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Fundamentals of
CORPORATE FINANCE
ELEVENTH EDITION
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Fundamentals of CORPORATE FINANCE

The McGraw-Hill/Irwin Series in Finance, Insurance, and Real Estate

Stephen A. Ross

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Fundamentals of CORPORATE FINANCE

Eleventh Edition

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Massachusetts Institute of Technology

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Mc Graw Hill Education

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To our families and friends with love and gratitude.

S.A.R. R.W.W. B.D.J.

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Preface from the Authors

When the three of us decided to write a book, we were united by one strongly held principle: Corporate finance should be developed in terms of a few integrated, powerful ideas. We believed that the subject was all too often presented as a collection of loosely related topics, unified primarily by virtue of being bound together in one book, and we thought there must be a better way.

One thing we knew for certain was that we didn't want to write a "me-too" book. So, with a lot of help, we took a hard look at what was truly important and useful. In doing so, we were led to eliminate topics of dubious relevance, downplay purely theoretical issues, and minimize the use of extensive and elaborate calculations to illustrate points that are either intuitively obvious or of limited practical use.

As a result of this process, three basic themes became our central focus in writing *Fundamentals of Corporate Finance:*

AN EMPHASIS ON INTUITION

We always try to separate and explain the principles at work on a common sense, intuitive level before launching into any specifics. The underlying ideas are discussed first in very general terms and then by way of examples that illustrate in more concrete terms how a financial manager might proceed in a given situation.

A UNIFIED VALUATION APPROACH

We treat net present value (NPV) as the basic concept underlying corporate finance. Many texts stop well short of consistently integrating this important principle. The most basic and important notion, that NPV represents the excess of market value over cost, often is lost in an overly mechanical approach that emphasizes computation at the expense of comprehension. In contrast, every subject we cover is firmly rooted in valuation, and care is taken throughout to explain how particular decisions have valuation effects.

A MANAGERIAL FOCUS

Students shouldn't lose sight of the fact that financial management concerns management. We emphasize the role of the financial manager as decision maker, and we stress the need for managerial input and judgment. We consciously avoid "black box" approaches to finance, and, where appropriate, the approximate, pragmatic nature of financial analysis is made explicit, possible pitfalls are described, and limitations are discussed.

In retrospect, looking back to our 1991 first edition IPO, we had the same hopes and fears as any entrepreneurs. How would we be received in the market? At the time, we had no idea that 23 years later, we would be working on an eleventh edition. We certainly never dreamed that in those years we would work with friends and colleagues from around the world to create country-specific Australian, Canadian, and South African editions, an International edition, Chinese, French, Polish, Portuguese, Thai, Russian, Korean, and Spanish language editions, and an entirely separate book, *Essentials of Corporate Finance,* now in its eighth edition.

Today, as we prepare to once more enter the market, our goal is to stick with the basic principles that have brought us this far. However, based on the enormous amount of feedback we have received from you and your colleagues, we have made this edition and its package even *more flexible* than previous editions. We offer flexibility in coverage, as customized editions of this text can be crafted in any combination through McGraw-Hill's *CREATE* system, and flexibility in pedagogy, by providing a wide

variety of features in the book to help students to learn about corporate finance. We also provide flexibility in package options by offering the most extensive collection of teaching, learning, and technology aids of any corporate finance text. Whether you use only the textbook, or the book in conjunction with our other products, we believe you will find a combination with this edition that will meet your current as well as your changing course needs.

Stephen A. Ross
Randolph W. Westerfield
Bradford D. Jordan

Coverage

This book was designed and developed explicitly for a first course in business or corporate finance, for both finance majors and non-majors alike. In terms of background or prerequisites, the book is nearly self-contained, assuming some familiarity with basic algebra and accounting concepts, while still reviewing important accounting principles very early on. The organization of this text has been developed to give instructors the flexibility they need.

The following grid presents, for each chapter, some of the most significant features as well as a few selected chapter highlights of the 11th edition of *Fundamentals.* Of course, in every chapter, opening vignettes, boxed features, in-chapter illustrated examples using real companies, and end-of-chapter material have been thoroughly updated as well.

Chapters	Selected Topics of Interest	Benefits to You
PART 1 Overview of Corporate Finance		
CHAPTER 1 Introduction to Corporate Finance	Goal of the firm and agency problems.	Stresses value creation as the most fundamental aspect of management and describes agency issues that can arise.
	Ethics, financial management, and executive compensation.	Brings in real-world issues concerning conflicts of interest and current controversies surrounding ethical conduct and management pay.
	Sarbanes-Oxley.	Up-to-date discussion of Sarbanes-Oxley and its implications and impact.
	Minicase: The McGee Cake Company.	Examines the choice of organization form for a small business.
CHAPTER 2 Financial Statements, Taxes, and Cash Flow	Cash flow vs. earnings.	Clearly defines cash flow and spells out the differences between cash flow and earnings.
	Market values vs. book values.	Emphasizes the relevance of market values over book values.
	Brief discussion of average corporate tax rates.	Highlights the variation in corporate tax rates across industries in practice.
	Minicase: Cash Flows and Financial Statements at Sunset Boards, Inc.	Reinforces key cash flow concepts in a small business setting.
PART 2 Financial Statements and Long-Term Financial Planning		
CHAPTER 3 Working with Financial Statements	Expanded DuPont analysis.	Expands the basic DuPont equation to better explore the interrelationships between operating and financial performance.
	DuPont analysis for real companies using data from S&P *Market Insight.*	Analysis shows students how to get and use real-world data, thereby applying key chapter ideas.
	Ratio and financial statement analysis using smaller firm data.	Uses firm data from *RMA* to show students how to actually get and evaluate financial statement benchmarks.
	Understanding financial statements.	Thorough coverage of standardized financial statements and key ratios.
	The enterprise value–EBITDA ratio.	Defines enterprise value (EV) and discusses the widely used EV–EBITDA ratio.
	Minicase: Ratio Analysis at S&S Air, Inc.	Illustrates the use of ratios and some pitfalls in a small business context.

Chapters	Selected Topics of Interest	Benefits to You
CHAPTER 4 Long-Term Financial Planning and Growth	Expanded discussion of sustainable growth calculations.	Illustrates the importance of financial planning in a small firm.
	Explanation of alternative formulas for sustainable and internal growth rates.	Explanation of growth rate formulas clears up a common misunderstanding about these formulas and the circumstances under which alternative formulas are correct.
	Thorough coverage of sustainable growth as a planning tool.	Provides a vehicle for examining the interrelationships between operations, financing, and growth.
	Long-range financial planning.	Covers percentage of sales approach to creating pro forma statements.
	Minicase: Planning for Growth at S&S Air.	Discusses the importance of financial plan and capacity utilization for a small business.
PART 3 Valuation of Future Cash Flows		
CHAPTER 5 Introduction to Valuation: The Time Value of Money	First of two chapters on time value of money.	Relatively short chapter introduces just the basic ideas on time value of money to get students started on this traditionally difficult topic.
CHAPTER 6 Discounted Cash Flow Valuation	Growing annuities and perpetuities.	Covers more advanced time value topics with numerous examples, calculator tips, and Excel spreadsheet exhibits. Contains many real-world examples.
	Second of two chapters on time value of money.	
	Minicase: The MBA Decision.	Explores the financial pros and cons of pursuing an MBA degree.
CHAPTER 7 Interest Rates and Bond Valuation	Bond valuation.	Complete coverage of bond valuation and bond features.
	Interest rates.	Discusses real versus nominal rates and the determinants of the term structure.
	"Clean" vs. "dirty" bond prices and accrued interest.	Clears up the pricing of bonds between coupon payment dates and also bond market quoting conventions.
	TRACE system and transparency in the corporate bond market.	Up-to-date discussion of new developments in fixed income with regard to price, volume, and transactions reporting.
	"Make-whole" call provisions.	Up-to-date discussion of a relatively new type of call provision that has become very common.
	Islamic finance	
	Minicase: Financing S&S Air's Expansion Plans with a Bond Issue.	Discusses the issues that come up in selling bonds to the public.
CHAPTER 8 Stock Valuation	Stock valuation.	Thorough coverage of constant and non-constant growth models.
	New! NYSE market operations.	Up-to-date description of major stock market operations.
	Valuation using multiples.	Illustrates using PE and price/sales ratios for equity valuation.
	Minicase: Stock Valuation at Ragan, Inc.	Illustrates the difficulties and issues surrounding small business valuation.

Chapters	Selected Topics of Interest	Benefits to You
PART 4 Capital Budgeting		
CHAPTER 9 Net Present Value and Other Investment Criteria	First of three chapters on capital budgeting.	Relatively short chapter introduces key ideas on an intuitive level to help students with this traditionally difficult topic.
	NPV, IRR, payback, discounted payback, and accounting rate of return.	Consistent, balanced examination of advantages and disadvantages of various criteria.
	Minicase: Bullock Gold Mining.	Explores different capital budgeting techniques with nonstandard cash flows.
CHAPTER 10 Making Capital Investment Decisions	Project cash flow.	Thorough coverage of project cash flows and the relevant numbers for a project analysis.
	Alternative cash flow definitions.	Emphasizes the equivalence of various formulas, thereby removing common misunderstandings.
	Special cases of DCF analysis.	Considers important applications of chapter tools.
	Minicase: Conch Republic Electronics, Part 1.	Analyzes capital budgeting issues and complexities.
CHAPTER 11 Project Analysis and Evaluation	Sources of value.	Stresses the need to understand the economic basis for value creation in a project.
	Scenario and sensitivity "what-if" analyses.	Illustrates how to actually apply and interpret these tools in a project analysis.
	Break-even analysis.	Covers cash, accounting, and financial break-even levels.
	Minicase: Conch Republic Electronics, Part 2.	Illustrates the use of sensitivity analysis in capital budgeting.
PART 5 Risk and Return		
CHAPTER 12 Some Lessons from Capital Market History	Expanded discussion of geometric vs. arithmetic returns.	Discusses calculation and interpretation of geometric returns. Clarifies common misconceptions regarding appropriate use of arithmetic vs. geometric average returns.
	Capital market history.	Extensive coverage of historical returns, volatilities, and risk premiums.
	Market efficiency.	Efficient markets hypothesis discussed along with common misconceptions.
	The equity risk premium.	Section discusses the equity premium puzzle and latest international evidence.
	The 2008 experience.	Section on the stock market turmoil of 2008.
	Minicase: A Job at S&S Air.	Discusses selection of investments for a 401(k) plan.
CHAPTER 13 Return, Risk, and the Security Market Line	Diversification, systematic and unsystematic risk.	Illustrates basics of risk and return in a straightforward fashion.
	Beta and the security market line.	Develops the security market line with an intuitive approach that bypasses much of the usual portfolio theory and statistics.
	Minicase: The Beta for Colgate-Palmolive.	Detailed discussion of beta estimation.

