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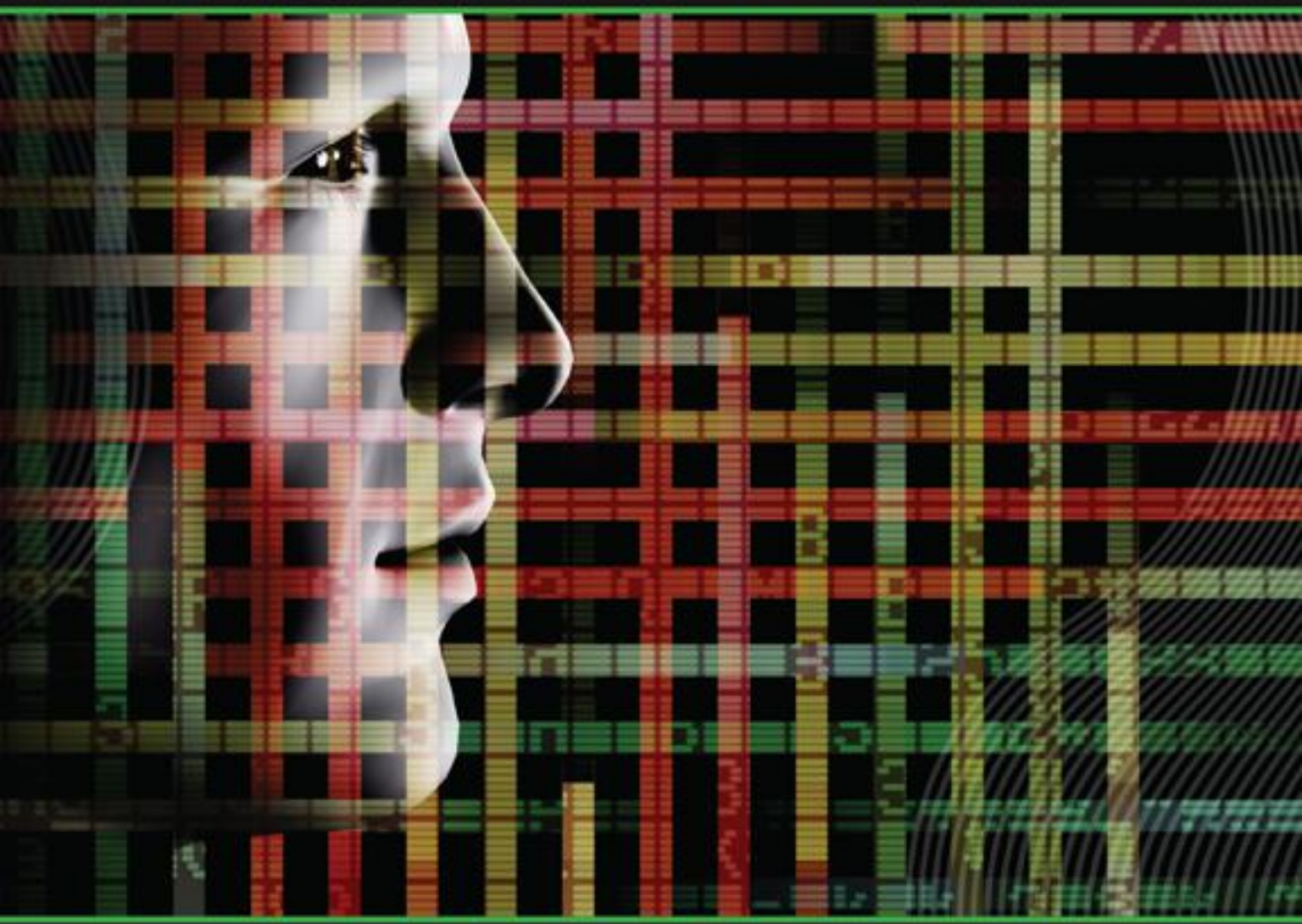
Intermediate Financial Management



BRIGHAM/DAVES

Intermediate Financial Management

12E

Intermediate Financial Management

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Intermediate Financial Management, 12th Edition

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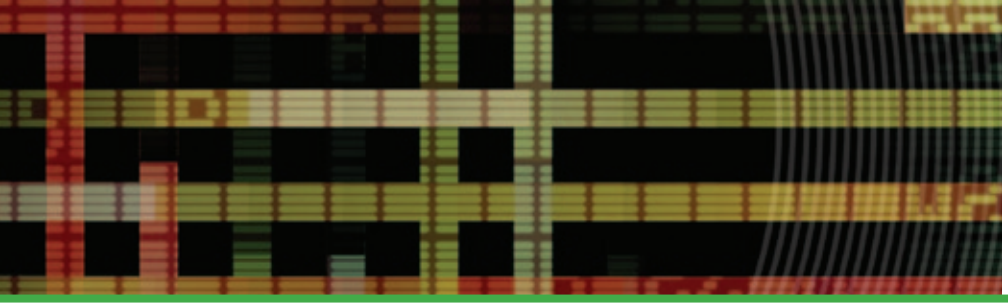

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Web Chapters

Web Extensions

Preface

Much has happened in finance recently. Years ago, when the body of knowledge was smaller, the fundamental principles could be covered in a one-term lecture course and then reinforced in a subsequent case course. This approach is no longer feasible. There is simply too much material to cover in one lecture course.

As the body of knowledge expanded, we and other instructors experienced increasing difficulties. Eventually, we reached these conclusions:

- The introductory course should be designed for all business students, not just for finance majors, and it should provide a broad overview of finance. Therefore, a text designed for the first course should cover key concepts but avoid confusing students by going beyond basic principles.
- Finance majors need a second course that provides not only greater depth on the core issues of valuation, capital budgeting, capital structure, cost of capital, and working capital management but also covers such special topics as mergers, multinational finance, leasing, risk management, and bankruptcy.
- This second course should also utilize cases that show how finance theory is used in practice to help make better financial decisions.

When we began teaching under the two-course structure, we tried two types of existing books, but neither worked well. First, there were books that emphasized theory, but they were unsatisfactory because students had difficulty seeing the usefulness of the theory and consequently were not motivated to learn it. Moreover, these books were of limited value in helping students deal with cases. Second, there were books designed primarily for the introductory MBA course that contained the required material, but they also contained too much introductory material. We eventually concluded that a new text was needed, one designed specifically for the second financial management course, and that led to the creation of *Intermediate Financial Management*, or *IFM* for short.

WEB

Students: Access the *Intermediate Financial Management 12e* companion site and online student resources by visiting **www.cengagebrain.com**, searching for ISBN 9781285850030 and clicking "Access Now" under "Study Tools" to go to the student textbook companion site.

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The Next Level: *Intermediate Financial Management*

In your introductory finance course you learned a number of terms and concepts. However, an intro course cannot make you "operational" in the sense of actually "doing" financial management. For one thing, introductory courses necessarily focus on individual chapters and even sections of chapters, and first-course exams generally consist of relatively simple problems plus short-answer questions. As a result, it is hard to get a good sense of how the various parts of financial management interact with one another. Second, there is not enough time in the intro course to allow students to set up and work out realistic problems, nor is there time to delve into actual cases that illustrate how finance theory is applied in practice.

Now it is time to move on. In *Intermediate Financial Management*, we first review materials that were covered in the introductory course, then take up new material. The review is absolutely essential, because no one can remember everything

that was covered in the first course, yet all of the introductory material is essential for a good understanding of the more advanced material. Accordingly, we revisit topics such as the net present value (NPV) and internal rate of return (IRR) methods, but now we delve into them more deeply, considering how to streamline and automate the calculations, how to obtain the necessary data, and how errors in the data might affect the outcome. We also relate the topics covered in different chapters to one another, showing, for example, how cost of capital, capital structure, dividend policy, and capital budgeting combine forces to affect the firm's value.

Also, because spreadsheets such as *Excel*, not financial calculators, are used for most real-world calculations, students need to be proficient with spreadsheets so that they will be more marketable after graduation. Therefore, we explain how to do various types of financial analysis with *Excel*. Working with *Excel* actually has two important benefits: (1) a knowledge of *Excel* is important in the workplace and the job market, and (2) setting up spreadsheet models and analyzing the results also provide useful insights into the implications of financial decisions.

Corporate Valuation as a Unifying Theme

Management's goal is to maximize firm value. Job candidates who understand the theoretical underpinning for value maximization and have the practical skills to analyze business decisions within this context make better, more valuable employees. Our goal is to provide you with both this theoretical underpinning and a practical skill set. To this end, we have developed several integrating features that will help you keep the big picture of value maximization in mind while you are honing your analytical skills:

- Every chapter starts off with a series of integrating *Beginning-of-Chapter Questions* that will help you place the material in the broader context of financial management.
- Most chapters have a valuation graphic and description that show exactly how the material relates to corporate valuation.
- Each chapter has a *Mini Case* that provides a business context for the material.
- Each chapter has an *Excel* spreadsheet *Tool Kit* that steps through all of the calculations in the chapter.
- Each chapter has a spreadsheet *Build-a-Model* that steps you through constructing an *Excel* model to work problems. We've designed these features and tools so that you'll finish your course with the skills to analyze business decisions and the understanding of how these decisions impact corporate value.

Design of the Book

Based on more than 30 years working on *Intermediate Financial Management* and teaching the advanced undergraduate financial management course, we have concluded that the book should include the following features:

- *Completeness*. Because *IFM* is designed for finance majors, it should be self-contained and suitable for reference purposes. Therefore, we specifically and purposely included: (a) some material that overlaps with introductory finance texts and (b) more material than can realistically be covered in a single course. We included in Chapters 2 through 5 some fundamental materials borrowed

directly from other Cengage Learning texts. If an instructor chooses to cover this material, or if an individual student feels a need to cover it on his or her own, it is available. In other chapters, we included relatively brief reviews of first-course topics. This was necessary both to put *IFM* on a stand-alone basis and to help students who have a delay between their introductory and second financial management courses get up to speed before tackling new material. This review is particularly important for working capital management and such "special topics" as mergers, lease analysis, and convertibles—all of which are often either touched on only lightly or skipped in the introductory course. Thus, the variety of topics covered in the text provides adopters with a choice of materials for the second course, and students can use materials that were not covered for reference purposes. We note, though, that instructors must be careful not to bite off more than their students can chew.

- *Theory and applications*. Financial theory is useful to financial decision makers, both for the insights it provides and for direct application in several important decision areas. However, theory can seem sterile and pointless unless its usefulness is made clear. Therefore, in *IFM*, we present theory in a decision-making context, which motivates students by showing them how theory can lead to better decisions. The combination of theory and applications also makes the text more usable as a reference for case courses as well as for real-world decision making.
- *Computer orientation*. Today, a business that does not use computers in its financial planning is about as competitive as a student who tries to take a finance exam without a financial calculator. Throughout the text, we provide computer spreadsheet examples for the calculations and spreadsheet problems for the students to work. This emphasis on spreadsheets both orients students to the business environment they will face upon graduation and helps them understand key financial concepts better.
- *Global perspective*. Successful businesses know that the world's economies are rapidly converging, that business is becoming globalized, and that it is difficult to remain competitive without being a global player. Even purely domestic firms cannot escape the influence of the global economy, because international events have a significant effect on domestic interest rates and economic activity. All of this means that today's finance students—who are tomorrow's financial executives—must develop a global perspective. To this end, *IFM* also contains an entire chapter on multinational financial management. In addition, to help students "think global," we provide examples throughout the text that focus on the types of global problems companies face. Of course, we cannot make multinational finance experts out of students in a conventional corporate finance course, but we can help them recognize that insular decision making is insufficient in today's world.

