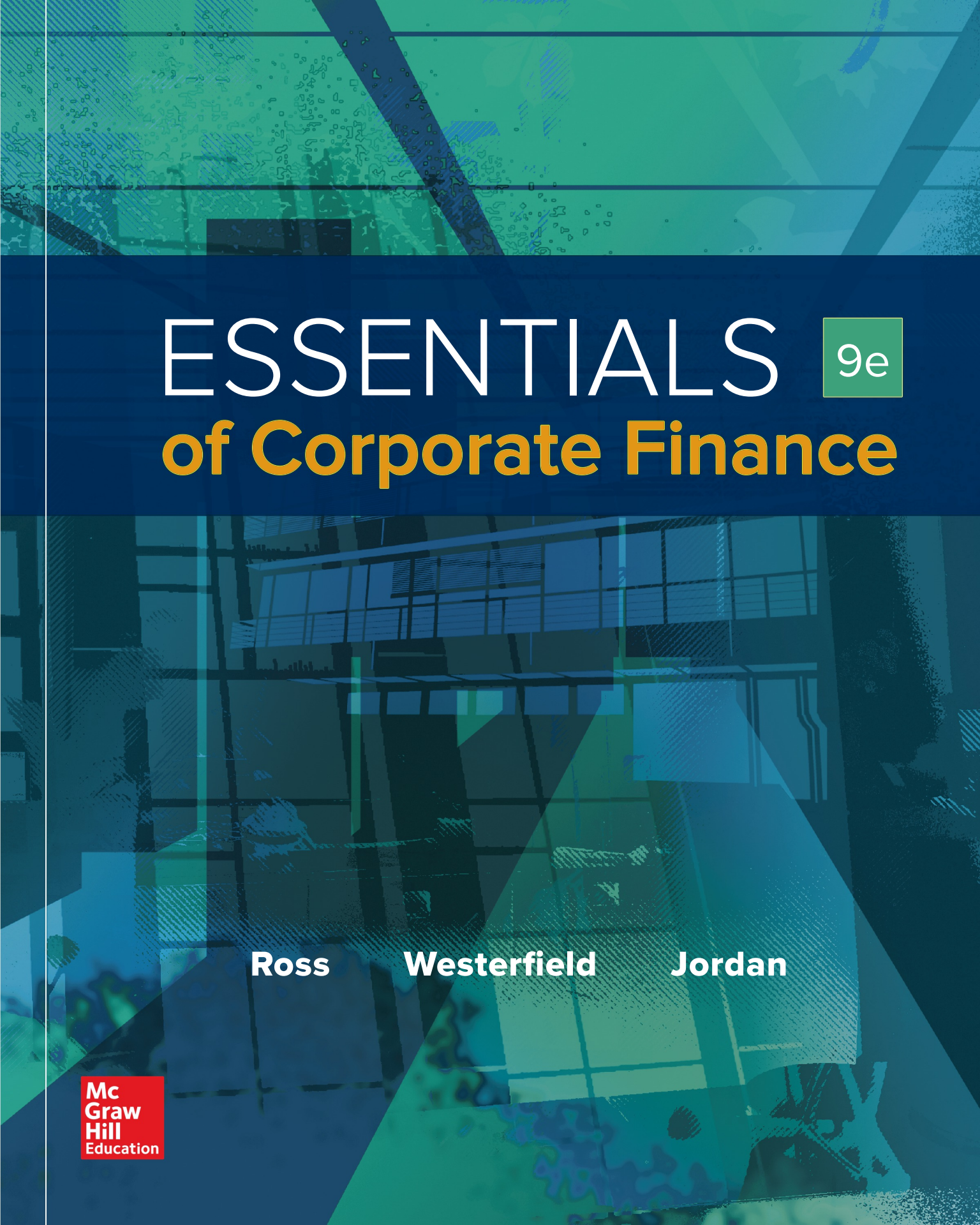
ESSENTIALS
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Essentials of Corporate Finance

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

Stephen A. Ross, Consulting Editor
Franco Modigliani Professor of Finance and Economics
Sloan School of Management, Massachusetts Institute of Technology

