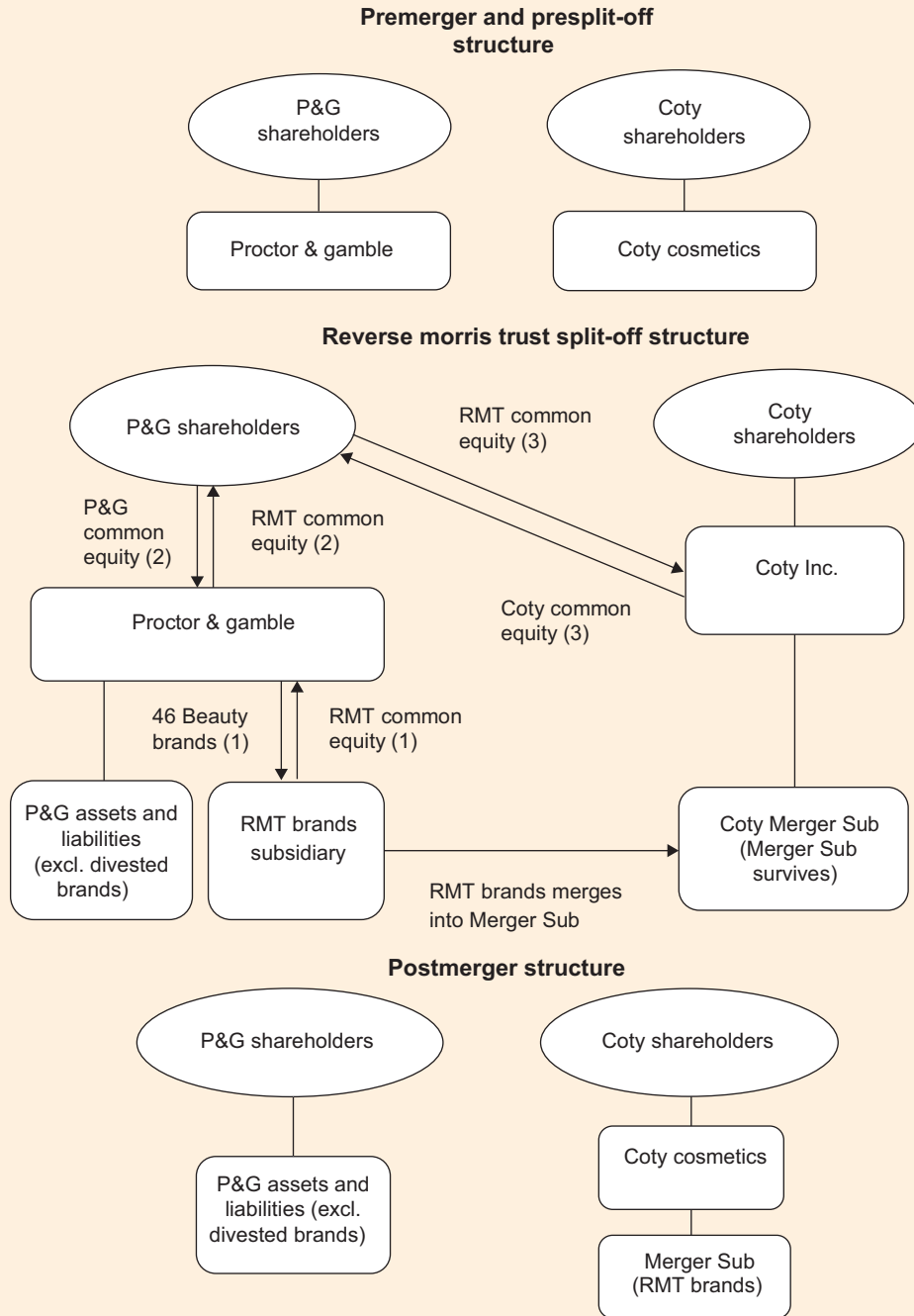


FIGURE 16.3 Reverse Morris trust split-off transaction.

**ADDITIONAL CASE STUDY RECOMMENDATIONS,
SEARCH HARVARD BUSINESS SCHOOL
PUBLISHING SITE, BY NAME OF CASE:
hbsp.harvard.edu)**

E.I. du Pont de Nemours and Co.: The
Conoco Split-off, Stuart C. Gilson, Perry L.
Fagan, Revision Date: July 25, 2005, Product
Number: 202005-PDF-ENG, Source: Harvard
Business School, hbsp.harvard.edu

Subjects Covered: Split-offs, Business
Strategy, Corporate Restructuring, Strategic
Options including Spin Offs, Asset Sales,
Tracking Stocks, and Split Offs

Debate Over Unbundling General Motors:
The Delphi Divestiture and Other Possible
Transactions, Malcolm S Salter, Revision

Date: June 12, 2002, Product Number:
800196-PDF-ENG, Source: Harvard Business
School, hbsp.harvard.edu

Subjects Covered: Divestitures, Spin-Offs,
Corporate Strategy

Deal Making in Troubled Waters: The
ABN AMRO Takeover, Didier Cossin,
Luc Keuleneer, Revision Date: Jun 3, 2010,
Product Number: IMD255-PDF-ENG,
Source: IMD, hbsp.harvard.edu

Subjects Covered: Restructuring, Spin-
Offs, Divestitures, Integration Planning

Alternative Exit and Restructuring Strategies

Bankruptcy Reorganization and Liquidation

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Success breeds disregard for the possibility of failure. —Hyman P. Minsky

INSIDE M&A: HERCULES OFFSHORE INC. EMERGES FROM COURT PROTECTION THROUGH A PREPACKAGED BANKRUPTCY

KEY POINTS

- Chapter 11 provides an opportunity for debtor firms to reorganize, restructure their liabilities, and to emerge as financially viable firms
- Debt-for-equity swaps are often used by creditors to recover all or a portion of what they are owed
- “Prepackaged” bankruptcy offers the potential for expediting the bankruptcy process saving millions of dollars in legal expenses.

With crude prices plunging to a seven year low, energy exploration and production companies reduced dramatically spending on costly off shore drilling projects given narrowing profit margins. Consequently, offshore oil and gas exploration came to a virtual standstill in 2015. Moreover, with the global economy showing few signs of economic growth, OPEC members continuing to pump at capacity, and oil inventories worldwide brimming, there was little prospect that oil prices would improve significantly in the foreseeable future.

Cash strapped offshore drillers were running out of options. Seeking protection from their creditors by filing for Chapter 11 bankruptcy reorganization may be the only option for many. Chapter 11 is that section of the US Bankruptcy Code that allows debtors to cease payment to their creditors while developing a plan to restructure the business in such a way that it can again be financially viable. While shareholders and bondholders may incur losses, jobs are saved, damage to communities minimized, and the firm often continues as a tax paying entity once its operating income improves.

It is against this backdrop that Hercules Offshore Drilling Inc. (Hercules) announced that it was filing a “prepackaged” Chapter 11 bankruptcy in August 2015. Chapter 11 reorganizations often are lengthy and very expensive in terms of legal and consulting fees and in no way guarantee that the firm will in fact achieve financial health. The length of time in bankruptcy protection can often undermine the capability of the firm because key employees, customers, and suppliers leave.

Accelerating the process can often increase the likelihood of saving a financially beleaguered firm. This is where a “prepackaged” bankruptcy can be helpful as the debtor gets a consensus among its major creditors to restructure outstanding debt before filing for Chapter 11. Prepackaged bankruptcies can shave 9 months or more off the length of time the firm remains in bankruptcy, saving 10 millions of dollars in bankruptcy related expenses.

For Hercules, this strategy proved successful as it was able to emerge from Chapter 11, 2 months after filing. At the time of filing the firm had \$546 million in assets and \$1.32 billion in total liabilities, of which \$1.2 billion was long-term debt. The firm had \$81 million in cash on hand. During the several months preceding filing, the firm had terminated more than 40% of its employees and cut the number of drilling rigs it operates by half. The firm also sold four of its Gulf of Mexico rigs and “moth-balled” several more. Revenue tumbled by two-thirds during the first 6 months of 2015 over the same period the prior year.

In a so-called debt for equity swap negotiated before filing, Hercules was able to get nearly all of its senior bondholders to agree to exchange \$1.2 billion in debt for equity in the new Hercules that would emerge from Chapter 11 bankruptcy. This would dramatically improve the firm’s operating cash flow but would nearly wipe out existing shareholders. As part of the restructuring process, Hercules obtained \$450 million in new financing backed by an existing contract. This money was used to complete the construction of a new offshore drilling rig which has a 5 year drilling contract with Maersk Sealand. Current liabilities were paid in full. The firm’s shareholders prior to the Chapter 11 filing were offered only 3% of the equity in the reorganized company emerging from bankruptcy. It is rare in Chapter 11 bankruptcies that existing common shareholders are recover much of their investment.

CHAPTER OVERVIEW

In a case of ambitions outpacing reality, renewable energy giant SunEdison filed for bankruptcy in 2016 bringing to a close its determination to become the world’s leading renewable energy business. The firm’s financial situation had become perilous following a series of acquisitions of firms, financed largely with debt, in the wind and residential solar industries in the United States and abroad designed to hype growth.

Sun Edison was not alone in running on financial hard times in 2016. Elon Musk, CEO and major stockholder in both firms, merged electric car maker Tesla with solar panel manufacturer and installer Solarcity to avoid the latter from defaulting on its outstanding debt. Other well-known renewable energy firms were at various stages of restructuring including multinational solar and biofuel giant Spanish based Abengoa; Solazyme, a maker of algae based biofuels, which abandoned the energy markets by changing its name to focus on personal care and food products; and NRG, which withdrew from what had been a headlong rush into alternative fuels.

Several years ago solar module maker, Solyndra, despite more than one-half billion dollars in government loans, was forced into bankruptcy. Dozens of solar companies around the globe have disappeared in recent years or are on the verge of doing so. Despite heavy government subsidies in the form of tax credits to customers or subsidized government loans, green energy companies have yet to find enough customers to support the costly infrastructures needed to support anticipated growth. Many of them have turned to bankruptcy.

The purpose of this chapter is to explore the mechanics of the bankruptcy process and when and how it may be used to restructure firms such as Hercules Offshore and the myriad green energy companies currently in bankruptcy. Bankruptcy and liquidation can be viewed as alternative restructuring and exit strategies for failing firms. How reorganization and liquidation take place both inside and outside the protection of the bankruptcy court are examined in detail. This chapter also discusses common strategic options for failing firms, the current state of bankruptcy prediction models, and empirical studies of the performance of firms experiencing financial distress. A review of this chapter (including practice questions with answers) is available in the file folder entitled “Student Study Guide” on the companion website to this book (<https://www.elsevier.com/books-and-journals/book-companion/9780128016091>).

BUSINESS FAILURE

Failing firms may be subject to financial distress, as measured by declining asset values, liquidity, and cash flow. The term *financial distress* does not have a strict technical or legal definition. The term applies to a firm that is unable to meet its obligations or to a specific security on which the issuer has defaulted.¹ *Technical insolvency* arises when a firm is unable to pay its liabilities when due. *Legal insolvency* occurs when a firm’s liabilities exceed the fair market value of its assets, since creditors’ claims cannot be satisfied unless the firm’s assets can be liquidated for more than the book value of the firm’s liabilities. A federal legal proceeding designed to protect the technically or legally insolvent firm from lawsuits by its creditors until a decision can be made to close or continue to operate the firm is called *bankruptcy*. A firm is not bankrupt or in bankruptcy until it files, or its creditors file, a petition for reorganization or liquidation with the federal bankruptcy courts.²

Receivership can be an alternative to bankruptcy in which a court- or government-appointed individual (i.e., a receiver) takes control of the assets and affairs of a business to administer them according to the court’s or government’s directives. The purpose of a receiver may be to serve as a custodian while disputes between officers, directors, or stockholders are settled or to liquidate the firm’s assets. Under no circumstances can the firm’s debt be discharged without the approval of the bankruptcy court. In most states, receivership cannot take effect unless a lawsuit is under way and the court has determined that receivership is appropriate.

Conservatorship represents a less restrictive alternative to receivership. While the receiver is expected to terminate the rights of shareholders and managers, a conservator is expected merely to assume these rights temporarily. For example, in July 2008, the failing IndyMac Bank was taken into administrative receivership by the Federal Deposit Insurance Corporation,

¹Default is defined by Moody’s Credit Rating Agency as any delinquent payout of interest or principal, bankruptcy, receivership, or an exchange that reduces the value of what is owed; e.g., the issuer might offer bondholders a new security or combination of securities, such as preferred or common stock, or debt with a lower coupon worth less than what they are owed.

²The terms *liquidity* and *solvency* often are used inappropriately. *Liquidity* is the ability of a business to have sufficient cash on hand (as opposed to tied up in receivables and inventory) to meet its immediate obligations without having to incur significant losses in selling assets. *Insolvency* means that a firm cannot pay its bills under any circumstances. A liquid business is more likely to be solvent (i.e., able to pay its bills); however, not all businesses that are liquid are solvent, and not all solvent businesses have adequate liquidity.

and the bank's assets and secured liabilities were transferred into a "bridge bank" called *IndyMac Federal Bank* until the assets could be liquidated. Also in September 2008, the CEO and the boards of the Federal National Mortgage Association and the Federal Home Loan Mortgage Corporation were dismissed, and the firms were put under the conservatorship of the Federal Housing Finance Agency while their asset portfolios were reduced.

A debtor firm and its creditors may choose to reach a negotiated settlement outside of bankruptcy, within the protection of the court, or through a prepackaged bankruptcy, which represents a blend of the first two options. The following sections discuss each of these options.

VOLUNTARY SETTLEMENT OUTSIDE OF BANKRUPTCY COURT

An insolvent firm and its creditors may agree to restructure the firm's obligations out of court to avoid the costs of bankruptcy proceedings, because this generally offers the best chance for creditors to recover the largest percentage of what they are owed and owners some portion of their investment in the firm.³ This process normally involves the debtor firm's requesting a meeting with its creditors. A committee of creditors is selected to analyze the debtor firm's financial position and recommend a course of action: whether the firm continues to operate or is liquidated.

Voluntary Settlements Resulting in Continued Operation

Plans to restructure the debtor firm developed cooperatively with creditors commonly are called *workouts*, arrangements outside of bankruptcy by a debtor and its creditors for payment or rescheduling of payment of the debtor's obligations. Because of the firm's weak financial position, the creditors must be willing to restructure the insolvent firm's debts to enable it to sustain its operations. Lenders with preexisting relationships with the debtor may be more willing to renegotiate loan terms (i.e., restructure debt) due to their greater familiarity with the firm's management and financial statements.⁴

Debt restructuring involves concessions by creditors that lower an insolvent firm's payments so that it may remain in business. Restructuring normally is accomplished in three ways: via an extension, a composition, or a debt-for-equity swap. An *extension* occurs when creditors agree to lengthen the period during which the debtor firm can repay its debt. Creditors often agree to suspend temporarily both interest and principal repayments. A *composition* is an agreement in which creditors agree to receive less than the full amount they are owed. A *debt-for-equity swap* occurs when creditors surrender a portion of their claims on the firm in exchange for an ownership position in the firm. If the reduced debt service payments enable the firm to prosper, the value of the stock in the long run may far exceed the amount of debt the creditors were willing to forgive.

Exhibit 17.1 depicts a debt restructure that enables the firm to continue operation by converting debt to equity. Although the firm, Survivor Inc., has positive earnings before interest and taxes, they are not enough to meet its interest payments. When principal payments are

³Jankowitsch et al., 2014

⁴Rosenfeld, 2014

EXHIBIT 17.1 SURVIVOR INC. RESTRUCTURES ITS DEBT

Survivor Inc. currently has 400,000 shares of common equity outstanding at a par value of \$10 per share. The current rate of interest on its debt is 8%, and the debt is amortized over 20 years. The combined federal, state, and local tax rate is 40%. The firm's cash flow and capital position are shown in [Table 17.1](#). Assume that bondholders are willing to convert \$5 million of debt to equity at the current par value of \$10 per share. This necessitates that Survivor Inc. issue 500,000 new shares. These actions result in positive cash flow, a substantial reduction in the firm's debt-to-total capital ratio, and a transfer of control to the bondholders. The former stockholders now own only 44.4% (4 million/9 million) of the company. The revised cash flow and capital position are shown in [Table 17.2](#).

TABLE 17.1 Cash Flow and Capital Position

Income and cash flow		Total capital	
Earnings before interest and taxes	\$500,000	Debt	\$10,000,000
Interest	\$800,000	Equity	\$4,000,000
Earnings before taxes	\$(300,000)	Total	\$14,000,000
Taxes	\$120,000		
Earnings after taxes	\$(180,000)	Debt/total capital	71.4%
Depreciation	\$400,000		
Principal repayment	\$(500,000)		
Cash flow	\$(280,000)		

TABLE 17.2 Revised Cash Flow and Capital Position

Income and cash flow		Total capital	
Earnings before interest and taxes	\$500,000	Debt	\$5,000,000
Interest	\$400,000	Equity	\$9,000,000
Earnings before taxes	\$100,000	Total	\$14,000,000
Taxes	\$40,000		
Earnings after taxes	\$60,000	Debt/total capital	35.7%
Depreciation	\$400,000		
Principal repayment	\$(250,000)		
Cash flow	\$210,000		

considered, cash flow becomes negative, rendering the firm technically insolvent. As a result of the restructuring of the firm's debt, Survivor Inc. is able to continue to operate; however, the firm's lenders now have a controlling interest in the firm. Note that the same type of restructuring could take place either voluntarily outside the courts or as a result of reorganizing under the protection of the bankruptcy court. The latter scenario is discussed later in this chapter [Tables 17.1 and 17.2](#).

Voluntary Settlement Resulting in Liquidation

If the creditors conclude that the insolvent firm's situation cannot be resolved, liquidation may be the only acceptable course of action. Liquidation can be conducted outside the court in a private liquidation or through the United States bankruptcy court. If the insolvent firm is willing to accept liquidation and all creditors agree, legal proceedings are not necessary. Creditors normally prefer private liquidations to avoid lengthy and costly litigation. Through a process called an *assignment*, a committee representing creditors grants the power to liquidate the firm's assets to a third party, called an *assignee* or *trustee*. The responsibility of the assignee is to sell the assets as quickly as possible while obtaining the best possible price. The assignee distributes the proceeds of the asset sales to the creditors and the firm's owners if any monies remain.

REORGANIZATION AND LIQUIDATION IN BANKRUPTCY

In the absence of a voluntary settlement out of court, the debtor firm may seek protection from its creditors by initiating bankruptcy or may be forced into bankruptcy by its creditors. When the debtor firm files the petition with the bankruptcy court, the bankruptcy is said to be *voluntary*. When creditors do the filing, the action is said to be *involuntary*. Once a bankruptcy petition is filed, the debtor firm is protected from any further legal action related to its debts until the bankruptcy proceedings are completed. The filing of a petition triggers an *automatic stay* once the court accepts the request, which provides a period suspending all judgments, collection activities, foreclosures, and repossessions of property by the creditors on any debt or claim that arose before the filing of the bankruptcy petition.

Whether a firm in bankruptcy is reorganized or liquidated depends on a number of factors. These include the viability of the plan proposed for reorganization, the relative leverage of the constituent groups having claims on the firm's assets, and the perceived competence of the firm's management. While difficult to measure, there also is evidence the perceived integrity of a bankrupt firm's management affects the likelihood the firm will be reorganized. Firms in bankruptcy whose managers have not misstated earnings in the past are more likely to be reorganized than those that have.⁵ Managers having misstated earnings may want to hide bad financial decisions by compromising the accuracy of financial data. While bankruptcy court judges may replace such management with a court-appointed trustee, they are still faced with a dilemma: Is the true financial state of the firm knowable if extensive manipulation of financial data has taken place? Consequently, when the data underlying reorganization plans submitted by the bankrupt firm to the court is dubious, judges are inclined to rule that the firm be liquidated.

The Evolution of US Bankruptcy Laws and Practices

US bankruptcy laws focus on rehabilitating and reorganizing debtors in distress. Modern bankruptcy laws are intended to create a mechanism for creditors to deal with an insolvent debtor, to whenever possible provide an opportunity for debtors to start over, and to preserve whenever possible the going-concern value of firms in financial distress by reorganizing rather liquidating them.

⁵Milano and Campa, 2014

These laws endeavor to balance the rights of creditors and borrowers in a manner that treats both parties in a uniform and fair manner. Creditor rights include the ability of a lender to file a lawsuit in the court system to recover what they are owed in a manner prescribed by law. Borrower rights include full disclosure of their legal protections from unreasonable and unfair treatment by creditors.

The equitable treatment of both creditors and borrowers impacts the availability and cost of credit as well as the extent to which it is used. Giving borrowers fair and equal access to credit can fuel economic growth by stimulating consumption and business investment. By providing creditors with the right to recover at least a portion of what they are owed through the court system, interest rates on loans tend to be lower in line with the reduction in risk to lenders. Such creditor protections also influence the amount of debt used by corporate borrowers. There is evidence that firms in countries granting creditors strong legal rights to recover what they are owed tend to be less leveraged than those in countries with weaker creditor rights. Why? Managers and shareholders are concerned about losing control if forced by lenders to reorganize their firms, and this concern can outweigh the lower cost of borrowing in countries with stronger creditor protections.⁶

While there are clear benefits to allowing ailing firms to reorganize under the protection of the bankruptcy court, the bankruptcy process can slow the pace at which redundant capacity is eliminated. For example, in the fossil fuels markets declining oil and coal prices were expected to cause a significant reduction in production capacity allowing available supply to adjust to meet lower demand. In practice, despite more than 70 oil and gas companies having filed for bankruptcy by the end of 2016, these companies collectively continued to produce about one million barrels per day or about 5% of US oil output. In the coal industry, the five largest coal mining firms accounting for 36% of US coal production have declared bankruptcy since mid-2015. According to IHS Global Energy, while their collective output did decline slightly in line with the total industry, their share of total industry output exceeded one third by the end of 2016, reflecting their ability to maintain production levels. Lenders, reluctant to actually take control of assets that have been used as collateral since there often are few buyers due to depressed oil and coal prices, have been willing to renegotiate loan terms and forgive a portion of what they are owed in order to recover as much as they can. As long as oil and coal extraction firms are able to operate such that their revenue exceeds their operating expenses they will be able to pay a portion of their fixed expenses, such as interest and principal on outstanding debt.

Rules and practices governing bankruptcy before the 20th century generally favored the creditor and were more severe with respect to the bankrupt party. More recent bankruptcy laws and practices emphasize rehabilitating debtors in distress by requiring them to reorganize with less emphasis on punishing the debtor.

Article I, Section 8, of the US Constitution authorizes Congress to enact laws pertaining to bankruptcy. Based on this authority, Congress passed the “bankruptcy code” in 1978, which is codified as Title 11 of the United States Legal Code. This law is the uniform federal law that governs all bankruptcy cases. Since 1978, this law has been amended several times. Except for Chapter 12, all the chapters of the present Bankruptcy Code are odd-numbered. Chapters. 1, 3, and 5 cover matters of general application, while Chapters. 7, 9, 11, 12, and 13 concern liquidation (business or nonbusiness), municipality bankruptcy, business reorganiza-

⁶Cho et al., 2014.

tion, family farm debt adjustment, and wage-earner or personal reorganization, respectively. Chapter 15 applies to international cases.

The Bankruptcy Reform Act of 1978 changed the bankruptcy laws substantially by adding a strong business reorganization mechanism, referred to as Chapter 11 of the US Bankruptcy Code. The 1978 law also broadened the conditions under which companies could file so that a firm could declare bankruptcy without waiting until it was insolvent. The Bankruptcy Reform Act of 1994 contained provisions to expedite bankruptcy proceedings and to encourage individual debtors to use Chapter 13 to reschedule their debts rather than use Chapter 7 to liquidate.

On April 19, 2005, the Bankruptcy Abuse Prevention and Consumer Protection Act (BAPCPA) became law. While the new legislation affects primarily consumer filings, BAPCPA affects business filers as well, with the heaviest influence on smaller businesses (i.e., those with less than \$2 million in debt). BAPCPA changed this process by (1) reducing the maximum length of time during which debtors have an exclusive right to submit a plan; (2) shortening the time that debtors have to accept or reject leases; and (3) limiting compensation under key employee retention programs. Prior to BAPCPA, a debtor corporation had the opportunity to request a bankruptcy judge to extend the period for submission of the plan of reorganization as long as it could justify its request. Once the judge ruled that the debtor has been given sufficient time, any creditor could submit a reorganization plan. The new law caps the exclusivity period at 18 months from the day of the bankruptcy filing. The debtor then has an additional 2 months to win the creditors' acceptance of the plan, thereby providing a *debtor-in-position* a maximum of 20 months before creditors can submit their reorganization plans.

Finally, Chapter 15 was added to the U.S. Bankruptcy Code by BAPCPA of 2005 to reflect the adoption of the Model Law on Cross-Border Insolvency passed by the United Nations Commission on International Trade Law (UNCITRAL) in 1997. The purpose of UNCITRAL is to provide for better coordination among legal systems for cross-border bankruptcy cases. Chapter 15 is discussed in more detail later in this chapter.