Beginning-of-Chapter Questions

We start each chapter with several Beginning-of-Chapter (BOC) questions. You will be able to answer some of the questions before you even read the chapter, and you will be able to give better answers after you have read it. Other questions are harder, and you won't feel truly comfortable answering them until after they have been discussed in class. We considered putting the questions at the ends of the chapters, but

we concluded that they would best serve our purposes if placed at the beginning. Here is a summary of our thinking as we wrote the questions:

- The questions indicate to you the key issues covered in the chapter and the things you should know when you complete the chapter.
- Some of the questions were designed to help you remember terms and concepts that were covered in the introductory course. Others indicate where we will be going beyond the intro course.
- You need to be able to relate different parts of financial management to one another, so some of the BOC questions were designed to get you to think about how the various chapters are related to one another. These questions tend to be harder, and they can be answered more completely after a classroom discussion.
- You also need to think about how financial concepts are applied in the real world, so some of the BOC questions focus on the application of theories to the decision process. Again, complete answers to these questions require a good bit of thought and discussion.
- Some of the BOC questions are designed to help you see how *Excel* can be used to make better financial decisions. These questions have accompanying models that provide tutorials on *Excel* functions and commands. The completed models are available on the textbook's Web site. Going through them will help you learn how to use *Excel* as well as give you valuable insights into the financial issues covered in the chapter. We have also provided an "*Excel* Tool Locater," which is an index of all of the *Excel* skills that the BOC models go over. This index is in the *Excel* file, ***Excel Locations.xls***. Because recruiters like students who are good with *Excel*, this will also help you as you look for a good job. It will also help you succeed once you are in the workplace.

We personally have used the BOC questions in several different ways:

- In some classes we simply told students to use the BOC questions or not, as they wished. Some students did study them and retrieve the *Excel* models from the Web, but many just ignored them.
- We have also assigned selected BOC questions and then used them, along with the related *Excel* models, as the basis for some of our lectures.
- Most recently, we literally built our course around the BOC questions.[1] Here we informed students on day one that we would start each class by calling on them randomly and grading them on their answers.[2] We also informed them that our exams would be taken verbatim from the BOC questions. They complained a bit about the quizzes, but the students' course evaluations stated that the quizzes should be continued because without them they would have come to class less well prepared and hence would have learned much less than they did.
- The best way to prepare for the course as we taught it was by first reading the questions, then reading the chapter, and then writing out notes outlining

1. Actually, we broke our course into two segments, one where we covered selected text chapters and another where we covered cases that were related to and illustrated the text chapters. For the case portion of the course, students made presentations and discussed the cases. All of the cases required them to use *Excel*.
2. Most of our students were graduating seniors who were interviewing for jobs. We excused them from class (and the quizzes) if they informed us by e-mail before class that they were interviewing.

answers to the questions in preparation for the oral quiz. We expected students to give complete answers to "easy" questions, but we gave them good grades if they could say enough about the harder questions to demonstrate that they had thought about how to answer them. We would then discuss the harder questions in lieu of a straight lecture, going into the related *Excel* models both to explain *Excel* features and to provide insights into different issues.

- Our midterm and final exams consisted of five of the harder BOC questions, of which three had to be answered in 2 hours in an essay format. It took a much more complete answer to earn a good grade than would have been required on the oral quizzes. We also allowed students to use a four-page "cheat sheet" on the exams.[3] That reduced time spent trying to memorize things as opposed to understanding them. Also, students told us that making up the cheat sheets was a great way to study.

Major Changes in the Twelfth Edition

As in every revision, we updated and clarified sections throughout the text. Specifically, we also made the following changes in content:

References to, implications of, and explanations for the global economic crisis. Last edition we began using the global economic crisis to illustrate important learning points, and we have continued that in this edition with new examples and tie-ins to the chapters' topics.

Additional integration of the textbook and the accompanying Excel Tool Kit spreadsheet models for each chapter. Many figures in the textbook come directly from the chapter's *Excel* ***Tool Kit*** model. This serves two purposes. First, it makes the analysis more transparent to the student; the student or instructor can go to the ***Tool Kit*** and see exactly how all of the numbers in a figure were calculated. Second, it provides an additional resource for students and instructors to use in learning *Excel*.

Improvements in the MicroDrive Examples. For many editions, we have used a hypothetical company, MicroDrive, as a running example. This provides continuity in the examples from chapter to chapter and helps students apply the material more quickly. We have improved the integration in this edition and have made some changes to the financial statements to accommodate our changes. First, the financial statement values are now all integers and in most cases end with a zero, which simplifies calculations. Second, we have separated operating costs into three categories: cost of goods sold (excluding depreciation), other operating costs, and depreciation. This allows for added flexibility when defining ratios and forecasting financial statements. Third, we have modified the financial statements to allow MicroDrive to be the illustrative company for more chapters and more topics than in previous editions. This has been especially important in the systematic risk topic and the free cash flow valuation topic.

3. We did require that students make up their own "cheat sheets," and we required them to turn their sheets in with their exams so we could check for independence.

Significant Changes in Selected Chapters

We made many small improvements within each chapter; some of the more notable ones are discussed below.

Chapter 1: An Overview of Financial Management and the Financial Environment We added a box on high-frequency trading—"Life in the Fast Lane: High-Frequency Trading!"—and a box on mortgage-backed securities, "Anatomy of a Toxic Asset." We also increased our coverage of the global economic crisis to reflect changes in the past 3 years, including a section on the Dodd-Frank Act.

Chapter 2: Risk and Return: Part I As a part of our effort to integrate the illustrative company MicroDrive throughout the book, we made significant changes in this chapter. We begin with a discussion of discrete probability distributions involving different market scenarios and then segue into continuous distributions and estimating means and standard deviations using historical data for MicroDrive. We discuss two-stock portfolios and the impact of diversification by using data for MicroDrive and another company. This sets the stage for a discussion of market risk versus diversifiable risk and the appropriate measure of market risk, beta. We then describe the risk-return relationship defined by the CAPM and the basic concept of market equilibrium. This provides a natural transition into the efficient market hypothesis. We also added optional sections covering the Fama-French three-factor model and behavioral finance. These optional sections can be omitted without loss of continuity, or they can be covered to provide more depth on the topic of market efficiency and asset pricing. This new organization consolidates our treatment of risk and return and also illustrates these concepts with MicroDrive, providing a more effective learning experience for students.

Chapter 4: Bond Valuation We updated the box "Betting With or Against the U.S. Government: The Case of Treasury Bond Credit Default Swaps" to reflect the debt-ceiling crisis of July 2011. We added another new box describing the handful of AAA-rated companies, "The Few, the Proud, the..... AAA-Rated Companies!" We revised another box, "Fear and Rationality," to include the TED spread as well as the Hi-Yield bond spread. We also added a brief discussion of duration and its use as a measure of risk. MicroDrive is the company used as a running example throughout the book. We changed its example bond offering to be consistent with MicroDrive's revised financial statements.

Chapter 6: Accounting for Financial Management We reorganized and better integrated the sections on the statement of cash flows, operating cash flow, and free cash flow. We now have a single section focusing on the use of free cash flow and its components as performance measures. We added two new boxes. "Filling in the GAAP" describes the planned convergence of GAAP and IFRS; "When It Comes to Taxes, History Repeats and Repeals Itself!" discusses the actual taxes (or lack thereof) paid by many corporations. MicroDrive is the company used as a running example throughout the book. We changed its financial statements so that MicroDrive would provide additional learning points when we cover valuation and forecasting in Chapters 8 and 9.

Chapter 7: Analysis of Financial Statements In previous editions, we defined the inventory turnover ratio using sales instead of COGS because some compilers of financial ratio statistics, such as Dun & Bradstreet, use the ratio of sales to inventories. However, most sources now report the turnover ratio using COGS, so we have changed our definition to conform to the majority of reporting organizations and now define the inventory turnover ratio as COGS/Inventories. Also, to be more consistent with many Web-based reporting organizations, we now define the debt ratio as total debt divided by total assets, the market debt ratio as total debt divided by total debt plus the market value of equity, and the debt-to-equity ratio as total debt divided by total common equity. MicroDrive is the company used as a running example throughout the book, and we changed its financial statements (which change its ratios) so that MicroDrive would offer additional learning points when we cover valuation and forecasting in Chapters 8 and 9.

Chapter 8: Basic Stock Valuation We have substantially restructured the chapter on stock valuation. Rather than starting with the constant growth dividend growth model, we begin with the constant growth free cash flow valuation model and progress to the nonconstant growth version. The dividend growth model is presented as a special case of the free cash flow model. This change serves two purposes. First, it makes more sense to begin with a model that has broad application, unlike the constant growth dividend model, which can be applied successfully to only a small minority of companies. Second, it allows the chapter to tie in better with the earlier and financial statement chapters and the later valuation chapters. We have re-written the examples to work with MicroDrive, with free cash flows calculated as in the earlier financial statements chapter. We have also added sections on identifying value drivers, stock price volatility, and the long-run nature of stock prices.

Chapter 9: Corporate Valuation and Financial Planning We restructured this chapter to better integrate with the basic stock valuation chapter and with later chapters that use stock valuation techniques. We separated financial statement forecasting into two parts—forecasting operations first, and then forecasting the remaining parts of the financial statements. Additional funds needed (AFN) calculations are now an integral part of this step.

Chapter 10: Corporate Governance We moved the valuation material from the previous edition to the stock valuation chapter (Chapter 8) and to the financial forecasting chapter (Chapter 9). In addition to better integrating the topics in those chapters, the move allows us to focus on agency conflicts and corporate governance in this chapter.

Chapter 11: Determining the Cost of Capital We added a new box, "How Effective Is the Effective Corporate Tax Rate?" This box shows the differences between the statutory rate and the effective rate over time; it also compares the U.S. statutory and effective rate with those of other developed economies. For better integration, we now use the company in our running example, MicroDrive, to illustrate cost of capital estimation. We streamlined the chapter's coverage of the forward-looking risk premium by moving the discussion of the relatively complex multistage model to a Web Extension. This allows the text's coverage of the forward-looking premium focus on the concepts all MBA students need to

understand, while at the same time letting the Web Extension address additional issues in more detail, such as the application of multistage models and the impact of stock repurchases. We now cover the own-bond-yield-plus-judgmental-risk-premium approach in the section on privately held companies, because this approach is used more often for such companies.

Chapter 12: Capital Budgeting: Decision Criteria We improved the integration with Chapter 13 by revising the numerical example in Chapter 12 so that the cash flows for Project L are now the cash flows that we estimate in Chapter 13. We put all the material related to IRR (such as the possibility of multiple IRRs) in a single section to make our coverage of IRR more cohesive.

