

12E

# Intermediate Financial Management



BRIGHAM/DAVES

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Australia • Brazil • Mexico • Singapore • United Kingdom • United States

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**Intermediate Financial Management,  
12<sup>th</sup> Edition****Eugene F. Brigham and Phillip R. Daves**

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WCN: 02-200-203

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Library of Congress Control Number: 2014946238

ISBN: 978-1-285-85003-0

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## WEB CHAPTERS & WEB EXTENSIONS

**Students:** Access the Web Chapters and Web Extensions by visiting [www.cengagebrain.com](http://www.cengagebrain.com), searching ISBN 9781285850030, and clicking “Access Now” under “Study Tools” to go to the student textbook companion site.

**Instructors:** Access the Web Chapters, Web Extensions, and other instructor resources by going to [www.cengage.com/login](http://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.”

## Web Chapters

- 28. Time Value of Money
- 29. Basic Financial Tools: A Review
- 30. Pension Plan Management
- 31. Financial Management in Not-for-Profit Businesses

## Web Extensions

- Web Extension 1-A An Overview of Derivative
- Web Extension 1-B A Closer Look at the Stock Markets
- Web Extension 2-A Continuous Probability Distributions
- Web Extension 2-B Estimating Beta with a Financial Calculator
- No Web Extension for Chapter 3
- Web Extension 4-A A Closer Look at Zero Coupon and other OID Bonds
- Web Extension 4-B A Closer Look at TIPS: Treasury Inflation-Protected Securities
- Web Extension 4-C A Close Look at Bond Risk: Duration
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# 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.

## 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

### WEB

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**Instructors:** Access the *Intermediate Financial Management 12e* companion site and instructor resources by going to [www.cengage.com/login](http://www.cengage.com/login), logging in with your faculty account username and password, and using ISBN 9781285850030 to reach the site through your account “Bookshelf.”

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.<sup>1</sup> Here we informed students on day one that we would start each class by calling on them randomly and grading them on their answers.<sup>2</sup> 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

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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.<sup>3</sup> 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.

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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  $\text{COGS}/\text{Inventories}$  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](http://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.

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- **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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## Acknowledgments

This book reflects the efforts of a great many people over a number of years. First, we would like to thank Fred Weston, Joel Houston, Mike Ehrhardt, and Scott Besley, who worked with us on other books published by Cengage Learning from which we borrowed liberally to create *IFM*. We also owe Lou Gapenski special thanks for his many past contributions to earlier editions of this text.

The following professors and professionals, who are experts on specific topics, provided extensive feedback on this edition. We are grateful for their insights.

|                |                   |                           |
|----------------|-------------------|---------------------------|
| Steven Beach   | Melissa Hart      | Alicia Rodriguez de Rubio |
| Sara Bennett   | James Haskins     | Camelia Rotaru            |
| Julie Cagle    | Xiankui Hu        | Diane Suhler              |
| Karen Denning  | Stephen Laceywell | John Thornton             |
| Ted Eschenbach | Alex Meisami      | Ruoyang Wang              |
| John Griffith  | Shane Moser       | Rustin Yerkes             |
| Axel Grossmann | Ivelina Pavlova   |                           |

In addition, we would like to thank the following people, whose reviews and comments on prior editions and companion books have contributed to this edition: Mike Adler, Syed Ahmad, Sadhana M. Alangar, Z. Ayca Altintig, Onur Arugaslan, Edward I. Altman, Mary Schary Amram, Bruce Anderson, Ron Anderson, Bob