Filing for Chapter 11 Reorganization

Chapter 11 reorganization may involve a corporation, a sole proprietorship, or a partnership. Since a corporation is viewed as separate from its owners (i.e., the shareholders), the Chapter 11 bankruptcy of a corporation does not put the personal assets of the stockholders at risk, other than the value of their investment in the firm's stock.

In contrast, sole proprietorships and owners are not separate; a bankruptcy case involving a sole proprietorship includes both the business and personal assets of the owner-debtor. Like a corporation, a partnership exists as an entity separate from its partners. In a general partnership bankruptcy case, since the partners are personally responsible for the debts and obligations of the partnership, they may be sued such that their personal assets are used to pay creditors, forcing the partners to file for bankruptcy.

Fig. 17.1 summarizes the process for reorganization under Chapter 11. The process begins by filing in a federal bankruptcy court. In the case of an involuntary petition, a hearing must be held to determine whether the firm is insolvent. If the firm is found to be insolvent, the court enters an *order for relief*, which initiates the bankruptcy proceedings. On the filing of a reorganization petition, the filing firm becomes the *debtor-in-possession* of all the assets and has a maximum of 20 months to convince creditors to accept its reorganization plan, after which the

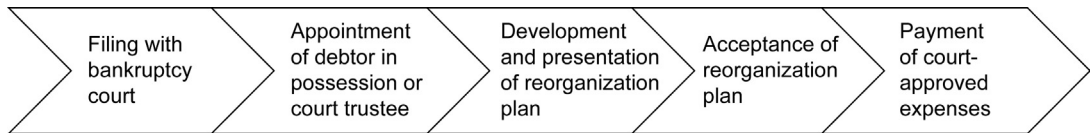


FIGURE 17.1 Procedures for reorganizing during bankruptcy.

creditors can submit their own proposal. In the case of fraud, creditors may request that the court appoints a trustee instead of the debtor to manage the firm during the reorganization period.

The US Trustee (the bankruptcy department of the US Justice Department) appoints one or more committees to represent the interests of creditors and shareholders. The purpose of these committees is to work with the debtor-in-possession to develop a reorganization plan for exiting Chapter 11. Creditors and shareholders are grouped according to the similarity of claims. In the case of creditors, the plan must be approved by holders of at least two-thirds of the dollar value of the claims as well as by a simple majority of the creditors in each group. In the case of shareholders, two-thirds of those in each group (e.g., common and preferred shareholders) must approve the plan.

Following acceptance by creditors, bondholders, and stockholders, the bankruptcy court also must approve the reorganization plan. Even if creditors or shareholders vote to reject the plan, the court is empowered to ignore the vote and approve the plan if it finds the plan fair to creditors and shareholders as well as feasible. Finally, the debtor-in-possession is responsible for paying the expenses approved by the court of all parties whose services contributed to the approval or disapproval of the plan.

Implementing Chapter 7 Liquidation

If the bankruptcy court determines that reorganization is infeasible, the failing firm may be forced to liquidate. According to the Administrative Office of US Courts, about 70% of bankruptcy filings are Chapter 7 filings rather than Chapter 11 reorganization. The prevalence of Chapter 7 liquidations may be a result of the tendency of secured creditors to force debtor firms into liquidation to recover what they are owed by selling off the collateral underlying their loans, often at the expense of unsecured creditors, and equity investors.

Under Chapter 7, a trustee is given the responsibility to liquidate the firm's assets, keep records, examine creditors' claims, disburse the proceeds, and submit a final report on the liquidation. The priority in which the claims are paid is stipulated in Chapter 7 of the Bankruptcy Reform Act, which must be followed by the trustee when the firm is liquidated.⁷ All secured creditors are paid when the firm's assets that were pledged as collateral are liquidated.⁸ If

⁷Chapter 7 distributes the liquidation proceeds according to the following priorities: (1) administrative claims (e.g., lawyers' fees, court costs, accountants' fees, trustees' fees, and other costs necessary to liquidate the firm's assets), (2) statutory claims (e.g., tax obligations, rent, consumer deposits, and unpaid wages and benefits owed before the filing, up to some threshold), (3) secured creditors' claims, (4) unsecured creditors' claims, and (5) equity claims.

⁸Fully secured creditors, such as bondholders and mortgage lenders, have a legally enforceable right to the collateral securing their loans or the equivalent value. A creditor is fully secured if the value of the collateral for its loan to the debtor equals or exceeds the amount of the debt. For this reason, fully secured creditors are not entitled to participate in any distribution of liquidated assets that the bankruptcy trustee might make.

the proceeds of the sale of these assets are inadequate to satisfy all of the secured creditors' claims, they become unsecured (general) creditors for the amount that was not recovered. If the proceeds of the sale of pledged assets exceed secured creditors' claims, the excess proceeds are used to pay general creditors.

The amount and timing of cash payments to unsecured creditors varies widely and depends on the ease with which the trustee can substantiate the legitimacy of claims and how liquid are the bankrupt firm's assets. In late 2014, the trustee managing the liquidation of Lehman Brothers, whose bankruptcy filing in September 2008 is believed to have set off the global financial crisis at that time, announced that unsecured creditors would receive \$4.62 billion. This came after secured creditors had already received \$105 billion. While the pay-out to unsecured creditors represented only 17% of their claims, the trustee heralded the cash distribution to unsecured creditors as an "extraordinary achievement" in view of the complexity of the bankruptcy.

Liquidation under Chapter 7 does not mean that all employees lose their jobs. When a large firm enters Chapter 7 bankruptcy, a division of the company may be sold intact to other companies during the liquidation. In many instances this results in much of the firm's workforce being given the option to work for the acquiring firm, although not necessarily at the same levels of compensation.

Exhibit 17.2 describes how a legally bankrupt company could be liquidated. In this illustration, the bankruptcy court, owners, and creditors could not agree on an appropriate reorganization plan for DOA Inc. Consequently, the court ordered that the firm be liquidated in accordance with Chapter 7. Note that this illustration would differ from a private or voluntary out-of-court liquidation in two important respects. First, the expenses associated with conducting the liquidation would be lower because the liquidation would not involve extended legal proceedings. Second, the distribution of proceeds could reflect the priority of claims negotiated between the creditors and the owners that differs from that set forth in Chapter 7 of the Bankruptcy Reform Act **Tables 17.3–17.5**

"Section 363 Sales" from Chapter 11

So-called 363 sales have become popular in recent years when time is critical. Section 363 bankruptcies allow a firm to enter a court-supervised sale of assets—usually an auction—as

EXHIBIT 17.2 LIQUIDATION OF DOA INC. UNDER CHAPTER 7

DOA has the balance sheet in **Table 17.3**. The only liability that is not shown on the balance sheet is the cost of the bankruptcy proceedings, which is treated as an expense and is not capitalized (i.e., not shown as a balance sheet item). The sale of DOA's assets generates \$5.4 million in cash. The distribution of the proceeds is displayed in **Table 17.4**. Note that the proceeds are distributed in accordance with the priorities stipulated in the current commercial bankruptcy law and that the cost of administering the bankruptcy totals 18% (i.e., \$972,000/\$5,400,000) of the proceeds from liquidation. Once all prior claims have been satisfied, the remaining proceeds are distributed to the unsecured creditors. The pro rata (proportional) settlement percentage of 27.64% is calculated by dividing funds available for unsecured creditors by the amount of unsecured creditor claims (i.e., \$1,368/\$4,950). The shareholders receive nothing because not all unsecured creditor claims have been satisfied (**Table 17.5**).

TABLE 17.3 DOA Balance Sheet

Assets		Liabilities	
Cash	\$35,000	Accounts payable	\$750,000
Accounts receivable	2,300,000	Bank notes payable	3,000,000
Inventories	2,100,000	Accrued salaries	720,000
Total current assets	\$4,435,000	Unpaid benefits	140,000
Land	1,500,000	Unsecured customer deposits	300,000
Net plant and equipment	2,000,000	Taxes payable	400,000
Total fixed assets	\$3,500,000	Total current liabilities	\$5,310,000
Total assets	\$7,935,000	First mortgage	2,500,000
		Unsecured debt	200,000
		Total long-term debt	\$2,700,000
		Preferred stock	50,000
		Common stock	100,000
		Paid in surplus	500,000
		Retained earnings	(725,000)
		Total stockholders' equity	\$(75,000)
		Total shareholders' equity and total liabilities	\$7,935,000

TABLE 17.4 Distribution of Liquidation Proceeds

Proceeds from liquidation	\$5,400,000
Expenses of administering bankruptcy	972,000
Salaries owed employees	720,000
Unpaid employee benefits	140,000
Unsecured customer deposits	300,000
Taxes	400,000
Funds available for creditors	\$2,868,000
First mortgage (from sale of fixed assets)	1,500,000
Funds available for unsecured creditors	\$1,368,000

TABLE 17.5 Pro Rata Distributions of Funds Among Unsecured Creditors

Unsecured creditor claims	Amount	Settlement at 27.64%
Unpaid balance from first mortgage	\$1,000,000	\$276,400
Accounts payable	750,000	207,300
Notes payable	3,000,000	829,200
Unsecured debt	200,000	55,280
Total	\$4,950,000	\$1,368,000

the best means of protecting the value of such assets. Unlike typical bankruptcies, firms may emerge in as little as 30–60 days.

The auction process starts with a prospective buyer's setting the initial purchase price and terms, as well as negotiating a *topping fee* to be paid if it is not successful in buying the assets. Often referred to as a *stalking horse*, the identity of the initial bidder may be concealed. The purpose of the stalking horse is to set a value for the business and to generate interest in the coming auction. *Credit bids* occur when secured creditors propose to buy the assets. Such bidders can bid up to the amount of the debt they are owed before offering any cash.⁹ Creditors opposing the sale have only 10–20 days to file objections to the court, although the period may be shortened to as little as a few days by the bankruptcy judge. The bankruptcy judge decides how the proceeds of the auction are distributed among secured creditors.

The Chapter 11 bankruptcy proceedings of automakers General Motors (GM) and Chrysler in 2009 are among the most controversial 363 sales. Chrysler LLC was sold to a new company managed by Italian carmaker Fiat that would operate as Chrysler Group LLC and consist of Chrysler, Jeep, Dodge, and Mopar brands. The ownership distribution of the new company emerging from Chapter 11 was as follows: United Auto Workers (55%), Fiat (20% growing to 35% once certain milestones had been reached), the US government (8%), and the Canadian government (2%).

The outcome of this proceeding was particularly controversial in that the *absolute priority rule* appears to have been violated. Under this federal bankruptcy code rule, no unsecured creditor can receive an interest in a reorganized firm before secured creditors are paid in full or are provided a fair distribution. However, in this instance, the UAW received for its pension obligations—an unsecured claim—a much higher ownership stake than the value of the cash received by secured creditors.¹⁰

The resolution of the GM 363 sale involved splitting the firm into two companies. The US and Canadian operations only were included in the GM bankruptcy filing. "New GM" contained the "good assets," while all the other assets were retained in "Old GM." "New GM" represented a new corporation containing only the attractive assets held by the US and Canadian operations and is primarily owned by the US and Canadian governments, a UAW

⁹In 2010, creditors outbid an investor group to acquire the *Philadelphia Inquirer* for an amount equal to \$318 million, about one-half of what they were owed by the newspaper.

¹⁰In early 2014, Fiat acquired the remainder of Chrysler that it did not already own.

healthcare trust, and the creditors of “Old GM.” Following approval of the Chapter 11 plan of reorganization, a postliquidating trust directed by a court-appointed trustee was established to dispose of the “Old GM” assets, with the proceeds going to creditors.

In 2014, GM recalled more than 1 million cars because of faulty ignition switches which contributed allegedly to the deaths of 13 people. If these deaths occurred prior to the 2009 bankruptcy agreement, it is possible that GM could be shielded from consumer claims pertaining to these fatalities since they would be the responsibility of “Old GM.” If so, claimants are unlikely to receive much compensation due to the low value of “Old GM” assets. In many cases, the trust’s assets may be worthless.

Chapter 15: Dealing with Cross-Border Bankruptcy

The purpose of Chapter 15 of the US Bankruptcy Code is to provide mechanisms for resolving insolvency cases involving assets, lenders, and other parties in various countries. A Chapter 15 case is secondary to the primary proceeding brought in another country, which is typically the debtor’s home country. As an alternative to Chapter 15, the debtor may proceed with a Chapter 7 or Chapter 11 case in the United States. As part of a Chapter 15 proceeding, the US Bankruptcy Court may authorize a trustee to act in a foreign country on its behalf.

The foreign trustee has the right to petition the US court system for resolving insolvency issues. The petition gives the court the authority to issue an order recognizing the foreign proceeding as either a “foreign main proceeding” or a “foreign nonmain proceeding.” A *foreign main proceeding* is a proceeding in a country where the debtor’s main interests are located; a *foreign nonmain proceeding* is a proceeding in a country where the debtor has a business not representing their primary holdings. If the proceeding is recognized as a foreign main proceeding, the court imposes an automatic stay on assets in dispute in the United States and authorizes the foreign representative to operate the debtor’s business.¹¹

Motivations for Filing for Bankruptcy

Although most companies that file for bankruptcy do so because of their deteriorating financial position, companies also seek bankruptcy protection to shed or limit exposure to future liabilities, enhance negotiating leverage, or to break onerous contracts. In 2001, LTV sold its plants while in bankruptcy to W.L. Ross and Company, which restarted the plants in 2002 in a new company named the International Steel Group. By simply buying assets, ISI eliminated its obligation to pay pension, healthcare, or insurance liabilities, which remained with LTV. A bankruptcy judge in late 2004 approved a settlement enabling two subsidiaries of the energy giant Halliburton to emerge from bankruptcy and to limit their exposure to potential future asbestos claims and litigation by establishing a \$4.2 billion trust fund to pay such claims. Delphi, the ailing auto parts manufacturer, used its bankrupt status to threaten to rescind union contracts, to gain wage and benefit reductions from employees in 2007. More recently, a bankruptcy court judge allowed Texas-based Sabine Oil and Gas in mid-2016 to shed

¹¹Chapter 15 also gives foreign creditors the right to participate in US bankruptcy cases and prohibits discrimination against foreign creditors. Chapter 15 proceeding attempts to promote collaboration between US and foreign courts, since the participants in the proceeding must cooperate fully.

expensive contracts made with oil and gas pipeline firms when energy prices were booming. Such contracts routinely require producers to ship minimum volumes of oil and gas or to be subject to penalties if they fail to do so. With global oil and gas prices having fallen to their lowest levels in more than a decade, producers were unable to ship enough oil and gas profitably to meet their obligations. With energy prices expected to remain depressed, the judge ruled that the ongoing penalty payments required by such contracts would prevent Sabine from being reorganized into a viable company.

The High Cost of Bankruptcy

Efforts to contain costs have prompted a greater use of auctions and other market-based techniques. These include *prepackaged bankruptcies* with a reorganization plan in place at the time of the bankruptcy filing, acquisition of distressed debt by investors willing to support the proposed plan of reorganization, and voluntary auction-based sales while a firm is under the protection of Chapter 11. Despite the increasing use of innovative ways of expediting the bankruptcy process, the cost of professional services remains high. While large and complex, fees paid to bankruptcy advisors, such as appraisers, investment bankers, and lawyers, since the Lehman Brothers liquidation began in 2008 are estimated to have exceeded \$2 billion by the end of 2012.¹²

Prepackaged Bankruptcies

Under a *prepackaged bankruptcy*, the debtor negotiates with creditors well in advance of filing for a Chapter 11 bankruptcy. Because there is general approval of the plan before the filing, the formal Chapter 11 reorganization that follows generally averages only a few months and results in substantially lower legal and administrative expenses.¹³ Prepackaged bankruptcies are often a result of major creditors' willingness to make concessions prior to the debtor filing for bankruptcy if they anticipate the debtor firm being liquidated at "fire sale" prices as a result of the bankruptcy process.¹⁴ Such bankruptcy proceedings work best when a limited number of sophisticated secured creditors, such as hedge funds are involved, enabling the negotiations to proceed rapidly, and with a greater likelihood of greater debt reduction.¹⁵

In a true prepackaged bankruptcy, creditors approve a reorganization plan before filing for bankruptcy. The bankruptcy court then approves the plan and the company emerges from bankruptcy quickly. Minority creditors often are required by the court to accept a plan of reorganization. The confirmation of such a plan over the objections of one or more classes of creditors sometimes is referred to as a *cram down*.

On November 4, 2010, US movie studio Metro-Goldwyn-Mayer filed a prepackaged Chapter 11 bankruptcy in New York that had the approval of nearly all of its creditors. The week before, creditors had approved a plan to forgive more than \$4 billion in debt for ownership stakes in the restructured studio and to replace existing management. The bankruptcy was

¹²Sandler, 2013

¹³Tashjian et al., 1996

¹⁴Eckbo and Thorburn, 2008

¹⁵Lim, 2015

approved the following month, with the reorganized firm emerging from court protection having raised \$600 million in new financing.

ALTERNATIVE OPTIONS FOR FAILING FIRMS

A failing firm's strategic options are to merge with another firm, reach an out-of-court voluntary settlement with creditors, or file for Chapter 11 bankruptcy. Note that the prepackaged bankruptcy discussed earlier in this chapter constitutes a blend of the second and third options. The firm may liquidate voluntarily as part of an out-of-court settlement or be forced to liquidate under Chapter 7 of the Bankruptcy Code. Table 17.6 summarizes the implications of each option. The choice of which option to pursue is critically dependent on which provides the greatest net present value for creditors and shareholders. To evaluate these options, the firm's management needs to estimate the going-concern, selling price, and liquidation values of the firm.

Merging with Another Firm

If the failing firm's management estimates that the sale price of the firm is greater than the going-concern or liquidation value, management should seek to be acquired by or to merge with another firm. In an essentially "make versus buy" decision,¹⁶ firms in the same industry may be inclined to acquire the failing firm, especially if they are able to acquire assets at distressed prices that can be used in their operations.¹⁷ The size of the discount from book value of such assets is likely to be greater if there are industry and economy wide liquidity problems. If the seller's direct competitors are unable to make a bid for the assets to be divested, nontraditional buyers, such as private equity firms are likely to express interest. Such buyers generally do not value such assets based on potential synergy but rather on their eventual sale value. Consequently, they often are looking to buy assets only at bargain prices. The problem is exacerbated further when the economy is depressed as there are likely to be few potential buyers.

If there is a strategic buyer, management must convince the firm's creditors that they will be more likely to receive what they are owed and shareholders are more likely to preserve share value if the firm is acquired rather than liquidated or allowed to remain independent. In some instances, buyers are willing to acquire failing firms only if their liabilities are reduced through the bankruptcy process. Hence, it may make sense to force the firm into bankruptcy to have some portion of its liabilities discharged during the process of Chapter 11 reorganization.¹⁸ Alternatively, the potential buyer could reach agreement in advance of bankruptcy reorganization

¹⁶"Make versus buy" decisions reflect the option of a firm to develop an asset on its own or to obtain it by acquiring another firm that already owns the desired asset.

¹⁷Almeida et al., 2011.

¹⁸To protect it from litigation, Washington Construction Group required Morrison Knudsen Corporation to file for bankruptcy as a closing condition in the agreement of purchase and sale in 2000.

TABLE 17.6 Alternative Strategies for Failing Firms

Assumptions	Options: failing firm	Outcome: failing firm
Selling price is greater than the going-concern or liquidation value	1. Is acquired by or 2. Merges with another firm	1. Continues as subsidiary of acquirer 2. Merged into acquirer and ceases to exist
Going-concern value is greater than the sale or liquidation value	1. Reaches out-of-court settlement with creditors 2. Seeks bankruptcy protection under Chapter 11 3. Seeks prepackaged settlement with primary creditors before entering Chapter 11	1. Continues with debt-for-equity swap, extension, and composition 2. Continues in reorganization
Liquidation value is greater than the sale or going-concern value	1. Reaches out-of-court settlement with creditors 2. Liquidates under Chapter 7	1. Ceases to exist; assignee liquidates assets and distributes proceeds, reflecting the terms of the negotiated settlement with creditors 2. Ceases to exist; trustee supervises liquidation and distributes proceeds according to statutory priorities

with the primary creditors (i.e., a prepackaged bankruptcy) and employ the bankruptcy process to achieve compliance from the minority creditors.

Sales within the protection of Chapter 11 reorganization may be accomplished either by a negotiated private sale to a particular purchaser or through a public auction. The latter is often favored by the court, since the purchase price is more likely to reflect the true market value of the assets. Generally, a public auction can withstand any court challenge by creditors questioning whether the purchaser has paid fair market value for the failing firm's assets. In 2005, Time Warner Inc. and Comcast Corp reached an agreement to buy bankrupt cable operator Adelphia Communications Corp while in Chapter 11 for nearly \$18 billion. Time Warner and Comcast paid Adelphia bondholders and other creditors in cash and warrants for stock in a new company formed by combining Time Warner's cable business and Adelphia. Bidders tend to overpay for firms purchased out of Chapter 11, with such strategies benefiting the target firm but not acquirer shareholders. In most cases, the acquirers fail to restructure the target firms successfully.

Reaching an Out-of-Court Voluntary Settlement with Creditors

The going-concern value of the firm may exceed the sale or liquidation value. Management must be able to demonstrate to creditors that a restructured or downsized firm would be able to repay its debts if creditors were willing to accept less, extend the maturity of the debt, or exchange debt for equity. In what is known as the *holdout problem*, smaller creditors have an incentive to attempt to hold up the agreement unless they receive special treatment, making an out-of-court voluntary settlement difficult to achieve. Consensus may be accomplished by

paying all small creditors 100% of what they are owed and the larger creditors an agreed-on percentage.

Other factors limiting voluntary settlements, such as a debt-for-equity swap, include a preference by some creditors for debt rather than equity and the lack of the necessary information to enable proper valuation of the equity offered to the creditors. Because of these factors, there is some evidence that firms attempting to restructure outside of Chapter 11 bankruptcy have more difficulty in reducing their indebtedness than those that negotiate with creditors while under the protection of Chapter 11.

Voluntary and Involuntary Liquidations

The failing firm's management, shareholders, and creditors may agree that the firm is worth more in liquidation than in sale or as a continuing operation. If management cannot reach agreement with its creditors on a private liquidation, the firm may seek Chapter 7 liquidation. The proceeds of a private liquidation are distributed in accordance with the agreement negotiated with creditors, while the order in which claimants are paid under Chapter 7 is set by statute.

THE INCREASING ROLE OF HEDGE FUNDS IN THE BANKRUPTCY PROCESS

Debtor-in-possession (DIP) financing refers to loans made to a firm in Chapter 11 to satisfy working capital needs while being reorganized. Such financing is considered senior in liquidation to all other forms of debt held by the bankrupt firm. Bank lenders are more likely to provide such financing for firms in Chapter 11 when their prebankruptcy petition loans to the firm are at risk, the firm exhibits significant potential to reorganize successfully, and the firm has long standing relationships with the lender. They usually have little interest in taking an equity stake in the firm. In contrast, activist lenders, such as hedge funds are more likely to provide DIP financing when debtor firms are small and their existing loans are over collateralized. Their motive is to loan in order to own the firm.¹⁹

Hedge funds can pursue activist strategies because of their focus on achieving high financial returns and because they are not limited by having other business relationships with the debtor firm. Banks, mutual funds, and pension funds often have potential conflicts of interest with the debtor firm ranging from meeting their capital needs to managing the firm's pension fund assets. Unlike pension and mutual funds, hedge funds also are able to hold large concentrations of illiquid investments that strengthen their influence in negotiating with secured creditors.

Hedge funds play a key role in financing debtor firms in Chapter 11 by providing DIP financing and acquiring equity stakes in such businesses. Hedge funds use the offer of DIP financing to bargain for seats on the debtor firm's board of directors and for receiving an ownership stake when the firm emerges from bankruptcy. DIP loans often convert to equity ownership, because they frequently allow for debt-for-equity swaps. Hedge funds also can acquire a controlling interest through so-called "loan-to-own" strategies and by acquiring unsecured debt in order to serve on the unsecured creditor or equity committees.

¹⁹Li and Wang, 2016.

Under a “loan-to-own” strategy, a hedge fund acquires the debt of a failing firm and converts the debt into a controlling equity stake. That is, the hedge fund buys the debt at depressed prices, forces the distressed firm into Chapter 11, and converts the debt at book value to equity in a debt-for-equity swap, resulting in a controlling stake in the firm when the firm emerges from bankruptcy. The emergence from Chapter 11 is accomplished under Section 363(k) of the Bankruptcy Code, which gives debtors the right to bid on the firm in a public auction sale. During the auction, the firm’s debt is valued at face value rather than market value, discouraging other bidders other than the hedge fund, which acquired the debt prior to bankruptcy at distressed levels.