Chapter 13: Capital Budgeting: Estimating Cash Flow and Analyzing Risk We revised the numerical example so that the cash flows we estimate in this chapter are the same cash flows we use in Chapter 12 for Project L.

Chapter 16: Capital Structure Decisions While updating Section 16-4 to include results from the latest empirical tests, we also reorganized the material and added subheadings to make it easier for students to synthesize. We moved the current valuation of Strausburg, the illustrative company, so that it immediately precedes Strausburg's recapitalization, which provides a better segue into the valuation effects of recapitalizations.

Chapter 17: Dynamic Capital Structures and Corporate Valuation We rewrote the chapter and organized it around the fundamental concept that a levered firm's value is equal to its unlevered value plus any side effects due to leverage. From this general concept, we examine special cases, including the MM models and the compressed adjusted present value (APV) model. In addition to the static case of a constant capital structure and constant growth, we apply the APV model to situations with dynamic capital structures that vary from year to year before becoming constant. We retained the MM proofs and put them in a separate section, which provides flexibility to instructors in selecting topics to cover.

Chapter 18: Initial Public Offerings, Investment Banking, and Financial Restructuring We added a section describing how the offer price is set in an IPO.

Chapter 19: Lease Financing We changed the definition of the net advantage of leasing (NAL) to "NAL = Present value of leasing – Present value of owning." Both present values are negative, so a positive NAL means that leasing should be preferred. The results from using this definition of NAL are unchanged from previous editions, but our students find this definition more intuitive.

Chapter 20: Hybrid Financing: Preferred Stock, Warrants, and Convertibles We added a new box describing the deductibility of preferred dividends by Section 521 cooperatives entitled "Hybrids Aren't Only for Corporations."

Chapter 21: Supply Chains and Working Capital Management We added two new boxes, "Your Check Isn't in the Mail" and "A Wag of the Finger or Tip of the Hat? The Colbert Report and Small Business Payment Terms." We rewrote the first section in the chapter to better distinguish between cash (including cash equivalents and marketable securities) used to support current operations and short-term investments (including marketable securities) held for possible future uses. We continued

this distinction throughout the chapter in our discussions of cash management and managing short-term investments. Recall that in Chapter 6 we updated our definition of inventory turnover ratio to COGS/Inventories to be consistent with the majority of reporting, so we followed through with that definition in Chapter 21.

Chapter 24: Enterprise Risk Management We rewrote much of the chapter, changing it from a chapter about derivatives with applications in risk management to a chapter about enterprise risk management with applications of derivatives as one of several tools in managing risk. We adapted the general enterprise risk management framework of the Treadway Commission's Committee of Sponsoring Organizations (COSO) because it satisfies the requirements of the Sarbanes-Oxley Act and the Foreign Corrupt Practices Act (FCPA). We now include the use of Monte Carlo simulation as a technique for identifying risk. We use the results of a simulation example to illustrate VaR and the expected shortfall (ES) measures that is recommended by Basel III.

Chapter 25: Bankruptcy, Reorganization, and Liquidation We added a new section describing the events leading to GM's government bailout, bankruptcy, and IPO.

Chapter 26: Mergers and Corporate Control We added a section explaining how the stock-swap ratio is determined for mergers where the payment is in the form of the acquiring company's stock.

Chapter 27: Multinational Financial Management We added a section on foreign exchange notation to ensure that all readers will better understand the relative values of currencies as reported by the financial press. We added a new figure showing the growth in employment by U.S. multinational corporations, including the mix of domestic and international employment. We added a new figure showing the value of the dollar index relative to major currencies to show how demand for the dollar and its relative value has changed over time. We added a new section on sovereign debt, including a brief discussion of the current Greek debt crisis.

Test Bank The instructor's test bank has been updated and revised with many new questions and problems.

OTHER WAYS THE BOOK CAN BE USED

The second corporate finance course can be taught in a variety of other ways, depending on a school's curriculum structure and the instructor's personal preferences. We have been focusing on the BOC questions and discussions, but we have used alternative formats, and all can work out very nicely. Therefore, we designed the book so that it can be flexible.

Mini Cases as a framework for lectures.
We originally wrote the Mini Cases specifically for use in class. We had students read the chapter and the Mini Case, and then we systematically went through it in class to "explain" the chapter. (See the section titled "The Instructional Package" later in this Preface for a discussion of lecture aids available from Cengage Learning.) Here we use a *PowerPoint* slide show, which is located on the instructor's Web site, and which we make available to students on our own course Web site. Students bring a printout of the slides to class, which makes it easier to take good notes.

Generally, it takes us about two hours to frame the issues with the opening questions and then go through a Mini Case, so we allocate that much time. We want to facilitate questions and class discussion, and the Mini Case format stimulates both.

The Mini Cases themselves provide case content, so it is not as necessary to use regular cases as it would be if we used lectures based entirely on text chapters. Still, we like to use a number of the free-standing cases that are available from Cengage-Compose, Cengage Learning's online case library, at **http://compose.cengage.com**, and we have teams of students present their findings in class. The presenters play the role of consultants teaching newly hired corporate staff members (the rest of the class) how to analyze a particular problem, and we as instructors play the role of "chief consultant"—normally silent but available to answer questions if the student "consultants" don't know the answers (which is rare). We use this format because it is more realistic to have students think about *how to analyze* problems than to focus on the final decision, which is really the job of corporate executives with far more experience than undergraduate students.

To ensure that nonpresenting students actually study the case, we call on them randomly before the presentation begins, we grade them on class participation, and our exams are patterned closely after the material in the cases. Therefore, nonpresenting students have an incentive to study and understand the cases and to participate when the cases are discussed in class. This format has worked well, and we have obtained excellent results with a relatively small amount of preparation time. Indeed, some of our Ph.D. students with no previous teaching experience have taught the course entirely on their own, following our outline and format, and also obtained excellent results.

An emphasis on basic material.

If students have not gained a thorough understanding of the basic concepts from their earlier finance courses, instructors may want to place more emphasis on the basics and thus cover Chapters 2 through 5 in detail rather than merely as a review. We even provide a chapter (Web Chapter 28) on time value of money skills on the textbook's Web site for students who need an even more complete review. Then, Chapters 6 through 17 can be covered in detail, and any remaining time can be used to cover some of the other chapters. This approach gives students a sound background on the core of financial management, but it does not leave sufficient time to cover a number of interesting and important topics. However, because the book is written in a modular format, if students understand the fundamental core topics they should be able to cover the remaining chapters on their own, if and when the need arises.

A case-based course.

At the other extreme, where students have an exceptionally good background, hence little need to review topics that were covered in the basic finance course, instructors can spend less time on the early chapters and concentrate on advanced topics. When we take this approach, we assign Web Chapter 29 as a quick review and then assign cases that deal with the topics covered in the early chapters. We tell students to review the other relevant chapters on their own to the extent necessary to work the cases, thus freeing up class time for the more advanced material. This approach works best with relatively mature students, including evening students with some business experience.

COMPREHENSIVE LEARNING SOLUTIONS

Intermediate Financial Management includes a broad range of ancillary materials designed both to enhance students' learning and to help instructors prepare for and conduct classes.

Supplemental Student Resources

Students: Access all of the below resources by visiting **www.cengagebrain.com**, searching ISBN 9781285850030, and clicking "Access Now" under "Study Tools" to go to the student textbook companion site.

Beginning of chapter (BOC) spreadsheets. Many of the integrative questions that appear at the start of each chapter have a spreadsheet model that illustrates the topic. There is also an index of the *Excel* techniques covered in the BOC *Excel* models. This index is in the *Excel* file, ***Excel Locations.xls***, and it provides a quick way to locate examples of *Excel* programming techniques

End of chapter Build-a-Model spreadsheet problems. In addition to the Tool Kits and Beginning of Chapter models, most chapters have a "Build a Model" spreadsheet problem. These spreadsheets contain financial data plus instructions for solving a particular problem. The model is partially completed, with headings but no formulas, so the models must literally be built. The partially completed spreadsheets for these "Build a Model" problems are on the student companion Web site, with the completed versions available to instructors.

Mini Case spreadsheets. These *Excel* spreadsheets do all the calculations required in the Mini Cases. They are similar to the Tool Kits for the chapter, except: (a) the numbers in the examples correspond to the Mini Case rather than to the chapter per se, and (b) there are some features that make it possible to do "what-if" analyses on a real-time basis in class.

Web Chapters and Web Extensions. Web chapters provide a chapter-length discussion of specialized topics that are not of sufficient general interest to warrant inclusion in the printed version of the text. Web extensions provide additional discussion or examples pertaining to material that is in the text.

Instructor Resources

Instructors: Access the above chapter resources and the following instructor ancillaries by going to **www.cengage.com/login**, logging in with your faculty account username and password, and using ISBN 9781285850030 to search for and to add resources to your account "Bookshelf."

- ***Instructor's Manual.*** This comprehensive manual contains answers to all the Beginning-of-Chapter Questions, end-of-chapter questions and problems, and Mini Cases.
- ***PowerPoint® slides.*** Created by the authors, the PowerPoint® slides cover essential topics for each chapter. Graphs, tables, and lists are developed sequentially for your convenience and can be easily modified for your needs. There are also slides that are specifically based on each chapter's Mini Case and in which graphs, tables, lists, and calculations are developed sequentially.

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Errors in the Text

At this point, authors generally say something like this: "We appreciate all the help we received from the people listed above, but any remaining errors are, of course, our own responsibility." And in many books, there are plenty of remaining errors. Having experienced difficulties with errors ourselves, both as students and as instructors, we resolved to avoid this problem in *Intermediate Financial Management*. As a result of our error detection procedures, we are convinced that the book is relatively free of mistakes.

Partly because of our confidence that few such errors remain, but primarily because we want very much to detect those errors that may have slipped by to correct them in subsequent printings, we decided to offer a reward of $10 per error to the first person who reports it to us. For purposes of this reward, errors are defined as

misspelled words, nonrounding numerical errors, incorrect statements, and any other error that inhibits comprehension. Typesetting problems such as irregular spacing and differences in opinion regarding grammatical or punctuation conventions do not qualify for this reward. Finally, any qualifying error that has follow-through effects is counted as two errors only. Please report any errors to Phillip Daves at the following email address: pdaves@utk.edu.

Conclusion

Finance is, in a real sense, the cornerstone of the free enterprise system. Good financial management is therefore vitally important to the economic health of business firms, hence to the nation and the world. Because of its importance, financial management should be thoroughly understood. However, this is easier said than done. The field is relatively complex, and it is undergoing constant change in response to shifts in economic conditions. All of this makes financial management stimulating and exciting, but also challenging and sometimes perplexing. We sincerely hope that the Twelfth Edition of *Intermediate Financial Management* will help you understand the financial problems faced by businesses today, as well as the best ways to solve those problems.