Angell, Vince Apilado, Henry Arnold, Nasser Arshadi, Bob Aubey, Abdul Aziz, Gil Babcock, Peter Bacon, Kent Baker, Tom Bankston, Les Barenbaum, Charles Barngrover, Steve Beach, John R. Becker-Blease, Bill Beedles, Moshe Ben-Horim, William (Bill) Beranek, Tom Berry, Bill Bertin, Roger Bey, Dalton Bigbee, John Bilderssee, Lloyd P. Blenman, Kevin K. Boeh, Russ Boisjoly, Keith Boles, Gordon R. Bonner, Geof Booth, Kenneth Boudreaux, Helen Bowers, Lyle Bowlin, Oswald Bowlin, Don Boyd, G. Michael Boyd, Pat Boyer, Ben S. Branch, Joe Brandt, Elizabeth Brannigan, Greg Brauer, Mary Broske, Dave Brown, David T. Brown, Kate Brown, Mary R. Brown, Bill Brueggeman, Kirt Butler, Robert Button, Julie Cagle, Bill (B. J.) Campsey, Bob Carleson, Severin Carlson, David Cary, Steve Celec, Don Chance, Antony Chang, Susan Chaplinsky, Jay Choi, S. K. Choudhury, Lal Chugh, Maclyn Clouse, Margaret Considine, Phil Cooley, Joe Copeland, James J. Cordeiro, David Cordell, John Cotner, Charles Cox, David Crary, Tony Crawford, John Crockett, Roy Crum, Brent Dalrymple, Bill Damon, William H. Dare, Joel Dauten, Steve Dawson, Sankar De, Miles Delano, Fred Dellva, Anand Desai, Ross Dickens, Bernard Dill, Greg Dimkoff, Les Dlabay, Mark Dorfman, Gene Drycimski, Dean Dudley, David A. Dumpe, David Durst, Ed Dyl, Dick Edelman, Charles Edwards, John Ellis, Theodore Engel, Dave Ewert, John Ezzell, Richard Fendler, Michael Ferri, Jim Filkins, John Finnerty, Susan Fischer, Mark Flannery, Steven Flint, Russ Fogler, Jennifer Foo, E. Bruce Frederickson, Dan French, Tina Galloway, Phil Gardial, Michael Garlington, Jim Garvin, Adam Gehr, Jim Gentry, Philip Glasgo, Rudyard Goode, Myron Gordon, Walt Goulet, Bernie Grablowsky, Theoharry Grammatikos, John Griffith, Axel Grossmann, Ed Grossnickle, John Groth, Alan Grunewald, Manak Gupta, George Hachey, Sam Hadaway, Thomas Hall, Don Hakala, Sally Hamilton, Gerald Hamsmith, William Hardin, Joel Harper, John Harris, Paul Hastings, Bob Haugen, Steve Hawke, Del Hawley, Hal Heaton, Robert Hehre, John Helmuth, K. L. Henebry, George Hettenhouse, Hans Heymann, Kendall Hill, Roger Hill, Tom Hindelang, Linda Hittle, Ralph Hocking, J. Ronald Hoffmeister, Jim Horigan, John Houston, John Howe, Keith Howe, Jim Hsieh, Hugh Hunter, Steve Isberg, James E. Jackson, Jim Jackson, Vahan Janjigian, Tim Jares, Kose John, Craig Johnson, Keith H. Johnson, Ramon Johnson, Ken Johnston, Ray Jones, Manuel Jose, Tejendra Kalia, Gus Kalogeras, Mike Keenan, Bill Kennedy, Joe Kiernan, Robert Kieschnick, Young Kim, Rick Kish, Linda Klein, Don Knight, Dorothy Koehl, Raj K. Kohli, Jaroslaw Komarynsky, Duncan Kretovich, Harold Krogh, Charles Kroncke, Merouane Lakehal-Ayat, Joan Lamm, P. Lange, Howard Lanser, Martin Laurence, Ed Lawrence, Richard LeCompte, Wayne Lee, Jim LePage, Ilene Levin, Jules Levine, John Lewis, Kartono Liano, Yingchou Lin, James T. Lindley, Chuck Linke, Bill Lloyd, Susan Long, Judy Maese, Bob Magee, Ileen Malitz, Phil Malone, Terry Maness, Chris Manning, Terry Martell, D. J. Masson, John Mathys, John McAlhany, Andy McCollough, Bill McDaniel, Robin McLaughlin, Tom McCue, Jamshid Mehran, Ilhan Meric, Larry Merville, Rick Meyer, Stuart Michelson, Jim Millar, Ed Miller, John Mitchell, Carol Moerdyk, Bob Moore, Barry Morris, Gene Morris, Fred Morrissey, Chris Muscarella, David Nachman, Tim Nantell, Don Nast, Bill Nelson, Bob Nelson, Bob Niendorf, Tom O'Brien, Dennis O'Connor, John O'Donnell, Jim Olsen, Robert Olsen, R. Daniel Pace, Coleen Pantalone, Jim Pappas, Stephen Parrish, Ohaness Paskelian, Glenn Petry, Jim Pettijohn, Rich Pettit, Dick Pettway, Hugo Phillips, John Pinkerton, Gerald Pogue, Ralph A. Pope, R. Potter, Franklin Potts, R. Powell, Chris Prestopino, Jerry Prock, Howard Puckett, Edward Pyatt, Herbert Quigley, George Racette, Bob