By buying unsecured debt, hedge funds play an important role in affecting the balance of power between the debtor firm and secured creditors. Reorganizations in which hedge funds have substantial representation on unsecured creditor committees exhibit higher recovery rates for unsecured creditors and equity owners due to the ability of hedge funds to offset the tendency of secured creditors to push for liquidation.²⁰

FAILING FIRMS AND SYSTEMIC RISK

In response to the meltdown in global financial markets in 2008 and 2009, the US Congress passed the Dodd–Frank Wall Street Reform and Consumer Protections Act of 2010 (Dodd–Frank). Among other things, the act created a new government authority to dismantle financial services firms whose demise would endanger the US financial system and economy. The objectives of this new authority, called the Orderly Liquidation Authority (OLA), are to ensure that losses resulting from the speedy liquidation of a firm are borne primarily by the firm’s shareholders and creditors, to minimize the loss of taxpayer funds, and to penalize current management. The OLA is solely a liquidation remedy and, unlike Chapter 11 of the US Bankruptcy Code, does not allow for reorganization or rehabilitation as an option. The order in which claimants are paid during liquidation is similar to that defined under Chapter 7, except that the government puts itself first.

The OLA applies to US bank holding companies and nonbank financial firms supervised by the Federal Reserve Board of Governors (the Fed). The OLA also applies to companies engaged predominantly in activities that the Fed determines are financial in nature, subsidiaries of such companies (other than insured depository institutions or insurance companies), and brokers and dealers registered with the SEC and a member of the Securities Investor Protection Corporation (SIPC), a fund designed to insure clients against broker/dealer fraud. The liquidation of insured depository institutions will continue to be the responsibility of the FDIC under the agency’s current mandate. While insurance companies will continue to be subject to state regulation, their holding companies and unregulated affiliates are covered by the OLA.

The advantages of the OLA are that it provides the government with both the authority and a clear process for expeditiously winding down failing firms that are deemed a risk to the financial system. However, the resolution process for dealing with failing, systemically risky firms can itself destabilize the financial system, since the process could panic investors and lenders. Furthermore, the OLA is applicable only to firms whose operations are wholly domestic, since

²⁰Jiang et al., 2012

there is currently no cross-border mechanism for resolving issues involving banks operating in multiple countries. Consequently, large multinational banks will be unaffected by the OLA.

In late 2015, The Federal Reserve Board of Governors adopted a rule stopping it from bailing out individual firms. The rule stemmed from the controversial decision in 2008 to rescue American International Group (AIG) and others, while deciding not to bail out Lehman Brothers, during the 2008–09 financial crisis. The rule is intended to end the notion of individual financial companies being too big to fail by allowing the Fed to rescue only the broader financial system rather than individual companies. Under the rule, the Fed can make emergency loans available that can potentially be used by at least five companies but it cannot selectively choose which firms to save individually.

But are we really safer today from another collapse of the global financial markets? Recent evidence suggests that despite the Dodd–Frank legislation passed in 2010, increasing bank capital requirements, and periodic “stress testing” of banks to determine the degree of financial distress they can withstand, the big financial institutions are no safer today than before the 2008 financial market meltdown.²¹ Since banks are better capitalized today, measures of risk and financial returns on their common and preferred stock required by investors and interest rates on their debt should be lower than prior to 2008 because they are less likely to experience financial distress and bankruptcy.²² In fact, required returns and measures of risk, such as share price volatility are higher. Why? The increase in bank capital requires banks to concentrate an increasing share of their cash in low earning investments such as Treasury securities reducing profitability, operating cash flow, dividend paying capability, interest coverage ratios, and ability to reinvest in current operations. Severe loan losses in an economic downturn could push already-stretched operating cash flow into the red, straining bank liquidity and potentially bank solvency. Consequently, while banks have more cash/liquid assets on hand to weather financial turmoil, their ability to generate cash from operations is lessened leaving their perceived current risk about the same as before the 2008 financial crisis.

By some measures the danger of systemic risk could even be greater if the financial markets show signs of investor panic. The top five US banks controlled 45% of total US banking assets in 2016 compared to 25% in 2000 making such banks more likely to be bailed out by the taxpayer as “too big to fail.”²³ Protected by an implied government safety net, bank managers may be prone to making risky bets unseen by regulators unable to monitor all aspects of the diversity and complexity of these megabanks.

PREDICTING CORPORATE DEFAULT AND BANKRUPTCY

Data mining software allows model builders to churn large quantities of data to identify patterns relevant to bankruptcy prediction. Analysts with substantial knowledge in specialized disciplines, such as accounting and finance add value in interpreting relevant data.

²¹Sarin and Summers, 2016. Andriosopoulos et al., 2017 conclude that Dodd–Frank may have resulted in some redistribution of wealth from small to larger financial institutions without reducing the financial industry’s overall riskiness.

²²Increased capital requirements relative to debt should in theory reduce a bank’s levered beta resulting in a reduction in investor required returns estimated using the capital asset pricing model (see Chapter 7) and share price volatility relative to overall stock market changes.

²³*The Economist*, The Superstar Company: A Giant Problem, September 17, 2016

However, neither data mining nor specialized knowledge has proven consistently superior in forecasting accurately default. Why? Both are backward looking generally relying on historical data. Each new credit cycle tends to be somewhat different from past cycles. What has proven to be the most useful is the judicious application of both data mining software and specialized knowledge.²⁴ The latter allows the analyst to determine whether data patterns uncovered through data mining are an anomaly or do actually improve model predictive accuracy.

Discriminant analysis was the primary method used to develop models in the 1960s and 1970s. Modeling shifted by the 1980s to logit analysis (probability based predictions) and neural networks (artificial intelligence). While the number of factors used in building models varied by decade, the average model used about 10 variables. In analyzing model accuracy, multivariate discriminant analysis and neural networks seem to be the most promising.²⁵ Interestingly, increasing the number of variables in the model does not guarantee greater accuracy. Two-factor models often are as accurate as models with as many as 21 factors.²⁶

The predictive accuracy of the various types of models tends to be similar, correctly identifying failing firms about 80% of the time when applied to firms used in the historical sample (so-called in-sample predictions) to estimate the models. However, accuracy drops substantially (to as low as 50%–60%) in predicting failing firms not used in constructing the models, so-called out-of-sample predictions.²⁷

Documenting potential problems with bankruptcy prediction models, researchers have found that model accuracy not only declines when applied to out-of-sample predictions but results often vary widely by industry and time period. Moreover, applying models to industries other than those used to develop the models often results in greatly diminished accuracy.²⁸ The widespread use of securitization (i.e., packaging of loans and selling them to investors) also tends to bias models. Securitization encourages lenders to downplay the borrower's credit repayment risk knowing they can securitize loan portfolios and sell them to investors. Bankruptcy prediction models often are constructed using the more favorable data reported by lenders thereby potentially undermining their predictive accuracy.²⁹

The earliest quantitative efforts to predict bankruptcy involved so-called *credit scoring models*, which relied on discriminant analysis to distinguish between bankrupt and nonbankrupt firms. *Discriminant analysis* uses a combination of independent variables to assign a score (i.e., a Z score) to a particular firm. This score then is used to distinguish between bankrupt and nonbankrupt firms by using a cut-off point. The likelihood of bankruptcy for firms with low Z scores is less than for firms with high Z scores. The most significant financial ratios for predicting default are earnings before income and taxes as a percent of total assets and the

²⁴Zhou et al., 2015

²⁵Mousavi et al., 2015

²⁶Bellovary et al., 2007

²⁷Statistical methodologies employed to construct bankruptcy models will settle on a set of variables that exhibit the highest correlation with failing firms during the historical period used to estimate such models. The degree of model reliability is tested severely when such models are used to predict failing firms not used in constructing the models. The significant drop in accuracy of out-of-sample predictions raises serious concerns about the reliability of such models (Aziz and Dar, 2006).

²⁸Grice and Dugan, 2001

²⁹Rajan et al., 2014

ratio of sales to total assets. More recently, the inclusion of cash flow in the calculation of the Z score has been found to improve the model's predictive accuracy.³⁰ The limitation of this approach is that it captures a firm's financial health at a moment in time and does not reflect changes in a company's financial ratios over time. Tests of this methodology applied to more recent samples found that the earlier model's ability to classify bankrupt companies correctly fell from 83.5% to 57.8%.³¹

Structural models of credit risk assume that firms default when they violate a debt covenant, cash flow falls short of required debt payments, or shareholders choose to pursue bankruptcy. Such models employ logit or probit regression analyses that provide a conditional probability that an observation belongs to a specific category and do not require assumptions as restrictive as discriminant analysis. The logit model yields a score between 0 and 1, which gives the probability that the firm will default.³² *Reduced form models* use market prices of the distressed firm's debt as the only source of information about the firm's risk. Such prices are a proxy for the variables used in the structural models. Although easier to estimate, such models lack a specific link between credit risk and the firm's assets and liabilities and assume that the timing of default is random, in that investors with incomplete data do not know how far the firm is from default.³³

Neural networks use artificial intelligence that attempts to mimic the way a human brain works and are particularly effective when a large database of prior examples exists.³⁴ The cumulative sums (CUSUM) method represents a class of models that account for serial correlation (i.e., interdependencies) in the data and that incorporate information from more than one period.³⁵ The options-based approach to bankruptcy prediction builds on option-pricing theory to explain business bankruptcy, relying on such variables as firm volatility to predict default.

Accounting data are sometimes used to predict credit ratings, which serve as proxies for the probability of default.³⁶ Other analysts argue that the probability of failure depends on the length of the time horizon considered³⁷ or demonstrate a correlation between default rates and loss in the event of default and the business cycle.³⁸ "Shocks," such as recession and credit crunches, contribute to default by affecting firm assets or cash flow negatively.³⁹ Other studies use net worth as a key factor affecting a firm's ability to raise funds in a liquidity crisis⁴⁰ or equity returns and debt service ratios as measures of distress.⁴¹ Of these factors, financial or accounting measures of liquidity, solvency, leverage, profitability, asset composition, firm size, and growth rate

³⁰ Almamy et al., 2016.

³¹ Grice and Ingram, 2001.

³² Hsu et al., 2002.

³³ See Jarrow and Turnbull (1995) for examples of reduced form models.

³⁴ Platt et al., 1999.

³⁵ Kahya and Theodosiou, 1999.

³⁶ Blume et al., 1998; Molina, 2006; Avramov et al., 2009.

³⁷ Duffie et al., 2007.

³⁸ Altman et al., 2005.

³⁹ Hennessy and Whited, 2007; Anderson and Coverhill, 2007.

⁴⁰ White, 1989.

⁴¹ Gilson et al., 1990; Asquith et al., 1994.

are the best predictors of the incidence of default,⁴² followed by market-based variables, such as interest rates and credit default swap rates, with macroeconomic variables, such as GDP adding relatively little to improving predictive accuracy.⁴³ Of these variables, those most common to international models of financial distress include measures solvency and profitability.⁴⁴

EMPIRICAL STUDIES OF FINANCIAL DISTRESS

Quantitative studies of firms in financial distress analyze investor returns on firms emerging from bankruptcy and on financially distressed stocks, the likelihood of business failure by stage of maturity, and the extent to which one firm's financial distress can be transmitted to other firms. These are discussed next.

Attractive Returns to Firms Emerging from Bankruptcy Are Often Temporary

When firms emerge from bankruptcy, they often cancel the old stock and issue new common stock. Empirical studies show that such firms often experience attractive financial returns to holders of the new stock immediately following the announcement that the firm is emerging from bankruptcy.⁴⁵ However, long-term performance often deteriorates with some studies showing that 40% of the firms studied experienced operating losses in 3 years after emerging from Chapter 11. Almost one-third subsequently filed for bankruptcy or had to restructure their debt. After 5 years, about one-quarter of all firms that reorganized were liquidated or merged or refilled for bankruptcy.⁴⁶ The most common reason for firms having to file for bankruptcy again is excessive debt.

Returns to Financially Distressed Stocks Are Unexpectedly Low

As a class, distressed stocks offer low financial rates of return despite their high risk of business failure.⁴⁷ In theory, one would expect such risky assets to offer financial returns commensurate with risk. The low financial return for distressed stocks tends to be worse for stocks with low analyst coverage, institutional ownership, and price per share. Factors potentially contributing to these low returns could include unexpected events, valuation errors by uninformed investors, and the characteristics of distressed stocks.

Unexpected events include the economy's being worse than expected. Valuation errors include investors' not understanding the true risk of failure of distressed firms and not fully discounting the value of these stocks to reflect this risk. The characteristics of failing firms are such that some investors may have an incentive to hold such stocks despite their low returns. For example, majority owners of distressed stocks can benefit by having other firms in which they have an ownership stake buy the firm's output or assets at bargain prices or sell to the

⁴²Liang et al., 2016.

⁴³Tinoco and Wilson, 2013

⁴⁴Laitinen and Suvas, 2016

⁴⁵Alderson and Betker, 1999; Eberhart et al., 1999

⁴⁶France, 2002

⁴⁷Campbell et al., 2008

firm at above market prices. Consequently, the low financial returns for these majority investors in distressed firms are more than offset by the returns on their investments in other firms that are either customers of or suppliers to the distressed firm.

Low returns to financially distressed stocks also may be related to the future potential for asset recovery. If expected recovery rates are high, the distressed firm's shareholders may deliberately trigger default by missing payments if they believe they can recover a significant portion of the value of their shares through renegotiation of credit terms with lenders. Consequently, the lower perceived risk of such shares would result in commensurately lower financial returns.⁴⁸

IPOs are More Likely to Experience Bankruptcy than are Established Firms

Firms that have recently undergone IPOs tend to experience a much higher incidence of financial distress and bankruptcy than more established firms.⁴⁹ These findings are consistent with other studies showing that a portfolio of IPOs performs well below the return on the S&P 500 stock index for up to 5 years after the firms go public.⁵⁰ Some observers attribute this underperformance to the limited amount of information available on these firms.⁵¹

Financially Ailing Firms Can Be Contagious

A contagion in this context describes the spread of financial distress of one firm to other firms. A declaration of bankruptcy by one firm can impact rival firms and suppliers negatively. The extent to which this may happen depends on whether the factors contributing to financial distress are affecting all firms within an industry or relate to a specific firm. The effects of financial distress may also differ depending on the degree to which an industry is concentrated. Studies show that stock prices of peers react negatively to a competitor's bankruptcy in most industries; however, peer share prices may increase whenever a competitor declares bankruptcy in highly concentrated industries. The latter reflects the likelihood that the remaining competitors in concentrated industries will gain market share, enabling them to benefit from increased economies of scale and pricing power.⁵² Furthermore, firms experiencing financial distress or in Chapter 11 are likely to experience declining sales and in turn to reduce their demand for raw materials and services from suppliers. When such firms represent important customers, suppliers often experience significant declines in valuations.⁵³

There also is evidence that bankruptcies of large industry participants can raise the cost of borrowing and reduce the access to credit of other industry participants by reducing the value of the collateral used to secure debt financing.⁵⁴ Specifically, firms experiencing financial distress are forced to sell assets and reduce their purchases of similar assets, putting downward

⁴⁸Garlappi and Yan, 2011

⁴⁹Beneda, 2007

⁵⁰Ritter, 1991; Loughran et al., 1994

⁵¹Grinblatt and Titman, 2002

⁵²Lang and Stulz, 1992

⁵³Hertzel et al., 2008

⁵⁴Benmelech and Bergman, 2011

pressure on the value of such assets. Consequently, firms owning similar assets whose value has fallen will be forced to borrow less, pay more for credit, or both.

SOME THINGS TO REMEMBER

Bankruptcy is designed to protect the technically or legally insolvent firm from lawsuits by its creditors until a decision is made to liquidate or reorganize the firm. Absent a voluntary settlement out of court, the debtor firm may voluntarily seek protection from its creditors by initiating bankruptcy or be forced involuntarily into bankruptcy by its creditors.

CHAPTER DISCUSSION QUESTIONS

- 17.1 Why would creditors make concessions to a debtor firm? Give examples of common types of concessions. Describe how these concessions affect the debtor firm.
- 17.2 Although most companies that file for bankruptcy do so because of their deteriorating financial position, companies increasingly are seeking bankruptcy protection to avoid litigation. Give examples of how bankruptcy can be used to avoid litigation.
- 17.3 What are the primary options available to a failing firm? What criteria might the firm use to select a particular option? Be specific.
- 17.4 Describe the probable trend in financial returns to shareholders of firms that emerge from bankruptcy. To what do you attribute these trends? Explain your answer.
- 17.5 Identify at least two financial or nonfinancial variables that have been shown to affect firm defaults and bankruptcies. Explain how each might affect the likelihood the firm will default or seek Chapter 11 protection.
- 17.6 On June 25, 2008, JHT Holdings, Inc., a Kenosha, Wisconsin-based package delivery service, filed for bankruptcy. The firm had annual revenues of \$500 million. What would the firm have to demonstrate for its petition to be accepted by the bankruptcy court?
- 17.7 Dura Automotive emerged from Chapter 11 protection in mid-2008. The firm obtained exit financing consisting of a \$110 million revolving-credit facility, a \$50 million European first-lien term loan, and an \$84 million US second-lien loan. The reorganization plan specified how a portion of the proceeds of these loans would be used. What do you believe might be typical stipulations in reorganization plans for using such funds? Be specific.
- 17.8 What are the primary factors contributing to business failure? Be specific.
- 17.9 In recent years, hedge funds engaged in so-called loan-to-own prebankruptcy investments, in which they acquired debt from distressed firms at a fraction of face value. Subsequently, they moved the company into Chapter 11, intent on converting the acquired debt to equity in a firm with sharply reduced liabilities. The hedge fund also provided financing to secure its interest in the business. The emergence from Chapter 11 was typically accomplished under Section 363(k) of the Bankruptcy Code, which gives debtors the right to bid on the firm in a public auction sale. During the auction, the firm's debt was valued at face value rather than market value, discouraging bidders other than the hedge fund, which acquired the debt prior to bankruptcy at distressed levels. Without competitive bidding, there was little chance of

generating additional cash for the general creditors. Is this an abuse of the Chapter 11 bankruptcy process? Explain your answer.

- 17.10** American Home Mortgage Investments filed for Chapter 11 bankruptcy in late 2008. The company indicated that it chose this course of action because it represented the best means of preserving the firm's assets. W.L. Ross and Company agreed to provide the firm \$50 million in debtor-in-possession financing to meet its anticipated cash needs while in Chapter 11. Comment on the statement that bankruptcy provides the best means of asset preservation. Why would W.L. Ross and Company lend money to a firm that had just filed for bankruptcy?

Answers to these Chapter Discussion Questions are found in the Online Instructor's Manual for instructors using this book (<https://textbooks.elsevier.com/web/Manuals.aspx?isbn=9780128016091>).

END OF CHAPTER CASE STUDY: ARCH COAL FILES FOR CHAPTER 11 BANKRUPTCY PROTECTION

Key Points

- Chapter 11 provides an opportunity for debtor firms to reorganize into financially viable firms and for creditors to recover a portion of what they are owed.
- Distressed industries such as the US coal industry often become prime targets for private equity investors to acquire deeply discounted assets (e.g., coal reserves and profitable mines).

To paraphrase the American humorist Mark Twain, reports of the coal industry's death have been greatly exaggerated. The coal industry is clearly in decline but appears to be far from dead. Globally, coal is used to fuel more than 40% of power generation. In addition, metallurgical coal is used to produce about 70% of the world's steel production (the remainder comes from recycled scrap). Despite concerns about pollution, coal is abundant, making it affordable. It is also easy to transport, store, and use. Equally important is that it is not subject to geopolitical tensions.

According to the 2015 global energy report by the International Energy Agency, the use of coal among Western European countries and the United States and Canada, peaked about 2008 and has been flat to declining in these countries since then. Even though the demand for coal is expected to increase at less than half of its historical 2.4% compound annual average growth rate during the last 25 years, it is projected to still account for more than 30% of global electricity output by 2040. Why? Because India and Asian Pacific countries have hundreds of new coal fired electrical power generating plants under construction or on the drawing boards to bring electricity to millions in these countries that do not currently have power. The logic is that it is better to provide electricity to millions in poverty and to deal with the potential pollution problems later. According to the Instituted for Energy Research, China is adding coal fired power plants at the rate of one every 7–10 days, despite have horrible air pollution in its major cities. Japan plans to build 43 coal fired plants to replace its shuttered nuclear power operations.

While US coal demand is expected to grow modestly long-term, the industry has been particularly hard hit in recent years. Nationwide, coal production at 895 million tons sank to the lowest levels in three decades in 2015. The vast majority of that drop was in Appalachia, but production

in the west was down as well according to the US Energy Information Agency. Many utilities have been switching from coal to natural gas to generate electricity. Besides being cheaper, natural gas emits less greenhouse gas, a major consideration as utilities look to comply with tough new government regulations. The Clean Power Plan, which takes effect in 2022, requires states to cut carbon emissions by using less coal and more solar, wind and gas power. Finally, prices of metallurgical coal remained depressed throughout 2016 amid the slowdown in China's economic growth. Despite these developments, the US Environmental Protection Agency predicts US coal production will decline to 685 million tons in 2016 increasing to about 800 million tons in 2050, comprising about 30% of US electricity output down from about 50% in 2008.

Throughout 2015 and 2016, the shares of US coal companies cratered reflecting the widely held belief that cheaper energy sources such as natural gas, sluggish economic growth, and stricter environmental regulations would reduce the demand for coal, depressing prices and profit margins. Although the inevitable shakeout is underway, market forces and bankruptcy laws are at work to restructure the industry. With 50 coal mining companies in bankruptcy by February 2016, the option to sell coal assets is limited in the near term. However, such assets could become attractive to "distressed debt" investors once the bankruptcy process enables mining firms to negotiate lower debt levels and labor costs. So-called distressed debt investors have a history of profiting by acquiring deeply discounted assets.

Among the options available to failing coal firms is to downsize by selling assets to raise cash and reduce debt, reach an out of court settlement with creditors, seek to merge with a financially stronger firm, or to reorganize under the protection of the US bankruptcy court. Apparently, many coal firms have chosen the latter option. The most notable coal mining firms that sought such protection in 2015 were Alpha Natural Resources Inc., Patriot Coal Corp. and Walter Energy Inc. This has spurred asset sales and consolidations, as well as widespread employment and wage reductions at these firms and other coal companies. States most directly impacted by these events include the five largest coal producing states in 2015 which include Wyoming, West Virginia, Kentucky, Illinois, and Pennsylvania.

The pressure to seek bankruptcy protection continued in 2016 as Arch Coal Corporation, the second largest coal supplier behind industry leader Peabody Energy,⁵⁵ filed for Chapter 11 protection in January 2016. Having lost money since 2012, the firm had been in negotiation with its creditors seeking relief from its bone-crushing \$4.5 billion in outstanding debt. The debt consisted of \$1.9 billion in senior collateralized debt with the remaining \$2.6 billion subordinated debt. In the negotiation, the firm had sought to get debt relief through partial forgiveness, deferral of interest payments and even a debt for equity swap.

In the filing, Arch's proposal offers senior lenders a combination of cash, new senior debt and most of the reorganized company's stock in a debt for equity swap. Junior creditors could choose between a minority equity interest and the proceeds of assets that had not been pledged as collateral for senior loans if the firm were eventually liquidated. While many senior lenders supported the Arch proposal prior to the bankruptcy filing, infighting broke out among hedge funds holding different layers (secured and unsecured) of Arch Coal debt. GSO Special Situations Master Fund LP, a Blackstone Group LP affiliate, even filed a lawsuit seeking to clear the way for a debt exchange

⁵⁵Peabody succumbed to industry wide pressures and filed for Chapter 11 bankruptcy protection on April 13, 2016. Peabody is expected to use the bankruptcy process to reduce its debt and to restructure its operations. Many of its mines are profitable on an operating basis. The bankruptcy filing was necessitated by the firm's inability to pay interest and principal payments on debt incurred in the firm's recent acquisitions.

rather than a debt for equity swap favored by Arch. Continued uncertainty about the level of acceptance of the agreement by major lenders is what ultimately caused Arch to file for Chapter 11 bankruptcy protection from its creditors.

Following a flurry of acquisitions, Arch's share price had declined since 2011. Much of its current debt load is attributable to its 2011 acquisition of International Coal Corporation. Those acquisitions were based on the presumption that the coal industry would see rapid overseas growth in the coming years, which has yet to materialize as the global economy continues its anemic growth. In early 2011, the firm's share price peaked at \$260 per share. On January 11, 2016, its stock traded at less than a dollar.

At the time of filing, Arch Coal had \$600 million in cash and short term investments, and had negotiated \$275 million in "debtor in possession" (DIP) financing from lenders to help sustain the firm's mining operations through the bankruptcy process. Lenders made sure that a portion of their DIP financing was secured and also that it was made by a bank syndicate consisting of multiple lenders. As of the end of 2014, Arch estimated that its pension benefit obligations were \$353 million and since they were well funded should not be affected by the bankruptcy filing.