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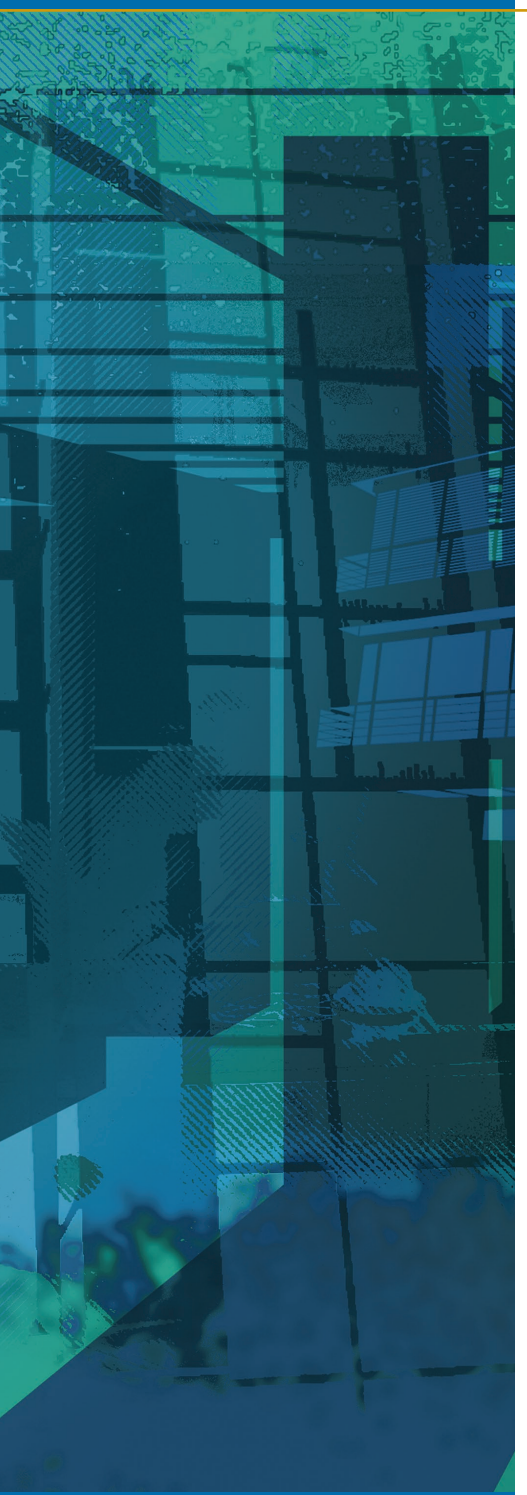

Essentials of Corporate Finance

Ninth Edition

Stephen A. Ross
Massachusetts Institute of Technology

Randolph W. Westerfield
University of Southern California

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University of Kentucky

Mc Graw Hill Education

ESSENTIALS OF CORPORATE FINANCE, NINTH EDITION

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From the Authors

When we first wrote *Essentials of Corporate Finance,* we thought there might be a small niche for a briefer book that really focused on what students with widely varying backgrounds and interests needed to carry away from an introductory finance course. We were wrong. There was a huge niche! What we learned is that our text closely matches the needs of instructors and faculty at hundreds of schools across the country. As a result, the growth we have experienced through the first eight editions of *Essentials* has far exceeded anything we thought possible.

With the ninth edition of *Essentials of Corporate Finance,* we have continued to refine our focus on our target audience, which is the undergraduate student taking a core course in business or corporate finance. This can be a tough course to teach. One reason is that the class is usually required of all business students, so it is not uncommon for a majority of the students to be nonfinance majors. In fact, this may be the only finance course many of them will ever have. With this in mind, our goal in *Essentials* is to convey the most important concepts and principles at a level that is approachable for the widest possible audience.

To achieve our goal, we have worked to distill the subject down to its bare essentials (hence, the name of this book), while retaining a decidedly modern approach to finance. We have always maintained that the subject of corporate finance can be viewed as the workings of a few very powerful intuitions. We also think that understanding the "why" is just as important, if not more so, than understanding the "how"—especially in an introductory course. Based on the gratifying market feedback we have received from our previous editions, as well as from our other text, *Fundamentals of Corporate Finance* (now in its eleventh edition), many of you agree.

By design, this book is not encyclopedic. As the table of contents indicates, we have a total of 18 chapters. Chapter length is about 30 pages, so the text is aimed squarely at a single-term course, and most of the book can be realistically covered in a typical semester or quarter. Writing a book for a one-term course necessarily means some picking and choosing, with regard to both topics and depth of coverage. Throughout, we strike a balance by introducing and covering the essentials (there's that word again!) while leaving some more specialized topics to follow-up courses.

The other things we have always stressed, and have continued to improve with this edition, are readability and pedagogy. *Essentials* is written in a relaxed, conversational style that invites the students to join in the learning process rather than being a passive information absorber. We have found that this approach dramatically increases students' willingness to read and learn on their own. Between larger and larger class sizes and the ever-growing demands on faculty time, we think this is an essential (!) feature for a text in an introductory course.

Throughout the development of this book, we have continued to take a hard look at what is truly relevant and useful. In doing so, we have worked to 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 emerge as our central focus in writing *Essentials of Corporate Finance:*

An Emphasis on Intuition We always try to separate and explain the principles at work on a commonsense, 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.

Today, as we prepare to once again enter the market, our goal is to stick with and build on the principles that have brought us this far. However, based on an 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 and pedagogy by providing a wide variety of features in the book to help students 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 just the textbook, or the book in conjunction with other products, we believe you will find a combination with this edition that will meet your needs.

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

Organization of the Text

We designed *Essentials of Corporate Finance* to be as flexible and modular as possible. There are a total of nine parts, and, in broad terms, the instructor is free to decide the particular sequence. Further, within each part, the first chapter generally contains an overview and survey. Thus, when time is limited, subsequent chapters can be omitted. Finally, the sections placed early in each chapter are generally the most important, and later sections frequently can be omitted without loss of continuity. For these reasons, the instructor has great control over the topics covered, the sequence in which they are covered, and the depth of coverage.