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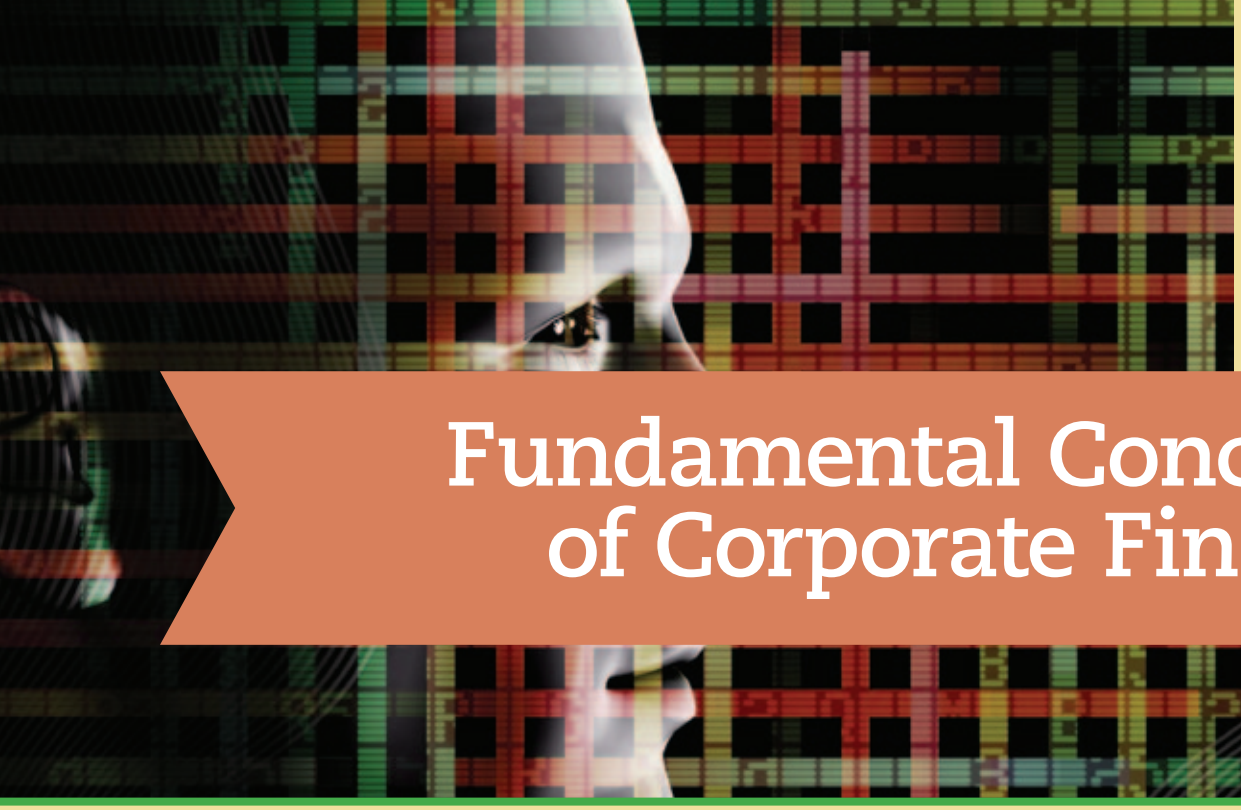


PART

Fundamental Concepts of Corporate Finance

CHAPTER 1

An Overview of Financial Management and the Financial Environment

This book is designed to explain what "financial management" is all about and to show how it can be used to help increase the value of a firm. It is intended for use in a second-level finance course, following the introductory course. Only the basic course is prerequisite, so if students have taken other finance courses, especially on investments or capital markets, they will find some of the material a review.

The book is often used in a "capstone" course taken during the last term before graduation. This is an exhilarating time for students, with graduation looming and a job search under way. It is also a good time to step back from the technical skills developed in the classroom and to look at the big picture of why financial management is so important. Spending the time now to develop a good overview of financial management can be tremendously valuable to your career. Why is financial management so valuable? In a nutshell, because it explains both how managers can increase their firms' value and why it is essential for them to do so.

Today's business environment is more complicated than ever. Investors are increasingly forcing managers to focus on value maximization, but events ranging from the scandals at Enron, WorldCom, Tyco, and a host of other companies during the early 2000s to the global financial meltdown and recession at the end of that decade have shown that ethical behavior and managerial accountability are crucial prerequisites. Mastering the technical details of financial management and understanding its role within the firm is important to graduating students because companies want to hire people who can make decisions with the broad corporate goal of value maximization in mind. Therefore, students who understand the principles of value maximization have a major advantage in the job market over students who do not. Demonstrating that you understand all this can make a big difference in both the quality of your initial job and your subsequent career path.

Beginning-of-Chapter Questions

As you read the chapter, consider how you would answer the following questions. You *should not* necessarily be able to answer the questions before you read the chapter. Rather, you should use them to get a sense of the issues covered in the chapter. After reading the chapter, you should be able to give at least partial answers to the questions, and you should be able to give better answers after the chapter has been discussed in class. Note, too, that it is often useful, when answering conceptual questions, to use hypothetical data to illustrate your answer. For example, your answer to Question 2 would probably be better if it were illustrated

with numbers. We have done this, using *Excel*; our model is available on the textbook's Web site. Accessing the model and working through it is a useful exercise.

1. What is presumed to be the **primary goal** of financial management? How is this goal related to other societal goals and considerations? Is this goal consistent with the basic assumptions of microeconomics? Are managers' actions always consistent with this goal?
2. Finance is all about **valuation**—how to estimate asset values and what to do to increase them. We develop and use *Excel* models throughout the book. We start that process in this chapter with simple models used to value bonds, stocks, and capital budgeting projects. Working through the model will give you a refresher in valuation plus a refresher on (or preview of) *Excel*. The model can be accessed on the textbook's Web site under the "Chapter Models" section. If you have never used *Excel* at all, then you should not attempt to use it to help answer this question, or if you do, you should not get frustrated if you have trouble.
    a. Explain how to find the value of a bond given the rate of interest it pays (its coupon rate), its par value (assume $1,000), and the going rate of interest on bonds with the same risk and maturity.
    b. Explain how to find the value of a stock given its last dividend, its expected growth rate, and its required rate of return.
    c. Explain how to find the value of a capital budgeting project given its cost, its expected annual net cash flows, its life, and its cost of capital.
    d. In each of the above cases, discuss how changes in the inputs would affect the output. Would it matter if the outputs were highly sensitive to changes in the inputs?
3. What are the advantages of the corporate form over a sole proprietorship or a partnership? What are the disadvantages of this form?
4. What are the various factors that affect the cost of money and hence interest rates? How will changes in these components affect asset prices?
5. What is securitization? How is securitization supposed to help banks and S&Ls manage risks and increase homeowners' access to capital?
6. What was the global economic crisis? This is a really big question, so specifically, explain how in our interconnected global economy a decrease in housing prices in large U.S. cities ended up bankrupting Norwegian retirees.

1-1 How to Use this Text

In your introductory finance course you learned a number of terms and concepts, and you now have an idea of what financial management is all about. However, you probably focused on individual chapters, or sections of chapters, and you probably prepared for exams that consisted of relatively simple problems and short-answer questions, often given in a multiple-choice format. That was a necessary part of the learning process, but now it is time to move on.

In *Intermediate Financial Management*, we go back over much of what you covered in the introductory course, plus introduce new material. However, our focus now is different. At this point we want you to learn how to *apply* the concepts, how to obtain the data necessary to implement the various decision models, and how to relate the various parts of finance to one another. So, while we revisit topics such as the net present value (NPV) and internal rate of return (IRR) methods, we delve into them more deeply, considering how to streamline and automate the calculations, how to obtain the necessary data, and how errors in the data affect the outcome. We also spend more time comparing the topics covered in different chapters to one

WEB

Visit the textbook's Web site. This ever-evolving site, for students and instructors, is a tool for teaching, learning, financial research, and job searches.

THE GLOBAL ECONOMIC CRISIS

The global economic crisis is like a guest at a party who has one drink and is very interesting and entertaining but who then has many more drinks, gets sick, and lingers on after everyone else has left. At the risk of oversimplification, this is what happened during the past decade: Many of the world's individuals, financial institutions, and governments borrowed too much money and used those borrowed funds to make speculative investments. Those investments turned out to be worth less than the amounts owed by the borrowers, forcing widespread bankruptcies, buyouts, and restructurings for both borrowers and lenders. This in turn reduced the supply of available funds that financial institutions normally lent to creditworthy individuals, manufacturers, and retailers. Without access to credit, consumers bought less, manufacturers produced less, and retailers sold less—all of which led to layoffs. According to the National Bureau of Economic Research, the resulting recession in the United States lasted from December 2007 through June 2009. But as we write this chapter in 2014, the U.S. and global economies are still not growing very quickly. As we progress through this chapter and the rest of the book, we will discuss different aspects of the crisis. For real-time updates, go to the Global Economic Watch (GEW) Resource Center at **www.cengage.com/thewatch**.

another. For example, you probably did not spend much time considering how the cost of capital, capital structure, dividend policy, and capital budgeting are related to one another, but we now discuss these critically important relationships.

Also, since spreadsheets such as *Excel*, not financial calculators, are used to analyze actual business decisions, you need to be proficient with spreadsheets to get many good jobs and certainly to succeed in those jobs. Therefore, we explain how to do the most common types of financial analyses using *Excel*. This focus has two benefits: Knowledge of *Excel* is useful per se, and setting up and analyzing the output from spreadsheet models will also teach you a lot about financial concepts.

To help sharpen your focus, we start each chapter with several *Beginning-of-Chapter Questions*. Some of these questions are designed to help you see how the chapter ties in with other chapters, while others will help you think about how the concepts are applied in the real world. You probably won't be able to answer all of the questions when you start working through the chapter, but that's fine! The questions aren't a pre-test. Their purpose is to help guide you through the material, and having them in mind when you read will help you understand the chapter in a more integrative and relevant way.

Most of the chapters have two spreadsheet models, which are available on the textbook's Web site. The first is a "Tool Kit," which contains the *Excel* models used to generate most of the tables and examples in the chapter. The second is a model that deals with specific Beginning-of-Chapter Questions. Both models contain notes and comments that explain the *Excel* procedures we used, so they can be used as a tutorial for learning more about both *Excel* and finance. Again, since recruiters prefer students who are good with *Excel*, learning more about it will help you get a better job and then succeed in it.

WWW

Consult **www.careers-in-finance.com** for an excellent site containing information on a variety of business career areas, listings of current jobs, and other reference materials.

COLUMBUS WAS WRONG—THE WORLD *IS* FLAT! AND HOT! AND CROWDED!

In his best-selling book *The World Is Flat*, Thomas L. Friedman argues that many of the barriers that long protected businesses and employees from global competition have been broken down by dramatic improvements in communication and transportation technologies. The result is a level playing field that spans the entire world. As we move into the information age, any work that can be digitized will flow to those able to do it at the lowest cost, whether they live in San Jose's Silicon Valley or Bangalore, India. For physical products, supply chains now span the world. For example, raw materials might be extracted in South America, fabricated into electronic components in Asia, and then used in computers assembled in the United States, with the final product being sold in Europe.

Similar changes are occurring in the financial markets, as capital flows across the globe to those who can best use it. Indeed, the combined China and Hong Kong IPO market is comparable in size to the combined Europe and U.S. IPO market.