Chapters	Selected Topics of Interest	Benefits to You
PART 6 Cost of Capital and Long-Term Financial Policy		
CHAPTER 14 Cost of Capital	Cost of capital estimation.	Contains a complete, Web-based illustration of cost of capital for a real company.
	Geometric vs. arithmetic growth rates.	Both approaches are used in practice. Clears up issues surrounding growth rate estimates.
	New! Firm valuation.	Illustrates the free cash flow approach to firm valuation.
	Minicase: Cost of Capital for Hubbard Computer, Inc.	Covers pure play approach to cost of capital estimation.
CHAPTER 15 Raising Capital	Dutch auction IPOs.	Explains uniform price auctions using recent Google IPO as an example.
	IPO "quiet periods."	Explains the SEC's quiet period rules.
	Rights vs. warrants.	Clarifies the optionlike nature of rights prior to their expiration dates.
	IPO valuation.	Extensive, up-to-date discussion of IPOs, including the 1999–2000 period.
	Minicase: S&S Air Goes Public.	Covers the key parts of the IPO process for a small firm.
CHAPTER 16 Financial Leverage and Capital Structure Policy	Basics of financial leverage.	Illustrates effect of leverage on risk and return.
	Optimal capital structure.	Describes the basic trade-offs leading to an optimal capital structure.
	Financial distress and bankruptcy.	Briefly surveys the bankruptcy process.
	Minicase: Stephenson Real Estate Recapitalization.	Discusses optimal capital structure for a medium-sized firm.
CHAPTER 17 Dividends and Payout Policy	Very recent survey evidence on dividend policy.	New survey results show the most important (and least important) factors considered by financial managers in setting dividend policy.
	Effect of new tax laws.	Discusses implications of new, lower dividend and capital gains rates.
	Dividends and dividend policy.	Describes dividend payments and the factors favoring higher and lower payout policies.
	Optimal payout policy.	Extensive discussion of the latest research and survey evidence on dividend policy, including life-cycle theory.
	Stock repurchases.	Thorough coverage of buybacks as an alternative to cash dividends.
	Minicase: Electronic Timing, Inc.	Describes the dividend/share repurchase issue for a small company.

Chapters	Selected Topics of Interest	Benefits to You
PART 7 Short-Term Financial Planning and Management		
CHAPTER 18 Short-Term Finance and Planning	Operating and cash cycles.	Stresses the importance of cash flow timing.
	Short-term financial planning.	Illustrates creation of cash budgets and potential need for financing.
	Purchase order financing.	Brief discussion of PO financing, which is popular with small and medium-sized firms.
	Minicase: Piepkorn Manufacturing Working Capital Management.	Illustrates the construction of a cash budget and short-term financial plan for a small company.
CHAPTER 19 Cash and Liquidity Management	Float management.	Thorough coverage of float management and potential ethical issues.
	Cash collection and disbursement.	Examination of systems used by firms to handle cash inflows and outflows.
	Minicase: Cash Management at Webb Corporation.	Evaluates alternative cash concentration systems for a small firm.
CHAPTER 20 Credit and Inventory Management	Credit management	Analysis of credit policy and implementation.
	Inventory management	Brief overview of important inventory concepts.
	Minicase: Credit Policy at Howlett Industries.	Evaluates working capital issues for a small firm.
PART 8 Topics in Corporate Finance		
CHAPTER 21 International Corporate Finance	Foreign exchange.	Covers essentials of exchange rates and their determination.
	International capital budgeting.	Shows how to adapt basic DCF approach to handle exchange rates.
	Exchange rate and political risk.	Discusses hedging and issues surrounding sovereign risk.
	Minicase: S&S Air Goes International.	Discusses factors in an international expansion for a small firm.
CHAPTER 22 Behavioral Finance: Implications for Financial Management	Behavioral finance.	Unique and innovative coverage of the effects of biases and heuristics on financial management decisions. "In Their Own Words" box by Hersh Shefrin.
	Case against efficient markets.	Presents the behavioral case for market inefficiency and related evidence pro and con.
CHAPTER 23 Enterprise Risk Management	Volatility and risk.	Illustrates need to manage risk and some of the most important types of risk.
	Hedging with forwards, options, and swaps.	Shows how many risks can be managed with financial derivatives.
	Minicase: Chatman Mortgage, Inc.	Analyzes hedging of interest rate risk.

Chapters	Selected Topics of Interest	Benefits to You
CHAPTER 24 Options and Corporate Finance	Stock options, employee stock options, and real options.	Discusses the basics of these important option types.
	Option-embedded securities.	Describes the different types of option found in corporate securities.
	Minicase: S&S Air's Convertible Bond.	Examines security issuance issues for a small firm.
CHAPTER 25 Option Valuation	Put–call parity and Black–Scholes.	Develops modern option valuation and factors influencing option values.
	Options and corporate finance.	Applies option valuation to a variety of corporate issues, including mergers and capital budgeting.
	Minicase: Exotic Cuisines Employee Stock Options.	Illustrates complexities that arise in valuing employee stock options.
CHAPTER 26 Mergers and Acquisitions	Alternatives to mergers and acquisitions.	Covers strategic alliances and joint ventures and why they are important alternatives.
	Defensive tactics.	Expanded discussion of antitakeover provisions.
	Divestitures and restructurings.	Important actions such as equity carve-outs, spins-offs, and split-ups are examined.
	Mergers and acquisitions.	Develops essentials of M&A analysis, including financial, tax, and accounting issues.
	Minicase: The Birdie Golf–Hybrid Golf Merger.	Covers small business valuation for acquisition purposes.
CHAPTER 27 Leasing	Synthetic leases.	Discusses controversial practice of custom-tailored, "off-balance-sheet" financing.
	Leases and lease valuation.	Essentials of leasing, good and bad reasons for leasing, and NPV of leasing are examined.
	Minicase: The Decision to Lease or Buy at Warf Computers.	Covers lease-or-buy and related issues for a small business.

In-Text Study Features

To meet the varied needs of its intended audience, *Fundamentals of Corporate Finance* is rich in valuable learning tools and support.

CHAPTER-OPENING VIGNETTES

Vignettes drawn from real-world events introduce students to the chapter concepts.

PART 5 Risk and Return

Some Lessons from Capital Market History

12

WITH THE S&P 500 UP about 32 percent and the NASDAQ index up about 38 percent in 2013, stock market performance overall was well above average for the year. However, investors in Fannie Mae had to be thrilled with the 1,333 percent gain in that stock, and investors in Freddie Mac had to feel pleased with its 963 percent gain. Of course, not all stocks increased during the year. Stock in communications services company NII Holdings fell 63 percent during the year, and stock in retailer JC Penney fell 54 percent. These examples show that there were tremendous potential profits to be made during 2013, but there was also the risk of losing money—lots of it. So what should you, as a stock market investor, expect when you invest your own money? In this chapter, we study almost nine decades of market history to find out.

▲ For updates on the latest happenings in finance, visit www.fundamentalsofcorporatefinance.blogspot.com.

Learning Objectives

After studying this chapter, you should understand:

LO1 How to calculate the return on an investment.

LO2 The historical returns on various important types of investments.

LO3 The historical risks on various important types of investments.

LO4 The implications of market efficiency.

CHAPTER LEARNING OBJECTIVES

This feature maps out the topics and learning goals in every chapter. Each end-of-chapter problem and test bank question is linked to a learning objective, to help you organize your assessment of knowledge and comprehension.

PEDAGOGICAL USE OF COLOR

This learning tool continues to be an important feature of *Fundamentals of Corporate Finance.* In almost every chapter, color plays an extensive, nonschematic, and largely self-evident role. A guide to the functional use of color is on the endsheets of the text.

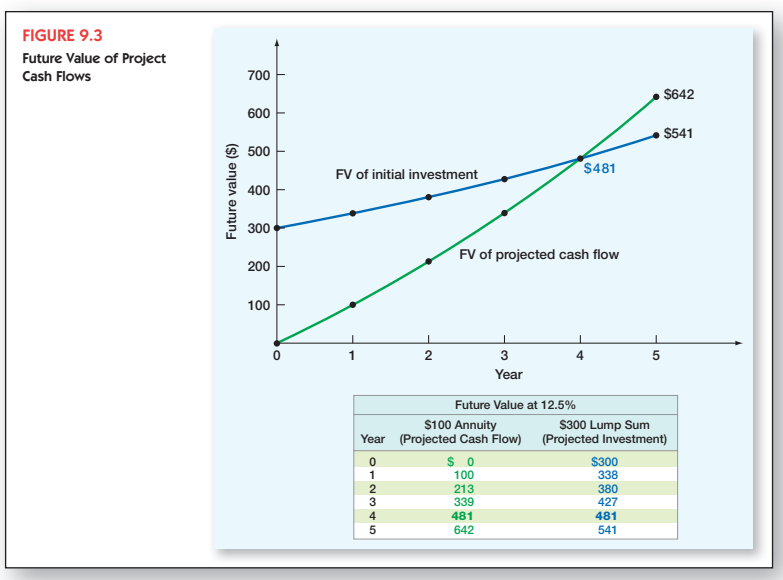


FIGURE 9.3
Future Value of Project Cash Flows

Future Value at 12.5%		
Year	$100 Annuity (Projected Cash Flow)	$300 Lump Sum (Projected Investment)
0	$ 0	$300
1	100	338
2	213	380
3	339	427
4	481	481
5	642	541

IN THEIR OWN WORDS BOXES

This series of boxes are the popular articles updated from previous editions written by a distinguished scholar or practitioner on key topics in the text. Boxes include essays by Merton Miller on capital structure, Fischer Black on dividends, and Roger Ibbotson on capital market history. A complete list of "In Their Own Words" boxes appears on page xlv.

IN THEIR OWN WORDS ...

Robert C. Higgins on Sustainable Growth

Most financial officers know intuitively that it takes money to make money. Rapid sales growth requires increased assets in the form of accounts receivable, inventory, and fixed plant, which, in turn, require money to pay for assets. They also know that if their company does not have the money when needed, it can literally "grow broke." The sustainable growth equation states these intuitive truths explicitly.