Just to get an idea of the breadth of coverage in the ninth edition of *Essentials,* the following grid presents for each chapter some of the most significant new features, as well as a few selected chapter highlights. Of course, in every chapter, figures, opening vignettes, boxed features, and in-chapter illustrations and examples using real companies have been thoroughly updated as well. In addition, the end-of-chapter material has been completely revised.

Chapters	Selected Topics	Benefits to Users
PART ONE	**Overview of Financial Management**	
Chapter 1	**New** opener discussing The Men's Wearhouse	
	Updated Finance Matters box on corporate ethics	Describes ethical issues in the context of mortgage fraud, offshoring, and tax havens.
	Updated information on executive and celebrity compensation	Highlights important development regarding the very current question of appropriate executive compensation.
	Updated Work the Web box on stock quotes	
	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.
	New proxy fight example involving Starboard Value and Darden Restaurants	
	New takeover battle discussion involving Jos. A. Bank and The Men's Wearhouse	
PART TWO	**Understanding Financial Statements and Cash Flow**	
Chapter 2	**New** opener discussing large energy company write-offs due to falling oil prices	
	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.
	Updated Work the Web box on SEC filings	Discusses the information that public companies are required to file with the SEC, and how to find that information.

Chapters	Selected Topics	Benefits to Users
Chapter 3	Additional explanation of alternative formulas for sustainable and internal growth rates	Expanded explanation of growth rate formulas clears up a common misunderstanding about these formulas and the circumstances under which alternative formulas are correct.
	Updated opener on PE ratios	
	Updated examples on Lowe's vs. Home Depot and Yahoo! vs. Google	
	Updated Work the Web box on financial ratios	Discusses how to find and analyze profitability ratios.
PART THREE	**Valuation of Future Cash Flows**	
Chapter 4	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.
	Updated Finance Matters box on collectibles	
Chapter 5	Second of two chapters on time value of money	Covers more advanced time value topics with numerous examples, calculator tips, and Excel spreadsheet exhibits. Contains many real-world examples.
	Updated opener on professional athletes' salaries	Provides a real-world example why it's important to properly understand how to value costs incurred today versus future cash inflows.
	Updated Work the Web box on student loan payments	
PART FOUR	**Valuing Stocks and Bonds**	
Chapter 6	**New** opener on negative interest on various sovereign bonds	Discusses the importance of interest rates and how they relate to bonds.
	Bond valuation	Thorough coverage of bond price/yield concepts.
	Updated bond features example using ExxonMobil issue	
	Interest rates and inflation	Highly intuitive discussion of inflation, the Fisher effect, and the term structure of interest rates.
	New "fallen angels" example using Petrobas issue	
	"Clean" vs. "dirty" bond prices and accrued interest	Clears up the pricing of bonds between coupon payment dates and also bond market quoting conventions.
	Updated Treasury quotes exhibit and discussion	
	Updated historic interest rates figure	
	FINRA's 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 relatively new type of call provision that has become very common.
	Updated Treasury yield curve exhibit	

Chapters	Selected Topics	Benefits to Users
Chapter 7	Stock valuation	Thorough coverage of constant and nonconstant growth models.
	Updated opener on difference in dividend payouts	
	Updated discussion of the NYSE, including its acquisition by ICE	Up-to-date description of major stock market operations.
	Updated Finance Matters box on the OTCBB and the Pink Sheets markets	
PART FIVE	**Capital Budgeting**	
Chapter 8	**Updated** opener on GE's "Ecomagination" program	Illustrates the growing importance of "green" business.
	First of two chapters on capital budgeting	Relatively short chapter introduces key ideas on an intuitive level to help students with this traditionally difficult topic.
	NPV, IRR, MIRR, payback, discounted payback, and accounting rate of return	Consistent, balanced examination of advantages and disadvantages of various criteria.
Chapter 9	Project cash flow	Thorough coverage of project cash flows and the relevant numbers for a project analysis.
	New opener on project failures and successes	Shows the importance of properly evaluating net present value.
	Scenario and sensitivity "what-if" analyses	Illustrates how to actually apply and interpret these tools in a project analysis.
PART SIX	**Risk and Return**	
Chapter 10	**Updated** opener on stock market performance	Discusses the relationship between risk and return as it relates to personal investing.
	Capital market history	Extensive coverage of historical returns, volatilities, and risk premiums.
	Market efficiency	Efficient markets hypothesis discussed along with common misconceptions.
	Geometric vs. arithmetic returns	Discusses calculation and interpretation of geometric returns. Clarifies common misconceptions regarding appropriate use of arithmetic vs. geometric average returns.
Chapter 11	Diversification, systematic, and unsystematic risk	Illustrates basics of risk and return in a straightforward fashion.
	Updated opener on stock price reactions to announcements	
	Updated beta coefficients exhibit and associated discussion	Develops the security market line with an intuitive approach that bypasses much of the usual portfolio theory and statistics.
PART SEVEN	**Long-Term Financing**	
Chapter 12	Cost of capital estimation	Intuitive development of the WACC and a complete, web-based illustration of cost of capital for a real company.
	Updated WACC calculations for Eastman	
	Geometric vs. arithmetic growth rates	Both approaches are used in practice. Clears up issues surrounding growth rate estimates.
	New section on company valuation with the WACC	Explores the difference between valuing a project and valuing a company.