Radcliffe, Allen Rappaport, Bill Rentz, Ken Riener, Charles Rini, John Ritchie, Jay Ritter, Pietra Rivoli, Fiona Robertson, Alicia Rodriguez, Antonio Rodriguez, Kenneth Roskelley, E. M. Roussakis, Dexter Rowell, Michael Ryngaert, Jim Sachlis, Abdul Sadik, Atul Saxena, Thomas Scampini, Kevin Scanlon, Frederick Schadler, James Schallheim, Mary Jane Scheuer, Carl Schweser, John Settle, Alan Severn, Sol Shalit, Frederic Shipley, Dilip Shome, Ron Shrieves, Neil Sicherman, J. B. Silvers, Clay Singleton, Joe Sinkey, Mark Sipper, Stacy Sirmans, Jaye Smith, Steve Smith, Don Sorenson, David Spears, Andrew Spieler, Ken Stanly, Ed Stendardi, Alan Stephens, Don Stevens, Jerry Stevens, G. Bennett Stewart, Glen Strasburg, Robert Strong, Tom Stuckey, Denver Swaby, Philip Swensen, Ernie Swift, Paul Swink, Eugene Swinnerton, Robert Taggart, Gary Tallman, Dennis Tanner, Russ Taussig, A. Tessmer, Manish Tewari, Richard Teweles, Ted Teweles, Andrew Thompson, Jonathan Tiemann, Sheridan Titman, George Trivoli, George Tsetsekos, Alan L. Tucker, Mel Tysseland, David Upton, Howard Van Auken, Pretorious Van den Dool, Pieter Vanderburg, Paul Vanderheiden, David Vang, Jim Verbrugge, Patrick Vincent, Steve Vinson, Susan Visscher, John Wachowicz, Joe Walker, Mike Walker, Sam Weaver, Kuo Chiang Wei, Bill Welch, Gary R. Wells, Fred Weston, Norm Williams, Tony Wingler, Ed Wolfe, Larry Wolken, Annie Wong, Bob G. Wood, Jr., Don Woods, Thomas Wright, Michael Yonan, Miranda Zhang, Zhong-guo Zhou, David Ziebart, Dennis Zocco, and Kent Zumwalt.

Special thanks are due to Fred Weston, Myron Gordon, Merton Miller, and Franco Modigliani, who have done much to help develop the field of financial management and who provided us with instruction and inspiration; to Roy Crum, who coauthored the multinational finance chapter; to Jay Ritter, who helped us with the materials on financial markets and IPOs; to Larry Wolken, who offered his hard work and advice for the development of the *PowerPoint* slides; to Dana Aberwald Clark, Susan Ball, and Chris Buzzard, who helped us develop the spreadsheet models; and to Susan Whitman, Amelia Bell, and Kirsten Benson, who provided editorial support.

Both our colleagues and our students at the Universities of Florida and Tennessee gave us many useful suggestions, and the Cengage Learning staff—especially Mike Reynolds, Kendra Brown, Jana Lewis, Heather Mooney, Adele Scholtz, Michelle Kunkler, Jessica Robbe, and Eileen Corcoran—helped greatly with all phases of text development, production, and marketing.

## 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](mailto: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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*March, 2015*

# Fundamental Concepts of Corporate Finance

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## CHAPTER 1

### An Overview of Financial Management and the Financial Environment

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# 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

**A**s 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
  - 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](http://www.cengage.com/thewatch).

### WWW

Consult [www.careers-in-finance.com](http://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.

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.

## 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.<sup>1</sup> 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.<sup>2</sup> 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**.

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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 "whistle-blowers." 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