Sustainable growth is often used by bankers and other external analysts to assess a company's credit-worthiness. They are aided in this exercise by several sophisticated computer software packages that provide detailed analyses of the company's past financial performance, including its annual sustainable growth rate.

Bankers use this information in several ways. Quick comparison of a company's actual growth rate to its sustainable rate tells the banker what issues will be at the top of management's financial agenda. If actual growth consistently exceeds sustainable growth, management's problem will be where to get the cash to finance growth. The banker thus can anticipate interest in loan products. Conversely, if sustainable growth consistently exceeds actual, the banker had best be prepared to talk about investment products, because management's problem will be what to do with all the cash that keeps piling up in the till.

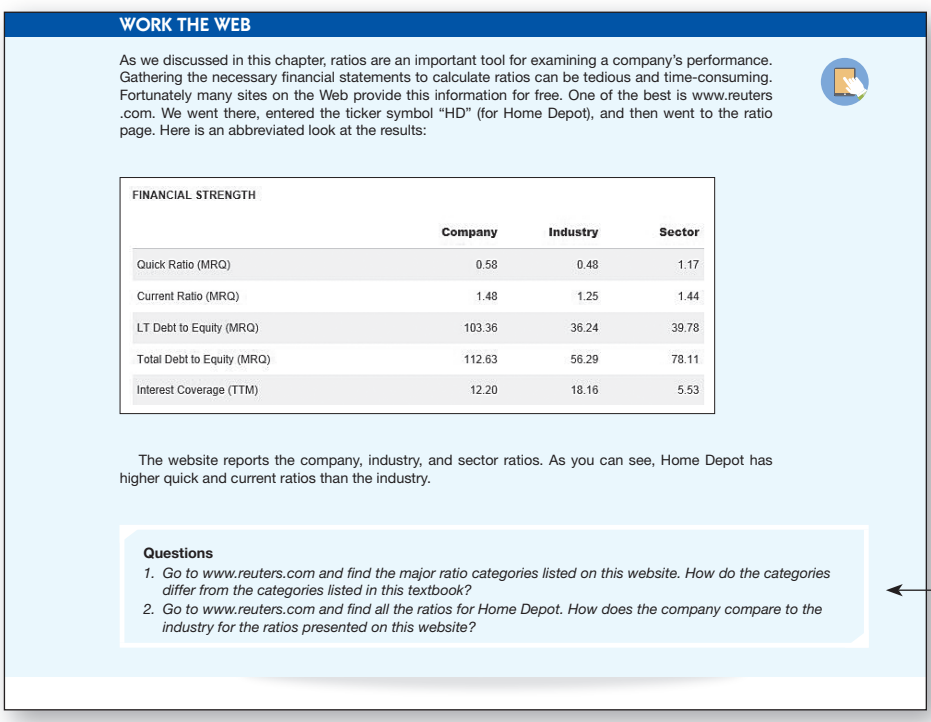
Bankers also find the sustainable growth equation useful for explaining to financially inexperienced small business owners and overly optimistic entrepreneurs that, for the long-run viability of their business, it is necessary to keep growth and profitability in proper balance.

Finally, comparison of actual to sustainable growth rates helps a banker understand why a loan applicant needs money and for how long the need might continue. In one instance, a loan applicant requested $100,000 to pay off several insistent suppliers and promised to repay in a few months when he collected some accounts receivable that were coming due. A sustainable growth analysis revealed that the firm had been growing at four to six times its sustainable growth rate and that this pattern was likely to continue in the foreseeable future. This alerted the banker to the fact that impatient suppliers were only a symptom of the much more fundamental disease of overly rapid growth, and that a $100,000 loan would likely prove to be only the down payment on a much larger, multiyear commitment.

Robert C. Higgins is the Marguerite Reimers Professor of Finance, Emeritus, at the Foster School of Business at the University of Washington. He pioneered the use of sustainable growth as a tool for financial analysis.

A NOTE ABOUT SUSTAINABLE GROWTH RATE CALCULATIONS

Very commonly, the sustainable growth rate is calculated using just the numerator in our expression, ROE $\times$ b. This causes some confusion, which we can clear up here. The issue has to do with how ROE is computed. Recall that ROE is calculated as net income divided by total equity. If total equity is taken from an ending balance sheet (as we have done consistently, and is commonly done in practice), then our formula is the right one. However, if total equity is from the beginning of the period, then the simpler formula is the correct one.



WORK THE WEB

As we discussed in this chapter, ratios are an important tool for examining a company's performance. Gathering the necessary financial statements to calculate ratios can be tedious and time-consuming. Fortunately many sites on the Web provide this information for free. One of the best is www.reuters.com. We went there, entered the ticker symbol "HD" (for Home Depot), and then went to the ratio page. Here is an abbreviated look at the results:

FINANCIAL STRENGTH

	Company	Industry	Sector
Quick Ratio (MRQ)	0.58	0.48	1.17
Current Ratio (MRQ)	1.48	1.25	1.44
LT Debt to Equity (MRQ)	103.36	36.24	39.78
Total Debt to Equity (MRQ)	112.63	56.29	78.11
Interest Coverage (TTM)	12.20	18.16	5.53

The website reports the company, industry, and sector ratios. As you can see, Home Depot has higher quick and current ratios than the industry.

Questions

1. *Go to www.reuters.com and find the major ratio categories listed on this website. How do the categories differ from the categories listed in this textbook?*
2. *Go to www.reuters.com and find all the ratios for Home Depot. How does the company compare to the industry for the ratios presented on this website?*

WORK THE WEB BOXES

These boxes show students how to research financial issues using the Web and then how to use the information they find to make business decisions. Work the Web boxes also include interactive follow-up questions and exercises.

REAL-WORLD EXAMPLES

Actual events are integrated throughout the text, tying chapter concepts to real life through illustration and reinforcing the relevance of the material. Some examples tie into the chapter-opening vignette for added reinforcement.

SPREADSHEET STRATEGIES

How to Calculate Present Values with Multiple Future Cash Flows Using a Spreadsheet

Just as we did in our previous chapter, we can set up a basic spreadsheet to calculate the present values of the individual cash flows as follows. Notice that we have simply calculated the present values one at a time and added them up:

	A	B	C	D	E
1					
2	Using a spreadsheet to value multiple future cash flows				
3					
4	What is the present value of $200 in one year, $400 the next year, $600 the next year, and				
5	$800 the last year if the discount rate is 12 percent?				
6					
7	Rate:	.12			
8					
9	Year	Cash flows	Present values	Formula used	
10	1	$200	$178.57	=PV(B7,A10,0,−B10)	
11	2	$400	$318.88	=PV(B7,A11,0,−B11)	
12	3	$600	$427.07	=PV(B7,A12,0,−B12)	
13	4	$800	$508.41	=PV(B7,A13,0,−B13)	
14					
15		Total PV:	$1,432.93	=SUM(C10:C13)	
16					
17	Notice the negative signs inserted in the PV formulas. These just make the present values have				
18	positive signs. Also, the discount rate in cell B7 is entered as B7 (an "absolute" reference)				
19	because it is used over and over. We could have just entered ".12" instead, but our approach is				
20	more flexible.				
21					
22					

SPREADSHEET STRATEGIES

This feature introduces students to Excel and shows them how to set up spreadsheets in order to analyze common financial problems—a vital part of every business student's education.

CALCULATOR HINTS

Brief calculator tutorials appear in selected chapters to help students learn or brush up on their financial calculator skills. These complement the Spreadsheet Strategies.

CALCULATOR HINTS

How to Calculate Present Values with Multiple Future Cash Flows Using a Financial Calculator

To calculate the present value of multiple cash flows with a financial calculator, we will simply discount the individual cash flows one at a time using the same technique we used in our previous chapter, so this is not really new. However, we can show you a shortcut. We will use the numbers in Example 6.3 to illustrate.

To begin, of course we first remember to clear out the calculator! Next, from Example 6.3, the first cash flow is $200 to be received in one year and the discount rate is 12 percent, so we do the following:

	N	I/Y	PMT	PV	FV
Enter	1	12			200
Solve for				−178.57	

Now, you can write down this answer to save it, but that's inefficient. All calculators have a memory where you can store numbers. Why not just save it there? Doing so cuts way down on mistakes because you don't have to write down and/or rekey numbers, and it's much faster.

Next we value the second cash flow. We need to change N to 2 and FV to 400. As long as we haven't changed anything else, we don't have to reenter I/Y or clear out the calculator, so we have:

	N	I/Y	PMT	PV	FV
Enter	2				400
Solve for				−318.88	

CONCEPT BUILDING

Chapter sections are intentionally kept short to promote a step-by-step, building block approach to learning. Each section is then followed by a series of short concept questions that highlight the key ideas just presented. Students use these questions to make sure they can identify and understand the most important concepts as they read.

Concept Questions

3.3a What are the five groups of ratios? Give two or three examples of each kind.

3.3b Given the total debt ratio, what other two ratios can be computed? Explain how.

3.3c Turnover ratios all have one of two figures as the numerator. What are these two figures? What do these ratios measure? How do you interpret the results?

3.3d Profitability ratios all have the same figure in the numerator. What is it? What do these ratios measure? How do you interpret the results?

SUMMARY TABLES

These tables succinctly restate key principles, results, and equations. They appear whenever it is useful to emphasize and summarize a group of related concepts. For an example, see Chapter 3, page 69.

PV for a perpetuity = C/r **[6.4]**

For example, an investment offers a perpetual cash flow of $500 every year. The return you require on such an investment is 8 percent. What is the value of this investment? The value of this perpetuity is:

Perpetuity PV = C/r = $500/.08 = $6,250

For future reference, Table 6.2 contains a summary of the annuity and perpetuity basic calculations we described. By now, you probably think that you'll just use online calculators to handle annuity problems. Before you do, see our nearby *Work the Web* box!

LABELED EXAMPLES

Separate numbered and titled examples are extensively integrated into the chapters. These examples provide detailed applications and illustrations of the text material in a step-by-step format. Each example is completely self-contained so students don't have to search for additional information. Based on our classroom testing, these examples are among the most useful learning aids because they provide both detail and explanation.

Preferred Stock — EXAMPLE 6.7

Preferred stock (or preference stock) is an important example of a perpetuity. When a corporation sells preferred stock, the buyer is promised a fixed cash dividend every period (usually every quarter) forever. This dividend must be paid before any dividend can be paid to regular stockholders—hence the term *preferred*.