Chapters	Selected Topics	Benefits to Users
Chapter 13	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.
	Updated Finance Matters box on recent pre-pack bankruptcies	
	Financial distress and bankruptcy	Briefly surveys the bankruptcy process.
Chapter 14	Updated opener with Qualcomm dividend announcement	Raises questions about why raising dividends and repurchasing stock would please investors.
	Updated figures on aggregate dividends, stock repurchases, and proportion of firms paying dividends	Brings students the latest thinking and evidence on dividend policy.
	Dividends and dividend policy	Describes dividend payments and the factors favoring higher and lower payout policies. Includes recent survey results on setting dividend policy.
	Updated examples and Finance Matters box covering buyback activity	Explores the reasons that buybacks are gaining in popularity now, following the recent recession.
Chapter 15	IPO valuation	Extensive, up-to-date discussion of IPOs, including the 1999–2000 period and the recent Facebook IPO.
	Dutch auctions	Explains uniform price ("Dutch") auctions using Google IPO as an example.
	New subsection on crowdfunding	Discusses the JOBS Act and crowdfunding.
	Updated tables and figures on IPO initial returns and number of offerings	
PART EIGHT	**Short-Term Financial Management**	
Chapter 16	Operating and cash cycles	Stresses the importance of cash flow timing.
	Short-term financial planning	Illustrates the creation of cash budgets and the potential need for financing.
	New Finance Matters box discussing operating and cash cycles	Explores how comparing the cash cycles of companies can reveal whether a company is performing well.
Chapter 17	Cash collection and disbursement	Examination of systems used by firms to handle cash inflows and outflows.
	Credit management	Analysis of credit policy and implementation.
	Inventory management	Brief overview of important inventory concepts.
PART NINE	**Topics in Business Finance**	
Chapter 18	New opener on impact of U.S. dollar appreciation	Raises questions about how currency appreciation affects the broader economy.
	Foreign exchange	Covers essentials of exchange rates and their determination.
	International capital budgeting	Shows how to adapt the basic DCF approach to handle exchange rates.
	Updated discussion of exchange rates and political risk	Discusses hedging and issues surrounding sovereign risk.

Learning Solutions

In addition to illustrating relevant concepts and presenting up-to-date coverage, *Essentials of Corporate Finance* strives to present the material in a way that makes it engaging and easy to understand. To meet the varied needs of the intended audience, *Essentials of Corporate Finance* is rich in valuable learning tools and support.

Each feature can be categorized by the benefit to the student:

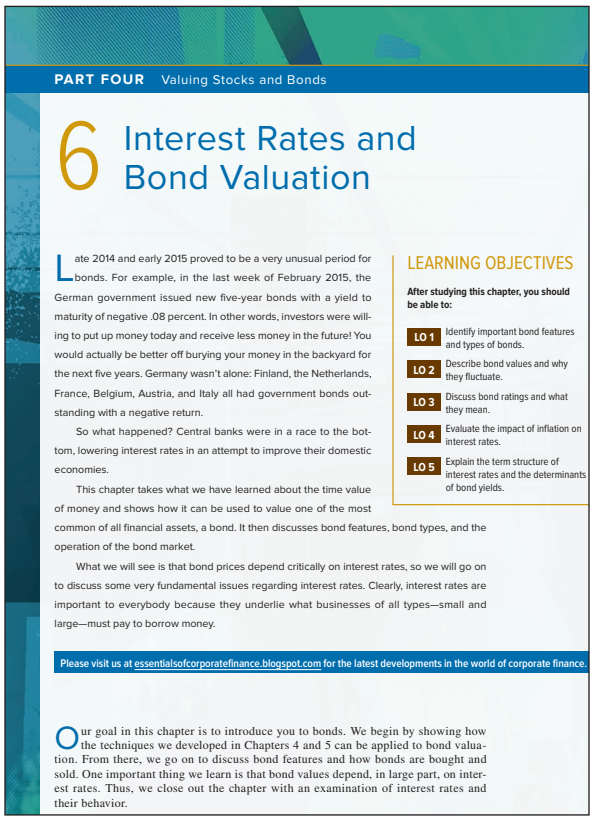
- Real financial decisions
- Application tools
- Study aids

REAL FINANCIAL DECISIONS

We have included two key features that help students connect chapter concepts to how decision makers use this material in the real world.

▼ CHAPTER-OPENING VIGNETTES

Each chapter begins with a contemporary real-world event to introduce students to chapter concepts.



PART FOUR Valuing Stocks and Bonds

6 Interest Rates and Bond Valuation

Late 2014 and early 2015 proved to be a very unusual period for bonds. For example, in the last week of February 2015, the German government issued new five-year bonds with a yield to maturity of negative .08 percent. In other words, investors were willing to put up money today and receive less money in the future! You would actually be better off burying your money in the backyard for the next five years. Germany wasn't alone: Finland, the Netherlands, France, Belgium, Austria, and Italy all had government bonds outstanding with a negative return.

So what happened? Central banks were in a race to the bottom, lowering interest rates in an attempt to improve their domestic economies.