Arch Coal, with about 4,600 employees, expects mining operations and customer shipments to continue uninterrupted and the impact on total employment and worker compensation to be limited. Unlike other bankrupt miners, the union-free miner said it has no labor issues to be resolved in Chapter 11. Arch, a supplier to both domestic and foreign customers, receives 84% of its coal from Wyoming's Powder River Basin with the remainder coming from Central Appalachia and the Illinois Basin. The Wyoming operations are profitable on an operating basis, while mines outside of Wyoming may have to be shutdown.

The Arch bankruptcy filing could jeopardize the firm's interests on the West Coast, where there has been some interest in building fossil fuel export terminals in recent years. Arch Coal is coowner of the proposed coal export terminal at the Millennium Bulk Terminals site in Longview, Washington. But the Arch Coal bankruptcy follows financial troubles by another investor in the project, Ambre Energy, and threatens the financial feasibility of the project.

Land reclamation may be another casualty of bankruptcy. Federal law requires coal companies to guarantee that, in the event that the company goes bankrupt, mines will be cleaned up. The law requires so called "reclamation bonds" before any mining permit is granted. But Arch has not put in escrow any funds for this purpose or purchased insurance to cover land reclamation. Congress has allowed coal firms to satisfy their obligations by self-insuring, which amounts to relying on the financial health and reputation of the coal company to raise the monies needed to restore terrain impacted by mining operations.

As recently as September 2015, Wyoming allowed Arch Coal to "self-bond" to cover its reclamation requirements. If the company cannot cover its reclamation requirements, the state will shoulder the burden as the states in which the firm has mines requiring land reclamation will simply be considered general creditors in the bankruptcy process. Thus, there is the danger the state will receive only a fraction of the total reclamation cost if the firm is liquidated and the proceeds distributed.

With over ninety square miles of coal mines in Wyoming's Powder River Basin, Arch has a \$458 million reclamation liability. The firm's court filing listed \$5.8 billion in assets and \$6.5 billion in debt making it unlikely that liquidation of assets would be sufficient to cover reclamation expenses after the required payments defined by the federal bankruptcy law have been made. The debtor in possession loan includes a \$75 million carve-out for environmental reclamation obligations. The balance of the reclamation costs may ultimately be borne by taxpayers.

The coal industry survivors will be low-cost producers across the country, including most of the eleven mines in Arch Coal's portfolio. Major US mining firms have many profitable mines, but have racked up too much debt. Their mines are now expected to fall into the hands of new owners and operators dominated by creditors and private equity firms willing to buy deeply distressed debt. Once purchased, such debt can be swapped at face value for coal mining assets. While the industry's future is cloudy, predictions of its demise are likely to prove highly premature.

Chapter Discussion Questions

- 17.1 To what extent do you believe the factors contributing to the Arch Coal's bankruptcy were beyond the control of management? To what extent do you believe past mismanagement may have contributed to the bankruptcy?
- 17.2 Comment on the fairness of the bankruptcy process to shareholders, lenders, employees, communities, government, and so forth. Be specific.
- 17.3 Why would lenders be willing to lend to a firm emerging from Chapter 11? How did the lenders attempt to manage their risks? Be specific.
- 17.4 How does Chapter 11 potentially affect adversely competitors of firms emerging from bankruptcy? Explain your answer.
- 17.5 Discuss whether Arch Coal's lenders would have been better off in Chapter 11 reorganization, from a liquidation, or a Section 363 sale?
- 17.6 The Arch Coal case study illustrates options available to the creditors and owners of a failing firm. How do you believe creditors and owners might choose from among the range of available options?

Solutions to these case study questions are found in the Online Instructor's Manual for instructors using this book (<https://textbooks.elsevier.com/web/Manuals.aspx?isbn=9780128016091>).

ADDITIONAL CASE STUDY RECOMMENDATIONS

Enron Collapse, Stewart Hamilton, Inna Francis, April 14, 2004, Source: IMD, Product Number: IMD 164-PDF-ENG, <https://cb.hbsp.harvard.edu/>

Subjects covered: Bankruptcy, Business Failures, Accounting, Auditing, Corporate Governance, Business Ethics.

Adelphia Communication Corp.'s Bankruptcy, Stuart C. Gilson, Belen Villalonga, Revision Date: February 19, 2010, Product Number: 208271-PDF-ENG,

Source: Harvard Business School, hbsp.harvard.edu.

Subjects covered: Bankruptcy, Conflicts of Interest, Fraud, Restructuring.

Bankruptcy and Restructuring at Marvel Entertainment Group, Benjamin C. Esty, Jason S. Auerbach, Revision Date: August 13, 2007, Product Number: 298059-PDF-ENG, Source: Harvard Business School, hbsp.harvard.edu.

Subjects covered: Bankruptcy, Liquidation, and Restructuring.

Cross-Border Mergers and Acquisitions Analysis and Valuation

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Courage is not the absence of fear. It is doing the thing you fear the most. —Rick Warren

INSIDE M&A: CHIP INDUSTRY CONSOLIDATION

KEY POINTS

- Industry consolidation often is an important factor in triggering merger waves.
- Market value can be grown dramatically through an aggressive and well executed acquisition strategy
- Differences in corporate tax rates among countries can give foreign acquirers an edge in acquiring domestic firms

With a market value of less than \$3.5 billion, chip maker Avago Technologies (Avago) was viewed as a modest competitor in the semiconductor industry when it went public in 2009. By 2015, the firm’s market value exploded to \$35 billion. The rapid expansion of the firm’s market value in 6 years reflected its successful growth through acquisition strategy.

Avago’s strategy emphasizes acquiring complementary businesses, quickly paring overlapping costs, and selling off businesses no longer critical to its growth plan. In the past 4 years, Avago acquired five companies that helped it further its motion control encoder technology and optical fiber technology. During the same period, Avago sold several noncore businesses enabling it to focus on strengthening its remaining businesses and to pay off debt incurred in making prior acquisitions.

The aggressive pace of acquisitions was fueled by historically low cost debt financing during this period, a rapidly appreciating share price, and low tax rates. Avago’s share price has grown at an approximate 39% compound annual average rate since its 2009 IPO when it traded

at \$17.38 per share before rising to \$128.48 in mid-2015. The rapid growth in its share price has made its stock attractive to target firm shareholders and as such a solid acquisition currency.

On May 28, 2015, Avago announced its biggest deal ever and the largest in the history of the semiconductor industry when it purchased Broadcom Technologies (Broadcom) for \$37 billion offering the firm's shareholders a combination of cash and stock. The combined firm will be named Broadcom Ltd. and will have annual revenue of \$15 billion. This deal propelled the newly formed company to the top ranks of semiconductor makers, although it will still be behind Intel and Qualcomm in terms of revenue. Synergies are estimated at \$750 million annually. The strategic fit appears greatest between Broadcom's broadband, infrastructure and networking businesses and Avago's handset business. Some portion of the purchase price can be recovered by the divestiture of such Broadcom units as its connectivity division.

The latest acquisition by Avago illustrates the wave of consolidation that swept over the computer chip industry. In recent years chip makers have turned to buying growth to cut costs using mergers to combine sales forces and back end operations. By achieving larger scale, the chip makers can remain attractive to customers wanting to reduce the number of their suppliers. The deal also enables the new company to free up billions in cash that was previously trapped overseas and helps to eliminate potential US tax liabilities. Many multinational US firms have been reluctant to repatriate their foreign earnings to the US due to the 35% applicable tax rate, the highest among developed countries. According to SEC filings, Broadcom is no exception. As of 2014, Broadcom had \$3.13 billion of cash and cash equivalents held by its foreign subsidiaries.

The Broadcom and Avago merger closed in March 2016. Since Broadcom was acquired by a foreign incorporated business, the combined firms can have tax free access to Broadcom's foreign cash holdings and earnings and the ability to reduce the tax rate through "earnings stripping." Earnings stripping refers to a US subsidiary of a foreign firm paying excessively high interest on loans from its parent or selling its output to the parent at below market prices. Both tactics reduce taxable earnings reported to US taxing authorities. While technically not a tax inversion in which a US firm acquires a foreign firm and then incorporates in the foreign firm's tax jurisdiction, this transaction in which a foreign firm acquires a US firm offers many of the same tax benefits. Corporate consolidated earnings in Singapore (where Avago is domiciled) are taxed at a modest 5% rate, well below US corporate tax rate. The resultant lower effective tax rate for the consolidated Avago and Broadcom businesses gave Avago a decided advantage in what it could justify paying for Broadcom over other potential suitors not having similar tax advantages.¹

CHAPTER OVERVIEW

Crossborder M&A's have become increasingly important in recent years increasing their share of global M&A activity. This chapter addresses the implications for crossborder deals of the backlash against globalization in recent years, as well as deal structures, financing, valuation, and execution in both developed and emerging countries. Throughout the chapter,

¹On April 5, 2016, the US treasury introduced new regulations giving the government more authority to treat interest payments on intercompany cash transfers as dividend payments, not deductible under US law. The new rules apply to intercompany loans after that date. How this will impact this and future deals will depend on how the rules are applied. For more detail, see Chapter 12.

the term *local country* refers to the target's country of residence, while *home country* refers to the acquirer's country of residence. *Developed countries* are those having significant and sustainable per capita economic growth, globally integrated capital markets, a well-defined legal system, transparent financial statements, currency convertibility, and a stable government. According to the World Bank, *emerging countries* have a growth rate in per capita gross domestic product significantly below that of developed countries and often lack many of the characteristics of developed countries.

Foreign investment has traditionally flowed from developed to developing countries; however, in recent years there has been a trend toward capital flowing from emerging market investors to developed countries.² The portion of foreign direct investment consisting of M&A's flowing from emerging market countries to developed countries has exceeded M&A's share of capital moving into emerging markets.³ Consequently, special attention in this chapter is given to dealing with crossborder M&A's involving emerging countries. A chapter review (including practice questions with answers) is available in the file folder entitled "Student Study Guide" on the companion website to this book (<https://www.elsevier.com/books-and-journals/book-companion/9780128016091>).

GLOBALIZATION: THE ELEPHANT IN THE ROOM?

Globalization refers to the economic integration of the world economy characterized by the increasingly unfettered flow of products and services among countries. Since WWII, multilateral trade agreements have resulted in a reduction in barriers to entering both developed and emerging domestic economies and the subsequent increase in global trade. Financial markets have displayed similar global integration such that fluctuations in financial returns in one country's equity and bond markets impact returns in similar markets in other countries.

So-called *globally integrated capital markets* provide foreigners with unfettered access to local capital markets and provide local residents access to foreign capital markets and ultimately a lower cost of capital. Unlike globally integrated capital markets, *segmented capital markets* exhibit different bond and equity prices in different geographic areas for identical assets in terms of risk and maturity. Arbitrage should drive the prices in different markets to be the same (differing only by transaction and hedging costs), since investors sell those assets that are overvalued to buy those that are undervalued. Segmentation arises when investors are unable to move capital from one market to another due to capital controls, prefer to invest in their local markets, or have better information about local rather than more remote firms.⁴ Investors in segmented markets bear a higher level of risk by holding a disproportionately large share of their investments in their local market as opposed to the level of risk if they invested in a globally diversified portfolio. Investors and lenders in such markets require a higher rate of return on local market investments than if investing in a globally diversified portfolio of stocks and bonds. As such, the cost of capital for firms in segmented markets, having limited access to global capital markets, often is higher than the global cost of capital.

²Chari et al., 2012.

³Rabbiosi et al., 2012.

⁴Kang and Kim, 2008.

Proponents of globalization argue that it has raised standards of living in both developed and emerging nations and helped emerging nations to catch up to developed economies by increasing employment, per capita income, as well as technological and cultural exchange. Critics argue that globalization weakens country sovereignty and enables developed economies to outsource domestic jobs to areas where the cost of doing business is cheaper in terms of labor costs and regulations. Critics also contend that it has disproportionately benefitted firms in Western countries at the expense of developing economies. Global capital markets, so their argument goes, also transmit disruptions rapidly in capital markets in major economies throughout the world, as evidenced by the global meltdown in the equity and bond markets in 2008 and 2009.

Between 1988 and 2008, gains in inflation adjusted income appear to be greatest in emerging market countries (mostly Asian and some Eastern European, South American, and Latin American countries) benefitting the poor, middle class, and the highest income earners. Unlike their counterparts in emerging nations, middle class income earners in developed countries have shown little growth (and in some cases declines) in real income since the late 1980s. Some observers use this information to illustrate what they view as the ills of globalization without establishing a causal link between globalization and income redistribution.

Individual country social economic policies are likely to explain the changing global income distribution more than simply the growth in international trade and the greater integration of the global economies.⁵ Blaming globalization is an oft used excuse to reduce pressure on governments to make the appropriate decisions to alleviate growing income disparities.

Whether globalization is an important factor in redistributing income or not perception is what matters. The rise in populism in the United States culminating in the election of Donald Trump as president in 2016 and efforts to restrict labor mobility among some European Union countries in the wake of mass migration from the Middle East and elsewhere underscore the extent of public unrest. The resulting backlash against globalization is likely to make countries more wary of liberalizing trade agreements. The European Union and the United States have run into major difficulties in the passage of the Transatlantic Trade and Investment Partnership (TTIP). While many governments have approved the TTIP, the United States has refused to approve the trade pact. The failure to approve this agreement could slow future trade induced global economic growth.

The impact of these developments on M&A's is less certain. Slower global growth is likely to undermine gains in foreign direct investment, including M&A's. However, with growth rates among countries varying widely, the pressure to pursue crossborder deals will remain high in the absence of factors that make such deals less attractive. Such factors could include "exit" taxes (taxes imposed on firms wanting to relocate outside a country) and limitations on earnings repatriation. However, the motives for international expansion are numerous and will continue to drive foreign direct investment in the foreseeable future. These are discussed next.

⁵The focus by the world's major central banks on suppressing interest rates to zero or negative levels has penalized the poor who are more likely to invest in fixed income securities while inflating equity markets to the benefit of the wealthy. Differences in educational attainment represent another factor looming large in explaining differences in labor force quality and in turn income distribution. US test scores in math and reading continue to decline relative to major developed countries despite the United States spending more per pupil than many other countries.

MOTIVES FOR INTERNATIONAL EXPANSION

Firms expand internationally for a variety of reasons. While some are similar to those motivating M&A's between firms within a country's borders (see Chapter 1), factors contributing to crossborder M&A's in some instance may be quite different.

Geographic and Industrial Diversification

Firms may diversify by investing in different industries in the same country, the same industries in different countries, or different industries in different countries. Firms investing in industries or countries whose economic cycles are not highly correlated may lower the overall volatility (i.e., risk) in their consolidated earnings and cash flows and, in turn, reduce their cost of capital⁶ and also their risk of default.⁷ This is something that a firm may not be able to achieve by diversifying within its home country.

Accelerating Growth

Foreign markets represent an opportunity for domestic firms to grow. Large firms experiencing slower growth in their domestic markets have a greater likelihood of making foreign acquisitions, particularly in rapidly growing emerging markets.⁸ US firms have historically invested in potentially higher-growth foreign markets. Similarly, the United States represents a large, growing, and politically stable market. Consequently, foreign firms have increased their exports to and direct investment (including M&A's) in the United States.

Industry Consolidation

Industries which are global in scope often require crossborder M&A's to consolidate. Excess capacity in many industries often drives M&A activity, as firms strive to achieve greater economies of scale and scope as well as pricing power with customers and suppliers. The highly active consolidation in recent years in the metals industries (e.g., steel, nickel, and copper) represents an excellent example of this global trend. Global consolidation also is common in the financial services, media, oil and gas, telecommunications, and pharmaceuticals industries.

Utilization of Lower Raw Material and Labor Costs

Labor cost differences are likely to be larger between countries and regions, since labor and other resources often tend to be less mobile across political boundaries. Emerging markets offer low labor costs, access to inexpensive raw materials, and low levels of regulation.

⁶Studies show that diversified international firms often exhibit a lower cost of capital than do firms whose investments are not well diversified (Stulz, 1995a, 1995b; Stulz and Wasserfallen, 1995. In contrast, Krapf (2015) finds little empirical support for risk reduction through international diversification.

⁷Koerniadi et al., 2015.

⁸Graham et al., 2008.

Shifting production overseas allows firms to reduce operating expenses and become more competitive globally. The benefit of lower labor costs is overstated because worker productivity in emerging countries tends to be significantly lower than in more developed countries.

Leveraging Intangible Assets

Firms with expertise, brands, patents, copyrights, and proprietary technologies seek to grow by exploiting these advantages in emerging markets. Foreign buyers may seek to acquire firms with intellectual property so that they can employ such assets in their own domestic markets.⁹ Firms with a reputation for superior products in their home markets might find that they can apply this reputation successfully in foreign markets (e.g., Coke and McDonald's). Firms seeking to leverage their capabilities are likely to acquire controlling interests in foreign firms.

However, as Wal-Mart discovered, sometimes even a widely recognized brand name is insufficient to overcome the challenges of foreign markets. Shortly after selling its 16 stores in South Korea in 2006 due to their poor profitability, the firm announced it was selling its operations in Germany to German retailer Metro AG. Wal-Mart had been unable to adapt to the ferocity of German competitors, the frugality of German shoppers, and the extent to which regulations, cultural differences, and labor unions would impede its ability to apply in Germany what had worked so well in the United States.

Minimizing Tax Liabilities

Firms in high-tax countries may shift production and reported profits by building or acquiring operations in countries with more favorable tax laws. Evidence supporting the notion that such strategies are common is mixed, with more recent studies showing a greater tendency of firms to shift their investments from high-tax countries to lower-tax countries and to pursue M&A transactions, in part due to their favorable tax consequences.¹⁰ In particular, domestic firms with large cash holdings held in their foreign subsidiaries are more inclined to make acquisitions in foreign countries, if tax rates in their home country exceed significantly foreign tax rates. However, abnormal returns on the announcement date for such acquirers often are lower than for similar acquisitions made in their home countries as investors may feel that tax considerations rather than synergy was the primary motivation for such takeovers.¹¹ So called corporate tax inversions (companies relocating their headquarters to take advantage of more favorable country tax rates) are discussed in detail in Chapter 12.

⁹Eun et al., 1996.

¹⁰Salihu et al. (2015), Zodrow (2010), Overesch (2009), and Servaes and Zenner (1994) found a positive correlation between cross-border investment (including mergers and acquisitions) and differences in tax laws. However, Dewenter (1995) found little correlation.

¹¹Hanlon et al., 2015.

Seeking More Management Friendly Environments

While corporate tax inversions are generally driven by potential tax savings, senior management may see additional benefits of changing the country in which the firm is incorporated. Dutch politicians have been touting the benefits of Dutch corporate law to global corporations in an effort to turn the Netherlands into a management-friendly environment. Mylan Labs set up a Dutch foundation known as a “Stichting” which is a takeover defense comparable to a US style poison pill. The foundation has the right to receive preferred shares with multiple voting rights that allow it to block any deal by outvoting other shareholders. Mylan’s board triggered the foundation’s special voting rights to oppose an unwanted takeover bid by Israel’s Teva Corp in 2015. Cable firm Altice switched its domicile in 2015 through a merger from Luxembourg to the Netherlands so that it could introduce a dual class share structure (which is barred in Luxembourg) giving the firm’s chairman Patrick Drahi 92% of the firm’s voting power while owning 58.5% of the firm.

Avoiding Entry Barriers

Market entry barriers often are less onerous within a country’s borders than between countries. Quotas and tariffs on imports imposed by governments to protect domestic industries often encourage foreign direct investment. Foreign firms may acquire existing facilities or start new operations in the country imposing the quotas and tariffs to circumvent such measures.

Fluctuating Exchange Rates

Changes in currency values have a significant impact on where and when foreign direct investments are made. The appreciation of foreign currencies relative to the dollar reduces the overall cost of investing in the United States. The impact of exchange rates on crossborder transactions has been substantiated in a number of studies.¹²

Following Customers

Often suppliers are encouraged to invest abroad to satisfy better the immediate needs of their customers. For example, auto parts suppliers worldwide have set up operations next to large auto manufacturing companies in China.

COMMON INTERNATIONAL MARKET ENTRY STRATEGIES

The method of market entry chosen by a firm reflects the firm’s risk tolerance, perceived risk, competitive conditions, and overall resources. Common entry strategies include mergers and acquisitions, greenfield, or solo ventures, joint ventures, export, and licensing.

¹²Boateng et al., 2014; Erel et al., 2012; Georgopoulos, 2008; and Vasconcellos and Kish, 1998.

In a greenfield or solo venture, a foreign firm starts a new business in the local country, enabling the firm to control technology, production, marketing, and product distribution. Firms with significant intangible assets (e.g., proprietary know-how) are frequently able to earn above-average returns, which can be leveraged in a greenfield or start-up venture.¹³ However, the firm's total investment is at risk. M&A's can provide quick access to a new market; however, they often are expensive, complex to negotiate, subject to myriad regulatory requirements, and beset by intractable cultural issues. Joint ventures allow firms to share the risks and costs of international expansion, develop new capabilities, and gain access to important resources but often fail due to conflict between partners.¹⁴ Firms often choose a joint venture over an acquisition as the preferred market entry strategy when the risk of loss of intellectual property to a JV partner is less than the potential for expropriation by the local country's government.¹⁵

Multinational corporations headquartered in emerging markets often use cross border acquisitions as a means of entering developed country markets. Such acquisitions allow these companies to rapidly become more competitive against dominant firms in developed countries by acquiring brands, technologies, management know how, and other skills they may lack.¹⁶

Exporting does not require the expense of establishing local operations; however, exporters must establish some means of marketing and distributing their products at the local level. The disadvantages of exporting include high transportation costs, exchange rate fluctuations, and possible tariffs placed on imports into the local country. Moreover, the exporter has limited control over the marketing and distribution of its products in the local market.

Licensing allows a firm to purchase the right to manufacture and sell another firm's products within a specific country or set of countries, with the licensor paid an upfront sum plus a royalty on each unit sold. Licensing also may involve firms interested in extracting natural resources within specific countries.¹⁷ The licensee takes the risks and makes the investments in facilities for manufacturing, marketing, and distribution of goods and services, making licensing possibly the least costly form of international expansion. Licensing is a popular entry mode for smaller firms with insufficient capital and limited brand recognition.¹⁸ Disadvantages include the lack of control over the manufacture and marketing of the firm's products in other countries. Licensing often is the least profitable entry strategy because the profits must be shared between the licensor and the licensee. Finally, the licensee may learn the technology and sell a similar competitive product after the license expires.

STRUCTURING CROSSBORDER DEALS

This section provides an abbreviated discussion of those aspects of deal structuring discussed in Chapters 11 and 12 most applicable to crossborder transactions.

¹³Brouthers and Brouthers, 2000.

¹⁴Zahra and Elhagrasey, 1994.

¹⁵Bodnaruk et al., 2016.

¹⁶Anderson and Sutherland, 2015.

¹⁷In early 2017, British Petroleum traded a 2% stake in the company plus a fee on each barrel of oil or oil equivalent produced to license the right to extract oil and gas from onshore oil fields in the United Arab Emirates over a 40 year period.

¹⁸Hitt and Ireland, 2000.

Friendly Versus Hostile Deals

Crossborder takeovers are most often friendly transactions. This reflects a combination of factors including cultural antipathy toward hostile takeovers and government protectionism. Government intervention in hostile deals is more likely if a foreign bidder is involved, if it is a large transaction, and if the target firm's country is experiencing high unemployment.¹⁹

Bidding Strategies

As with domestic deals, international mergers and acquisitions commonly employ toehold investment tactics and termination fees to reduce the likelihood of competition in bidding for a target. If a bidding contest does occur, the use of these tactics increases the probability that the initial bidder will be successful. There is little evidence that high initial bids prevent bidding competition. The successful participant in a bidding contest is generally the one who includes the most cash in the offer price. Serial acquirers are more likely not to participate in bidding contests and are more likely to complete transactions.²⁰ Finally, US bidders tend to offer lower purchase price premiums when they are relatively unfamiliar with the culture of the target firm's country. Why? Because the greater uncertainty that anticipated synergies cannot be realized due to cultural factors on a timely basis or at all reduces the acquirer's confidence it can earn back the premium paid. However, this uncertainty does not appear present when foreign firms acquire US targets.²¹

Acquisition Vehicles

Non-US firms seeking to acquire US companies often use C corporations rather than limited liability companies or partnerships to acquire the shares or assets of US targets. They are relatively easy to organize quickly, since all states permit such structures and no prior government approval is required. There is no limitation on non-US persons or entities acting as shareholders in US corporations, except for certain regulated industries. A limited liability company is attractive for JVs in which the target would be owned by two or more unrelated parties, corporations, or nonresident investors. While not traded on public stock exchanges, LLC shares can be sold freely to members. This facilitates the parent firm's operating the acquired firm as a subsidiary or JV. A partnership may have advantages for investors from certain countries (e.g., Germany), where income earned from a US partnership is not subject to taxation. A holding company structure enables a foreign parent to offset gains from one subsidiary with losses generated by another, serves as a platform for future acquisitions, and provides the parent with additional legal protection in the event of lawsuits.