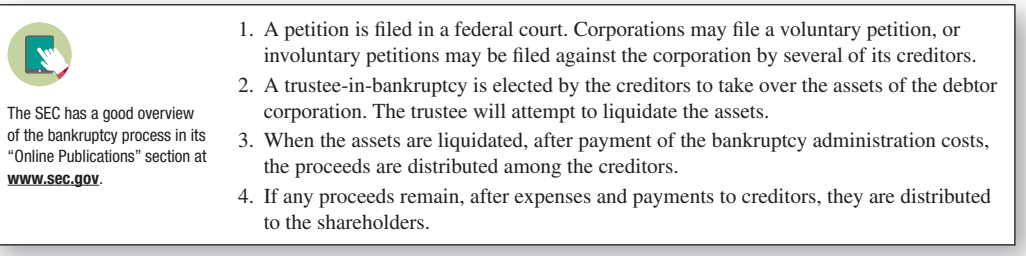
Suppose the Fellini Co. wants to sell preferred stock at $100 per share. A similar issue of preferred stock already outstanding has a price of $40 per share and offers a dividend of $1 every quarter. What dividend will Fellini have to offer if the preferred stock is going to sell?

KEY TERMS

Key Terms are printed in bold type and defined within the text the first time they appear. They also appear in the margins with definitions for easy location and identification by the student.

EXPLANATORY WEB LINKS

These Web links are provided in the margins of the text. They are specifically selected to accompany text material and provide students and instructors with a quick way to check for additional information using the Internet.

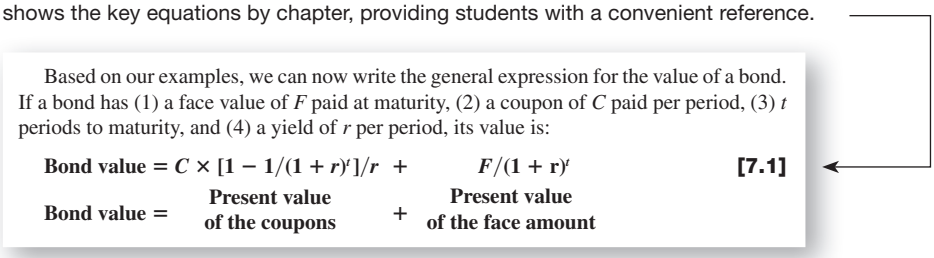


The SEC has a good overview of the bankruptcy process in its "Online Publications" section at **www.sec.gov**.

1. A petition is filed in a federal court. Corporations may file a voluntary petition, or involuntary petitions may be filed against the corporation by several of its creditors.
2. A trustee-in-bankruptcy is elected by the creditors to take over the assets of the debtor corporation. The trustee will attempt to liquidate the assets.
3. When the assets are liquidated, after payment of the bankruptcy administration costs, the proceeds are distributed among the creditors.
4. If any proceeds remain, after expenses and payments to creditors, they are distributed to the shareholders.

KEY EQUATIONS

Called out in the text, key equations are identified by an equation number. The list in Appendix B shows the key equations by chapter, providing students with a convenient reference.



Based on our examples, we can now write the general expression for the value of a bond. If a bond has (1) a face value of F paid at maturity, (2) a coupon of C paid per period, (3) t periods to maturity, and (4) a yield of r per period, its value is:

$$\text{Bond value} = C \times [1 - 1/(1 + r)^t]/r + F/(1 + r)^t \quad \textbf{[7.1]}$$

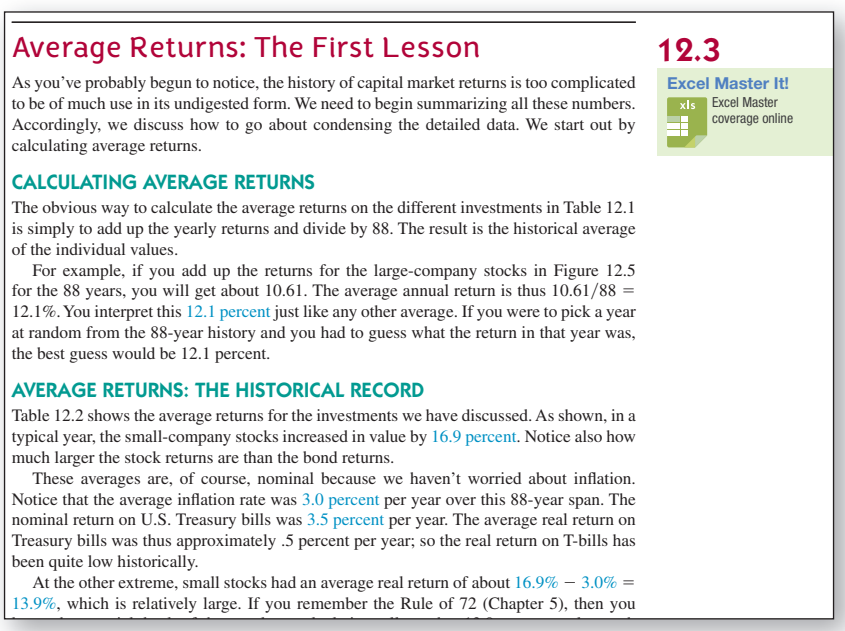
$$\text{Bond value} = \begin{matrix}\text{Present value} \\ \text{of the coupons}\end{matrix} + \begin{matrix}\text{Present value} \\ \text{of the face amount}\end{matrix}$$

HIGHLIGHTED CONCEPTS

Throughout the text, important ideas are pulled out and presented in a highlighted box—signaling to students that this material is particularly relevant and critical for their understanding. For examples, Chapter 10, page 313; Chapter 13, page 434.

EXCEL MASTER

Icons in the margin identify concepts and skills covered in our unique, RWJ-created Excel Master program. For more training in Excel functions for finance, and for more practice, log on to McGraw-Hill's *Connect Finance* for *Fundamentals of Corporate Finance* to access the Excel Master files. This pedagogically superior tool will help get your students the practice they need to succeed—and to exceed expectations.



12.3

Average Returns: The First Lesson

Excel Master It!

Excel Master coverage online

As you've probably begun to notice, the history of capital market returns is too complicated to be of much use in its undigested form. We need to begin summarizing all these numbers. Accordingly, we discuss how to go about condensing the detailed data. We start out by calculating average returns.

CALCULATING AVERAGE RETURNS

The obvious way to calculate the average returns on the different investments in Table 12.1 is simply to add up the yearly returns and divide by 88. The result is the historical average of the individual values.

For example, if you add up the returns for the large-company stocks in Figure 12.5 for the 88 years, you will get about 10.61. The average annual return is thus 10.61/88 = 12.1%. You interpret this 12.1 percent just like any other average. If you were to pick a year at random from the 88-year history and you had to guess what the return in that year was, the best guess would be 12.1 percent.

AVERAGE RETURNS: THE HISTORICAL RECORD

Table 12.2 shows the average returns for the investments we have discussed. As shown, in a typical year, the small-company stocks increased in value by 16.9 percent. Notice also how much larger the stock returns are than the bond returns.

These averages are, of course, nominal because we haven't worried about inflation. Notice that the average inflation rate was 3.0 percent per year over this 88-year span. The nominal return on U.S. Treasury bills was 3.5 percent per year. The average real return on Treasury bills was thus approximately .5 percent per year; so the real return on T-bills has been quite low historically.

At the other extreme, small stocks had an average real return of about 16.9% − 3.0% = 13.9%, which is relatively large. If you remember the Rule of 72 (Chapter 5), then you

CHAPTER SUMMARY AND CONCLUSIONS

Every chapter ends with a concise, but thorough, summary of the important ideas—helping students review the key points and providing closure to the chapter.

CHAPTER REVIEW AND SELF-TEST PROBLEM

2.1 Cash Flow for Mara Corporation This problem will give you some practice working with financial statements and figuring cash flow. Based on the following information for Mara Corporation, prepare an income statement for 2015 and balance sheets for 2014 and 2015. Next, following our U.S. Corporation examples in the chapter, calculate cash flow from assets, cash flow to creditors, and cash flow to stockholders for Mara for 2015. Use a 35 percent tax rate throughout. You can check your answers against ours, found in the following section.

	2014	2015
Sales	$4,203	$4,507
Cost of goods sold	2,422	2,633
Depreciation	785	952
Interest	180	196
Dividends	225	250
Current assets	2,205	2,429
Net fixed assets	7,344	7,650
Current liabilities	1,003	1,255
Long-term debt	3,106	2,085

CHAPTER REVIEW AND SELF-TEST PROBLEMS

Appearing after the Summary and Conclusions, each chapter includes a Chapter Review and Self-Test Problem section. These questions and answers allow students to test their abilities in solving key problems related to the chapter content and provide instant reinforcement.

CONCEPTS REVIEW AND CRITICAL THINKING QUESTIONS

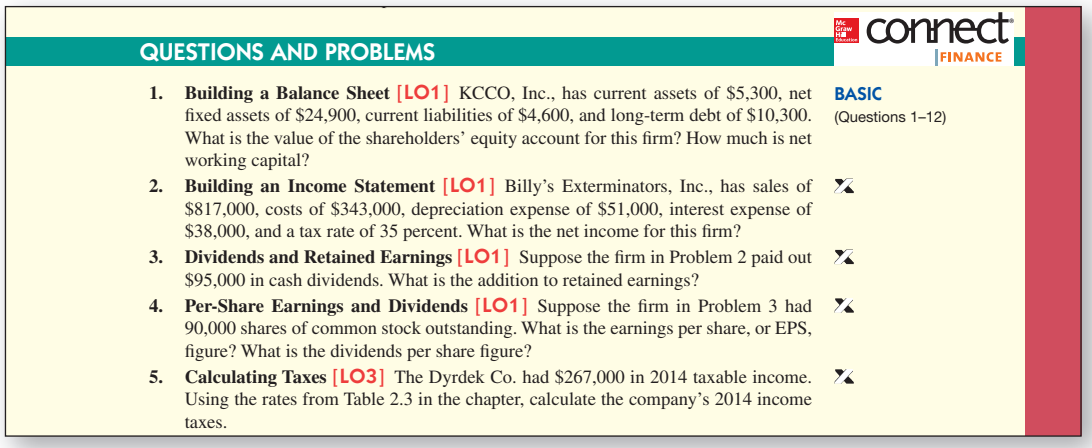
This successful end-of-chapter section facilitates your students' knowledge of key principles, as well as intuitive understanding of the chapter concepts. A number of the questions relate to the chapter-opening vignette—reinforcing student critical thinking skills and the learning of chapter material.