Unfortunately, a dynamic world can bring runaway growth, which can lead to significant environmental problems and energy shortages. Friedman describes these problems in another bestseller, *Hot, Flat, and Crowded*. In a flat world, the keys to success are knowledge, skills, and a great work ethic. In a flat, hot, and crowded world, these factors must be combined with innovation and creativity to deal with truly global problems.

1-2 The Corporate Life Cycle

Many major corporations, including Apple and Hewlett-Packard, began life in a garage or basement. How is it possible for such companies to grow into the giants we see today? No two companies develop in exactly the same way, but the following sections describe some typical stages in the corporate life cycle.

1-2a Starting Up as a Proprietorship

Many companies begin as a **proprietorship**, which is an unincorporated business owned by one individual. Starting a business as a proprietor is easy—one merely begins business operations after obtaining any required city or state business licenses. The proprietorship has three important advantages: (1) it is easily and inexpensively formed, (2) it is subject to few government regulations, and (3) its income is not subject to corporate taxation but is taxed as part of the proprietor's personal income.

However, the proprietorship also has three important limitations: (1) It may be difficult for a proprietorship to obtain the capital needed for growth. (2) The proprietor has unlimited personal liability for the business's debts, which can result in losses that exceed the money invested in the company (creditors may even be able to seize a proprietor's house or other personal property!). (3) The life of a proprietorship is limited to the life of its founder. For these three reasons, sole proprietorships are used primarily for small businesses. In fact, proprietorships account for only about 4% of all sales, based on dollar values, even though about 72% of all companies are proprietorships.

1-2b More Than One Owner: A Partnership

Some companies start with more than one owner, and some proprietors decide to add a partner as the business grows. A **partnership** exists whenever two or more persons or entities associate to conduct a noncorporate business for profit. Partnerships may operate under different degrees of formality, ranging from informal, oral understandings to formal agreements filed with the secretary of the state in which the partnership was formed. Partnership agreements define the ways any profits and losses are shared between partners. A partnership's advantages and disadvantages are generally similar to those of a proprietorship.

Regarding liability, the partners potentially can lose all of their personal assets, even assets not invested in the business, because under partnership law, each partner is liable for the business's debts. Therefore, in the event the partnership goes bankrupt, if any partner is unable to meet his or her pro rata liability then the remaining partners must make good on the unsatisfied claims, drawing on their personal assets to the extent necessary. To avoid this, it is possible to limit the liabilities of some of the partners by establishing a **limited partnership**, wherein certain partners are designated **general partners** and others **limited partners**. In a limited partnership, the limited partners can lose only the amount of their investment in the partnership, while the general partners have unlimited liability. However, the limited partners typically have no control—it rests solely with the general partners—and their returns are likewise limited. Limited partnerships are common in real estate, oil, equipment-leasing ventures, and venture capital. However, they are not widely used in general business situations, because usually no partner is willing to be the general partner and thus accept the majority of the business's risk, and no partners are willing to be limited partners and give up all control.

In both regular and limited partnerships, at least one partner is liable for the debts of the partnership. However, in a **limited liability partnership (LLP)**, sometimes called a **limited liability company (LLC)**, all partners enjoy limited liability with regard to the business's liabilities, and their potential losses are limited to their investment in the LLP. Of course, this arrangement increases the risk faced by an LLP's lenders, customers, and suppliers.

1-2c Many Owners: A Corporation

Most partnerships have difficulty attracting substantial amounts of capital. This is generally not a problem for a slow-growing business, but if a business's products or services really catch on, and if it needs to raise large sums of money to capitalize on its opportunities, then the difficulty in attracting capital becomes a real drawback. Thus, many growth companies, such as Hewlett-Packard and Microsoft, began life as a proprietorship or partnership, and at some point their founders decided to convert to a corporation. On the other hand, some companies, in anticipation of growth, actually begin as corporations. A **corporation** is a legal entity created under state laws, and it is separate and distinct from its owners and managers. This separation gives the corporation three major advantages: (1) *unlimited life*—a corporation can continue after its original owners and managers are deceased; (2) *easy transferability of ownership interest*—ownership interests are divided into shares of stock, which can be transferred far more easily than can proprietorship or partnership interests; and (3) *limited liability*—losses are limited to the actual funds invested.

To illustrate limited liability, suppose you invested $10,000 in a partnership that then went bankrupt and owed $1 million. Because the owners are liable for the debts of a partnership, you could be assessed for a share of the company's debt, and you could be held liable for the entire $1 million if your partners could not pay their shares. On the other hand, if you invested $10,000 in the stock of a corporation that went bankrupt, your potential loss on the investment would be limited to your $10,000 investment.[1] Unlimited life, easy transferability of ownership interest, and limited liability make it much easier for corporations than proprietorships or partnerships to raise money in the financial markets and grow into large companies.

The corporate form offers significant advantages over proprietorships and partnerships, but it also has two disadvantages: (1) Corporate earnings may be subject to double taxation—the earnings of the corporation are taxed at the corporate level, and then earnings paid out as dividends are taxed again as income to the stockholders. (2) Setting up a corporation involves preparing a charter, writing a set of bylaws, and filing the many required state and federal reports, which is more complex and time-consuming than creating a proprietorship or a partnership.

The **charter** includes the following information: (1) name of the proposed corporation, (2) types of activities it will pursue, (3) amount of capital stock, (4) number of directors, and (5) names and addresses of directors. The charter is filed with the secretary of the state in which the firm will be incorporated, and when it is approved, the corporation is officially in existence.[2] After the corporation begins operating, quarterly and annual employment, financial, and tax reports must be filed with state and federal authorities.

The **bylaws** are a set of rules drawn up by the founders of the corporation. Included are such points as: (1) how directors are to be elected (all elected each year or perhaps one-third each year for 3-year terms), (2) whether the existing stockholders will have the first right to buy any new shares the firm issues, and (3) procedures for changing the bylaws themselves, should conditions require it.

There are several different types of corporations. Professionals such as doctors, lawyers, and accountants often form a **professional corporation (PC)** or a **professional association (PA)**. These types of corporations do not relieve the participants of professional (malpractice) liability. Indeed, the primary motivation behind the professional corporation was to provide a way for groups of professionals to incorporate in order to avoid certain types of unlimited liability yet still be held responsible for professional liability.

Finally, if certain requirements are met, particularly with regard to size and number of stockholders, owners can establish a corporation but elect to be taxed as if the business were a proprietorship or partnership. Such firms, which differ not in organizational form but only in how their owners are taxed, are called **S corporations**.

1. In the case of very small corporations, the limited liability may be fiction because lenders frequently require personal guarantees from the stockholders.
2. More than 60% of major U.S. corporations are chartered in Delaware, which has, over the years, provided a favorable legal environment for corporations. It is not necessary for a firm to be headquartered, or even to conduct operations, in its state of incorporation, or even in its country of incorporation.

1-2d Growing and Managing a Corporation

Once a corporation has been established, how does it evolve? When entrepreneurs start a company, they usually provide all the financing from their personal resources, which may include savings, home equity loans, or even credit cards. As the corporation grows, it will need factories, equipment, inventory, and other resources to support its growth. In time, the entrepreneurs usually deplete their own resources and must turn to external financing. Many young companies are too risky for banks, so the founders must sell stock to outsiders, including friends, family, private investors (often called angels), or venture capitalists. If the corporation continues to grow, it may become successful enough to attract lending from banks, or it may even raise additional funds through an **initial public offering (IPO)** by selling stock to the public at large. After an IPO, corporations support their growth by borrowing from banks, issuing debt, or selling additional shares of stock. In short, a corporation's ability to grow depends on its interactions with the financial markets, which we describe in much more detail later in this chapter.

For proprietorships, partnerships, and small corporations, the firm's owners are also its managers. This is usually not true for a large corporation, which means that large firms' stockholders, who are its owners, face a serious problem. What is to prevent managers from acting in their own best interests, rather than in the best interests of the stockholder/owners? This is called an **agency problem**, because managers are hired as agents to act on behalf of the owners. Agency problems can be addressed by a company's **corporate governance**, which is the set of rules that control the company's behavior toward its directors, managers, employees, shareholders, creditors, customers, competitors, and community. We will have much more to say about agency problems and corporate governance throughout the book, especially in Chapters 10, 15, and 16.

SELF TEST

What are the key differences between proprietorships, partnerships, and corporations?

Describe some special types of partnerships and corporations, and explain the differences among them.

1-3 The Primary Objective of the Corporation: Value Maximization

Shareholders are the owners of a corporation, and they purchase stocks because they want to earn a good return on their investment without undue risk exposure. In most cases, shareholders elect directors, who then hire managers to run the corporation on a day-to-day basis. Because managers are supposed to be working on behalf of shareholders, they should pursue policies that enhance shareholder value. Consequently, throughout this book we operate on the assumption that management's primary objective should be *stockholder wealth maximization.*

The **market price** is the stock price that we observe in the financial markets. We later explain in detail how stock prices are determined, but for now it is enough to say that a company's market price incorporates the information available to

ETHICS FOR INDIVIDUALS AND BUSINESSES

A firm's commitment to business ethics can be measured by the tendency of its employees, from the top down, to adhere to laws, regulations, and moral standards relating to product safety and quality, fair employment practices, fair marketing and selling practices, the use of confidential information for personal gain, community involvement, and illegal payments to obtain business.

Ethical Dilemmas. When conflicts arise between profits and ethics, sometimes legal and ethical considerations make the choice obvious. At other times the right choice isn't clear. For example, suppose Norfolk Southern's managers know that its trains are polluting the air, but the amount of pollution is within legal limits and further reduction would be costly, causing harm to their shareholders. Are the managers ethically bound to reduce pollution? Aren't they also ethically bound to act in their shareholders' best interests? This is clearly a dilemma.

Ethical Responsibility. Over the past few years, illegal ethical lapses have led to a number of bankruptcies, which have raised this question: Were the *companies* unethical, or was it just a few of their *employees*? Arthur Andersen, an accounting firm, audited Enron, WorldCom, and several other companies that committed accounting fraud. The U.S. Justice Department concluded that Andersen itself was guilty because it fostered a climate in which unethical behavior was permitted and built an incentive system that made such behavior profitable to both the perpetrators and the firm itself. As a result, Andersen went out of business. Anderson was later judged to be not guilty, but by the time the judgment was rendered the company was already out of business. People simply did not want to deal with a tainted accounting firm.

Protecting Ethical Employees. If employees discover questionable activities or are given questionable orders, should they obey their bosses' orders, refuse to obey those orders, or report the situation to a higher authority, such as the company's board of directors, its auditors, or a federal prosecutor? In 2002 Congress passed the Sarbanes-Oxley Act, with a provision designed to protect "whistleblowers." If an employee reports corporate wrongdoing and later is penalized, he or she can ask the Occupational Safety and Health Administration to investigate the situation. If the employee was improperly penalized, the company can be required to reinstate the person, along with back pay and a sizable penalty award. Several big awards have been handed out since the act was passed.

investors. If the market price reflects all *relevant* information, then the observed price is the **intrinsic price**, also called the **fundamental price**.