US companies acquiring businesses outside the United States encounter obstacles atypical of domestic acquisitions. These include investment and exchange control approvals, tax clearances, clearances under local competition (i.e., antitrust) laws, and unusual due diligence problems. Other problems involve the necessity of agreeing on an allocation of the purchase

¹⁹Rowoldt and Starke, 2016.

²⁰Bessler et al., 2015.

²¹Lim et al., 2016.

price among assets located in various jurisdictions and compliance with local law relating to the documentation necessary to complete the transaction. Much of what follows also applies to non-US firms acquiring foreign firms.

The laws governing foreign firms have an important impact on the choice of acquisition vehicle, since the buyer must organize a local company to hold acquired shares or assets in a way that meets local-country law. In common-law countries (e.g., the United Kingdom, Canada, Australia, India, Pakistan, Hong Kong, Singapore, and other former British colonies), the acquisition vehicle will be a corporation-like structure, which is similar to those in the United States. In civil-law countries (which include Western Europe, South America, Japan, and Korea), the acquisition will be in the form of a share company or limited liability company. *Civil law* is synonymous with *codified law*, *continental law*, or the *Napoleonic Code*. Practiced in some Middle Eastern Muslim countries and some countries in Southeast Asia (e.g., Indonesia and Malaysia), Islamic law is based on the Koran.

In the European Union, there is no overarching law or EU directive requiring a specific corporate form. Rather, corporate law is the responsibility of each member nation. There is evidence that differences in corporate law across member nations have hindered progress toward a more active European M&A market, since both individual country and EU level laws must be considered.²² In an effort to adapt to this complexity, smaller enterprises often use a limited liability company, while larger enterprises, particularly those with public shareholders, are referred to as *share companies*. The rules applicable to limited liability companies tend to be flexible and are particularly useful for wholly owned subsidiaries. In contrast, share companies are subject to numerous restrictions and securities laws. However, their shares trade freely on public exchanges.

Share companies are more regulated than US corporations. They must register with the commercial registrar in the location of their principal place of business. Bureaucratic delays from several weeks to several months between the filing of the appropriate documents and the organization of the company may occur. Most civil-law countries require that there be more than one shareholder. Usually there is no limitation on foreigners acting as shareholders. Limited liability companies outside the United States are generally subject to fewer restrictions than share companies. A limited liability company typically is required to have more than one quota holder (i.e., investor). In general, either domestic or foreign corporations or individuals may be quota holders in the LLC.²³

Form of Payment

US target shareholders often receive cash rather than shares in crossborder deals.²⁴ Shares and other securities require registration with the Securities and Exchange Commission and compliance with all local securities (including state) laws if they are resold in the United States. Acquirer shares often are less attractive to potential target shareholders because of the absence of a liquid market for resale or because the acquirer is not recognized by the target firm's shareholders. In buying non-US firms, target shareholders of public companies are

²²Moschieri and Campa, 2014.

²³For an excellent discussion of corporate structures in common-law and civil-law countries, see Truitt (2006).

²⁴Ceneboy et al., 1991.

more likely to receive cash while equity is more commonly paid to shareholders of private firms.²⁵ Acquirer equity often is used in deals involving private targets because of the difficulty in valuing such firms. Target shareholders will provide more accurate information since the eventual value of their acquirer shares will reflect the acquirer's success or failure.

Form of Acquisition

Share acquisitions are generally the simplest form of acquisition in cross-border deals, because all target assets and liabilities transfer to the acquirer by "rule of law." Acquirers tend to opt for owning 100% of the target's equity when the target is in a related industry and the acquirer is highly familiar with the country in which the target resides.²⁶ Asset purchases result in the transference of all or some of the assets of the target firm to the acquirer. The major disadvantage of a share purchase is that all the target's known and unknown liabilities transfer to the buyer. When the target is in a foreign country, full disclosure of liabilities is limited and some target assets transfer with tax liens or other associated liabilities. Asset sales often are more complicated in foreign countries when the local law requires that the target firm's employees automatically become the acquirer's employees. Mergers are not legal or practical in all countries, often due to the requirement that minority shareholders agree with the will of the majority vote. There is some evidence that acquirers able to purchase selected target assets in cross-border deals fare better as measured by financial returns than those that undertake mergers or stock purchases.²⁷ Why? Perhaps because of the difficulty of performing adequate due diligence when the acquirer is less familiar with the culture and financial transparency may be limited.

Tax Strategies

Tax-free reorganizations, or mergers, are often used by foreign acquirers of US firms. The target firm merges with a US subsidiary of the foreign acquirer in a statutory merger under state laws. To qualify as a US corporation for tax purposes, the foreign firm must own at least 80% of the stock of the domestic subsidiary. As such, the transaction can qualify as a Type-A tax-free reorganization (see Chapter 12).

Another form of deal structure is the taxable purchase, which involves the acquisition by one company of the shares or assets of another, usually in exchange for cash or debt. Target firm shareholders recognize a taxable gain or loss on the exchange. The forward triangular merger is the most common form of taxable transaction. The target company merges with a US subsidiary of the foreign acquirer, with shareholders of the target firm receiving acquirer shares, as well as cash, although cash is the predominant form of payment. This structure is useful when some target company shareholders want shares while others want cash.

Hybrid transactions represent a third form of transaction used in crossborder transactions. This type of structure affords the US target corporation and its shareholders tax-free treatment while avoiding the issuance of shares of the foreign acquirer. A hybrid transaction may

²⁵Bae et al., 2013.

²⁶Chiara Di Guardo et al., 2016.

²⁷Jory et al., 2016.

be taxable to some target shareholders and tax free to others. To structure hybrid transactions, some target company shareholders may exchange their common shares for a nonvoting preferred stock while the foreign acquirer or its US subsidiary buys the remaining common stock for cash. This transaction is tax free to target company shareholders taking preferred stock and taxable to those selling their shares for cash.²⁸

FINANCING CROSSBORDER DEALS

Debt is most often used to finance crossborder transactions. Sources of financing exist in capital markets in the acquirer's home, the target's local country, or in some third country. Domestic capital sources available to crossborder acquirers include banks willing to provide bridge financing and lines of credit, bond markets, and equity markets.

Debt Markets

Commonly used to finance crossborder deals, Eurobonds are debt instruments expressed in terms of US dollars or other currencies and sold to investors outside the country in whose currency they are denominated. A typical Eurobond transaction could be a dollar-denominated bond issued by a French firm through an underwriting group. The underwriting group could comprise the overseas affiliate of a New York commercial bank, a German commercial bank, and a consortium of London banks. Bonds issued by foreign firms and governments in local markets have existed for many years. Such bonds are issued in another country's domestic bond market, denominated in its currency, and subject to that country's regulations.²⁹

Equity Markets

The American Depositary Receipt (ADR) market evolved as a means of enabling foreign firms to raise funds in US equity markets. ADRs represent the receipt for the shares of a foreign-based corporation held in a US bank, entitling the holder to all dividends and capital gains. The acronyms ADS and ADR often are used interchangeably. The Euroequity market reflects equity issues by a foreign firm tapping a larger investor base than the firm's home equity market.³⁰

Sovereign Wealth Funds

Sovereign wealth funds (SWFs) are government-backed or government-sponsored investment funds whose function is to invest accumulated reserves of foreign currencies. For years,

²⁸For an excellent discussion of the different tax laws in various countries, see PriceWaterhouseCoopers (2015).

²⁹Bonds of a non-US issuer registered with the SEC for sale in the US public bond markets are called *yankee bonds*. Similarly, a US company issuing a bond in Japan would be issuing a "samurai" bond.

³⁰If the acquirer is not well known in the target's home market, target shareholders may be able to sell the shares only at a discount in their home market. The buyer may have to issue shares in its home market or possibly in the international equities market and use the proceeds to acquire the target for cash. Alternatively, the acquirer may issue shares in the target's market to create a resale market for target shareholders or offer target shareholders the opportunity to sell the shares in the buyer's home market through an investment banker.

such funds, in countries that had accumulated huge quantities of dollars, would reinvest these funds in US Treasury securities. However, in recent years, such funds have become more sophisticated, increasingly taking equity positions in foreign firms and diversifying their currency holdings. Empirical studies show that the motives for making such investments are to earn high financial returns rather than to steal intellectual property or to threaten the national security of countries in which they invest.³¹ Moreover, SWFs tend to target “strategic industries,” such as telecommunications, financial, natural resource, and utilities in countries displaying sustainable economic growth and whose governments are relatively unlikely to prevent such investments for political reasons.³² In addition to providing a source of capital, SWFs, as politically connected large investors, may contribute to the value of a firm in which they invest by providing access to the SWF’s home market and to government-related contracts.³³

PLANNING AND IMPLEMENTING CROSSBORDER TRANSACTIONS IN EMERGING COUNTRIES

Entering emerging economies poses challenges not generally encountered in developed countries. What follows is a discussion of how to deal with the inherent political and economic risks in such endeavors.

Political and Economic Risks

Political and economic risks are often interrelated. Examples of political and economic risk include excessive local government regulation, confiscatory tax policies, restrictions on cash remittances, currency inconvertibility, restrictive employment policies, expropriation of assets of foreign firms, civil war, or local insurgencies, and corruption. Another, sometimes overlooked, challenge is the failure of the legal system in an emerging country to honor contracts.³⁴

Unexpected changes in exchange rates can influence the competitiveness of goods produced in the local market for export to the global marketplace. Changes in exchange rates alter the value of assets invested in the local country and earnings repatriated from the local operations to the parent firm in the home country. Not surprisingly, the degree of economic and political freedom correlates positively with foreign direct investment. When property rights are respected and earnings repatriation is unrestricted, foreigners are inclined to invest in the local country.³⁵

³¹Alhashel, 2015.

³²Boubaki et al., 2016.

³³Sojli and Tham, 2010.

³⁴Khanna et al., 2005.

³⁵Berggren and Jordahl (2005) demonstrate a strong positive relationship between foreign direct investment and the Heritage Foundation’s Freedom Index. This index contains about 50 variables divided into 10 categories, measuring various aspects of economic and political freedoms.

Sources of Information for Assessing Political and Economic Risk

Information sources include consultants in the local country, joint venture partners, a local legal counsel, or appropriate government agency, such as the US Department of State. Other sources of information include the major credit-rating agencies, such as Standard & Poor's, Moody's, and Fitch IBCA. Trade magazines, such as *Euromoney* and *Institutional Investor*, provide overall country-risk ratings updated semiannually. The Economic Intelligence Unit also provides numerical risk scores for individual countries. The *International Country Risk Guide*, published by the Political Risk Services Group, offers overall numerical risk scores for individual countries as well as separate scores for political, financial, and economic risks.

Using Insurance to Manage Risk

The decision to buy insurance depends on the size of the investment and the level of risk. Parties have a variety of sources from which to choose. For instance, the export credit agency in a variety of countries, such as Export Import Bank (United States), SACE (Italy), and Hermes (Germany), may offer coverage for companies based within their jurisdictions. The Overseas Private Investment Corporation is available to firms based in the United States, while the World Bank's Multilateral Investment Guarantee Agency is available to all firms.

Using Options and Contract Language to Manage Risk

When adequate due diligence is impractical, acquirers may include a put option in the purchase agreement, enabling the buyer to require the seller to repurchase shares from the buyer at a predetermined price under certain circumstances. Alternatively, the agreement could include a clause requiring a purchase price adjustment.

HOW ARE CROSSBORDER TRANSACTIONS VALUED?

Crossborder deals require converting cash flows from one currency to another. Also, discount rates may be adjusted for risks not found when the acquirer and target are in the same country.

Converting Foreign Target Cash Flows to Acquirer Domestic Cash Flows

Cash flows of the target firm can be expressed in its own currency, including expected inflation (i.e., nominal terms), its own currency without inflation (i.e., real terms), or the acquirer's currency. Real cash flow valuation adjusts all cash flows for inflation and uses real discount rates. M&A practitioners utilize nominal cash flows, except when inflation rates are high. Under these circumstances, real cash flows are preferable. Real cash flows are determined by dividing the nominal cash flows by the country's gross domestic product deflator or some other broad measure of inflation. Future real cash flows are estimated by dividing future nominal cash flows by the current GDP deflator,³⁶ increased by the expected rate of inflation.

³⁶The GDP deflator is the ratio of current dollar GDP to real or constant-dollar GDP and measures the percent change in prices between the current period and some prior "base" period.

Real discount rates are determined by subtracting the expected rate of inflation from nominal discount rates.³⁷

It is simpler to project the target's aggregate cash flows (rather than each component separately) in terms in its own currency and then convert the cash flows into the acquirer's currency. This requires estimating future exchange rates between the target (local) and the acquirer's (home) currencies, which are affected by interest rates and expected inflation in the two countries. The current rate at which one currency can be exchanged for another is called the *spot exchange rate*. Conversion to the acquirer's currency can be achieved by using future spot exchange rates, estimated either from relative interest rates (the interest rate parity theory) in each country or by the relative rates of expected inflation (the purchasing power parity theory).

When Target Firms Are in Developed (Globally Integrated) Capital Market Countries

For developed countries, the interest rate parity theory provides a useful framework for estimating *forward currency exchange rates* (i.e., future spot exchange rates). Consider a US acquirer's valuation of a firm in the European Union (EU), with projected cash flows expressed in terms of Euros. The target's cash flows can be converted into dollars by using a forecast of future dollar-to-euro spot rates. The *interest rate parity theory* relates forward (future) spot exchange rates to differences in interest rates between two countries adjusted by the spot rate. Therefore, the dollar/euro exchange rate $(\$/\epsilon)_n$ (i.e., the future, or forward, exchange rate), n periods into the future, is expected to appreciate (depreciate) according to the following relationship:

$$(\$/\epsilon)_n = \{(1 + R_{\$n})^n / (1 + R_{\epsilon n})^n\} \times (\$/\epsilon)_0 \quad (18.1)$$

Similarly, the Euro-to-Dollar exchange rate $(\epsilon/\$)_n$, n periods into the future, would be expected to appreciate (depreciate) according to the following relationship:

$$(\epsilon/\$)_n = \{(1 + R_{\epsilon n})^n / (1 + R_{\$n})^n\} \times (\epsilon/\$)_0 \quad (18.2)$$

Note that $(\$/\epsilon)_0$ and $(\epsilon/\$)_0$ represent the spot rate for the Dollar-to-Euro and Euro-to-dollar exchange rates, respectively; $R_{\$n}$ and $R_{\epsilon n}$ represent the interest rate in the United States and the European Union, respectively. Eqs. (18.1) and (18.2) imply that if US interest rates rise relative to those in the European Union, investors will buy dollars with Euros at the current spot rate and sell an equivalent amount of dollars for Euros in the forward (future) market n periods into the future in anticipation of converting their dollar holdings back into euros. According to this theory, the dollar-to-euro spot rate will appreciate and the dollar-to-euro forward rate will depreciate until any profit due to the difference in interest rates is eliminated.³⁸ Exhibit 18.1 illustrates how to convert a target company's nominal free cash flows to the firm

³⁷Nominal (real) cash flows should give the same NPVs if the expected rate of inflation used to convert future cash flows to real terms is the same inflation rate used to estimate the real discount rate.

³⁸Equilibrium between forward exchange rates and spot rates adjusted for the ratio of US interest rates to those in Eurozone countries will in practice be restored by a combination of appreciating dollar-to-Euro spot rates, depreciating dollar-to-Euro forward rates, and declining US interest rates and increasing Eurozone interest rates. Interest rates on US bonds decline as the investors bid up their prices, and interest rates on comparable Eurozone bonds increase as investors sell these bonds and invest the proceeds in the United States.

EXHIBIT 18.1 CONVERTING EURO-DENOMINATED INTO DOLLAR-DENOMINATED FREE CASH FLOWS TO THE FIRM USING THE INTEREST RATE PARITY THEORY

	2012	2013	2014
Target's Euro-Denominated FCFF Cash Flows (Millions)	€124.5	€130.7	€136.0
Target Country's Interest Rate (%)	4.50	4.70	5.30
US Interest Rate (%)	4.25	4.35	4.55
Current Spot Rate (\$/€) = 1.2044			
Projected Spot Rate (\$/€)	1.2015	1.1964	1.1788
Target's Dollar-Denominated FCFF Cash Flows (Millions)	\$149.59	\$156.37	\$160.32

Note: Calculating the projected spot rate using Eq. (18.1):

$$(\$/\text{€})_{2012} = \{(1.0425)/(1.0450)\} \times 1.2044 = 1.2015$$

$$(\$/\text{€})_{2013} = \{(1.0435)^2/(1.0470)^2\} \times 1.2044 = 1.1964$$

$$(\$/\text{€})_{2014} = \{(1.0455)^3/(1.0530)^3\} \times 1.2044 = 1.1788$$

(FCFF) expressed in Euros (i.e., the local country or target's currency) to those expressed in dollars (i.e., home country or acquirer's currency).

When Target Firms Are in Emerging (Segmented) Capital Market Countries

Cash flows are converted, as before, using the interest rate parity theory or the purchasing power parity theory. The latter is used if there is insufficient information about interest rates in the emerging market. The *purchasing power parity theory* states that the percentage difference in the forward rate relative to the spot rate should over time equal the difference in expected inflation rates between countries. That is, one currency appreciates (depreciates) with respect to another currency according to the expected relative rates of inflation between the two countries such that an identical good in each country will have the same price. To illustrate, the Dollar/Mexican peso exchange rate, $(\$/\text{Peso})_n$, and the Mexican Peso/Dollar exchange rate, $(\text{Peso}/\$)_n$, n periods from now (i.e., future exchange rates) is expected to change according to the following relationships:

$$(\$/\text{Peso})_n = [(1 + P_{\text{US}})^n / (1 + P_{\text{MEX}})^n] \times (\$/\text{Peso})_0 \quad (18.3)$$

and

$$(\text{Peso}/\$)_n = [(1 + P_{\text{MEX}})^n / (1 + P_{\text{US}})^n] \times (\text{Peso}/\$)_0 \quad (18.4)$$

where P_{US} and P_{MEX} are the expected inflation rates in the United States and Mexico, respectively, and $(\$/\text{Peso})_0$ and $(\text{Peso}/\$)_0$ are the dollar-to-peso and peso-to-dollar spot exchange rates, respectively. If prices in the United States are expected to rise faster than those in Mexico for the same goods and services, other things equal, holders of pesos will buy dollars

EXHIBIT 18.2 CONVERTING PESO-DENOMINATED INTO DOLLAR-DENOMINATED FREE CASH FLOWS TO THE FIRM USING THE PURCHASING POWER PARITY THEORY

	2012	2013	2014
Target's Peso-Denominated FCFF Cash Flows (Millions of Pesos)	P1050.5	P1124.7	P1202.7
Current Mexican Expected Inflation Rate = 6%			
Current US Expected Inflation Rate = 4%			
Current Spot Rate (\$/Peso) = 0.0877			
Projected Spot Rate (\$/Peso)	0.0860	0.0844	0.0828
Target's Dollar-Denominated FCFF Cash Flows (Millions of \$)	\$90.34	\$94.92	\$99.58

Note: Calculating the projected spot rate using Eq. (18.3):

$$(\$/\text{Peso})_{2012} = \{(1.04)/(1.06)\} \times 0.0877 = 0.0860$$

$$(\$/\text{Peso})_{2013} = \{(1.04)^2/(1.06)^2\} \times 0.0877 = 0.0844$$

$$(\$/\text{Peso})_{2014} = \{(1.04)^3/(1.06)^3\} \times 0.0877 = 0.0828$$

to purchase US goods and services before they rise in price and sell an equivalent amount of Dollars for Pesos in the forward exchange market before the dollar depreciates. This causes the Dollar/Peso spot rate to decline (i.e., the Dollar to appreciate against the Peso) and the forward Dollar/Peso exchange rate to increase (i.e., the Dollar to depreciate against the Peso).

See Exhibit 18.2 for an illustration of how this might work in practice.

Selecting the Correct Marginal Tax Rate

Global businesses generally pay taxes using either the worldwide or territorial tax regimes. The current *worldwide or global tax system* taxes businesses on income earned in their home country and on the income they earn in foreign countries. In contrast, the *territorial tax system* taxes income earned by both domestic and foreign firms operating within a country's borders only on what they earn in that country and excludes most foreign-earned income. That is, only profits earned by domestic and foreign firms in that country are taxed under the territorial tax system.

Multinational firms headquartered in countries with a worldwide tax system can be put at a significant competitive disadvantage to those incorporated in countries using a territorial tax system. For example, Proctor & Gamble and Unilever both sell soap worldwide but their profits are taxed quite differently. US based P&G has to pay taxes on its worldwide profits while Unilever pays taxes mostly in the United Kingdom and the Netherlands, where it has coheadquarters. Consequently, P&G is at a competitive disadvantage since its tax burden is significantly higher.

The US worldwide system taxes the domestic and foreign income of businesses with US headquarters. Businesses can claim a “foreign tax credit” for taxes that their foreign subsidiaries pay in other countries. This credit limits double taxation. Where the foreign tax rate exceeds the US rate, no US liability is generated. In the more common circumstances where the US tax rate is greater, US businesses owe a residual tax on their foreign earnings equal to the difference between the US tax rate (35% at the time of this writing)³⁹ and the tax that their subsidiaries paid in the foreign country where they earned the income.

Instead of a pure territorial system, most countries use an exemption system under which foreign income is mostly exempt from taxation. The exemption is generally 95% of foreign earnings. Consequently, most foreign firms pay only a small token tax if they bring their after-tax profits back to their home country. US firms must pay the difference between the US tax rate and the tax that they have already paid. For example, French and US firms investing in Ireland pay a corporate tax of only 12.5%. The French firm can then repatriate its after-tax profit to France by paying 5% on those repatriated profits. The US firm has to pay an effective marginal tax rate of 22.5% equal to the difference between the US 35% corporate tax and the 12.5% Irish tax. The huge difference provides a major incentive for US firms to retain foreign earned profits outside the United States.

The selection of the right marginal tax rate for valuation purposes thus depends on where most of the taxes are actually paid. If the acquirer’s country exempts foreign income from further taxes (or applies only a token tax rate) once taxed in the foreign country, the correct tax rate would be the marginal tax rate in the foreign country because that is where taxes are paid. If the marginal tax rate in the acquirer’s country is higher than the target’s country rate and taxes paid in a foreign country are deductible from the taxes owed by the acquirer in its home country, the correct tax rate would be the acquirer’s marginal effective tax rate. That is, the difference between the acquirer’s marginal tax rate in its home country less the tax rate paid in a foreign country.

Estimating the Cost of Equity in Crossborder Transactions

The capital asset pricing model or a multifactor model (e.g., CAPM plus a firm size adjustment) often are used in developed countries with liquid capital markets.⁴⁰ For emerging nations, estimating the cost of equity is more complex, with at least 12 separate approaches employed.⁴¹ Each method attempts to adjust the discount rate for potential capital market segmentation and specific country risks. Still other methods attempt to include emerging-country risk by adjusting projected cash flows. In either case, the adjustments often appear arbitrary.

Developed economies seem to exhibit little differences in the cost of equity, due to the relatively high integration of their capital markets with the global capital market. Thus, adjusting the cost of equity for specific country risk does not seem to make any significant difference.⁴² For emerging-market countries, the existence of segmented capital markets,

³⁹The election of Donald Trump as US president may mean that US corporate tax rates could be cut substantially in 2017, perhaps as low as 15%.

⁴⁰Graham and Harvey, 2001.

⁴¹Harvey, 2005.

⁴²Koedijk et al., 2002; Bodnar et al., 2003.

political instability, limited liquidity, currency fluctuations, and currency inconvertibility seems to make adjusting the target firm's cost of equity for these factors desirable but often impractical.⁴³

The following discussion incorporates the basic elements of valuing cross-border transactions, distinguishing between the different adjustments made when investing in developed and emerging countries. Nonetheless, considerable debate continues in this area.

Estimating the Cost of Equity in Developed (Globally Integrated) Countries

What follows is a discussion of how to adjust the basic CAPM formulation for valuing cross-border transactions when the target is located in a developed country. The discussion is similar to the capital asset pricing model formulation (CAPM) outlined in Chapter 7, except for the use of either national or globally diversified stock market indices in estimating beta and calculating the equity market risk premium.

Estimating the Risk-Free Rate of Return (Developed Countries)

The risk-free rate generally is the local country's government (or sovereign) bond rate whenever the projected cash flows for the target firm are expressed in local currency.⁴⁴ Risk-free rates usually are US Treasury bond rates if projected cash flows are in dollars.

Adjusting CAPM for Risk (Developed Countries)

The equity premium, the difference between the return on a well-diversified portfolio and the risk-free return, is the additional return required by investors to buy stock. When capital markets are fully integrated, equity investors hold globally diversified portfolios, resulting in high a correlation between individual country equity indices and global indices. Therefore, an equity premium may be estimated by regressing the firm's share price against a well-diversified portfolio of US equities, another developed country's equity portfolio, or a global equity portfolio.⁴⁵

The CAPM also should be adjusted for the size of the firm, which serves as a proxy for factors such as smaller firms being subject to higher default risk and generally being less liquid than large capitalization firms. See Table 7.1 in Chapter 7 for estimates of the amount of the adjustment to the cost of equity to correct for firm size, as measured by market value.