This chapter takes what we have learned about the time value of money and shows how it can be used to value one of the most common of all financial assets, a bond. It then discusses bond features, bond types, and the operation of the bond market.

What we will see is that bond prices depend critically on interest rates, so we will go on to discuss some very fundamental issues regarding interest rates. Clearly, interest rates are important to everybody because they underlie what businesses of all types—small and large—must pay to borrow money.

LEARNING OBJECTIVES

After studying this chapter, you should be able to:

LO 1 Identify important bond features and types of bonds.

LO 2 Describe bond values and why they fluctuate.

LO 3 Discuss bond ratings and what they mean.

LO 4 Evaluate the impact of inflation on interest rates.

LO 5 Explain the term structure of interest rates and the determinants of bond yields.

Please visit us at essentialsofcorporatefinance.blogspot.com for the latest developments in the world of corporate finance.

Our goal in this chapter is to introduce you to bonds. We begin by showing how the techniques we developed in Chapters 4 and 5 can be applied to bond valuation. From there, we go on to discuss bond features and how bonds are bought and sold. One important thing we learn is that bond values depend, in large part, on interest rates. Thus, we close out the chapter with an examination of interest rates and their behavior.

FINANCE MATTERS

Exotic Bonds

Bonds come in many flavors. The unusual types are called "exotics" and can range from the fairly simple to the truly esoteric. Take the case of mortgage-backed securities (MBSs). MBSs are a type of securitized financial instrument. In securitization, cash flows from financial assets are pooled together into securities, and the securities are sold to investors. With an MBS, banks or mortgage brokers who originate mortgages sell the mortgages to a trust. The trust pools the mortgages and sells bonds to investors. Bondholders receive payments based on the mortgage payments made by homeowners. During 2008, problems with MBSs skyrocketed due to the precipitous drop in real estate values and the sharply increased default rates on the underlying mortgages.

The reverse convertible is a relatively new type of structured note. One type generally offers a high coupon rate, but the redemption at maturity can be paid in cash at par value or paid in shares of stock. For example, one recent General Motors (GM) reverse convertible had a coupon rate of 16 percent, which is a very high coupon rate in today's interest rate environment. However, at maturity, if GM's stock declined sufficiently, bondholders would receive a fixed number of GM shares that were worth less than par value. So, while the income portion of the bond return would be high, the potential loss in par value could easily erode the extra return.

CAT bonds are issued to cover insurance companies against natural catastrophes. The type of natural catastrophe is outlined in the bond. For example, about 30 percent of all CAT bonds protect against a North Atlantic hurricane. The way these issues are structured is that the borrowers can suspend payment temporarily (or even permanently) if they have significant hurricane-related losses. These CAT bonds may seem like pretty risky investments, but, to date, only four have not been paid in full. For example, because of Hurricane Katrina, CAT bondholders lost $190 million. CAT bondholders also lost $300 million due to the 2011 tsunami in Japan. During 2011, two other CAT bond issues, each worth $100 million, were triggered due to an unusually active tornado season.

Perhaps the most unusual bond (and certainly the most ghoulish) is the "death bond." Companies such as Stone Street Financial purchase life insurance policies from individuals who are expected to die within the next 10 years. They then sell bonds that are paid off from the life insurance proceeds received when the policyholders die. The return on the bonds to investors depends on how long the policyholders live. A major risk is that if medical treatment advances quickly, it will raise the life expectancy of the policyholders, thereby decreasing the return to the bondholder.

▲ FINANCE MATTERS BOXES

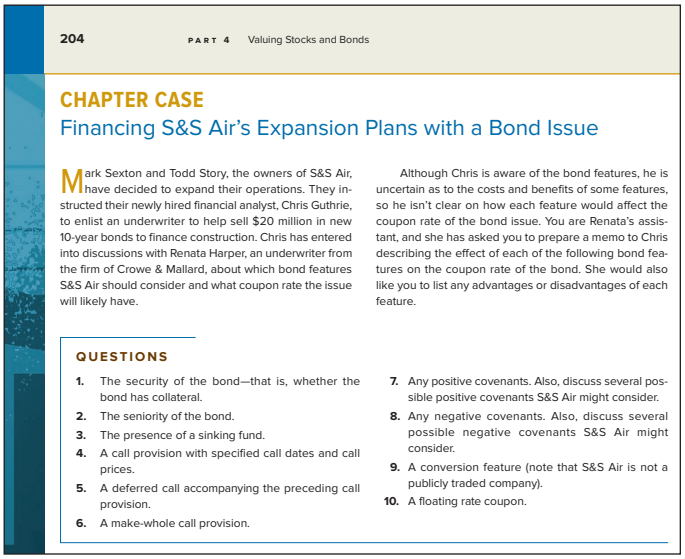
Most chapters include at least one *Finance Matters* box, which takes a chapter issue and shows how it is being used right now in everyday financial decision making.

APPLICATION TOOLS

Because there is more than one way to solve problems in corporate finance, we include many sections that encourage students to learn or brush up on different problem-solving methods, including financial calculator and Excel spreadsheet skills.