However, investors rarely have all relevant information. Companies report most major decisions, but they may withhold selected information to prevent competitors from gaining strategic advantages. In addition, managers may take actions that boost bonuses linked to higher current earnings yet actually decrease future cash flows, such as reducing scheduled maintenance. As we show in Chapter 8, short-term focus can reduce the intrinsic price but might actually increase the market price if such actions are difficult for investors to discern immediately. Thus, the market price can deviate from the intrinsic price. In this example, the market price initially would go up relative to the intrinsic price, but it would then fall in the future as the company experienced production problems due to poorly maintained equipment.

Therefore, when we say management's objective should be to maximize stockholder wealth, we really mean it is to *maximize the fundamental price of the firm's common stock*, not just the current market price. Firms do, of course, have other objectives; in particular, the managers who make the actual decisions are interested in their own personal satisfaction, in their employees' welfare, and in the good of

their communities and society at large. Still, for the reasons set forth in the following sections, *maximizing intrinsic stock value should be the most important objective for most corporations.*

1-3a Intrinsic Stock Value Maximization and Social Welfare

WWW

The Investment Company Institute is a great source of information. For updates on mutual fund ownership, see **www.ici.org/research#fact_books**.

If a firm attempts to maximize its intrinsic stock value, is this good or bad for society? In general, it is good. Aside from such illegal actions as fraudulent accounting, exploiting monopoly power, violating safety codes, and failing to meet environmental standards, *the same actions that maximize intrinsic stock values also benefit society.* Here are some of the reasons:

1. **Most individuals have a stake in the stock market.** Seventy-five years ago this was not true, because most stock ownership was concentrated in the hands of a relatively small segment of society consisting of the wealthiest individuals. More than 44% of all U.S. households now own mutual funds, as compared with only 4.6% in 1980. When direct stock ownership and indirect ownership through pension funds are also considered, many members of society now have an important stake in the stock market, either directly or indirectly. Therefore, when a manager takes actions to maximize the stock price, this improves the quality of life for millions of ordinary citizens.
2. **Consumers benefit.** Stock price maximization requires efficient, low-cost businesses that produce high-quality goods and services at the lowest possible cost. This means that companies must develop products and services that consumers want and need, which leads to new technology and new products. Also, companies that maximize their stock price must generate growth in sales by creating value for customers in the form of efficient and courteous service, adequate stocks of merchandise, and well-located business establishments.

   People sometimes argue that firms, in their efforts to raise profits and stock prices, increase product prices and gouge the public. In a reasonably competitive economy, which we have, prices are constrained by competition and consumer resistance. If a firm raises its prices beyond reasonable levels, it will simply lose market share. Even giant firms such as Dell and Coca-Cola lose business to domestic and foreign competitors if they set prices above the level necessary to cover production costs plus a "normal" profit. Of course, firms *want* to earn more, and they constantly try to cut costs, develop new products, and so on, and thereby earn above-normal profits. Note, though, that if they are indeed successful and do earn above-normal profits, those very profits will attract competition, which will eventually drive prices down. So again, the main long-term beneficiary is the consumer.
3. **Employees benefit.** In some situations a stock increases when a company announces plans to lay off employees, but viewed over time this is the exception rather than the rule. In general, companies that successfully increase stock prices also grow and add more employees, thus benefiting society. Note, too, that many governments across the world, including U.S. federal and state governments, are privatizing some of their state-owned activities by selling these operations to investors. Perhaps not surprisingly, the sales and cash flows of recently privatized companies generally improve. Moreover, studies show that newly privatized companies tend to grow and thus require more employees when they are managed with the goal of stock price maximization.

1-3b Managerial Actions to Maximize Shareholder Wealth

What types of actions can managers take to maximize shareholder wealth? To answer this question, we first need to ask, "What determines a firm's value?" In a nutshell, it is *a company's ability to generate cash flows now and in the future.*

We address different aspects of this in detail throughout the book, but we can lay out three basic facts now: (1) Any financial asset, including a company's stock, is valuable only to the extent that it generates cash flows. (2) The timing of cash flows matters—cash received sooner is better. (3) Investors are averse to risk, so all else equal, they will pay more for a stock whose cash flows are relatively certain than for one whose cash flows are more risky. Therefore, managers can increase their firm's value by increasing the size of the expected cash flows, by speeding up their receipt, and by reducing their risk.

The cash flows that matter are called **free cash flows (FCF)**, not because they are free, but because they are available (or free) for distribution to all of the company's investors, including creditors and stockholders. You will learn how to calculate free cash flows in Chapter 6, but for now you should know that free cash flow is:

$$\text{FCF} = \begin{matrix}\text{Sales}\\\text{revenues}\end{matrix} - \begin{matrix}\text{Operating}\\\text{costs}\end{matrix} - \begin{matrix}\text{Operating}\\\text{taxes}\end{matrix} - \begin{matrix}\text{Required investments}\\\text{in new operating capital}\end{matrix}$$

CORPORATE SCANDALS AND MAXIMIZING STOCK PRICE

The list of corporate scandals seems to go on forever: Sunbeam, Enron, ImClone, WorldCom, Tyco, Adelphia. . . . At first glance, it's tempting to say, "Look what happens when managers care only about maximizing stock price." But a closer look reveals a much different story. In fact, if these managers were trying to maximize stock price, they failed dismally, given the resulting values of these companies.

Although details vary from company to company, a few common themes emerge. First, managerial compensation was linked to the *short-term* performance of the stock price via poorly designed stock option and stock grant programs. This provided managers with a powerful incentive to drive up the stock price at the option vesting date without worrying about the future. Second, it is virtually impossible to take *legal and ethical* actions that quickly drive up the stock price. The value of a company ultimately depends on all of its expected future cash flows, and making a substantive change in them requires the old-fashioned hard work of increasing sales, cutting costs, or reducing capital requirements. Because legal and ethical actions to drive up the stock price quickly don't exist, some managers began bending a few rules. Third, as they initially got away with bending rules, it seems that their egos and hubris grew to such an extent that they felt they were above all rules, so they began breaking even more rules.

Stock prices did go up, at least temporarily, but as Abraham Lincoln said, "You can't fool all of the people all of the time." As the scandals became public, the stocks' prices plummeted, and in some cases the companies were ruined.

There are several important lessons to be learned from these examples. First, people respond to incentives, and poorly designed incentives can cause disastrous results. Second, ethical violations usually begin with small steps, so if stockholders want managers to avoid large ethical violations, then they shouldn't let them make the small ones. Third, there is no shortcut to creating lasting value. It takes hard work to increase sales, cut costs, and reduce capital requirements, but this is the formula for success.

Brand managers and marketing managers can increase sales (and prices) by truly understanding their customers and then designing goods and services that customers want. Human resource managers can improve productivity through training and employee retention. Production and logistics managers can improve profit margins, reduce inventory, and improve throughput at factories by implementing supply chain management, just-in-time inventory management, and lean manufacturing. In fact, all managers make decisions that can increase free cash flows.

One of the financial manager's roles is to help others see how their actions affect the company's ability to generate cash flow and, hence, its intrinsic value. Financial managers also must decide *how to finance the firm*. In particular, they must choose the mix of debt and equity to use and the specific types of debt and equity securities to issue. They also must decide what percentage of current earnings to retain and reinvest rather than pay out as dividends. Along with these financing decisions, the general level of interest rates in the economy, the risk of the firm's operations, and stock market investors' overall attitude toward risk determine the rate of return required to satisfy a firm's investors. This rate of return from an investor's perspective is a cost from the company's point of view. Therefore, the rate of return required by investors is called the **weighted average cost of capital (WACC)**.

The following equation defines the relationship between a firm's fundamental value, its free cash flows, and its cost of capital:

$$\text{Value} = \frac{FCF_1}{(1 + WACC)^1} + \frac{FCF_2}{(1 + WACC)^2} + \frac{FCF_3}{(1 + WACC)^3} + \cdots + \frac{FCF_\infty}{(1 + WACC)^\infty} \quad (1\text{–}1)$$

We will explain how to use this equation in later chapters, but for now note that: (1) a growing firm often needs to raise external funds in the financial markets, and (2) the actual price of a firm's stock is determined in those markets. The rest of this chapter focuses on financial markets.

SELF TEST

What should be management's primary objective?

How does maximizing the fundamental stock price benefit society?

Free cash flow depends on what three factors?

How is a firm's fundamental value related to its free cash flows and its cost of capital?

1-4 An Overview of the Capital Allocation Process

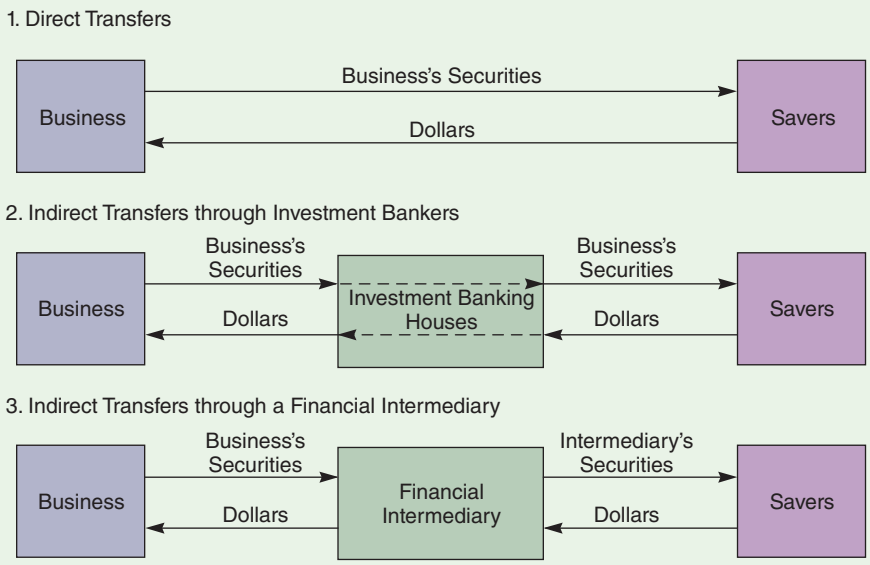
Businesses often need capital to implement growth plans; governments require funds to finance building projects; and individuals frequently want loans to purchase cars, homes, and education. Where can they get this money? Fortunately, there are some individuals and firms with incomes greater than their expenditures. In spite of William Shakespeare's advice, most individuals and firms are

both borrowers and lenders. For example, an individual might borrow money with a car loan or a home mortgage but might also lend money through a bank savings account. In the aggregate, individuals are net savers and provide most of the funds ultimately used by nonfinancial corporations. Although most nonfinancial corporations own some financial securities, such as short-term Treasury bills, nonfinancial corporations are net borrowers in the aggregate. In the United States, federal, state, and local governments are also net borrowers in the aggregate, although many foreign governments, such as those of China and oil-producing countries, are actually net lenders. Banks and other financial corporations raise money with one hand and invest it with the other. For example, a bank might raise money from individuals in the form of a savings account and then lend most of that money to business customers. In the aggregate, financial corporations borrow slightly more than they lend.

Transfers of capital between savers and those who need capital take place in three different ways. Direct transfers of money and securities, as shown in Panel 1 of Figure 1-1, occur when a business (or government) sells its securities directly to savers. The business delivers its securities to savers, who in turn provide the firm with the money it needs. For example, a privately held company might sell shares of stock directly to a new shareholder, or the U.S. government might sell a Treasury bond directly to an individual investor.