⁴³Bodnar et al. (2003).

⁴⁴The debt crises in many developed countries in 2010 and 2011 suggest that using a government bond rate as a risk-free rate in countries not having their own currencies (e.g., Eurozone countries) is questionable. Such countries cannot repay their debt by simply "printing" money. In July 2012, the Spanish government's 10-year bond rate was 6.95% and the cost of default insurance (i.e., the amount investors pay others to insure against default) was 564 basis points, or 5.64%. Known as the *credit default swap* (CDS) rate, this figure is the difference between a bond rate and a presumed risk-free rate, which in Europe was the German government bond rate. To investors, the implied risk-free return on 10-year Spanish debt was 1.31% (i.e., 6.95%–5.64%), assuming the German government will not default. Alternatively, either the US Treasury bond rate adjusted for differences in inflation between countries [see Eq. (18.6)] or a large corporation's borrowing rate within the local country could be used as a risk-free rate.

⁴⁵In the United States, an example of a well-diversified portfolio is the Standard & Poor's 500 stock index (S&P 500); in the global capital markets, the Morgan Stanley Capital International World Index (MSCI) is commonly used as a proxy for a well-diversified global equity portfolio.

Global CAPM Formulation (Developed Countries)

In globally integrated markets, systematic risk is defined relative to the rest of the world. An asset has systematic risk only to the extent that the performance of the asset correlates with the overall world economy. When using a global equity index, the CAPM often is called the *global* or *international capital asset pricing model*. If the target firm's risk is similar to that faced by the acquirer, the acquirer's cost of equity may be used to discount the target's cash flows.

The global capital asset pricing model for the target firm may be expressed as follows:

$$k_{e,dev} = R_f + \beta_{devfirm,global} (R_m - R_f) + FSP \quad (18.5)$$

where

$k_{e,dev}$ = required return on equity for a firm operating in a developed country

R_f = local country's risk-free financial rate of return if cash flows are measured in the local country's currency or the US Treasury bond rate if in dollars

$(R_m - R_f)$ = difference between the expected return on the global market portfolio (i.e., MSCI), the US equity index (S&P 500), or a broadly defined index in the target's local country and R_f . This difference is the equity premium, which should be approximately the same when expressed in the same currency for countries with globally integrated capital markets.

$\beta_{devfirm,global}$ = measure of nondiversifiable risk with respect to a globally diversified equity portfolio or a well-diversified country portfolio highly correlated with the global index. Alternatively, $\beta_{devfirm,global}$ may be estimated indirectly, as illustrated in Eq. (18.7).

FSP = firm size premium, reflecting the additional return smaller firms must earn relative to larger firms to attract investors

An analyst may wish to value the target's future cash flows in both the local and home currencies. The Fisher effect allows the analyst to convert a nominal cost of equity from one currency to another. Assuming the expected inflation rates in the two countries are accurate, the real cost of equity should be the same in both countries.

Applying the Fisher Effect

The so-called Fisher effect states that nominal interest rates can be expressed as the sum of the real interest rate (i.e., interest rates excluding inflation) and the anticipated rate of inflation. The Fisher effect can be shown for the United States and Mexico as follows:

$$(1 + i_{US}) = (1 + r_{US})(1 + P_{US}) \quad \text{and} \quad (1 + r_{US}) = (1 + i_{US}) / (1 + P_{US})$$

$$(1 + i_{MEX}) = (1 + r_{MEX})(1 + P_{MEX}) \quad \text{and} \quad (1 + r_{MEX}) = (1 + i_{MEX}) / (1 + P_{MEX})$$

If real interest rates are constant among all countries, nominal interest rates among countries will vary only by the difference in the anticipated inflation rates. Therefore,

$$(1 + i_{US}) / (1 + P_{US}) = (1 + i_{MEX}) / (1 + P_{MEX}) \quad (18.6)$$

where

i_{US} and i_{MEX} = nominal interest rates in the United States and Mexico, respectively

r_{US} and r_{MEX} = real interest rates in the United States and Mexico, respectively

P_{US} and P_{MEX} = anticipated inflation rates in the United States and Mexico, respectively

If the analyst knows the Mexican interest rate and the anticipated inflation rates in Mexico and the United States, solving Eq. (18.6) provides an estimate of the US interest rate (i.e., $i_{US} = [(1 + i_{MEX}) \times (1 + P_{US}) / (1 + P_{MEX})] - 1$). Exhibit 18.3 illustrates how the cost of equity estimated in one currency is converted easily to the cost in another using Eq. (18.6). Although the historical equity premium in the United States is used in calculating the cost of equity, the historical United Kingdom or MSCI premium also could have been employed.

Estimating the Cost of Equity in Emerging (Segmented) Capital Market Countries

If capital markets are segmented, the global capital asset pricing model must reflect the tendency of investors in individual countries to hold local country rather than globally diversified equity portfolios. Consequently, equity premiums differ among countries, reflecting the nondiversifiable risk associated with each country's equity market index. What follows is a discussion of how to adjust the basic CAPM formulation for valuing cross-border deals when the target is located in an emerging country.

Estimating the Risk-Free Rate of Return (Emerging Countries)

Data limitations and the absence of a legal procedure to deal with sovereign debt (i.e., government issued debt) in default often preclude using the local country's government bond rate as the risk-free rate. There is no court to approve a debt restructuring plan to reduce, wipe out, or convert debt to equity as with commercial bankruptcies. Troubled countries negotiate directly with lenders to restructure debt by reducing the amount owed, lowering the interest rate, and extending the maturity of the debt or some combination

EXHIBIT 18.3 CALCULATING THE TARGET FIRM'S COST OF EQUITY IN BOTH HOME AND LOCAL CURRENCIES

Acquirer, a US multinational firm, is interested in purchasing Target, a small UK-based competitor, with a market value of £550 million, or about \$1 billion. The current risk-free rate of return for United Kingdom 10-year government bonds is 4.2%. The anticipated inflation rates in the United States and the United Kingdom are 3% and 4%, respectively. The size premium is estimated at 1.2%. The historical equity risk premium in the United States is 5.5%.^a Acquirer estimates Target's β to be 0.8, by regressing Target's historical financial returns against the S&P 500. What is the cost of equity ($k_{e,UK}$) that should be used to discount Target's projected cash flows when they are expressed in terms of British pounds (i.e., local currency)? What is the cost of equity ($k_{e,US}$) that should be used to discount Target's projected cash flows when they are expressed in terms of US dollars (i.e., home currency)?^b

$$k_{e,UK} [\text{see Eq. (18.5)}] = 0.042 + 0.8 \times (0.055) + 0.012 = 0.098 = 9.80\%$$

$$k_{e,US} [\text{see Eq. (18.6)}] = [(1 + 0.098) \times (1 + 0.03) / (1 + 0.04)] - 1 = 0.0875 \times 100 = 8.75\%$$

^aThe US equity premium or the UK equity premium could have been used, since equity markets in either country are highly correlated.

^bThe real rate of return is the same in the United Kingdom (r_{UK}) and the United States (r_{US}). $r_{UK} = 9.8\% - 4.0\% = 5.8\%$, and $r_{US} = 8.8\% - 3.0\% = 5.8\%$.

of all three. Recent rulings by US courts may make the restructuring of sovereign debt increasingly difficult.⁴⁶

As an alternative to the local country government bond rate, the US Treasury bond rate often is used to estimate the risk-free rate if the target firm's cash flows are in terms of local currency. To create a local nominal interest rate, the Treasury bond rate should be adjusted for the difference in the anticipated inflation rates in the two countries using Eq. (18.6). Alternatively, the risk-free rate can be estimated using the buildup method as the sum of the expected inflation rate and the expected real rate. The analyst can add the expected inflation rate for the country to the US Treasury inflation-adjusted bond rate (i.e., Treasury inflation-protected securities, or TIPS). For example, the expected inflation rate for Angola in June 2012 was 12%, and the five-year rate on 10-year US treasury inflation-indexed securities (the real rate) was 2.38%.⁴⁷ Therefore, the estimated risk-free rate for Angolan government bonds at that time was 14.38%.

Adjusting CAPM for Risk (Emerging Countries)

Systematic risk for a firm operating primarily in its emerging country's home market, whose capital market is segmented,⁴⁸ is measured mainly with respect to the country's equity market index ($\beta_{\text{emfirm, country}}$) and to a lesser extent with respect to a globally diversified equity portfolio ($\beta_{\text{country, global}}$). The emerging-country firm's global beta ($\beta_{\text{emfirm, global}}$) can be adjusted to reflect the relationship with the global capital market as follows:

$$\beta_{\text{emfirm, global}} = \beta_{\text{emfirm, country}} \times \beta_{\text{country, global}} \quad (18.7)$$

The value of $\beta_{\text{emfirm, country}}$ is estimated by regressing historical returns for the local firm against returns for the country's equity index.⁴⁹ The value of $\beta_{\text{country, global}}$ can be estimated by regressing the financial returns for the local-country equity index (or for an index in a similar country) against the historical financial returns for a global equity index.⁵⁰ Due to the absence of historical data in many emerging economies, the equity risk premium often is estimated using the "prospective method" implied in the constant-growth valuation model. As shown in Chapter 7, Eq. (7.14) in Chapter 7, this formulation provides an estimate of the present value of dividends growing at a constant rate in perpetuity. That is, dividends paid in the current period (d_0) are grown at a constant rate of growth (g) such that d_1 equals $d_0(1 + g)$.

⁴⁶The International Monetary Fund often provides loans to countries similar to debtor in possession financing, with the IMF repaid before other lenders. Bondholders agreeing to restructure plans often receive partial payment of what they are owed while lenders who hold out may receive nothing. In late 2014, US courts ruled in the case of debts owed by the Argentine government that holdouts cannot fare worse than those who agree to a restructure plan, making reaching negotiated settlements with governments in default extremely difficult.

⁴⁷The 5-year TIPS rate is used because the TIPS rate in June 2012 was an artificially low -1.5% (a 0.98% nominal rate less the 2.48% change in the CPI) due to efforts by the US Federal Reserve to reduce .5 Treasury bond rates through "Operation Twist."

⁴⁸An analyst can determine if a country's equity market is segmented from the global equity market if the two markets are relatively uncorrelated. This implies that the local country's equity premium differs from the global equity premium, reflecting the local country's systematic risk.

⁴⁹Absent sufficient data, $\beta_{\text{emfirm, country}}$ may be estimated using the beta for a similar local or foreign firm.

⁵⁰Alternatively, a more direct approach is to regress the local firm's historical returns against the financial returns for a globally diversified portfolio of stocks to estimate $\beta_{\text{emfirm, global}}$. Furthermore, the β between a similar local or foreign firm and the global index could be used for this purpose.

Assuming the stock market values stocks correctly and we know the present value of a broadly defined index in the target firm's country (P_{country}) or in a similar country, dividends paid annually on this index in the next period (d_1), and the expected dividend growth (g), we can estimate the expected return (R_{country}) on the stock index as follows:

$$P_{\text{country}} = d_1 / (R_{\text{country}} - g) \quad \text{and} \quad R_{\text{country}} = (d_1 / P_{\text{country}}) + g \quad (18.8)$$

From Eq. (18.8), the equity risk premium for the local country's equity market is $R_{\text{country}} - R_f$, where R_f is the local country's risk-free rate of return. Exhibit 18.4 illustrates how to calculate the cost of equity for a firm in an emerging country in the absence of perceived significant country or political risk not captured in the beta or equity risk premium. Note that the local country's risk-free rate of return is estimated using the US Treasury bond rate adjusted for the expected inflation in the local country relative to the United States. This converts the US Treasury bond rate into a local-country nominal interest rate.

Adjusting the CAPM for Country or Political Risk (Emerging Countries)

A country's equity premium may not capture all the events that could jeopardize a firm's ability to operate, such as political instability, limits on repatriation of earnings, capital controls, and the levying of confiscatory or discriminatory taxes. Such factors could increase the firm's likelihood of default. Unless the analyst includes the risk of default by the firm in projecting a local firm's cash flows, the expected cash flow stream would be overstated to the extent that it does not reflect the costs of financial distress.

If the US Treasury bond rate is used as the risk-free rate in calculating the CAPM, adding a country risk premium to the basic CAPM estimate is appropriate. The country risk premium (CRP) often is measured as the difference between the yield on the country's

EXHIBIT 18.4 CALCULATING THE TARGET FIRM'S COST OF EQUITY FOR FIRMS IN EMERGING COUNTRIES

Assume next year's dividend yield on an emerging country's stock market is 5% and that earnings for the companies in the stock market index are expected to grow by 6% annually in the foreseeable future. The country's global beta ($\beta_{\text{country,global}}$) is 1.1. The US Treasury bond rate is 4%, and the expected inflation rate in the emerging country is 4%, compared to 3% in the United States. Estimate the country's risk-free rate (R_f), the return on a diversified portfolio of equities in the emerging country (R_{country}), and the country's equity risk premium ($R_{\text{country}} - R_f$). What is the cost of equity in the local currency for a local firm ($k_{e,\text{em}}$) whose country beta ($\beta_{\text{emfirm,country}}$) is 1.3?

Solution

$$R_f = [(1 + 0.04)((1 + 0.04) / (1 + 0.03)) - 1] = 0.0501 \times 100 = 5.01\%$$

$$R_{\text{country}} \quad [\text{see Eq. (18.8)}] = 5.00 + 6.00 = 11.00\%$$

$$R_{\text{country}} - R_f = 11.00 - 5.01 = 5.99\%$$

$$\beta_{\text{emfirm,global}} \quad [\text{see Eq. (18.7)}] = 1.3 \times 1.1 = 1.43$$

$$k_{e,\text{em}} = 5.01 + 1.43(5.99) = 13.58\%$$

sovereign or government bonds and the US Treasury bond rate of the same maturity. The difference, or “spread,” is the additional risk premium that investors demand for holding the emerging country’s debt rather than US Treasury bonds.⁵¹ Standard & Poor’s (www.standardandpoors.com), Moody’s Investors Service (www.moodys.com), and Fitch IBCA (www.fitchibca.com) provide sovereign bond spreads. In practice, the sovereign bond spread is computed from a bond with the same maturity as the US benchmark 10-year Treasury bond used to compute the risk-free rate for calculating the cost of equity.

While political risk has traditionally been associated with emerging countries, there have been an increasing number of instances in recent years of political risk associated with equities and sovereign bonds in developed countries. The sovereign bond crisis in Spain and Italy following the global recession in 2008–09 caused government bond rates to rise and stock prices to fall until it became clear that the Eurozone would remain intact. Similarly, the decision by the United Kingdom to exit the European Union in 2016 triggered concern about the long-term health of the British economy. Consequently, the adjustments for political risk suggested in this section also can apply to developed countries as well.

Global CAPM Formulation (Emerging Countries)

To estimate the cost of equity for a firm in an emerging economy ($k_{e,em}$), Eq. (18.5) can be modified for specific country risk as follows:

$$k_{e,em} = R_f + \beta_{emfirm,global} (R_{country} - R_f) + FSP + CRP \quad (18.9)$$

where

R_f = local risk-free rate or the US Treasury bond rate converted to a local nominal rate if cash flows are in the local currency [see Eq. (18.6)] or to the US Treasury bond rate if cash flows are in dollars

$(R_{country} - R_f)$ = difference between expected return on a well-diversified equity index in the local country or a similar country and the risk-free rate

$\beta_{emfirm,global}$ = emerging country firm’s global beta [see Eq. (18.7)]

FSP = firm size premium, reflecting the additional return that smaller firms must earn relative to larger firms to attract investors

CRP = specific country risk premium, expressed as the difference between the local country’s (or a similar country’s) government bond rate and the US Treasury bond rate of the same maturity. Add to the CAPM estimate only if the US Treasury bond rate is employed as a proxy for the local country’s risk-free rate.

Estimating the Local Firm’s Cost of Debt in Emerging Markets

The cost of debt for an emerging market firm (i_{emfirm}) should be adjusted for default risk due to events related to the country and those specific to the firm. When a local corporate bond rate is not available, the cost of debt for a specific local firm may be estimated by using an interest rate in the home country (i_{home}) that reflects a level of creditworthiness comparable to

⁵¹ A country risk premium should not be added to the cost of equity if the risk-free rate is the country’s sovereign or government bond rate, since the effects of specific country or political risk would be reflected already.

that of the firm in the emerging country. The country risk premium is added to the appropriate home country interest rate to reflect the impact of such factors as political instability on i_{emfirm} . Therefore, the cost of debt can be expressed as follows:

$$i_{\text{emfirm}} = i_{\text{home}} + \text{CRP} \quad (18.10)$$

Most firms in emerging markets are not rated; to determine which home-country interest rate to select, it is necessary to assign a credit rating to the local firm. This “synthetic” credit rating is obtained by comparing financial ratios for the target firm to those used by US rating agencies. The estimate of the unrated firm’s credit rating may be obtained by comparing interest coverage ratios used by Standard & Poor’s to the firm’s interest coverage ratio to determine how S&P would rate the firm. [Exhibit 18.5](#) illustrates how to calculate the cost of emerging-market debt.

[Exhibit 18.6](#) illustrates the calculation of WACC in cross-border transactions. Note the adjustments made to the estimate of the cost of equity for firm size and country risk. Note also the adjustment made to the local borrowing cost for country risk. The risk-free rate of return is the US Treasury bond rate converted to a local nominal rate of interest.

[Table 18.1](#) summarizes methods commonly used for valuing cross-border M&As for developed-country and emerging-country firms. The WACC calculation assumes that the firm uses only common equity and debt financing. Note that the country risk premium is added to both the cost of equity and the after-tax cost of debt in calculating the WACC for a target firm in an emerging country if the US Treasury bond rate is used as the risk-free rate of return. The analyst should avoid adding the country risk premium to the cost of equity if the risk-free rate used to estimate the cost of equity is the local country’s government bond rate. References to home and local countries in [Table 18.1](#) refer to the acquirer’s and the target’s countries, respectively.

Evaluating Risk Using Scenario Planning

With countries like China and India growing at near-double-digit rates, the future may be too dynamic to rely on discounted cash flows. As an alternative to adjusting the target’s

EXHIBIT 18.5 ESTIMATING THE COST OF DEBT IN EMERGING MARKET COUNTRIES

Assume that a firm in an emerging market has annual operating income before interest and taxes of \$550 million and annual interest expenses of \$18 million. This implies an interest coverage ratio of 30.6 (i.e., $\$550 \div \$18$). For Standard & Poor’s, this corresponds to an AAA rating. According to S&P, default spreads for AAA firms are 0.85 currently. The current interest rate on US triple A-rated bonds is 6.0%. Assume further that the country’s government bond rate is 10.3% and that the US Treasury bond rate is 5%. Assume that the firm’s marginal tax rate is 0.4. What is the firm’s cost of debt before and after tax?

Solution

Cost of debt before taxes [see Eq.(18.10)] = $6.0 + (10.3 - 5.0) = 11.3\%$

After - tax cost of debt = $11.3 \times (1 - 0.4) = 6.78\%$

EXHIBIT 18.6 ESTIMATING THE WEIGHTED AVERAGE COST OF CAPITAL IN CROSS-BORDER TRANSACTIONS

Acquirer Inc., a US-based corporation, wants to purchase Target Inc. Acquirer's management believes that the country in which Target is located is segmented from global capital markets because the beta estimated by regressing the financial returns on the country's stock market with those of a global index is significantly different from one.

Assumptions: The current US Treasury bond rate (R_{US}) is 5%. The expected inflation rate in the target's country is 6% annually, as compared to 3% in the United States. The country's risk premium (CRP) provided by Standard & Poor's is estimated to be 2%. Based on Target's interest coverage ratio, its credit rating is estimated to be AA. The current interest rate on AA-rated US corporate bonds is 6.25%. Acquirer Inc. receives a tax credit for taxes paid in a foreign country. Since its marginal tax rate is higher than Target's, Acquirer's marginal tax rate of 0.4 is used in calculating WACC. Acquirer's pretax cost of debt is 6%. The firm's total capitalization consists only of common equity and debt. Acquirer's projected debt-to-total capital ratio is 0.3.

Target's beta and the country beta are estimated to be 1.3 and 0.7, respectively. The equity premium is estimated to be 6% based on the spread between the prospective return on the country's equity index and the estimated risk-free rate of return. Given Target Inc.'s current market capitalization of \$3 billion, the firm's size premium (FSP) is estimated at 1.0 (see Table 7.1 in Chapter 7). What is the appropriate weighted average cost of capital Acquirer should use to discount target's projected annual cash flows, expressed in its own local currency?

Solution

$$k_{e,em} [\text{see Eq. (18.9)}] = \{[(1 + 0.05) \times (1 + 0.06)/(1 + 0.03)] - 1\} \times 100^a + 1.3 \times 0.7 (6.0) + 1.0 + 2.0 = 16.52\%$$

$$i_{local} [\text{see Eq. (18.10)}] = 6.25 + 2.0 = 8.25\%$$

$$wacc_{em} [\text{see Eq. (7.4)}] = 16.52 \times (1 - 0.3) + 8.25 \times (1 - 0.4) \times 0.3 = 13.05\%$$

^aNote that the expression $\{[(1 + 0.05) \times (1 + 0.06)/(1 + 0.03)] - 1\} \times 100$ represents the conversion of the US Treasury bond rate to a local nominal rate of interest using Eq. (18.6). Also note that 1.3×0.7 results in the estimation of the target's global beta, as indicated in Eq. (18.7).

cost of capital, the acquirer may incorporate risk into the valuation by considering different economic scenarios for the emerging country. Variables defining alternative scenarios could include GDP growth, inflation rates, interest rates, and foreign exchange rates. For example, a best-case scenario can be based on projected cash flows, assuming the emerging market's economy grows at a moderate real growth rate of 2% per annum for the next five years. Alternative scenarios could assume a 1–2-years recession. A third scenario could assume a dramatic devaluation of the country's currency. The NPVs are weighted by subjectively determined probabilities. The actual valuation of the target firm reflects the expected value of the three scenarios.⁵²

⁵²Note that if a scenario approach is used to incorporate risk in the valuation, there is no need to modify the discount rate for perceived political and economic risk in the local country. See Chapter 8 for how to use decision trees.

TABLE 18.1 Common Methodologies for Valuing Cross-Border Transactions

Developed Countries (Integrated Capital Markets)	Emerging Countries (Segmented Capital Markets)
Step 1. Project and Convert Cash Flows	Step 1. Project and Convert Cash Flows
a. Project target's cash flows in local currency. b. Convert local cash flows into acquirer's home currency, employing forward exchange rates projected using interest rate parity theory.	a. Project target's cash flows in local currency. b. Convert local cash flows into acquirer's home currency, using forward exchange rates. Project exchange rates, using purchasing power parity theory if little reliable data on interest rates available.
Step 2. Adjust Discount Rates	Step 2. Adjust Discount Rates
$k_{e,dev} = R_f + \beta_{devfirm,global}^a (R_m - R_f) + FSP$ $i = \text{cost of debt}^c$ $WACC = k_e W_e + i(1 - t) \times W_d$	$k_{e,em} = R_f + \beta_{emfirm,global}^a (R_{country} - R_f)^b + FSP + CRP$ $i_{local} = i_{home} + CRP$ $WACC = k_e W_e + i_{local} (1 - t) \times W_d$
a. R_f is the long-term government bond rate in the home country. b. $\beta_{devfirm,global}$ is nondiversifiable risk associated with a well-diversified global, United States, or local-country equity index. c. R_m is the return on a well-diversified United States, local, or global equity index. d. FSP is the firm size premium. e. t is the appropriate marginal tax rate. f. W_e is the acquirer's target equity-to-total capital ratio, and W_d is $1 - W_e$.	a. R_f is the long-term government bond rate in the local country or the US Treasury bond rate converted to a local nominal rate if cash flows in local currency or if cash flows in dollars, the US Treasury bond rate. Note that if the local risk-free rate is used, do <i>not</i> add CRP. b. $\beta_{emfirm,global}$ is nondiversifiable risk associated with target's local-country β and local country's global β . c. $R_{country}$ is the return on a diversified local equity index or a similar country's index. d. CRP is the country risk premium. e. i_{home} is the home-country cost of debt. f. i_{local} is the local-country cost of debt.

^a β may be estimated directly for firms whose business is heavily dependent on exports or operating in either developing or emerging countries by regressing directly the firm's historical financial returns against returns on a well-diversified global equity index. For firms operating primarily in their home markets, β may be estimated indirectly by using Eq. (18.7).

^b $(R_{country} - R_f)$ also could be the equity premium for well-diversified United States or global equity indices if the degree of local segmentation is believed to be small.

^cFor developed countries, either the home-country or local-country cost of debt may be used. There is no need to add a country risk premium as would be the case in estimating a local emerging country's cost of debt.