▼ CHAPTER CASES

Located at the end of most chapters, these cases focus on hypothetical company situations that embody 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 the chapters in that part. Great for homework or in-class exercises and discussions!



204 PART 4 Valuing Stocks and Bonds

CHAPTER CASE

Financing S&S Air's Expansion Plans with a Bond Issue

Mark Sexton and Todd Story, the owners of S&S Air, have decided to expand their operations. They instructed their newly hired financial analyst, Chris Guthrie, to enlist an underwriter to help sell $20 million in new 10-year bonds to finance construction. Chris has entered into discussions with Renata Harper, an underwriter from the firm of Crowe & Mallard, about which bond features S&S Air should consider and what coupon rate the issue will likely have.

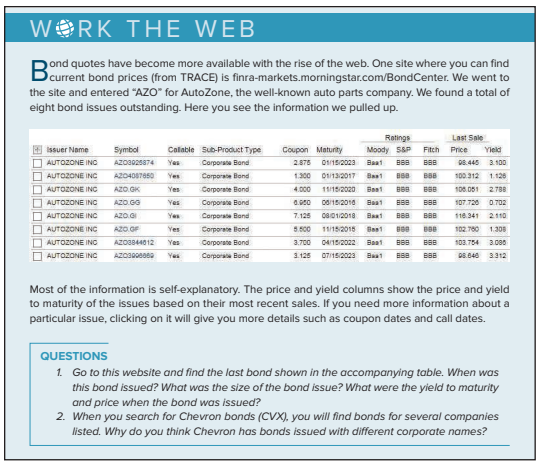
Although Chris is aware of the bond features, he is uncertain as to the costs and benefits of some features, so he isn't clear on how each feature would affect the coupon rate of the bond issue. You are Renata's assistant, and she has asked you to prepare a memo to Chris describing the effect of each of the following bond features on the coupon rate of the bond. She would also like you to list any advantages or disadvantages of each feature.

QUESTIONS

1. The security of the bond—that is, whether the bond has collateral.
2. The seniority of the bond.
3. The presence of a sinking fund.
4. A call provision with specified call dates and call prices.
5. A deferred call accompanying the preceding call provision.
6. A make-whole call provision.
7. Any positive covenants. Also, discuss several possible positive covenants S&S Air might consider.
8. Any negative covenants. Also, discuss several possible negative covenants S&S Air might consider.
9. A conversion feature (note that S&S Air is not a publicly traded company).
10. A floating rate coupon.

▼ WORK THE WEB

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



WORK THE WEB

Bond quotes have become more available with the rise of the web. One site where you can find current bond prices (from TRACE) is finra-markets.morningstar.com/BondCenter. We went to the site and entered "AZO" for AutoZone, the well-known auto parts company. We found a total of eight bond issues outstanding. Here you see the information we pulled up.

Issuer Name	Symbol	Callable	Sub-Product Type	Coupon	Maturity	Ratings			Last Sale	
						Moody	S&P	Fitch	Price	Yield
AUTOZONE INC	AZO3925874	Yes	Corporate Bond	2.875	01/15/2023	Baa1	BBB	BBB	98.445	3.100
AUTOZONE INC	AZO4087650	Yes	Corporate Bond	1.300	01/13/2017	Baa1	BBB	BBB	100.312	1.126
AUTOZONE INC	AZO.GK	Yes	Corporate Bond	4.000	11/15/2020	Baa1	BBB	BBB	106.051	2.788
AUTOZONE INC	AZO.GG	Yes	Corporate Bond	6.950	06/15/2016	Baa1	BBB	BBB	107.726	0.702
AUTOZONE INC	AZO.GI	Yes	Corporate Bond	7.125	08/01/2018	Baa1	BBB	BBB	116.341	2.110
AUTOZONE INC	AZO.GF	Yes	Corporate Bond	5.500	11/15/2015	Baa1	BBB	BBB	102.780	1.309
AUTOZONE INC	AZO3844612	Yes	Corporate Bond	3.700	04/15/2022	Baa1	BBB	BBB	103.754	3.086
AUTOZONE INC	AZO3966859	Yes	Corporate Bond	3.125	07/15/2023	Baa1	BBB	BBB	98.646	3.312

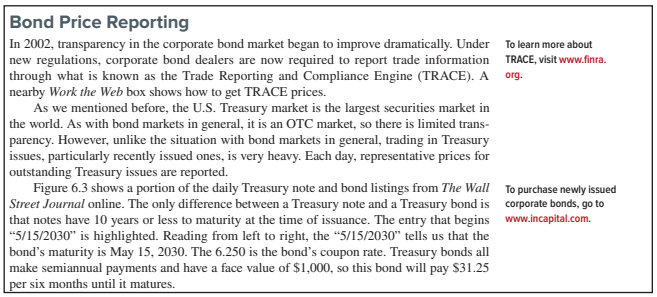
Most of the information is self-explanatory. The price and yield columns show the price and yield to maturity of the issues based on their most recent sales. If you need more information about a particular issue, clicking on it will give you more details such as coupon dates and call dates.

QUESTIONS

1. *Go to this website and find the last bond shown in the accompanying table. When was this bond issued? What was the size of the bond issue? What were the yield to maturity and price when the bond was issued?*
2. *When you search for Chevron bonds (CVX), you will find bonds for several companies listed. Why do you think Chevron has bonds issued with different corporate names?*

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.