CONCEPTS REVIEW AND CRITICAL THINKING QUESTIONS

1. **Liquidity** [LO1] What does liquidity measure? Explain the trade-off a firm faces between high liquidity and low liquidity levels.
2. **Accounting and Cash Flows** [LO2] Why might the revenue and cost figures shown on a standard income statement not be representative of the actual cash inflows and outflows that occurred during a period?
3. **Book Values versus Market Values** [LO1] In preparing a balance sheet, why do you think standard accounting practice focuses on historical cost rather than market value?
4. **Operating Cash Flow** [LO2] In comparing accounting net income and operating cash flow, name two items you typically find in net income that are not in operating cash flow. Explain what each is and why it is excluded in operating cash flow.
5. **Book Values versus Market Values** [LO1] Under standard accounting rules, it is possible for a company's liabilities to exceed its assets. When this occurs, the owners' equity is negative. Can this happen with market values? Why or why not?
6. **Cash Flow from Assets** [LO4] Suppose a company's cash flow from assets is negative for a particular period. Is this necessarily a good sign or a bad sign?
7. **Operating Cash Flow** [LO4] Suppose a company's operating cash flow has been negative for several years running. Is this necessarily a good sign or a bad sign?
8. **Net Working Capital and Capital Spending** [LO4] Could a company's change in NWC be negative in a given year? (*Hint:* Yes.) Explain how this might come about. What about net capital spending?
9. **Cash Flow to Stockholders and Creditors** [LO4] Could a company's cash flow to stockholders be negative in a given year? (*Hint:* Yes.) Explain how this might come about. What about cash flow to creditors?
10. **Firm Values** [LO1] Referring back to the Microsoft example used at the beginning of the chapter, note that we suggested that Microsoft's stockholders probably didn't suffer as a result of the reported loss. What do you think was the basis for our conclusion?

END-OF-CHAPTER QUESTIONS AND PROBLEMS

Students learn better when they have plenty of opportunity to practice; therefore, *FCF,* 11e, provides extensive end-of-chapter questions and problems. The end-of-chapter support greatly exceeds typical introductory textbooks. The questions and problems are separated into three learning levels: Basic, Intermediate, and Challenge. Answers to selected end-of-chapter material appear in Appendix C. Also, most problems are available in McGraw-Hill's *Connect*—see page xxiv for details.



QUESTIONS AND PROBLEMS

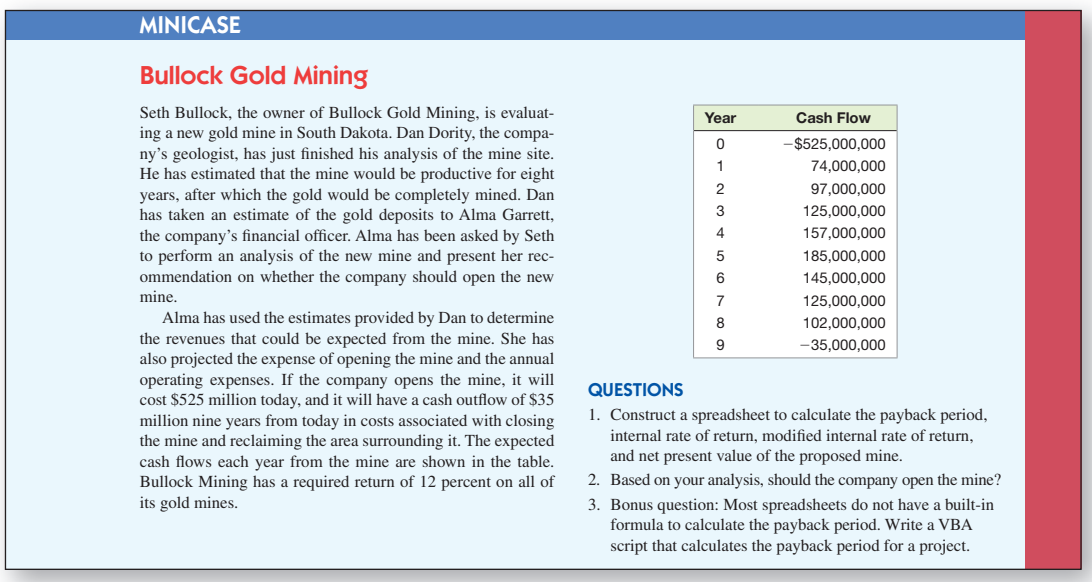
connect FINANCE

BASIC (Questions 1–12)

1. **Building a Balance Sheet** [LO1] KCCO, Inc., has current assets of $5,300, net fixed assets of $24,900, current liabilities of $4,600, and long-term debt of $10,300. What is the value of the shareholders' equity account for this firm? How much is net working capital?
2. **Building an Income Statement** [LO1] Billy's Exterminators, Inc., has sales of $817,000, costs of $343,000, depreciation expense of $51,000, interest expense of $38,000, and a tax rate of 35 percent. What is the net income for this firm?
3. **Dividends and Retained Earnings** [LO1] Suppose the firm in Problem 2 paid out $95,000 in cash dividends. What is the addition to retained earnings?
4. **Per-Share Earnings and Dividends** [LO1] Suppose the firm in Problem 3 had 90,000 shares of common stock outstanding. What is the earnings per share, or EPS, figure? What is the dividends per share figure?
5. **Calculating Taxes** [LO3] The Dyrdek Co. had $267,000 in 2014 taxable income. Using the rates from Table 2.3 in the chapter, calculate the company's 2014 income taxes.

END-OF-CHAPTER CASES

Located at the end of the book's chapters, these minicases focus on real-life company situations that embody important corporate finance topics. Each case presents a new scenario, data, and a dilemma. Several questions at the end of each case require students to analyze and focus on all of the material they learned from each chapter.



MINICASE

Bullock Gold Mining

Seth Bullock, the owner of Bullock Gold Mining, is evaluating a new gold mine in South Dakota. Dan Dority, the company's geologist, has just finished his analysis of the mine site. He has estimated that the mine would be productive for eight years, after which the gold would be completely mined. Dan has taken an estimate of the gold deposits to Alma Garrett, the company's financial officer. Alma has been asked by Seth to perform an analysis of the new mine and present her recommendation on whether the company should open the new mine.

Alma has used the estimates provided by Dan to determine the revenues that could be expected from the mine. She has also projected the expense of opening the mine and the annual operating expenses. If the company opens the mine, it will cost $525 million today, and it will have a cash outflow of $35 million nine years from today in costs associated with closing the mine and reclaiming the area surrounding it. The expected cash flows each year from the mine are shown in the table. Bullock Mining has a required return of 12 percent on all of its gold mines.

Year	Cash Flow
0	−$525,000,000
1	74,000,000
2	97,000,000
3	125,000,000
4	157,000,000
5	185,000,000
6	145,000,000
7	125,000,000
8	102,000,000
9	−35,000,000

QUESTIONS

1. Construct a spreadsheet to calculate the payback period, internal rate of return, modified internal rate of return, and net present value of the proposed mine.
2. Based on your analysis, should the company open the mine?
3. Bonus question: Most spreadsheets do not have a built-in formula to calculate the payback period. Write a VBA script that calculates the payback period for a project.

WEB EXERCISES (ONLINE ONLY)

For instructors interested in integrating even more online resources and problems into their course, these Web activities show students how to learn from the vast amount of financial resources available on the Internet. In the 11th edition of *Fundamentals,* these Web exercises are available to students and instructors through *Connect.*

Comprehensive Teaching and Learning Package

This edition of *Fundamentals* has several options in terms of the textbook, instructor supplements, student supplements, and multimedia products. Mix and match to create a package that is perfect for your course!

TEXTBOOK

Customize your version of *Fundamentals* 11e through McGraw-Hill's *Create* platform. Teach the chapters you want in the order you want—your rep can show you how!

INSTRUCTOR RESOURCES

Keep all the supplements in one place! Your *Connect* Library contains all the necessary supplements—Instructor's Manual, Solutions, Test Bank, Computerized Test Bank, and PowerPoint—all in one easy-to-find, easy-to-use, integrated place: your *Connect Finance* course.

- **Instructor's Manual (IM)**
  Prepared by Denver Travis, Eastern Kentucky University
  A great place to find new lecture ideas! The annotated outline for each chapter includes lecture tips, real-world tips, ethics notes, suggested PowerPoint slides, and, when appropriate, a video synopsis.

- **Solutions Manual (SM)**
  Prepared by Brad Jordan, University of Kentucky, and Joseph Smolira, Belmont University
  The *Fundamentals* Solutions Manual provides detailed solutions to the extensive end-of-chapter material, including concept review questions, quantitative problems, and cases.

- **Test Bank**
  Prepared by Kay Johnson
  Over 100 questions and problems per chapter! Each chapter includes questions that test the understanding of key terms in the book; questions patterned after learning objectives, concept questions, chapter opening vignettes, boxes, and highlighted phrases; multiple-choice problems patterned after end-of-chapter questions at a variety of skill levels; and essay questions to test problem-solving skills and more advanced understanding of concepts.

- **Computerized Test Bank (Windows)**
  Create your own tests in a snap! These additional questions are found in a computerized test bank utilizing McGraw-Hill's EZ Test testing software to quickly create customized exams. This user-friendly program allows instructors to sort questions by format; edit existing questions or add new ones; and scramble questions for multiple versions of the same test.

- **PowerPoint Presentations**
  Prepared by Denver Travis, Eastern Kentucky University
  The PowerPoint slides for the 11th edition have been revised to include a wealth of instructor material, including lecture tips, real-world examples, and international notes. Each presentation now also includes slides dedicated entirely to ethics notes that relate to the chapter topics. In addition, the PPTs provide exhibits and examples both from the book and from outside sources.

Applicable slides have Web links that take you directly to specific Internet sites, or a spreadsheet link to show an example in Excel. Go to the Notes Page function for more tips and information while presenting the slides to your class.

STUDENT RESOURCES

Student resources for this edition can be found through the Library tab in your *Connect Finance* course. If you aren't using *Connect,* visit us at http://connect.mheducation.com to learn more, and ask your professor about using it in your course for access to a great group of supplement resources!