While building risk into the projected cash flows is equivalent to adjusting the discount rate in applying the DCF method, it also is subject to making arbitrary or highly subjective adjustments. What are the appropriate scenarios to be simulated? How many such scenarios are needed to incorporate risk adequately into the projections? What is the likelihood that each scenario will occur? The primary advantage of adopting a scenario approach is that it forces the analyst to evaluate a wider range of possible outcomes. The major disadvantages are the substantial additional effort required and the degree of subjectivity in estimating probabilities.

EMPIRICAL STUDIES OF CROSS-BORDER TRANSACTIONS

While cross-border M&As occur for reasons similar to domestic transactions, crossborder deals generally involve additional costs and complexities. These are due to geographical and cultural differences, differences in corporate governance and stakeholder protections, underdeveloped capital markets in emerging economies, and currency fluctuations.

Erel et al. (2012) in a sample of 56,978 crossborder M&As between 1990 and 2007 found that 80% of completed deals targeted a non-US firm and 75% involved non-US acquirers. Moreover, the vast majority of the deals involved private firms as either the target firm or the acquiring firm. Private firms made up the preponderance of targets in cross border deals due to concern about the lack of transparency (and in turn reliable data) of public firms and because private firms often sell at a substantial discount from their true value, especially in illiquid markets (i.e., those in which private firms often are difficult to sell).⁵³ Cultural and political compatibility seemed to be important in determining the geographic location of firms involved in crossborder transactions. M&As are more likely to occur between firms located in countries that commonly trade with one another and are relatively close geographically. Familiarity with a country's language,⁵⁴ legal institutions, customs and values contributes to higher announcement-date returns in cross-border deals⁵⁵ due to the greater likelihood of realizing potential synergies.⁵⁶ Reflecting the aforementioned cultural, legal, and language differences, the deal completion rate is likely to be less when the acquirer is from a more developed country and the target is domiciled in an emerging country.⁵⁷

International Diversification May Contribute to Higher Financial Returns

Empirical studies suggest that international diversification may increase financial returns by reducing risk if economies are relatively uncorrelated. Higher financial returns from international diversification may also be due to economies of scale and scope, geographic location advantages associated with being nearer customers, increasing the size of the firm's served market, and learning new technologies.⁵⁸ Multinational firms also may be able to reduce risk, because they can more readily alter investment strategies by exiting poorly performing businesses in one country and reinvesting in more attractive opportunities in other countries. These "real options" to defer, abandon, expand capital projects can be implemented only if the firm has the financial resources to pursue such options.⁵⁹ Shutting down or deferring a project is not costless as contracts have to be negotiated and local laws addressing how employees are treated must be obeyed.

There is significant controversy about whether returns are higher for multinational companies that diversify across countries⁶⁰ or across industries.⁶¹ Buyers of targets in segmented markets realize larger abnormal returns than if they were to buy firms in globally integrated countries, since targets in segmented markets benefit from the acquirer's lower cost of capital.⁶²

⁵³Bae et al., 2013.

⁵⁴Kedia and Reddy, 2017.

⁵⁵Ahern et al., 2015.

⁵⁶Capron and Guillén, 2009.

⁵⁷Lim et al., 2016.

⁵⁸Zahra et al., 2000.

⁵⁹Aabo et al., 2016.

⁶⁰Isakov and Sonney, 2002.

⁶¹Diermeier and Solnik, 2001.

⁶²Francis et al., 2008.

Returns for Crossborder Deals Consistent with Those for Domestic Deals

Both shareholders of target and bidder firms on average benefit from takeovers. Like domestic takeovers, shareholders of target firms in crossborder M&As earn substantial abnormal returns. Such returns for shareholders of US targets of foreign buyers range from about 23%⁶³ to about 40%.⁶⁴ Domestic bidders on average earn slightly higher positive announcement date returns than crossborder acquirers.⁶⁵ However, crossborder deals involving public acquirers and large public targets often experience abnormal announcement date financial returns that are zero to somewhat negative, particularly when such transactions are paid for with acquirer equity.⁶⁶ Over the long-term, cross-border deals in which the form of payment is primarily equity frequently underperform largely cash financed transactions.⁶⁷ This is consistent with the greater complexity of integrating large transactions and the tendency of public acquirers using overvalued stock to overpay for the target firm.

However, the use of acquirer stock in cross-border deals may be appropriate when the target firm's governance practices are problematic (i.e., the target firm's financial statements are suspect and the target is only willing to allow the acquirer to perform limited due diligence) and the local country's shareholder protections are limited or poorly enforced. Offering to exchange acquirer shares for target shares gives target shareholders choosing to retain their shares in the combined firms an incentive not to over value their shares, because both the acquirer and target firm shareholders will share in any postclosing losses if the acquirer overpays.⁶⁸

Acquirers of targets in emerging countries often earn abnormal returns of 1.65% to 3.1%, well in excess of the average cross-border or domestic deal. This improvement may be attributable to the achievement of control, improved governance practices, the elimination of minority shareholders, and the encouragement of investment in the target by the parent.⁶⁹ Gains tend to be larger if the acquirer has significant prior experience in the target's home country.⁷⁰ Large public companies in particular often show positive announcement date returns on takeovers in weak governance countries, contrary to the negative returns they often realize in countries with strong governance standards. Why? Because such firms often are politically connected enabling them to expedite the takeover process. Also, lenders in countries with weak lender protections may require higher levels of collateral to finance takeovers and larger firms are in a better position to satisfy this requirement.⁷¹

In a massive study consisting of 263,461 domestic and cross-border deals (both public and private) in 47 countries between 1992 and 2011, Yilmaz and Tanyeri (2016) confirmed the findings of earlier extensive global studies⁷² that on average both target and bidder shareholders

⁶³Kuipers et al., 2009.

⁶⁴Seth et al., 2000; Eun et al., 1996; Servaes and Zenner, 1994.

⁶⁵Mateev and Andonov, 2016.

⁶⁶Ellis et al., 2011.

⁶⁷Dutta et al., 2013.

⁶⁸Huang et al., 2017.

⁶⁹Barbopoulos et al., 2013.

⁷⁰Aybar and Thanakijsonbat, 2015.

⁷¹Humphery-Jenner and Powell, 2014.

⁷²Ellis et al., 2011; Erel et al., 2012; Netter et al., 2011.

benefit in takeovers. Specifically, abnormal returns around the announcement date average 6.9% (13% for public targets) for target shareholders and 1.4% for bidder shareholders.

Improving Corporate Governance Creates Significant Shareholder Value

Abnormal financial returns to acquirers are greater if the acquirer is from a country with stronger governance controls and the target is in a country with weaker governance standards. Country governance standards in this context often refers to the existence of laws governing the property rights of shareholders and bondholders, transparent accounting practices, and the extent to which the court systems in these countries enforce such laws. Acquirers located in countries having effective governance practices often exhibit superior shareholder protections, financial transparency, and management practices than those located in countries in which corporate governance is not taken as seriously.

Having control enables the acquirer, having the stronger governance standards, to impose its stricter management practices and shareholder protections on the target, often resulting in better long-term operating performance.⁷³ However, the premium paid for the target firm may be substantially reduced if there is a significant risk of government expropriation of the acquirer's investment at a later date. Similarly, cross-border deals made by emerging country acquirers are associated with positive abnormal returns of 1.1% on the announcement date when the target firm is located in a country whose governance and shareholder protections are viewed as stronger than in the acquirer's home country. Investors see the acquirer adopting the stronger governance practices of the target firm.⁷⁴ Investors tend to react more positively to large cross-border acquisitions in which the emerging market acquirer has prior local market experience, is able to exploit a higher growth opportunities, and which is financed with debt. The rigors of meeting principal and interest repayments limits management's ability to misuse cash.⁷⁵

For good corporate governance practices (e.g., financial transparency) to affect firm value, a country must recognize the importance of the rule of law (e.g., a legal system willing to recognize and protect shareholder rights). Aggrieved shareholders should feel a reasonable lawsuit would be objectively reviewed in a country's courts. When firms from developed markets acquire firms from emerging markets, the rule of law in the emerging market target country has a significant positive impact on the post-acquisition performance.⁷⁶ Why? The existence of corporate laws protecting shareholder rights and a court system willing to enforce infractions of such laws reduces the risk of expropriation by the emerging country's government. This in turn can lower the firm's cost of financing future projects.

While cross-border deals represent an important channel for spreading good governance practices from countries with strong investor protections to firms in countries with weaker protections, the tendency of foreign acquirers to "cheery pick" firms may hinder this process. That is, foreign acquirers tend to purchase the better performing firms leaving largely

⁷³Erel et al., 2012; Martynova and Renneboog, 2008b; Moeller et al., 2005; Yen and Andre, 2010.

⁷⁴Bhagat et al., 2011.

⁷⁵Aybar and Thanakijsonbat, 2015.

⁷⁶Thenmozhi and Narayanan, 2016.

untouched the poorer performing firms, which may have the greatest need for improved corporate governance.⁷⁷

Foreign Institutional Ownership May Promote Crossborder M&A Activity

Cross-border deals often involve significant foreign institutional ownership intent on facilitating a change in control in firms located in countries having weak corporate governance or legal institutions.⁷⁸ The foreign institutional investors facilitate change-of-control deals by serving as intermediaries between buyers and sellers and by supplying information not publicly available. In doing so, the institutional investors hope to raise the value of investments they may have in firms with subpar governance by forcing them to adopt more rigorous governance practices because of the change in control.

M&As in “Frontier Economies” May Result in the Highest Acquirer Financial Returns

“Frontier economies” are those whose stage of economic development precedes emerging economies as described earlier in this chapter. Examples include such economies as Albania, Bangladesh, Botswana, Cyprus, Estonia, Lithuania, Romania, and Sri Lanka. Their financial markets are viable but tend to be smaller and less liquid than emerging or developed economies, and they exhibit higher risk due to frequent political unrest, currency risk, and limited shareholder protections. However, they do offer acquirers the potential for higher returns due to above average growth, a greater ability to dominate markets, and the potential for transferring their competitive advantage from their home countries. Cross-border merger activity in these countries is relatively new having begun in the late 1990s. Target firms in these “frontier economies” usually receive the lowest premiums for their shares. Acquirers from the United States, United Kingdom, Canada, and other developed and emerging countries can earn the high positive abnormal returns when they bid for target firms in frontier markets.⁷⁹

SOME THINGS TO REMEMBER

Motives for international corporate expansion include a desire to accelerate growth, to achieve diversification, to consolidate industries, and to exploit natural resources and lower labor costs available elsewhere. Other motives include applying a firm’s brand name or intellectual property in new markets, minimizing tax liabilities, following customers, and avoiding tariffs and import barriers. Alternative entry strategies include exporting, licensing, alliances or joint ventures, solo ventures or greenfield operations, as well as M&As. The basic differences between within-country and cross-border valuation methods is that the latter involves converting cash flows from one currency to another and adjusting the discount rate for risks common in cross-border deals.

⁷⁷Kim and Lu, 2013.

⁷⁸Andriosopoulos et al., 2015; Ferreira et al., 2010a.

⁷⁹Vagenas-Nanos, 2016.

CHAPTER DISCUSSION QUESTIONS

- 18.1 Discuss the circumstances under which a non-US buyer may choose as its acquisition vehicle a US corporate structure; a limited liability company; or a partnership.
- 18.2 What factors influence the selection of which tax rate to use (i.e., the target's or the acquirer's) in calculating the weighted-average cost of capital in cross-border transactions?
- 18.3 Discuss adjustments commonly made in estimating the cost of debt in emerging countries.
- 18.4 Find an example of a recent cross-border transaction. Discuss the challenges an analyst might face in valuing the target firm.
- 18.5 Discuss the various types of adjustments for risk that might be made to the global CAPM before valuing a target firm in an emerging country. Be specific.
- 18.6 Do you see the growth in sovereign wealth funds as important sources of capital to the M&A market or as a threat to the sovereignty of the countries in which they invest?
- 18.7 What factors contribute to the increasing integration of the global capital markets?
- 18.8 Give examples of economic and political risk that you could reasonably expect to encounter in acquiring a firm in an emerging economy. Be specific.
- 18.9 During the 1980s and 1990s, changes in the S&P 500 (a broadly diversified index of US stocks) were about 50% correlated with the MSCI EAFE Index (a broadly diversified index of European and other major industrialized countries' stock markets). In recent years, the correlation has increased to more than 90%. Why? If an analyst wishes to calculate the cost of equity, which index should he or she use in estimating the equity risk premium?
- 18.10 Comment on the following statement: "The conditions for foreign buyers interested in US targets could not be more auspicious. The dollar is weak, M&A financing is harder to come by for financial sponsors (private equity firms), and many strategic buyers in the United States are hard-pressed to make acquisitions at a time when earnings targets are being missed."

Answers to these Chapter Discussion Questions are found in the Online Instructor's Manual for instructors using this book (<https://textbooks.elsevier.com/web/Manuals.aspx?isbn=9780128016091>).

END OF CHAPTER CASE STUDY MAJOR REGULATORY AND INTEGRATION HURDLES FOR THE ANHEUSER-BUSCH INBEV AND SABMILLER MERGER

Case Objectives: To illustrate challenges common to cross-border M&As including

- Regulatory obstacles;
- Challenges of postmerger integration efforts; and
- The impact of regulatory and postmerger considerations on recovering the purchase price premium.

While the motives that drive cross-border deals may be compelling, the challenges of closing and postmerger integration often are underestimated, especially if the participants are doing business in

many different countries. Closing such deals involves getting approval from regulators in multiple countries, which can be time-consuming and expensive. In developed countries, antitrust law usually is well developed but in emerging economies such laws may be new or largely untested in the courts. Without historical precedents, how laws are applied often is determined on a case by case basis creating a serious potential for unanticipated costs eroding deal value. Moreover, regulatory corruption may result in the uneven application of such laws.

Actions required to gain regulatory approval usually involve selling off some portion of the combined business in countries where increased concentration is a concern. In doing so, the economics of the deal may be changed profoundly, especially when the assets to be divested represent a significant portion of the anticipated synergies resulting from combining the firms. The greatest synergy often comes from buying businesses whose operations in a country are complementary to those of the acquirer. For example, by buying a competitor, the acquirer gains potential pricing power and cost saving opportunities by eliminating duplicate overhead, production facilities, and distribution channels. Because the acquirer is under duress to sell the assets stipulated under their agreement with the regulators, assets may be sold at less than fair market value.

Once regulatory approval is achieved, integrating the target's operations with those of the acquirer can be even more challenging than dealing with regulators. Labor laws in developed and emerging countries may limit the acquirer's ability to terminate "redundant" workers or allow acquirers to do so only at great expense. Country cultures may also inhibit the ability of the acquirer to introduce more modern management, production, and distribution methods. All of these factors contribute to delaying and possibly preventing realization of anticipated synergies.

The following narrative describes global beer industry leader Anheuser-Busch InBev's (AB InBev) 2016 takeover of the second largest beer company SABMiller. The combined firms' leadership position should result in lower relative costs than competitors due to economies of scale, brand recognition, and the ability to negotiate lower raw material costs. The new firm could also experience greater pricing power because of brand recognition and differentiation.

But in closing this deal, AB InBev created a substantial hurdle to overcome. To complete the transaction, the firm had to pay an exorbitant 50% premium to SABMiller's September 14, 2015 share price, the day prior to initial media speculation about the deal. Even though AB InBev's management has a well established reputation for aggressive cost cutting, earning back this premium is likely to prove daunting. The focus in this discussion will be on the implications of regulatory approval and postmerger integration on deal value.

With market growth tepid overall and declining in some regions, the global beer industry is undergoing major changes as people in many developed countries are turning to locally brewed craft beer. Furthermore, future growth globally is expected to come mainly in emerging countries and in regions such as Africa.

To prosper in this changing environment, AB InBev sought to enlarge its presence in faster growing beer consuming regions. On November 11, 2015, AB InBev reached an agreement to acquire rival SABMiller for \$104 billion in cash (\$67 per SABMiller share). The merger combines the world's two largest brewers with annual revenue of \$64 billion and an almost one-third share of global beer sales.

Historically, AB InBev has used acquisitions to increase profitability by cutting costs and steering customers toward more expensive brands. The firm has acquired regional brewers in China, eliminated regional beer offerings, and then guided customers toward Budweiser, which is three times

more expensive than Chinese beers, and to its own higher priced Chinese beer, Harbin. The strategy has been so effective that Budweiser is now consumed more outside than inside the US. The firm is expected to repeat this strategy with its acquisition of SABMiller as the primary means of recovering its purchase price premium and earning the cost of capital.

The size of the premium paid by AB InBev reflected the concentrated ownership of SABMiller stock and perceived synergies by AB InBev's management. SABMiller is 27% owned by Altria (the giant American tobacco company) and 14% owned by Colombia's BevCo., the holding company of the Santo Domingo family. These two shareholders agreed to receive a mix of restricted stock and cash. By accepting shares and remaining invested in the combined company, Altria and BevCo., would avoid the large tax bills they would have otherwise incurred if they had sold their holdings entirely for cash. Altria expects to get a 10.5% stake in the combined company and two board seats. The Santo Domingo family is expected to receive about a 6% ownership share and one board seat. The support of these shareholders is contingent upon no other shareholders opting for the partial cash and stock alternative.

The restricted shares are subject to a 5 year lockup, meaning they will not be listed on any public exchange for 5 years and that they cannot be traded during that period. At the time the merger agreement was signed, the value of the cash and stock combination was priced 5% lower than the all-cash option. The purpose of pricing the option to receive shares and cash at a discount to the all-cash offer was to make that proposal unattractive to all but the largest shareholders: Altria and BevCo.

The deal could have been imperiled by the appreciation of AB InBev's share price making it increasingly attractive to smaller shareholders who would accept the mixed share/cash option reducing the initial 5% discount from the all-cash alternative. This could have become a complicating factor since AB InBev's board had indicated that it was not willing to issue more than 326 million new shares to limit dilution to current shareholders. However, anticipating this problem, the merger agreement allowed for modifying the offer price either by raising the all-cash offer, lowering the cash-portion of the cash and stock alternative, or both.

From the outset, the deal's size triggered resistance from regulators due to concerns about stifling competition. The global market share of AB InBev and SABMiller together would be about 31%, dwarfing Heineken's 9% share, the next closest competitor. In the United States, it would be about 70% and in China it would be approximately 40%. How the companies' dominance might ultimately affect prices for consumers is unclear. But the merger would give the combined brewers substantial clout in negotiating deals with suppliers, distributors and retailers. For AB InBev, regulatory approval had to be won in the United States, the European Union, China, South Africa, Colombia, Australia, and India.

The primary argument for approving the deal rested on the limited geographic overlap of the two firm's markets, but the sale of certain brands was necessary. Resistance was expected to be to be greatest in the United States and China. Why? The MillerCoors joint venture in which SABMiller owned a 58% stake, formed by SABMiller with Molson Coors in 2008, owned several major brands in the United States. SABMiller's 49% share of the CR Snow joint venture in China, with China Resources Enterprise, was a leader in certain beer categories.

Recognizing these potential regulatory problems, SABMiller announced proactively in late 2015 that it would sell its interest in MillerCoors joint venture to its JV partner Molson Coors for

\$12 billion. The deal included the global rights to the Miller brand and would make Molson Coors the second-largest brewer in the United States behind AB InBev. Molson Coors would retain the rights to sell brands it currently owns in the United States. The sale was contingent on the closing of the AB InBev and SABMiller deal. Following closing, Molson Coors will control about 26% of the US beer market. AB InBev's share would remain unchanged at its pre-SABMiller deal level of 45%.

In March 2016, SABMiller sold its stake in the China joint venture to its partner China Resources. AB InBev in April accepted an offer by Asahi Group Holdings of Japan to buy certain AB InBev brands in Europe as well as certain SABMiller operations in Britain, Italy, and the Netherlands. In May, the European Union approved the deal contingent upon the two firms selling SABMiller premium brands in Europe and certain other European operations in the Czech Republic, Hungary, Poland, Romania, and Slovakia. US regulatory approval in late 2016 allowed AB InBev to retain Budweiser, Beck's and Stella Artois while selling the Miller's brand in the United States. In June, AB InBev resolved one of the more knotty hurdles when it received regulatory approval in South Africa conditioned on the sale of certain local brands and setting aside a trust fund to make payments to workers who could lose their jobs as a result of the merger. Other regulatory issues that were resolved included AB InBev's serving as a bottler for Pepsi in Latin America and SABMiller's bottling Coca Cola in Africa. The firm agreed to keep the two soft drink operations separate. Regulatory approval was also received in Australia and India following the divestment of certain local brands.

The firm has stated publicly that the integration of SABMiller will follow a process similar to AB InBev's acquisition of Mexican brewer Modelo in 2013. Following closing, dedicated local teams led the integration process with senior executives focusing on critical decisions such as how to combine administrative, operations and supply chain networks. While AB InBev sent a few executives to integrate the two companies' operations, "99% of the people" planning and implementing the integration were Modelo staff. However, with Modelo and AB InBev, the integration involved combining operations in Mexico and the United States. But with SABMiller, the integration will involve many countries. AB InBev now will have to bring together operations across multiple continents and a host of countries, something it hasn't done since it was created through a combination of Belgium-based InterBrew and Brazil-based AmBev more than a decade ago.

To recover the huge premium paid, AB InBev must be able to realize substantial cost savings on a timely basis largely through global procurement of raw materials to achieve greater bulk discounts, renegotiating packaging and bottling contracts, and through job cuts by eliminating overlapping headquarters and management teams. Anheuser-Busch InBev said that it expected to achieve about \$1.4 billion in annual pre-tax cost savings by the end of the fourth year after the deal's completion. While the firm has both a reputation and demonstrable track record for being able to effectively extract these savings, the magnitude of the challenge remains daunting: SABMiller employs 69,000 people in 83 countries while AB InBev has 155,000 workers in 25 countries. Cultures and laws can differ widely across these geographic areas often requiring lengthier integration than originally anticipated.

SABMiller's operations in Africa may be the crown jewel of the takeover. However, the risks are high. Labor problems in South Africa could be significant. AB InBev has little experience in Africa and it must retain key former SABMiller executives and support staff to minimize local disrup-

tions. AB InBev says it will keep a regional headquarters in Johannesburg and plans to seek to have its shares listed on the Johannesburg Stock Exchange as soon as possible. These actions are planned to assuage local unions, investors and government officials.

Successfully integrating businesses often comes with a much higher price tag than initially believed. In applying the business strategy it has successfully used in the past, AB InBev will try to eliminate regional brands and move consumers toward more expensive beers. This will require significant investment in training, demographic data collection, and sales and marketing programs. In addition, the new firm expects to realize additional revenue growth as it would now have access to the fast growing Africa beer market and greater dominance in Latin America. The firm's inexperience in this region could create a series of missteps.

The combination of AB InBev and SABMiller has to weather successfully the loss of revenues and profits due to the sale of lucrative assets to gain regulatory approval and the perils of post-merger integration. AB InBev may be unable to sell assets required by regulatory approval at their fair market value. While an estimate of the financial impact of potential asset sales should have been included in AB InBev's initial valuation of SABMiller, the size, complexity and length (as much as four years) of the integration creates substantial uncertainty. Greater capital requirements than anticipated, labor unrest or an economic slowdown could derail the best of plans. While management has some influence over these factors, others are clearly beyond their control.

At the time of the 2016 closing, the world economy continued to sputter. Civil war and terrorism disrupted much of North and West Africa raising doubts about future growth. China, by far the largest beer consuming market, recorded its slowest economic growth rate in more than 25 years. By paying such a steep price for SABMiller, AB InBev may find the realization of their objectives far more demanding than first thought. Past success is a two edged sword in that it gives management a template to follow for future acquisitions but it can also create excessive confidence. Could the firm's past success in making and integrating their acquisitions have caused them to be more optimistic in agreeing to the purchase price for SABMiller than they should have been? Time will tell.

Chapter Discussion Questions

- 18.1 What are the key assumptions implicit in Anheuser-Busch InBev's takeover of SABMiller? Which do you believe are the most critical? Be Specific.
- 18.2 Why did the deal include restricted stock in AB InBev's stock and cash options rather than unrestricted shares? How does the lockup on the restricted stock included in AB InBev's stock and cash combination affect the value of these shares?
- 18.3 What were the primary motives for the merger from AB InBev's perspective stated in the case? Review the common motives for cross-border deals discussed in this chapter; speculate as to what other motives for this acquisition other than those indicated in the case might AB InBev have had in buying SABMiller.
- 18.4 What alternatives to acquisition could AB InBev have pursued? Speculate as to why a takeover was the preferred option?

Solutions to these questions are found in the Online Instructor's Manual available to instructors using this book (<https://textbooks.elsevier.com/web/Manuals.aspx?isbn=9780128016091>).