Bond Price Reporting

In 2002, transparency in the corporate bond market began to improve dramatically. Under new regulations, corporate bond dealers are now required to report trade information through what is known as the Trade Reporting and Compliance Engine (TRACE). A nearby *Work the Web* box shows how to get TRACE prices.

To learn more about TRACE, visit www.finra.org.

As we mentioned before, the U.S. Treasury market is the largest securities market in the world. As with bond markets in general, it is an OTC market, so there is limited transparency. However, unlike the situation with bond markets in general, trading in Treasury issues, particularly recently issued ones, is very heavy. Each day, representative prices for outstanding Treasury issues are reported.

Figure 6.3 shows a portion of the daily Treasury note and bond listings from *The Wall Street Journal* online. The only difference between a Treasury note and a Treasury bond is that notes have 10 years or less to maturity at the time of issuance. The entry that begins "5/15/2030" is highlighted. Reading from left to right, the "5/15/2030" tells us that the bond's maturity is May 15, 2030. The 6.250 is the bond's coupon rate. Treasury bonds all make semiannual payments and have a face value of $1,000, so this bond will pay $31.25 per six months until it matures.

To purchase newly issued corporate bonds, go to www.incapital.com.

WHAT'S ON THE WEB? ▶

These end-of-chapter activities show students how to use and learn from the vast amount of financial resources available on the Internet.

WHAT'S ON THE WEB?

6.1 Bond Quotes. You can find current bond prices at finra-markets.morningstar.com/BondCenter. You want to find the bond prices and yields for bonds issued by Pfizer. Enter the ticker symbol "PFE" to do a search. What is the shortest maturity bond issued by Pfizer that is outstanding? What is the longest maturity bond? What is the credit rating for Pfizer's bonds? Do all of the bonds have the same credit rating? Why do you think this is?

HOW TO CALCULATE BOND PRICES AND YIELDS USING A FINANCIAL CALCULATOR

CALCULATOR HINTS

Many financial calculators have fairly sophisticated built-in bond valuation routines. However, these vary quite a lot in implementation, and not all financial calculators have them. As a result, we will illustrate a simple way to handle bond problems that will work on just about any financial calculator.

To begin, of course, we first remember to clear out the calculator! Next, for Example 6.3, we have two bonds to consider, both with 12 years to maturity. The first one sells for $935.08 and has a 10 percent coupon rate. To find its yield, we can do the following:

Enter	12		100	−935.08	1,000
	N	**I/Y**	**PMT**	**PV**	**FV**
Solve for		11			

Notice that here we have entered both a future value of $1,000, representing the bond's face value, and a payment of 10 percent of $1,000, or $100, per year, representing the bond's annual coupon. Also notice that we have a negative sign on the bond's price, which we have entered as the present value.

◀ CALCULATOR HINTS

Calculator Hints is a self-contained section occurring in various chapters that first introduces students to calculator basics and then illustrates how to solve problems with the calculator. Appendix D goes into more detailed instructions by solving problems with two specific calculators.

EXCEL MASTER ICONS ▶

Topics covered in the comprehensive Excel Master supplement (found in Connect) are indicated by an icon in the margin.

6.1 BONDS AND BOND VALUATION

Excel Master coverage online

When a corporation (or government) wishes to borrow money from the public on a long-term basis, it usually does so by issuing, or selling, debt securities that are generically called bonds. In this section, we describe the various features of corporate bonds and some of the terminology associated with bonds. We then discuss the cash flows associated with a bond and how bonds can be valued using our discounted cash flow procedure.

SPREADSHEET STRATEGIES ▶

The unique Spreadsheet Strategies feature is also in a self-contained section, showing students how to set up spreadsheets to solve problems—a vital part of every business student's education.

SPREADSHEET STRATEGIES

HOW TO CALCULATE BOND PRICES AND YIELDS USING A SPREADSHEET

Like financial calculators, most spreadsheets have fairly elaborate routines available for calculating bond values and yields; many of these routines involve details that we have not discussed. However, setting up a simple spreadsheet to calculate prices or yields is straightforward, as our next two spreadsheets show:

	A	B	C	D	E	F	G	H
1								
2	Using a spreadsheet to calculate bond yields							
3								
4	Suppose we have a bond with 22 years to maturity, a coupon rate of 8 percent, and a price of							
5	$960.17. If the bond makes semiannual payments, what is its yield to maturity?							
6								
7	Settlement date:	1/1/00						
8	Maturity date:	1/1/22						
9	Annual coupon rate:	.08						
10	Bond price (% of par):	96.017						
11	Face value (% of par):	100						
12	Coupons per year:	2						
13	Yield to maturity:	.084						
14								

INTERMEDIATE (Questions 18–33)

LO 2 **18. Bond Price Movements.** Bond X is a premium bond making semiannual payments. The bond has a coupon rate of 8.5 percent, a YTM of 7 percent, and has 13 years to maturity. Bond Y is a discount bond making semiannual payments. This bond has a coupon rate of 7 percent, a YTM of 8.5 percent, and also has 13 years to maturity. What are the prices of these bonds today assuming both bonds have a $1,000 par value? If interest rates remain unchanged, what do you expect the prices of these bonds to be in one year? In three years? In eight years? In 12 years? In 13 years? What's going on here? Illustrate your answers by graphing bond prices versus time to maturity.