- **Excel Resources**
  For those seeking additional practice, students can access Excel template problems and Excel Master, designed by Brad Jordan and Joe Smolira.
- **Narrated PowerPoint Slides**
  The Narrated PowerPoints provide real-world examples accompanied by step-by-step instructions and explanations for solving problems presented in the chapter. The Concept Checks from the text are also integrated into the slides to reinforce the key topics in the chapter. Designed specifically to appeal to the different learning methods of students, the slides provide a visual and audio explanation of topics and problems. Click on the slide and listen to the accompanying narration!

TEACHING SUPPORT

Along with having access to all of the student resource materials through the *Connect* Library tab, you also have password-protected access to the Instructor's Manual, solutions to end-of-chapter problems and cases, Instructor's PowerPoint, Excel Template Solutions, video clips, and video projects and questions.

HOW THE MARKET WORKS

Students receive free access to this Web-based portfolio simulation with a hypothetical brokerage account to buy and sell stocks and mutual funds. Students can use the real data found at this site in conjunction with the chapters on investments. They can also compete against students in their class, and around the United States to run the most successful portfolio. This site is powered by Stock-Trak, the leading provider of investment simulation services to the academic community.

AVAILABLE FOR PURCHASE & PACKAGING

FinGame Online 5.0

By LeRoy Brooks, John Carroll University

(ISBN 10: 0077219880/ISBN 13: 9780077219888)

Just $15.00 when packaged with this text. In this comprehensive simulation game, students control a hypothetical company over numerous periods of operation. The game is now tied to the text by exercises found on the *Connect* Student Library. As students make major financial and operating decisions for their company, they will develop and enhance their skills in financial management and financial accounting statement analysis.

FINANCIAL ANALYSIS WITH AN ELECTRONIC CALCULATOR, SIXTH EDITION

by Mark A. White, University of Virginia, McIntire School of Commerce
(ISBN 10: 0073217093/ISBN 13: 9780073217093)

The information and procedures in this supplementary text enable students to master the use of financial calculators and develop a working knowledge of financial mathematics and problem solving. Complete instructions are included for solving all major problem types on four popular models: HP 10B and 12C, TI BA II Plus, and TI-84. Hands-on problems with detailed solutions allow students to practice the skills outlined in the text and obtain instant reinforcement. *Financial Analysis with an Electronic Calculator* is a self-contained supplement to the introductory financial management course.

MCGRAW-HILL'S *CONNECT FINANCE*

LESS MANAGING. MORE TEACHING. GREATER LEARNING.

McGraw-Hill's *Connect Finance* is an online assignment and assessment solution that connects students with the tools and resources they'll need to achieve success.

McGraw-Hill's *Connect Finance* helps prepare students for their future by enabling faster learning, more efficient studying, and higher retention of knowledge.

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Connect Finance offers a number of powerful tools and features to make managing assignments easier, so faculty can spend more time teaching. With *Connect Finance,* students can engage with their coursework anytime and anywhere, making the learning process more accessible and efficient. *Connect Finance* offers you the features described below.

Simple Assignment Management

With *Connect Finance,* creating assignments is easier than ever, so you can spend more time teaching and less time managing. The assignment management function enables you to:

- Create and deliver assignments easily with selectable end-of-chapter questions and test bank items.
- Streamline lesson planning, student progress reporting, and assignment grading to make classroom management more efficient than ever.
- Go paperless with the eBook and online submission and grading of student assignments.

Smart Grading

When it comes to studying, time is precious. *Connect Finance* helps students learn more efficiently by providing feedback and practice material when they need it, where they need it. When it comes to teaching, your time also is precious. The grading function enables you to:

- Have assignments scored automatically, giving students immediate feedback on their work and side-by-side comparisons with correct answers.
- Access and review each response; manually change grades or leave comments for students to review.
- Reinforce classroom concepts with practice tests and instant quizzes.

Instructor Library

The *Connect Finance* Instructor Library is your repository for additional resources to improve student engagement in and out of class. You can select and use any asset that enhances your lecture. The *Connect Finance* Instructor Library includes all of the instructor supplements for this text.

Student Study Center

The *Connect Finance* Student Study Center is the place for students to access additional resources. The Student Study Center:

- Offers students quick access to lectures, practice materials, eBooks, and more.
- Provides instant practice material and study questions, easily accessible on the go.

Student Progress Tracking

Connect Finance keeps instructors informed about how each student, section, and class is performing, allowing for more productive use of lecture and office hours. The progress-tracking function enables you to:

- View scored work immediately and track individual or group performance with assignment and grade reports.
- Access an instant view of student or class performance relative to learning objectives.
- Collect data and generate reports required by many accreditation organizations, such as AACSB.

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- Performance Analytics—Now available for both instructors and students, easy-to-decipher data illuminates course performance. Students always know how they're doing in class, while instructors can view student and section performance at-a-glance.
- Mobile—Available on tablets, students can now access assignments, quizzes, and results on-the-go, while instructors can assess student and section performance anytime, anywhere.
- Personalized Learning—Squeezing the most out of study time, the adaptive engine in *Connect* creates a highly personalized learning path for each student by identifying areas of weakness, and surfacing learning resources to assist in the moment of need. This seamless integration of reading, practice, and assessment, ensures that the focus is on the most important content for that individual student at that specific time, while promoting long-term retention of the material.

http://connect.mheducation.com

DIAGNOSTIC AND ADAPTIVE LEARNING OF CONCEPTS: LEARNSMART

LEARNSMART® Students want to make the best use of their study time. The LearnSmart adaptive self-study technology within *Connect Finance* provides students with a seamless combination of practice, assessment, and remediation for every concept in the textbook. LearnSmart's intelligent software adapts to every student response and automatically delivers concepts that advance students' understanding while reducing time devoted to

the concepts already mastered. The result for every student is the fastest path to mastery of the chapter concepts. LearnSmart:

- Applies an intelligent concept engine to identify the relationships between concepts and to serve new concepts to each student only when he or she is ready.
- Adapts automatically to each student, so students spend less time on the topics they understand and practice more those they have yet to master.
- Provides continual reinforcement and remediation, but gives only as much guidance as students need.
- Integrates diagnostics as part of the learning experience.
- Enables you to assess which concepts students have efficiently learned on their own, thus freeing class time for more applications and discussion.

SMARTBOOK

SMARTBOOK™ Smartbook is an extension of LearnSmart—an adaptive eBook that helps students focus their study time more effectively. As students read, Smartbook assesses comprehension and dynamically highlights where they need to study more.

For more information about *Connect,* go to **http://connect.mheducation.com**, or contact your local McGraw-Hill sales representative.

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Tegrity Campus is a service that makes class time available 24/7 by automatically capturing every lecture in a searchable format for students to review when they study and complete assignments. With a simple one-click start-and-stop process, you capture all computer screens and corresponding audio. Students can replay any part of the class with easy-to-use browser-based viewing on a PC or Mac.

Educators know that the more students can see, hear, and experience class resources, the better they learn. In fact, studies prove it. With Tegrity Campus, students quickly recall key moments by using Tegrity Campus's unique search feature. This search helps students efficiently find what they need, when they need it, across an entire semester of class recordings. Help turn all your students' study time into learning moments immediately supported by your lecture.

To learn more about Tegrity, watch a 2-minute Flash demo at **www.tegrity.com**.

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Assurance of Learning Ready

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Throughout the development of this edition, we have taken great care to discover and eliminate errors. Our goal is to provide the best textbook available on the subject. To ensure that future editions are error-free, we gladly offer $10 per arithmetic error to the first individual reporting it as a modest token of our appreciation. More than this, we would like to hear from instructors and students alike. Please write and tell us how to make this a better text. Forward your comments to: Dr. Brad Jordan, c/o Editorial—Finance, McGraw-Hill Education, 1333 Burr Ridge Parkway, Burr Ridge, IL 60527.

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In Their Own Words Boxes

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1 Introduction to Corporate Finance

GEORGE ZIMMER, FOUNDER of The Men's Wearhouse, for years appeared in television ads promising "You're going to like the way you look. I guarantee it." But, in mid-2013, Zimmer evidently didn't look so good to the company's board of directors, which abruptly fired him. It was reported that Zimmer had a series of disagreements with the board, including a desire to take the company private. Evidently, Zimmer's ideas did not "suit" the board.

Understanding Zimmer's journey from the founder of a clothing store that used a cigar box as a cash register, to corporate executive, and finally to ex-employee takes us into issues involving the corporate form of organization, corporate goals, and corporate control, all of which we discuss in this chapter. You're going to learn a lot if you read it. We guarantee it.

▲ For updates on the latest happenings in finance, visit www.fundamentalsofcorporatefinance.blogspot.com.

Learning Objectives

After studying this chapter, you should understand:

- **LO1** The basic types of financial management decisions and the role of the financial manager.
- **LO2** The goal of financial management.
- **LO3** The financial implications of the different forms of business organization.
- **LO4** The conflicts of interest that can arise between managers and owners.

To begin our study of modern corporate finance and financial management, we need to address two central issues. First, what is corporate finance and what is the role of the financial manager in the corporation? Second, what is the goal of financial management? To describe the financial management environment, we consider the corporate form of organization and discuss some conflicts that can arise within the corporation. We also take a brief look at financial markets in the United States.

1.1 Corporate Finance and the Financial Manager

In this section, we discuss where the financial manager fits in the corporation. We start by defining *corporate finance* and the financial manager's job.

WHAT IS CORPORATE FINANCE?

Imagine that you were to start your own business. No matter what type you started, you would have to answer the following three questions in some form or another:

1. What long-term investments should you take on? That is, what lines of business will you be in and what sorts of buildings, machinery, and equipment will you need?
2. Where will you get the long-term financing to pay for your investment? Will you bring in other owners or will you borrow the money?
3. How will you manage your everyday financial activities such as collecting from customers and paying suppliers?

These are not the only questions by any means, but they are among the most important. Corporate finance, broadly speaking, is the study of ways to answer these three questions. Accordingly, we'll be looking at each of them in the chapters ahead.

THE FINANCIAL MANAGER

A striking feature of large corporations is that the owners (the stockholders) are usually not directly involved in making business decisions, particularly on a day-to-day basis. Instead, the corporation employs managers to represent the owners' interests and make decisions on their behalf. In a large corporation, the financial manager would be in charge of answering the three questions we raised in the preceding section.

For current issues facing CFOs, see **ww2.cfo.com**.