**ADDITIONAL CASE STUDY RECOMMENDATIONS
(SEARCH HARVARD BUSINESS SCHOOL PUBLISHING
SITE BY NAME OF CASE:
hbsp.harvard.edu)**

How China Reset Its Global Acquisition Agenda, Peter J. Williamson, Anand P. Raman, April 1, 2011, Harvard Business Review, Product Number: R1104k-PDF-ENG, <https://cb.hbsp.harvard.edu>

Subjects Covered: Global Business, Due Diligence, Global Strategy, Market Share, Mergers & Acquisitions
Cultural Challenges of Integration: Value Creation and Daiichi Sankyo's Indian Acquisition, Beng Geok Wee; Wilfred Chua, Revised Publication Date: November 20, 2012, Source: ABCC at Nanyang Tech University, Product Number: NTU027-PDF-ENG, hbsp.harvard.edu

Subjects Covered: Organizational Behavior, Role of Culture in Cross-Border M&A, Post-M&A Integration Process, Cross-Cultural Relations
Alliance Management at Forbes Marshall, Naga Lakshmi Damaraju; Harshdeep Singh, January 20, 2012, Source: Ivey Publishing, Product Number: W11618-PDF-ENG, hbsp.harvard.edu

Subjects Covered: Joint Ventures, Managing Business Alliances, Value Chains
Mahindra Satyam-Restoring Corporate Governance, Murray J. Bryant, Ramasastry Chandrasekhar, February 9, 2011, Product Number: 910M86-PDF-ENG, Source: Ivey Publishing, hbsp.harvard.edu

Subjects Covered: Governance, Setting Corporate Priorities, Management Decision Making
Hindalco's Acquisition of Novelis: The Making of a Giant, Aastha Sachdeva, Madhur Deep, R. Srinivasan, Revision Date: January 1, 2010, Product Number: IMB303-PDF-ENG, Source: Indian Institute

of Management-Bangalore, hbsp.harvard.edu

Subjects Covered: Acquirer and Target Motives, Cross-Border Deals, Value Creation and Value Destruction, Aligning Strategic Intent, Cross-Cultural Relations

Orascom Telecom: Risks of Internationalization, Marina, Dina Zaki, Farah Zahran, Publication Date: April 18, 2011, Product Number: W11096, hbsp.harvard.edu

Subjects Covered: International Strategy, Tax accounting, Financial accounting
Acciona and the Battle for Control of Endesa, Belen Villalonga, Rachele Silverberg, Publication Date: November 30, 2009, Product Number: 210029-PDF-ENG, Source: Harvard Business School, hbsp.harvard.edu

Subjects Covered: Cross-border deals, governance, diversification, family owned businesses, government regulations
Tata Motors' Acquisition of Daewoo Commercial Company, Meera Harish Sanjay Singh, Kulwant Singh, Publication Date: December 4, 2008, Product Number: 908M94-PDF-ENG, Source: IVEY Publishing, hbsp.harvard.edu

Subjects Covered: International Expansion, Bidding Process, Cultural Barriers, Criteria for a Successful Acquisition, Market Entry Strategies
CIBC Mellon: Managing a Cross-Border Joint Venture, Paul W. Beamish, Michael Sartor, Publication Date: October 8, 2010, Product Number: 910M91-PDF-ENG, Source: Ivey Publishing, hbsp.harvard.edu

Subjects Covered: Joint Ventures, Risk Management, Decision-Making

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Glossary

- Abnormal return** The return to shareholders due to nonrecurring events that differs from what would have been predicted by the market. It is the return due to an event such as a merger or an acquisition.
- Acquirer** A firm that attempts to acquire a controlling interest in another company.
- Acquisition** The purchase by one company of a controlling ownership interest in another firm, a legal subsidiary of another firm, or selected assets of another firm.
- Acquisition vehicle** The legal structure used to acquire another company.
- Arbitrageurs (“arbs”)** In the context of M&As, arbs are speculators who attempt to profit from the difference between the bid price and the target firm’s current share price.
- Asset impairment** An asset is said to be impaired according to FASB Statement 142 if its fair value falls below its book or carrying value.
- Asset purchases** Transactions in which the acquirer buys all or a portion of the target company’s assets and assumes all, some, or none of the target’s liabilities.
- Asymmetric information** Information about a firm that is not equally available to managers as well as shareholders.
- Back-end merger** The merger following either a single- or two-tier tender offer consisting of either a long-form or short-form merger, with the latter not requiring a target firm shareholder vote.
- Bankruptcy** A federal legal proceeding designed to protect the technically or legally insolvent firm from lawsuits by its creditors until a decision can be made either to shut down or to continue to operate the firm.
- Bear hug** A takeover tactic involving the mailing of a letter containing an acquisition proposal to the board of directors of a target company without prior warning and demanding a rapid decision.
- Beta** A measure of nondiversifiable risk or the extent to which a firm’s (or asset’s) return changes because of a change in the market’s return.
- Boot** The nonequity portion of a purchase price.
- Breakup fee** A fee that will be paid to a potential acquirer if a target firm decides to accept an alternative bid. Also called a *termination fee*.
- Bridge financing** Temporary unsecured short-term loans provided by investment banks to pay all or a portion of the purchase price and meet immediate working capital requirements until permanent or long-term financing is found.
- Business alliance** A generic term referring to all forms of business combinations other than mergers and acquisitions.
- Business strategy or model** That portion of a business plan detailing the way the firm intends to achieve its vision.
- Buyout** Change in controlling interest in a corporation.
- Capital asset pricing model** A framework for measuring the relationship between expected risk and return.
- Capitalization multiple** The multiple estimated by dividing 1 by the estimated discount or capitalization rate that can be used to estimate the value of a business by multiplying it by an indicator of value, such as free cash flow.
- Capitalization rate** The discount rate used by practitioners if the cash flows of a firm are not expected to grow or are expected to grow at a constant rate indefinitely.
- Cash-for-assets** An acquisition in which the acquirer pays cash for the seller’s assets and may choose to accept some or all of the seller’s liabilities.
- Cash-out statutory merger** A merger in which the shareholders of the selling firm receive cash or some form of nonvoting investment (e.g., debt or nonvoting preferred or common stock) for their shares.
- Certificate of incorporation** A document received from the state once the articles of incorporation have been approved.
- Classified board election** An antitakeover defense involving the separation of a firm’s board into several classes, only one of which is up for election at any one point in time. Also called a *staggered board*.
- Closing** The phase of the acquisition process in which ownership is transferred from the target to the acquiring firm in exchange for some agreed-on consideration following the receipt of all necessary shareholder, regulatory, and third-party approvals.
- Closing conditions** Stipulations that must be satisfied before closing can take place.
- Collar agreement** An arrangement providing for certain changes in the share exchange ratio contingent on the level of the acquirer’s share price around the effective date of the merger.

- Common-size financial statements** Financial statements calculated by taking each line item as a percentage of revenue.
- Composition** An agreement in which creditors consent to settling for less than the full amount they are owed.
- Confidentiality agreement** A mutually binding accord defining how information exchanged among the parties may be used and the circumstances under which the discussions may be made public. Also known as a *nondisclosure agreement*.
- Conglomerate mergers** Transactions in which the acquiring company purchases firms in largely unrelated industries.
- Consent decree** Requires the merging parties to divest overlapping businesses or restrict anticompetitive practices.
- Consent solicitation** A process enabling dissident shareholders in certain states to obtain shareholder support for their proposals by simply obtaining their written consent.
- Consolidation** A business combination involving two or more companies joining to form a new company, in which none of the combining firms survive.
- Constant-growth model** A valuation method that assumes that cash flow will grow at a constant rate.
- Contingent value rights (CVR)** Commitments by an issuing company to pay additional cash or securities to the holder of the CVR if the share price of the issuing company falls below a specified level at some future date.
- Control premium** The excess over a target's current share price the acquirer is willing to pay to gain a controlling interest. A pure control premium is one in which the anticipated synergies are small and the perceived value of the purchase is in gaining control to direct the activities of the target firm.
- Corporate bylaws** Rules governing the internal management of a corporation that are determined by the corporation's founders.
- Corporate charters** A state license defining the powers of a firm and the rights and responsibilities of its shareholders, board of directors, and managers. The charter consists of articles of incorporation and a certificate of incorporation.
- Corporate governance** The systems and controls in place to protect the rights of corporate stakeholders.
- Corporate restructuring** Actions taken to expand or contract a firm's basic operations or fundamentally change its asset or financial structure.
- Cost leadership** A strategy designed to make a firm the cost leader in its market by constructing efficient production facilities, tightly controlling overhead expense, and eliminating marginally profitable customer accounts.
- Cram down** A legal reorganization occurring whenever one or more classes of creditors or shareholders approve, even though others may not.
- Cumulative voting rights** In an election for a board of directors, each shareholder is entitled to as many votes as equal the number of shares the shareholder owns multiplied by the number of directors to be elected. Furthermore, the shareholder may cast all of these votes for a single candidate or any two or more of them.
- Debt-for-equity swap** Creditors surrender a portion of their claims on a firm in exchange for an ownership position in the firm.
- Debtor-in-possession** On the filing of a reorganization petition, the firm's current management remains in place to conduct the ongoing affairs of the firm.
- Destroyers of value** Factors that can reduce the future cash flow of combined companies.
- Discounted cash flow** The conversion of future to current cash flows by applying an appropriate discount rate.
- Discount rate** The opportunity cost associated with investment in a firm used to convert the projected cash flows to present values.
- Diversifiable risk** The risk specific to an individual firm, such as strikes and lawsuits.
- Diversification** A strategy of buying firms outside of the company's primary line of business.
- Divestiture** The sale of all or substantially all of a company or product line to another party for cash or securities.
- Dual class recapitalization** A takeover defense in which a firm issues multiple classes of stock in which one class has voting rights that are 10 to 100 times those of another class. Such stock is also called *super voting stock*.
- Due diligence** The process by which an acquirer seeks to determine the accuracy of a target's financial statements, evaluate the firm's operations, validate valuation assumptions, determine fatal flaws, and identify sources and destroyers of value.
- Earnouts** Payments to a seller based on the acquired business's achieving certain profit or revenue targets.
- Economic value** The present value of a firm's projected cash flows.
- Economies of scale** The spreading of fixed costs over increasing production levels.
- Economies of scope** The use of a specific set of skills or an asset currently used to produce a specific product to produce related products.

Effective control Control achieved when one firm has purchased another firm's voting stock, it is not likely to be temporary, there are no legal restrictions on control such as from a bankruptcy court, and there are no powerful minority shareholders.

Employee stock ownership plan (ESOP) A trust fund or plan that invests in the securities of the firm sponsoring the plan on behalf of the firm's employees. Such plans are generally defined contribution employee-retirement plans.

Enterprise cash flow Cash available to shareholders and lenders after all operating obligations of a firm have been satisfied.

Enterprise value Viewed from the liability side of the balance sheet, it is the sum of the market or present value of a firm's common equity plus preferred stock and long-term debt. For simplicity, other long-term liabilities are often excluded from the calculation. From the perspective of the asset side of the balance sheet, it is equal to cash plus the market value of current operating and nonoperating assets less current liabilities plus long-term assets.

Equity carve-out A transaction in which a parent firm issues a portion of its stock or that of a subsidiary to the public.

Equity cash flow Cash available to common shareholders after all operating obligations of a firm have been satisfied.

Equity premium The rate of return in excess of the risk-free rate investors require to invest in equities.

Excess returns See *abnormal returns*.

Exchange offer A tender offer involving a share-for-share exchange.

Extension Creditor agreement to lengthen the period during which the debtor firm can repay its debt and, in some cases, to temporarily suspend both interest and principal repayments.

Fair market value The cash or cash-equivalent price a willing buyer would propose and a willing seller would accept for a business if both parties have access to all relevant information.

Fairness opinion letter A written and signed third-party assertion certifying the appropriateness of the price of a proposed deal involving a tender offer, merger, asset sale, or leveraged buyout.

Fair value An estimate of the value of an asset when no strong market exists for a business or it is not possible to identify the value of substantially similar firms.

Financial buyer Acquirers that focus on relatively short to intermediate financial returns and typically use large amounts of debt to finance their acquisitions.

Financial sponsor An investor group providing equity financing in leveraged buyout transactions.

Financial synergy The reduction in the cost of capital as a result of more stable cash flows, financial economies of scale, or a better matching of investment opportunities with available funds.

Fixed or constant share-exchange agreement An exchange agreement in which the number of acquirer shares exchanged for each target share is unchanged between the signing of the agreement of purchase and the sale and closing.

Fixed-value agreement The value of the price per share is fixed by allowing the number of acquirer shares issued to vary to offset fluctuations in the buyer's share price.

Flip-in poison pill Shareholders' rights plan in which the shareholders of the target firm can acquire stock in the target firm at a substantial discount.

Flip-over poison pill Shareholders' rights plan in which the target firm's shareholders may convert such rights to acquire stock of the surviving company at a substantial discount.

Form of acquisition The determination of what is being acquired (i.e., stock or assets) and the way in which ownership is transferred.

Form of payment A means of payment: cash, common stock, debt, or some combination. Some portion of the payment may be deferred or dependent on the future performance of the acquired entity.

Forward triangular merger The acquisition subsidiary being merged with the target and the acquiring subsidiary surviving.

Free cash flow The difference between cash inflows and cash outflows, which may be positive, negative, or zero.

Friendly takeover Acquisition when the target's board and management are receptive to the idea and recommend shareholder approval.

General partner An individual responsible for the daily operations of a limited partnership.

Globally integrated capital markets Capital markets providing foreigners with unfettered access to local capital markets and local residents to foreign capital markets.

Going concern value The value of a company defined as the firm's value in excess of the sum of the value of its parts.

Going private The purchase of the publicly traded shares of a firm by a group of investors.

- Golden parachutes** Employee severance arrangements that are triggered whenever a change in control takes place.
- Goodwill** The excess of the purchase price over the fair value of the acquired net assets on the acquisition date.
- Go-shop provision** A provision allowing a seller to continue to solicit other bidders for a specific time period after an agreement has been signed but before closing. However, the seller that accepts another bid must pay a breakup fee to the bidder with which it had a signed agreement.
- Hedge fund** Private investment limited partnerships (for US investors) or offshore investment corporations (for non-US or tax-exempt investors) in which the general partner has made a substantial personal investment.
- Highly leveraged transactions** Transactions involving a substantial amount of debt relative to the amount of equity invested.
- Holding company** A legal entity often having a controlling interest in one or more companies.
- Horizontal merger** A combination of two firms within the same industry.
- Hostile takeover** Acquisition when the initial bid was unsolicited, the target was not seeking a merger at the time of the approach, the approach was contested by the target's management, and control changed hands.
- Hostile tender offer** A tender offer that is unwanted by the target's board.
- Hubris** An explanation for takeovers that attributes a tendency to overpay to excessive optimism about the value of a deal's potential synergy or excessive confidence in management's ability to manage the acquisition.
- Impaired asset** As defined by FASB, a long-term asset whose fair value falls below its book or carrying value.
- Implementation strategy** The way in which a firm chooses to execute a business strategy.
- Indemnification** A common contractual clause requiring a seller to indemnify or absolve the buyer of liability in the event of misrepresentations or breaches of warranties or covenants. Similarly, the buyer usually agrees to indemnify the seller. In effect, it is the reimbursement to the other party for a loss for which it was not responsible.
- Interest rate parity theory** A theory that relates forward or future spot exchange rates to differences in interest rates between two countries adjusted by the spot rate.
- Investment bankers** Advisors who offer strategic and tactical advice and acquisition opportunities, screen potential buyers and sellers, make initial contact with a seller or buyer, and provide negotiation support, valuation, and deal-structuring advice.
- Involuntary bankruptcy** A situation in which creditors force a debtor firm into bankruptcy.
- Junk bonds** High-yield bonds either rated by the credit-rating agencies as below investment grade or not rated at all.
- Legal form of the selling entity** Whether the seller is a C or Subchapter S corporation, a limited liability company, or a partnership.
- Legal insolvency** When a firm's liabilities exceed the fair market value of its assets.
- Letter of intent** Preliminary agreement between two companies intending to merge that stipulates major areas of agreement between the parties.
- Leveraged buyout** Purchase of a company financed primarily by debt.
- Liquidation** The value of a firm's assets sold separately less its liabilities and expenses incurred in breaking up the firm.
- Liquidity discount** The discount or reduction in the offer price for the target firm made by discounting the value of the target firm estimated by examining the market values of comparable publicly traded firms to reflect the potential loss in value when sold due to the illiquidity of the market for similar types of investments. The liquidity discount also is referred to as a *marketability discount*.
- Management buyout** A leveraged buyout in which managers of the firm to be taken private are also equity investors in the transaction.
- Management entrenchment theory** A theory that managers use a variety of takeover defenses to ensure their longevity with the firm.
- Management preferences** The boundaries or limits that senior managers of an acquiring firm place on the acquisition process.
- Managerialism theory** A theory espousing that managers acquire companies to increase the acquirer's size and their own remuneration.
- Marketability risk** The risk associated with an illiquid market for a specific stock. Also called *liquidity risk*.
- Maximum offer price** The sum of the minimum price plus the present value of net synergy.
- Merger** A combination of two or more firms in which all but one legally cease to exist.
- Merger-acquisition plan** A specific type of implementation strategy that describes in detail the motivation for the acquisition and how and when it will be achieved.

- Merger arbitrage** An investment strategy that attempts to profit from the spread between a target firm's current share price and a pending takeover bid.
- Merger of equals** A merger framework usually applied whenever the merger participants are comparable in size, competitive position, profitability, and market capitalization.
- Minimum offer price** The target's stand-alone or present value or its current market value.
- Minority discount** The reduction in the value of minority investors' investment in a firm because they cannot direct the activities of the firm.
- Minority investment** A less-than-controlling interest in another firm.
- Net asset value** The difference between the fair market value of total identifiable acquired assets and the value of acquired liabilities.
- Net debt** The market value of debt assumed by the acquirer less cash and marketable securities on the books of the target firm.
- Net operating loss carryforward and carrybacks** Provisions in the tax laws allowing firms to use accumulated net tax losses to offset income earned over a specified number of future years or recover taxes paid during a limited number of prior years.
- Net purchase price** Total purchase price plus other assumed liabilities less the proceeds from the sale of discretionary or redundant target assets.
- Net synergy** The difference between estimated sources of value and destroyers of value.
- Nondiversifiable risk** Risk generated by factors that affect all firms, such as inflation and war.
- One-tiered offer** A bidder announces the same offer to all target shareholders.
- Operating synergy** Increased value resulting from a combination of businesses due to such factors as economies of scale and scope.
- Payment-in-kind (PIK) notes** Equity or debt that pays dividends or interest in the form of additional equity or debt.
- Poison pills** A new class of securities issued as a dividend by a company to its shareholders, giving shareholders rights to acquire more shares at a discount.
- Postclosing organization** The organizational and legal framework used to manage the combined businesses following the completion of the transaction.
- Private corporation** A firm whose securities are not registered with state or federal authorities.
- Private equity fund** Limited partnerships in which the general partner has made a substantial personal investment.
- Pro forma financial statements** A form of accounting that presents financial statements in a way that purports to describe a firm's current or projected performance more accurately.
- Proxy contest** An attempt by dissident shareholders to obtain representation on the board of directors or to change a firm's bylaws.
- Purchase accounting** A form of accounting for financial reporting purposes in which the acquired assets and assumed liabilities are revalued to their fair market value on the date of acquisition and recorded on the books of the acquiring company.
- Purchasing power parity theory** The theory stating that one currency will appreciate (depreciate) with respect to another currency according to the expected relative rates of inflation between the two countries.
- Purchase premium** The excess of an offer price over the target's current share price, which reflects both the value of expected synergies and the amount necessary to obtain control.
- Pure control premium** The value an acquirer believes can be created by replacing incompetent management or changing the strategic direction of a firm.
- Pure play** A firm whose products or services focus on a single industry or market.
- Real options** Management's ability to adopt and later revise corporate investment decisions.
- Reverse breakup fee** Fee paid to a target firm in the event the bidder wants to withdraw from a signed contract.
- Reverse merger** Process by which a private firm goes public by merging with a public firm, with the public firm surviving.
- Reverse triangular merger** The merger of a target with a subsidiary of the acquiring firm, with the target surviving.
- Risk-free rate of return** The return on a security with an exceedingly low probability of default, such as US Treasury securities, and minimal reinvestment risk.
- Risk premium** The additional rate of return in excess of the risk-free rate that investors require to purchase a firm's equity. Also called the *equity premium*.
- Secured debt** Debt backed by the borrower's assets.

- Segmented capital markets** Capital markets exhibiting different bond and equity prices in different geographic areas for identical assets in terms of risk and maturity.
- Share-exchange ratio** The number of shares of an acquirer's stock to be exchanged for each share of the target's stock.
- Shareholders' interest theory** The presumption that management resistance to proposed takeovers is a good bargaining strategy to increase the purchase price for the benefit of the target firm shareholders.
- Shell corporation** A company that is incorporated but has no significant assets or operations.
- Sources of value** Factors increasing the cash flow of combined companies.
- Spin-off** A transaction in which a parent creates a new legal subsidiary and distributes shares it owns in the subsidiary to its current shareholders as a stock dividend.
- Split-off** A variation of a spin-off in which some parent company shareholders receive shares in a subsidiary in return for relinquishing their parent company shares.
- Split-up** A transaction in which a parent firm splits its assets between two or more subsidiaries and the stock of each subsidiary is offered to its shareholders in exchange for their parent firm shares.
- Staggered board election** A takeover defense involving the division of a firm's directors into a number of different classes, with no two classes up for reelection at the same time. Also called a *classified board*.
- Stand-alone business** A business whose financial statements reflect all the costs of running the business and all the revenues generated by the business.
- Standstill agreement** A contractual arrangement in which an acquirer agrees not to make any further investments in the target's stock for a stipulated period.
- Statutory merger** The combination of the acquiring and target firms, in which one firm ceases to exist, in accordance with the statutes of the state in which the combined businesses will be incorporated.
- Stock-for-stock statutory merger** A merger in which the seller receives acquirer shares in exchange for its shares (with the seller shares subsequently cancelled); also called a *stock swap merger*.
- Stock purchases** The exchange of a target's stock for cash, debt, or the stock of the acquiring company.
- Strategic buyer** An acquirer primarily interested in increasing shareholder value by realizing long-term synergies.
- Subsidiary carve-out** A transaction in which the parent creates a wholly owned independent legal subsidiary, with stock and a management team different from the parent's, and issues a portion of the subsidiary's stock to the public.
- Supermajority rules** A takeover defense requiring a higher level of approval for amending a charter or for certain types of transactions, such as a merger or an acquisition.
- Super voting stock** A class of voting stock having voting rights many times those of other classes of stock.
- Synergy** The notion that the value of combined enterprises will exceed the sum of their individual values.
- Takeover Generic** term referring to a change in the controlling ownership interest of a corporation.
- Takeover defenses** Protective devices put in place by a firm to frustrate, slow down, or raise the cost of a takeover.
- Target company** The firm that is being solicited by an acquiring company.
- Taxable transaction** Transaction in which the form of payment is primarily something other than the acquisition of company stock.
- Tax considerations** Structures and strategies determining whether a transaction is taxable or nontaxable to the seller's shareholders.
- Tax-free reorganization** Nontaxable transactions usually involving mergers, with the form of payment primarily acquirer stock exchanged for the target's stock or assets.
- Tax shield** The reduction in a firm's tax liability due to the tax deductibility of interest.
- Tender offer** The offer to buy shares in another firm, usually for cash, securities, or both.
- Term sheet** A document outlining the primary areas of agreement between a buyer and a seller, which is often used as the basis for a more detailed letter of intent.
- Total capitalization** The sum of a firm's debt and all forms of equity.
- Total consideration** A term commonly used in legal documents to reflect the different types of remuneration received by target company shareholders.
- Total purchase price** The total consideration plus the market value of a target firm's debt assumed by the acquiring company. Also referred to as *enterprise value*.
- Tracking stocks** Separate classes of common stock of a parent corporation whose dividend payouts depend on the financial performance of a specific subsidiary. Also called *target* or *letter stocks*.

Two-tiered offer A tender offer in which target shareholders receive an offer for a specific number of shares. Immediately following this offer, the bidder announces its intentions to purchase the remaining shares at a lower price or using something other than cash.

Type A reorganization A tax-free merger or consolidation in which target shareholders receive cash, voting or nonvoting common or preferred stock, or debt for their shares. At least 50 percent of the purchase price must be in acquirer stock.

Type B stock-for-stock reorganization A tax-free transaction in which the acquirer uses its voting common stock to purchase at least 80% of the voting power of the target's outstanding voting stock and at least 80% of each class of nonvoting shares. Used as an alternative to a merger.

Type C stock-for-assets reorganization A tax-free transaction in which acquirer voting stock is used to purchase at least 80% of the fair market value of the target's net assets.

Valuation cash flows Restated GAAP cash flows used for valuing a firm or a firm's assets.

Variable growth valuation model A valuation method that assumes that a firm's cash flows will experience periods of high growth followed by a period of slower, more sustainable growth.

Weighted-average cost of capital A broader measure than the cost of equity that represents the return that a firm must earn to induce investors to buy its stock and bonds.

White knight A potential acquirer that is viewed more favorably by a target firm's management and board than the initial bidder.

Zero-growth valuation model A valuation model that assumes that free cash flow is constant in perpetuity.

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