As shown in Panel 2, indirect transfers may go through an **investment banking house** such as Goldman Sachs, which *underwrites* the issue. An underwriter serves as a middleman and facilitates the issuance of securities. The company

FIGURE 1-1 Diagram of the Capital Allocation Process



sells its stocks or bonds to the investment bank, which in turn sells these same securities to savers. Because new securities are involved and the corporation receives the proceeds of the sale, this is a "primary" market transaction.

Transfers also can be made through a **financial intermediary** such as a bank or mutual fund, as shown in Panel 3. Here the intermediary obtains funds from savers in exchange for its own securities. The intermediary then uses this money to purchase and then hold businesses' securities. For example, a saver might give dollars to a bank and receive a certificate of deposit, and then the bank might lend the money to a small business, receiving in exchange a signed loan. Thus, intermediaries literally create new types of securities.

There are three important characteristics of the capital allocation process. First, new financial securities are created. Second, financial institutions are often involved. Third, allocation between providers and users of funds occurs in financial markets.

SELF TEST

Identify three ways that capital is transferred between savers and borrowers.

Distinguish between the roles played by investment banking houses and financial intermediaries.

1-5 Financial Securities

WWW

You can access current and historical interest rates and economic data from the Federal Reserve Economic Data (FRED) site at **www.stls.frb.org/fred**.

The variety of financial securities is limited only by human creativity, ingenuity, and governmental regulations. At the risk of oversimplification, we can classify most financial securities by the type of claim and the time until maturity. In addition, some securities actually are created from packages of other securities. We discuss the key aspects of financial securities in this section.

1-5a Type of Claim: Debt, Equity, or Derivatives

Financial securities are simply pieces of paper with contractual provisions that entitle their owners to specific rights and claims on specific cash flows or values. Debt instruments typically have specified payments and a specified maturity. For example, an Alcoa bond might promise to pay 10% interest for 30 years, at which time it promises to make a $1,000 principal payment. If debt matures in more than a year, it is called a *capital market security*. Thus, the Alcoa bond in this example is a capital market security.

If the debt matures in less than a year, it is a *money market security*. For example, Home Depot might expect to receive $300,000 in 75 days, but it needs cash now. Home Depot might issue commercial paper, which is essentially an IOU. In this example, Home Depot might agree to pay $300,000 in 75 days in exchange for $297,000 today. Thus, commercial paper is a money market security.

Equity instruments are a claim upon a residual value. For example, Alcoa's stockholders are entitled to the cash flows generated by Alcoa after its bondholders, creditors, and other claimants have been satisfied. Because stock has no maturity date, it is a capital market security.

Notice that debt and equity represent claims upon the cash flows generated by real assets, such as the cash flows generated by Alcoa's factories and operations. In contrast, **derivatives** are securities whose values depend on, or are *derived* from, the values of some other traded assets. For example, options and futures are two important types of derivatives, and their values depend on the prices of other assets. An option on Alcoa stock or a futures contract to buy pork bellies are examples of derivatives. We discuss options in Chapter 5 and in ***Web Extension 1A***, which provides a brief overview of options and other derivatives.

WEB

For an overview of derivatives, see ***Web Extension 1A*** on the textbook's Web site.

Some securities are a mix of debt, equity, and derivatives. For example, preferred stock has some features like debt and some like equity, while convertible debt has both debt-like and option-like features.

We discuss these and other financial securities in detail later in the book, but Table 1-1 provides a summary of the most important conventional financial securities. We discuss rates of return later in this chapter, but notice now in Table 1-1 that interest rates tend to increase with the maturity and risk of the security.

Some securities are created from packages of other assets, a process called *securitization*. The misuse of securitized assets is one of the primary causes of the global financial crisis, so every manager needs to understand the process of securitization.

1-5b The Process of Securitization

Many types of assets can be securitized, but we will focus on mortgages because they played such an important role in the global financial crisis. At one time, most mortgages were made by **savings and loan associations (S&Ls)**, which took in the vast majority of their deposits from individuals who lived in nearby neighborhoods. The S&Ls pooled these deposits and then lent money to people in the neighborhood in the form of fixed-rate mortgages, which were pieces of paper signed by borrowers promising to make specified payments to the S&L. The new homeowners paid principal and interest to the S&L, which then paid interest to its depositors and reinvested the principal repayments in other mortgages. This was clearly better than having individuals lend directly to aspiring homeowners, because a single individual might not have enough money to finance an entire house or the expertise to know if the borrower was creditworthy.

Note that the S&Ls' assets consisted mainly of long-term, fixed-rate mortgages, but their liabilities were in the form of deposits that could be withdrawn immediately. The combination of long-term assets and short-term liabilities created a problem. If the overall level of interest rates increased, the S&Ls would have to increase the rates they paid on deposits or else savers would take their money elsewhere. However, the S&Ls couldn't increase the rates on their outstanding mortgages because these mortgages had fixed interest rates, which meant they couldn't increase the rates they paid on their deposits very much. This problem came to a head in the 1960s, when the Vietnam War led to inflation, which pushed up interest rates. At this point, the "money market fund" industry was born, and it literally sucked money out of the S&Ls, forcing many of them into bankruptcy.

This problem of long-term mortgages financed by short-term and unreliable deposits could be resolved if there were some way for the S&Ls and other mortgage lenders like banks to sell the mortgages to investors who wanted a long-term investment and lend out the resulting money again. The outcome was "mortgage

TABLE 1-1 Summary of Major Financial Instruments

Instrument	Major Participants	Risk	Original Maturity	Rates of Return on 6/30/13[a]
U.S. Treasury bills	Sold by U.S. Treasury	Default-free	91 days to 1 year	0.11%
Bankers' acceptances	A firm's promise to pay, guaranteed by a bank	Low if strong bank guarantees	Up to 180 days	0.28%
Commercial paper	Issued by financially secure firms to large investors	Low default risk	Up to 270 days	0.12%
Negotiable certificates of deposit (CDs)	Issued by major banks to large investors	Depends on strength of issuer	Up to 1 year	0.26%
Money market mutual funds	Invest in short-term debt; held by individuals and businesses	Low degree of risk	No specific maturity (instant liquidity)	0.42%
Eurodollar market time deposits	Issued by banks outside the United States	Depends on strength of issuer	Up to 1 year	0.22%
Consumer credit loans	Loans by banks/credit unions/finance companies	Risk is variable	Variable	Variable
Commercial loans	Loans by banks to corporations	Depends on borrower	Up to 7 years	Tied to prime rate (3.25%) or LIBOR (0.27%)[b]
U.S. Treasury notes and bonds	Issued by U.S. government	No default risk, but price falls if interest rates rise	2 to 30 years	3.40%
Mortgages	Loans secured by property	Risk is variable	Up to 30 years	4.50%
Municipal bonds	Issued by state and local governments to individuals and institutions	Riskier than U.S. government bonds, but exempt from most taxes	Up to 30 years	4.08%
Corporate bonds	Issued by corporations to individuals and institutions	Riskier than U.S. government debt; depends on strength of issuer	Up to 40 years[c]	4.37%
Leases	Similar to debt; firms lease assets rather than borrow and then buy them	Risk similar to corporate bonds	Generally 3 to 20 years	Similar to bond yields

Instrument	Major Participants	Risk	Original Maturity	Rates of Return on 6/30/13[a]
Preferred stocks	Issued by corporations to individuals and institutions	Riskier than corporate bonds	Unlimited	4% to 9%
Common stocks[d]	Issued by corporations to individuals and institutions	Riskier than preferred stocks	Unlimited	9% to 15%

[a]Data are from *The Wall Street Journal* **(online.wsj.com)** or the *Federal Reserve Statistical Release* (**www.federalreserve.gov/releases/H15/update**). Bankers' acceptances assume a 3-month maturity. Money market rates are for the Merrill Lynch Ready Assets Trust. The corporate bond rate is for AAA-rated bonds.
[b]The prime rate is the rate U.S. banks charge to good customers. LIBOR (London Interbank Offered Rate) is the rate that U.K. banks charge one another.
[c]A few corporations have issued 100-year bonds; however, most have issued bonds with maturities of less than 40 years.
[d]Common stocks are expected to provide a "return" in the form of dividends and capital gains rather than interest. Of course, if you buy a stock, your *actual* return may be considerably higher or lower than your *expected* return.

securitization," a process whereby banks, S&Ls, and specialized mortgage-originating firms would originate mortgages and then sell them to investment banks, which would bundle them into packages and then use these packages as collateral for bonds that could be sold to pension funds, insurance companies, and other institutional investors. Thus, individual mortgages were bundled and then used to back a bond—a "security"—that could be traded in the financial markets.

Congress facilitated this process by creating two stockholder-owned but government-sponsored entities, the Federal National Mortgage Association (Fannie Mae) and the Federal Home Loan Mortgage Corporation (Freddie Mac). Fannie Mae and Freddie Mac were financed by issuing a relatively small amount of stock and a huge amount of debt.

To illustrate the securitization process, suppose an S&L or bank is paying its depositors 5% but is charging its borrowers 8% on their mortgages. The S&L can take hundreds of these mortgages, put them in a pool, and then sell the pool to Fannie Mae. The mortgagees can still make their payments to the original S&L, which will then forward the payments (less a small handling fee) to Fannie Mae.

Consider the S&L's perspective. First, it can use the cash it receives from selling the mortgages to make additional loans to other aspiring homeowners. Second, the S&L is no longer exposed to the risk of owning mortgages. The risk hasn't disappeared—it has been transferred from the S&L (and its federal deposit insurers) to Fannie Mae. This is clearly a better situation for aspiring homeowners and, perhaps, also for taxpayers.

Fannie Mae can take the mortgages it just bought, put them into a very large pool, and sell bonds backed by the pool to investors. The homeowner will pay the S&L, the S&L will forward the payment to Fannie Mae, and Fannie Mae will use the funds to pay interest on the bonds it issued, to pay dividends on its stock, and to buy additional mortgages from S&Ls, which can then make additional loans to aspiring homeowners. Notice that the mortgage risk has been shifted from Fannie Mae to the investors who now own the mortgage-backed bonds.

How does the situation look from the perspective of the investors who own the bonds? In theory, they own a share in a large pool of mortgages from all over the country, so a problem in a particular region's real estate market or job market won't affect the whole pool. Therefore, their expected rate of return should be very close to the 8% rate paid by the home-owning mortgagees. (It will be a little less due to handling fees charged by the S&L and Fannie Mae and to the small amount of expected losses from the homeowners who could be expected to default on their mortgages.) These investors could have deposited their money at an S&L and earned a virtually risk-free 5%. Instead, they chose to accept more risk in hopes of the higher 8% return. Note, too, that mortgage-backed bonds are more liquid than individual mortgage loans, so the securitization process increases liquidity, which is desirable. The bottom line is that risk has been reduced by the pooling process and then allocated to those who are willing to accept it in return for a higher rate of return.