The financial management function is usually associated with a top officer of the firm, such as a vice president of finance or some other chief financial officer (CFO). Figure 1.1 is a simplified organizational chart that highlights the finance activity in a large firm. As shown, the vice president of finance coordinates the activities of the treasurer and the controller. The controller's office handles cost and financial accounting, tax payments, and management information systems. The treasurer's office is responsible for managing the firm's cash and credit, its financial planning, and its capital expenditures. These treasury activities are all related to the three general questions raised earlier, and the chapters ahead deal primarily with these issues. Our study thus bears mostly on activities usually associated with the treasurer's office.

FINANCIAL MANAGEMENT DECISIONS

As the preceding discussion suggests, the financial manager must be concerned with three basic types of questions. We consider these in greater detail next.

capital budgeting
The process of planning and managing a firm's long-term investments.

Capital Budgeting The first question concerns the firm's long-term investments. The process of planning and managing a firm's long-term investments is called **capital budgeting**. In capital budgeting, the financial manager tries to identify investment opportunities that are worth more to the firm than they cost to acquire. Loosely speaking, this means that the value of the cash flow generated by an asset exceeds the cost of that asset.

The types of investment opportunities that would typically be considered depend in part on the nature of the firm's business. For example, for a large retailer such as Walmart,

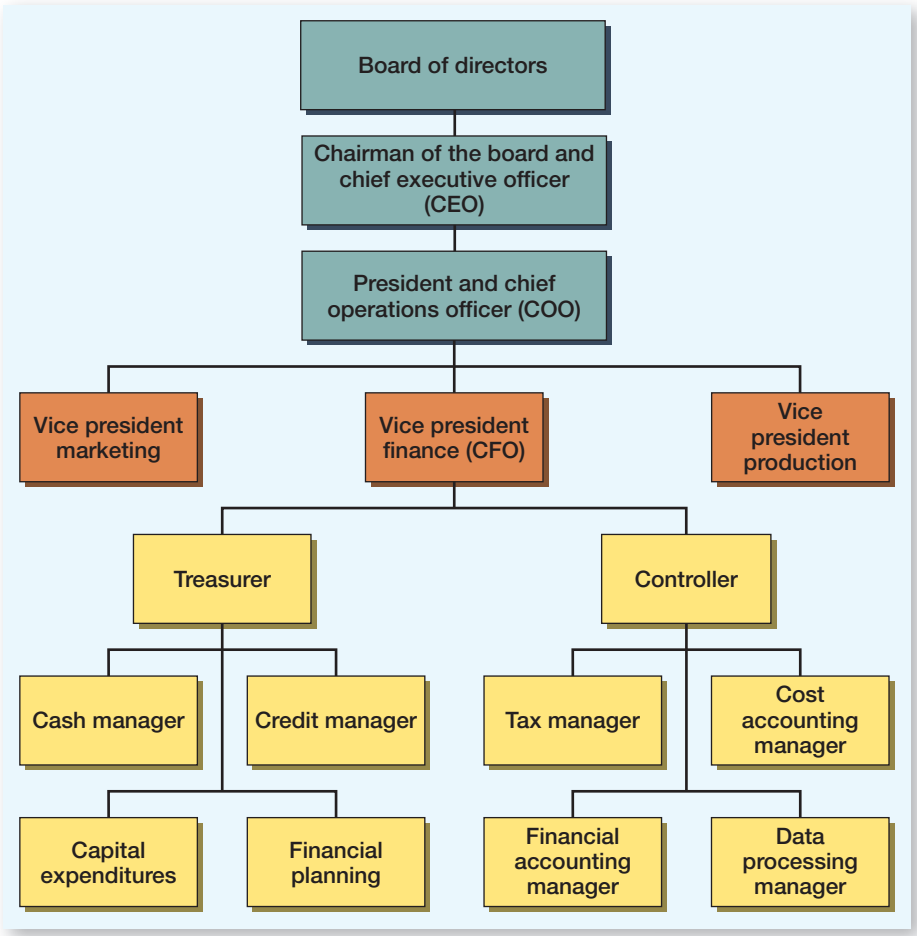

FIGURE 1.1
A Sample Simplified Organizational Chart

deciding whether to open another store would be an important capital budgeting decision. Similarly, for a software company such as Oracle or Microsoft, the decision to develop and market a new spreadsheet program would be a major capital budgeting decision. Some decisions, such as what type of computer system to purchase, might not depend so much on a particular line of business.

Regardless of the specific nature of an opportunity under consideration, financial managers must be concerned not only with how much cash they expect to receive, but also with when they expect to receive it and how likely they are to receive it. Evaluating the *size, timing,* and *risk* of future cash flows is the essence of capital budgeting. In fact, as we will see in the chapters ahead, whenever we evaluate a business decision, the size, timing, and risk of the cash flows will be by far the most important things we will consider.

Capital Structure The second question for the financial manager concerns ways in which the firm obtains and manages the long-term financing it needs to support its long-term investments. A firm's **capital structure** (or financial structure) is the specific mixture of long-term debt and equity the firm uses to finance its operations. The financial manager has two concerns in this area. First, how much should the firm borrow? That is, what mixture of debt and equity is best? The mixture chosen will affect both the risk and the value of the firm. Second, what are the least expensive sources of funds for the firm?

capital structure
The mixture of debt and equity maintained by a firm.

If we picture the firm as a pie, then the firm's capital structure determines how that pie is sliced—in other words, what percentage of the firm's cash flow goes to creditors and what percentage goes to shareholders. Firms have a great deal of flexibility in choosing a financial structure. The question of whether one structure is better than any other for a particular firm is the heart of the capital structure issue.

In addition to deciding on the financing mix, the financial manager has to decide exactly how and where to raise the money. The expenses associated with raising long-term financing can be considerable, so different possibilities must be carefully evaluated. Also, corporations borrow money from a variety of lenders in a number of different, and sometimes exotic, ways. Choosing among lenders and among loan types is another job handled by the financial manager.

working capital
A firm's short-term assets and liabilities.

Working Capital Management The third question concerns **working capital** management. The term *working capital* refers to a firm's short-term assets, such as inventory, and its short-term liabilities, such as money owed to suppliers. Managing the firm's working capital is a day-to-day activity that ensures that the firm has sufficient resources to continue its operations and avoid costly interruptions. This involves a number of activities related to the firm's receipt and disbursement of cash.

Some questions about working capital that must be answered are the following: (1) How much cash and inventory should we keep on hand? (2) Should we sell on credit? If so, what terms will we offer, and to whom will we extend them? (3) How will we obtain any needed short-term financing? Will we purchase on credit, or will we borrow in the short term and pay cash? If we borrow in the short term, how and where should we do it? These are just a small sample of the issues that arise in managing a firm's working capital.

Conclusion The three areas of corporate financial management we have described—capital budgeting, capital structure, and working capital management—are very broad categories. Each includes a rich variety of topics, and we have indicated only a few questions that arise in the different areas. The chapters ahead contain greater detail.

Concept Questions

1.1a What is the capital budgeting decision?

1.1b What do you call the specific mixture of long-term debt and equity that a firm chooses to use?

1.1c Into what category of financial management does cash management fall?

1.2 Forms of Business Organization

Large firms in the United States, such as Ford and Microsoft, are almost all organized as corporations. We examine the three different legal forms of business organization—sole proprietorship, partnership, and corporation—to see why this is so. Each form has distinct advantages and disadvantages for the life of the business, the ability of the business to raise cash, and taxes. A key observation is that as a firm grows, the advantages of the corporate form may come to outweigh the disadvantages.

SOLE PROPRIETORSHIP

sole proprietorship
A business owned by a single individual.

A **sole proprietorship** is a business owned by one person. This is the simplest type of business to start and is the least regulated form of organization. Depending on where you

live, you might be able to start a proprietorship by doing little more than getting a business license and opening your doors. For this reason, there are more proprietorships than any other type of business, and many businesses that later become large corporations start out as small proprietorships.

The owner of a sole proprietorship keeps all the profits. That's the good news. The bad news is that the owner has *unlimited liability* for business debts. This means that creditors can look beyond business assets to the proprietor's personal assets for payment. Similarly, there is no distinction between personal and business income, so all business income is taxed as personal income.

The life of a sole proprietorship is limited to the owner's life span, and the amount of equity that can be raised is limited to the amount of the proprietor's personal wealth. This limitation often means that the business is unable to exploit new opportunities because of insufficient capital. Ownership of a sole proprietorship may be difficult to transfer because this transfer requires the sale of the entire business to a new owner.

PARTNERSHIP

A **partnership** is similar to a proprietorship except that there are two or more owners (partners). In a *general partnership,* all the partners share in gains or losses, and all have unlimited liability for *all* partnership debts, not just some particular share. The way partnership gains (and losses) are divided is described in the *partnership agreement.* This agreement can be an informal oral agreement, such as "let's start a lawn mowing business," or a lengthy, formal written document.

partnership
A business formed by two or more individuals or entities.

In a *limited partnership,* one or more *general partners* will run the business and have unlimited liability, but there will be one or more *limited partners* who will not actively participate in the business. A limited partner's liability for business debts is limited to the amount that partner contributes to the partnership. This form of organization is common in real estate ventures, for example.

The advantages and disadvantages of a partnership are basically the same as those of a proprietorship. Partnerships based on a relatively informal agreement are easy and inexpensive to form. General partners have unlimited liability for partnership debts, and the partnership terminates when a general partner wishes to sell out or dies. All income is taxed as personal income to the partners, and the amount of equity that can be raised is limited to the partners' combined wealth. Ownership of a general partnership is not easily transferred because a transfer requires that a new partnership be formed. A limited partner's interest can be sold without dissolving the partnership, but finding a buyer may be difficult.

Because a partner in a general partnership can be held responsible for all partnership debts, having a written agreement is very important. Failure to spell out the rights and duties of the partners frequently leads to misunderstandings later on. Also, if you are a limited partner, you must not become deeply involved in business decisions unless you are willing to assume the obligations of a general partner. The reason is that if things go badly, you may be deemed to be a general partner even though you say you are a limited partner.

Based on our discussion, the primary disadvantages of sole proprietorships and partnerships as forms of business organization are (1) unlimited liability for business debts on the part of the owners, (2) limited life of the business, and (3) difficulty of transferring ownership. These three disadvantages add up to a single, central problem: the ability of such businesses to grow can be seriously limited by an inability to raise cash for investment.

CORPORATION

The **corporation** is the most important form (in terms of size) of business organization in the United States. A corporation is a legal "person," separate and distinct from its owners,

corporation
A business created as a distinct legal entity composed of one or more individuals or entities.

and it has many of the rights, duties, and privileges of an actual person. Corporations can borrow money and own property, can sue and be sued, and can enter into contracts. A corporation can even be a general partner or a limited partner in a partnership, and a corporation can own stock in another corporation.

Not surprisingly, starting a corporation is somewhat more complicated than starting the other forms of business organization. Forming a corporation involves preparing *articles of incorporation* (or a charter) and a set of *bylaws*. The articles of incorporation must contain a number of things, including the corporation's name, its intended life (which can be forever), its business purpose, and the number of shares that can be issued. This information must normally be supplied to the state in which the firm will be incorporated. For most legal purposes, the corporation is a "resident" of that state.

The bylaws are rules describing how the corporation regulates its existence. For example, the bylaws describe how directors are elected. These bylaws may be a simple statement of a few rules and procedures, or they may be quite extensive for a large corporation. The bylaws may be amended or extended from time to time by the stockholders.

In a large corporation, the stockholders and the managers are usually separate groups. The stockholders elect the board of directors, who then select the managers. Managers are charged with running the corporation's affairs in the stockholders' interests. In principle, stockholders control the corporation because they elect the directors.

As a result of the separation of ownership and management, the corporate form has several advantages. Ownership (represented by shares of stock) can be readily transferred, and the life of the corporation is therefore not limited. The corporation borrows money in its own name. As a result, the stockholders in a corporation have limited liability for corporate debts. The most they can lose is what they have invested.

The relative ease of transferring ownership, the limited liability for business debts, and the unlimited life of the business are why the corporate form is superior for raising cash. If a corporation needs new equity, for example, it can sell new shares of stock and attract new investors. Apple is an example. The company was a pioneer in the personal computer business. As demand for its products exploded, it had to convert to the corporate form of organization to raise the capital needed to fund growth and new product development. The number of owners can be huge; larger corporations have many thousands or even millions of stockholders. For example, in 2014, General Electric Company (better known as GE) had about 4 million stockholders and about 10.1 billion shares outstanding. In such cases, ownership can change continuously without affecting the continuity of the business.

The corporate form has a significant disadvantage. Because a corporation is a legal person, it must pay taxes. Moreover, money paid out to stockholders in the form of dividends is taxed again as income to those stockholders. This is *double taxation,* meaning that corporate profits are taxed twice: at the corporate level when they are earned and again at the personal level when they are paid out.[1]

Today, all 50 states have enacted laws allowing for the creation of a relatively new form of business organization, the limited liability company (LLC). The goal of this entity is to operate and be taxed like a partnership but retain limited liability for owners, so an LLC is essentially a hybrid of partnership and corporation. Although states have differing definitions for LLCs, the more important scorekeeper is the Internal Revenue Service (IRS). The IRS will consider an LLC a corporation, thereby subjecting it to double taxation, unless it meets certain specific criteria. In essence, an LLC cannot be too corporation-like, or it will be treated as one by the IRS. LLCs have become common. For example, Goldman, Sachs and Co., one of Wall Street's last remaining partnerships, decided to convert from a private

[1]An S corporation is a special type of small corporation that is essentially taxed like a partnership and thus avoids double taxation. In 2014, the maximum number of shareholders in an S corporation was 100.

TABLE 1.1 International Corporations

Company	Country of Origin	Type of Company	
		In Original Language	Translated
Bayerische Motoren Werke (BMW) AG	Germany	Aktiengesellschaft	Corporation
Dornier GmbH	Germany	Gesellschaft mit Beschränkter Haftung	Limited liability company
Rolls-Royce PLC	United Kingdom	Public limited company	Public limited company
Shell UK Ltd.	United Kingdom	Limited	Corporation
Unilever NV	Netherlands	Naamloze Vennootschap	Joint stock company
Fiat SpA	Italy	Società per Azioni	Joint stock company
Volvo AB	Sweden	Aktiebolag	Joint stock company
Peugeot SA	France	Société Anonyme	Joint stock company

partnership to an LLC (it later "went public," becoming a publicly held corporation). Large accounting firms and law firms by the score have converted to LLCs.

As the discussion in this section illustrates, the need of large businesses for outside investors and creditors is such that the corporate form will generally be the best for such firms. We focus on corporations in the chapters ahead because of the importance of the corporate form in the U.S. and world economies. Also, a few important financial management issues, such as dividend policy, are unique to corporations. However, businesses of all types and sizes need financial management, so the majority of the subjects we discuss bear on any form of business.

A CORPORATION BY ANOTHER NAME . . .

The corporate form of organization has many variations around the world. The exact laws and regulations differ from country to country, of course, but the essential features of public ownership and limited liability remain. These firms are often called *joint stock companies, public limited companies,* or *limited liability companies,* depending on the specific nature of the firm and the country of origin.

Table 1.1 gives the names of a few well-known international corporations, their countries of origin, and a translation of the abbreviation that follows the company name.

Concept Questions

1.2a What are the three forms of business organization?

1.2b What are the primary advantages and disadvantages of sole proprietorships and partnerships?

1.2c What is the difference between a general and a limited partnership?

1.2d Why is the corporate form superior when it comes to raising cash?

The Goal of Financial Management 1.3

Assuming that we restrict ourselves to for-profit businesses, the goal of financial management is to make money or add value for the owners. This goal is a little vague, of course, so we examine some different ways of formulating it to come up with a more precise definition. Such a definition is important because it leads to an objective basis for making and evaluating financial decisions.

POSSIBLE GOALS

If we were to consider possible financial goals, we might come up with some ideas like the following:

Survive.

Avoid financial distress and bankruptcy.

Beat the competition.

Maximize sales or market share.

Minimize costs.

Maximize profits.

Maintain steady earnings growth.

These are only a few of the goals we could list. Furthermore, each of these possibilities presents problems as a goal for the financial manager.

For example, it's easy to increase market share or unit sales: All we have to do is lower our prices or relax our credit terms. Similarly, we can always cut costs simply by doing away with things such as research and development. We can avoid bankruptcy by never borrowing any money or never taking any risks, and so on. It's not clear that any of these actions are in the stockholders' best interests.

Profit maximization would probably be the most commonly cited goal, but even this is not a precise objective. Do we mean profits this year? If so, we should note that actions such as deferring maintenance, letting inventories run down, and taking other short-run cost-cutting measures will tend to increase profits now, but these activities aren't necessarily desirable.

The goal of maximizing profits may refer to some sort of "long-run" or "average" profits, but it's still unclear exactly what this means. First, do we mean something like accounting net income or earnings per share? As we will see in more detail in the next chapter, these accounting numbers may have little to do with what is good or bad for the firm. Second, what do we mean by the long run? As a famous economist once remarked, in the long run, we're all dead! More to the point, this goal doesn't tell us what the appropriate trade-off is between current and future profits.

The goals we've listed here are all different, but they tend to fall into two classes. The first of these relates to profitability. The goals involving sales, market share, and cost control all relate, at least potentially, to different ways of earning or increasing profits. The goals in the second group, involving bankruptcy avoidance, stability, and safety, relate in some way to controlling risk. Unfortunately, these two types of goals are somewhat contradictory. The pursuit of profit normally involves some element of risk, so it isn't really possible to maximize both safety and profit. What we need, therefore, is a goal that encompasses both factors.

THE GOAL OF FINANCIAL MANAGEMENT

The financial manager in a corporation makes decisions for the stockholders of the firm. Given this, instead of listing possible goals for the financial manager, we really need to answer a more fundamental question: From the stockholders' point of view, what is a good financial management decision?

If we assume that stockholders buy stock because they seek to gain financially, then the answer is obvious: Good decisions increase the value of the stock, and poor decisions decrease the value of the stock.

Given our observations, it follows that the financial manager acts in the shareholders' best interests by making decisions that increase the value of the stock. The appropriate goal for the financial manager can thus be stated quite easily:

The goal of financial management is to maximize the current value per share of the existing stock.

The goal of maximizing the value of the stock avoids the problems associated with the different goals we listed earlier. There is no ambiguity in the criterion, and there is no short-run versus long-run issue. We explicitly mean that our goal is to maximize the *current* stock value.

If this goal seems a little strong or one-dimensional to you, keep in mind that the stockholders in a firm are residual owners. By this we mean that they are entitled to only what is left after employees, suppliers, and creditors (and anyone else with a legitimate claim) are paid their due. If any of these groups go unpaid, the stockholders get nothing. So, if the stockholders are winning in the sense that the leftover, residual portion is growing, it must be true that everyone else is winning also.

Because the goal of financial management is to maximize the value of the stock, we need to learn how to identify investments and financing arrangements that favorably impact the value of the stock. This is precisely what we will be studying. In fact, we could have defined *corporate finance* as the study of the relationship between business decisions and the value of the stock in the business.

A MORE GENERAL GOAL

Given our goal as stated in the preceding section (maximize the value of the stock), an obvious question comes up: What is the appropriate goal when the firm has no traded stock? Corporations are certainly not the only type of business; and the stock in many corporations rarely changes hands, so it's difficult to say what the value per share is at any given time.

As long as we are dealing with for-profit businesses, only a slight modification is needed. The total value of the stock in a corporation is simply equal to the value of the owners' equity. Therefore, a more general way of stating our goal is as follows: Maximize the market value of the existing owners' equity.

With this in mind, it doesn't matter whether the business is a proprietorship, a partnership, or a corporation. For each of these, good financial decisions increase the market value of the owners' equity and poor financial decisions decrease it. In fact, although we focus on corporations in the chapters ahead, the principles we develop apply to all forms of business. Many of them even apply to the not-for-profit sector.

Finally, our goal does not imply that the financial manager should take illegal or unethical actions in the hope of increasing the value of the equity in the firm. What we mean is that the financial manager best serves the owners of the business by identifying goods and services that add value to the firm because they are desired and valued in the free marketplace.

SARBANES-OXLEY

In response to corporate scandals at companies such as Enron, WorldCom, Tyco, and Adelphia, Congress enacted the Sarbanes-Oxley Act in 2002. The act, better known as "Sarbox," is intended to protect investors from corporate abuses. For example, one section of Sarbox prohibits personal loans from a company to its officers, such as the ones that were received by WorldCom CEO Bernie Ebbers.

One of the key sections of Sarbox took effect on November 15, 2004. Section 404 requires, among other things, that each company's annual report must have an assessment of the company's internal control structure and financial reporting. An independent auditor must then evaluate and attest to management's assessment of these issues.