Thus, in theory it is a win–win–win situation: More money is available for aspiring homeowners, S&Ls (and taxpayers) have less risk, and there are opportunities for investors who are willing to take on more risk to obtain higher potential returns. Although the securitization process began with mortgages, it is now being used with car loans, student loans, credit card debt, and other loans. The details vary for different assets, but the processes and benefits are similar to those with mortgage securitization: (1) increased supplies of lendable funds, (2) transfer of risk to those who are willing to bear it, and (3) increased liquidity for holders of the debt.

Mortgage securitization was a win–win situation in theory, but as practiced in the last decade it has turned into a lose–lose situation. We will have more to say about securitization and the global economic crisis later in this chapter, but first let's take a look at the cost of money.

1-6 The Cost of Money

In a free economy, capital from those with available funds is allocated through the price system to users who have a need for funds. The interaction of the providers' supply and the users' demand determines the cost (or price) of money, which is the rate users pay to providers. For debt, we call this price the **interest rate**. For equity, we call it the **cost of equity**, and it consists of the dividends and capital gains stockholders expect. Keep in mind that the "price" of money is a cost from a user's perspective but a return from the provider's point of view.

Notice in Table 1-1 that a financial instrument's rate of return generally increases as its maturity and risk increase. We will have much more to say about the relationships among an individual security's features, risk, and return later in the book, but first we will examine some fundamental factors and economic conditions that affect all financial instruments.

1-6a Fundamental Factors That Affect the Cost of Money

The four most fundamental factors affecting the cost of money are: (1) **production opportunities**, (2) **time preferences for consumption**, (3) **risk**, and (4) **inflation**. By production opportunities, we mean the ability to turn capital into benefits. If a business raises capital, the benefits are determined by the expected rates of return on its production opportunities. If a student borrows to finance his or her education, the benefits are higher expected future salaries (and, of course, the sheer joy of

learning!). If a homeowner borrows, the benefits are the pleasure from living in his or her own home, plus any expected appreciation in the value of the home. Observe that the expected rates of return on these "production opportunities" put an upper limit on how much users can pay to providers.

Providers can use their current funds for consumption or saving. By saving, they choose not to consume now, expecting to consume more in the future. If providers strongly prefer consumption now, then it takes high interest rates to induce them to trade current consumption for future consumption. Therefore, the time preference for consumption has a major impact on the cost of money. Notice that the time preference for consumption varies for different individuals, for different age groups, and for different cultures. For example, people in Japan have a lower time preference for consumption than those in the United States, which partially explains why Japanese families tend to save more than U.S. families even though interest rates are lower in Japan.

If the return on an investment is risky, then providers require a higher expected return to induce them to take the extra risk, which drives up the cost of money. As you will see later in this book, the risk of a security is determined by market conditions and the security's particular features.

Expected inflation also leads to a higher cost of money. For example, suppose you earned 10% one year on your investment but inflation caused prices to increase by 20%. This means you can't consume as much at the end of the year as when you originally invested your money. Obviously, if you had expected 20% inflation, you would have required a higher rate of return than 10%.

1-6b Economic Conditions and Policies That Affect the Cost of Money

Economic conditions and policies also affect the cost of money. These include: (1) Federal Reserve policy, (2) the federal budget deficit or surplus, (3) the level of business activity, and (4) international factors, including the foreign trade balance, the international business climate, and exchange rates.

WWW

The home page for the Board of Governors of the Federal Reserve System can be found at **www.federalreserve.gov**. You can access general information about the Federal Reserve, including press releases, speeches, and monetary policy.

Federal Reserve Policy

If the Federal Reserve Board wants to stimulate the economy, it most often uses open market operations to purchase Treasury securities held by banks. Because banks are selling some of their securities, the banks will have more cash, which increases their supply of loanable funds, which in turn makes banks willing to lend more money at lower interest rates. In addition, the Fed's purchases represent an increase in the demand for Treasury securities. As with anything for sale, increased demand causes Treasury securities' prices to go up and interest rates to go down. The net result is a reduction in interest rates, which stimulates the economy by making it less costly for companies to borrow for new projects or for individuals to borrow for major purchases or other expenditures.

When banks sell their holdings of Treasury securities to the Fed, the banks' reserves go up, which increases the money supply. A larger money supply ultimately leads to an increase in expected inflation, which eventually pushes interest rates up. Thus, the Fed can stimulate the economy in the short term by driving down interest rates and increasing the money supply, but this creates longer-term inflationary pressures. This was exactly the dilemma facing the Fed in mid-2013.

On the other hand, if the Fed wishes to slow down the economy and reduce inflation, the Fed reverses the process. Instead of purchasing Treasury securities, the Fed sells Treasury securities to banks, which reduces banking reserves and causes an increase in short-term interest rates but a decrease in long-term inflationary pressures.

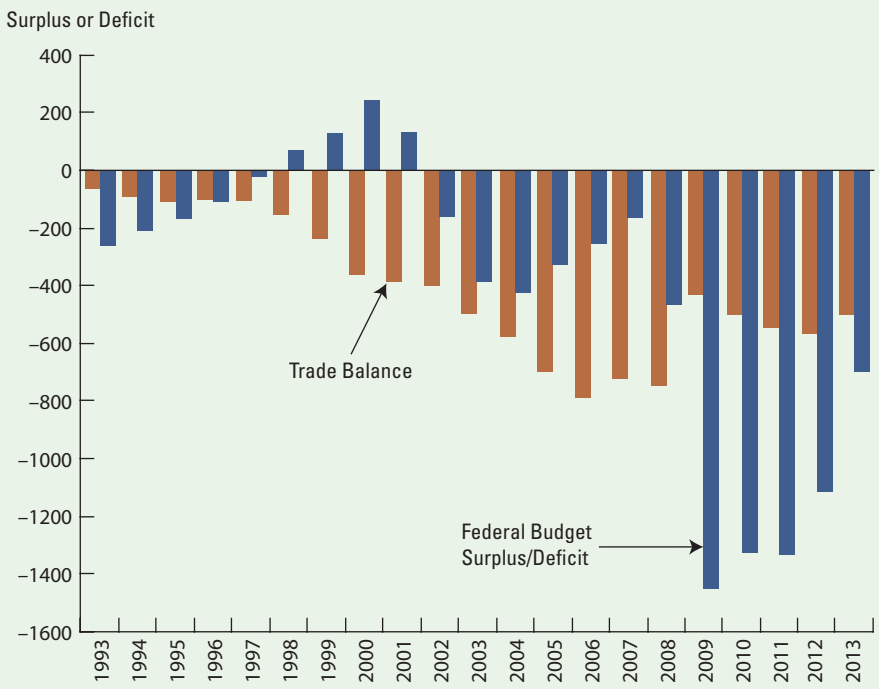
WWW

For today's cumulative total federal debt (the total public debt), check out the *Current Daily Treasury Statement* at **www.fms.treas.gov/dts/index.html**.

Budget Deficits or Surpluses

If the federal government spends more than it takes in from tax revenues, then it runs a deficit, and that deficit must be covered either by borrowing or by printing money (increasing the money supply). The government borrows by issuing new Treasury securities. All else held equal, this creates a greater supply of Treasury securities, which leads to lower security prices and higher interest rates. Federal government actions that increase the money supply also increase expectations for future inflation, which drives up interest rates. Thus, the larger the federal deficit, other things held constant, the higher the level of interest rates. As shown in Figure 1-2, the federal government has run deficits in 15 of the past 19 years. Annual deficits in the mid-1990s were in the $250 billion range, but they have ballooned to well over a trillion dollars in recent years. These huge deficits have contributed to the cumulative federal debt, which in late 2013 stood at more than $17 trillion.

FIGURE 1-2 Federal Budget Surplus/Deficits and Trade Balances (Billions of Dollars)



Business Activity

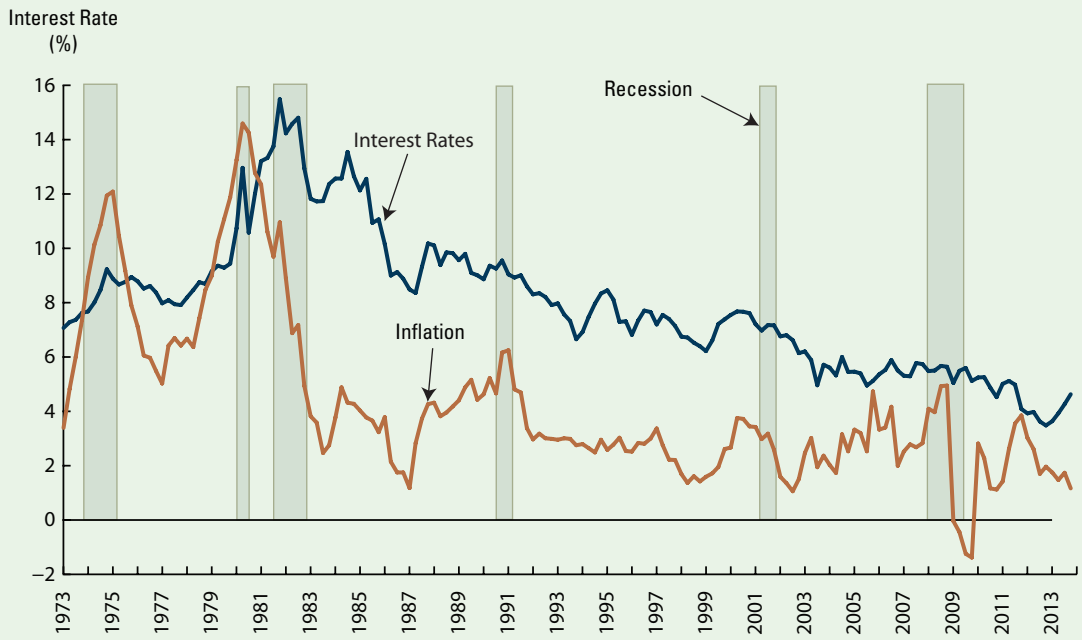
Figure 1-3 shows interest rates, inflation, and recessions. Notice that interest rates and inflation typically rise prior to a recession and fall afterward. There are several reasons for this pattern.

Consumer demand slows during a recession, keeping companies from increasing prices, which reduces price inflation. Companies also cut back on hiring, which reduces wage inflation. Less disposable income causes consumers to reduce their purchases of homes and automobiles, reducing consumer demand for loans. Companies reduce investments in new operations, which reduces their demand for funds. The cumulative effect is downward pressure on inflation and interest rates. The Federal Reserve is also active during recessions, trying to stimulate the economy by driving down interest rates.

International Trade Deficits or Surpluses

Businesses and individuals in the United States buy from and sell to people and firms in other countries. If we buy more than we sell (that is, if we import more

FIGURE 1-3 Business Activity, Interest Rates, and Inflation



Notes:

1. Tick marks represent January 1 of the year.
2. The shaded areas designate business recessions as defined by the National Bureau of Economic Research; see **www.nber.org/cycles**.
3. Interest rates are for AAA corporate bonds; see the St. Louis Federal Reserve Web site: **http://research.stlouisfed.org/fred**. These rates reflect the average rate during the month ending on the date shown.
4. Inflation is measured by the annual rate of change for the Consumer Price Index (CPI) for the preceding 12 months; see **http://research.stlouisfed.org/fred**.