LO 2 **19. Interest Rate Risk.** Both Bond Bill and Bond Ted have 6.2 percent coupons, make semiannual payments, and are priced at par value. Bond Bill has 5 years to maturity, whereas Bond Ted has 25 years to maturity. If interest rates suddenly rise by 2 percent, what is the percentage

◀ SPREADSHEET TEMPLATES

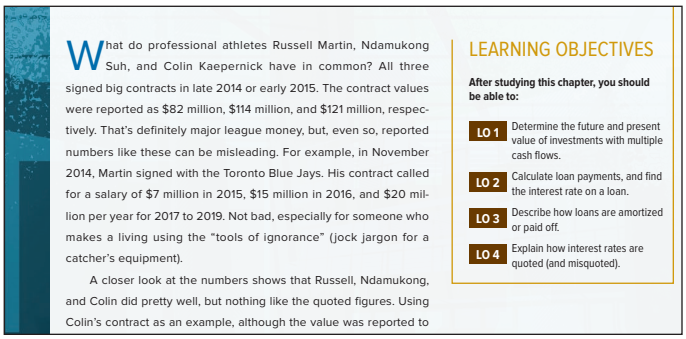
Indicated by an Excel icon next to applicable end-of-chapter questions and problems, spreadsheet templates are available for selected problems in Connect. For even more spreadsheet examples, check out Excel Master, also available in Connect.

STUDY AIDS

We want students to get the most from this book and this course, and we realize that students have different learning styles and study needs. We therefore present a number of study features to appeal to a wide range of students.

▼ LEARNING OBJECTIVES

Each chapter begins with a number of learning objectives that are key to the student's understanding of the chapter. Learning objectives are also linked to end-of-chapter problems and test bank questions.



What do professional athletes Russell Martin, Ndamukong Suh, and Colin Kaepernick have in common? All three signed big contracts in late 2014 or early 2015. The contract values were reported as $82 million, $114 million, and $121 million, respectively. That's definitely major league money, but, even so, reported numbers like these can be misleading. For example, in November 2014, Martin signed with the Toronto Blue Jays. His contract called for a salary of $7 million in 2015, $15 million in 2016, and $20 million per year for 2017 to 2019. Not bad, especially for someone who makes a living using the "tools of ignorance" (jock jargon for a catcher's equipment).

A closer look at the numbers shows that Russell, Ndamukong, and Colin did pretty well, but nothing like the quoted figures. Using Colin's contract as an example, although the value was reported to

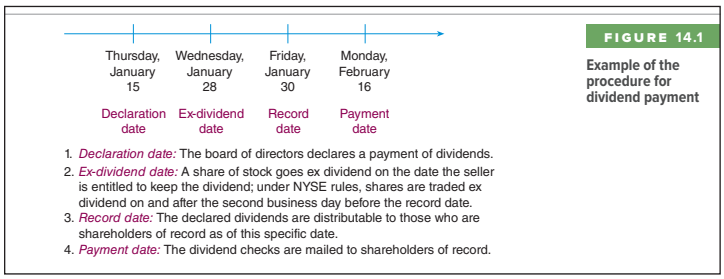
LEARNING OBJECTIVES

After studying this chapter, you should be able to:

- **LO 1** Determine the future and present value of investments with multiple cash flows.
- **LO 2** Calculate loan payments, and find the interest rate on a loan.
- **LO 3** Describe how loans are amortized or paid off.
- **LO 4** Explain how interest rates are quoted (and misquoted).

▼ PEDAGOGICAL USE OF COLOR

We continue to use a full-color palette in *Essentials* not only to make the text more inviting, but, more important, as a functional element to help students follow the discussion. In almost every chapter, color plays an important, largely self-evident role. A guide to the use of color is found on the back endsheets.

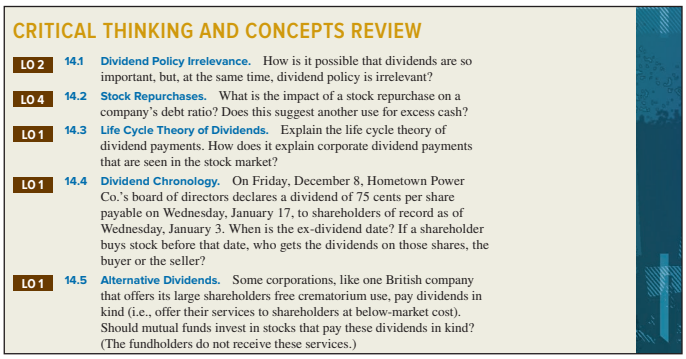


1. *Declaration date:* The board of directors declares a payment of dividends.
2. *Ex-dividend date:* A share of stock goes ex dividend on the date the seller is entitled to keep the dividend; under NYSE rules, shares are traded ex dividend on and after the second business day before the record date.
3. *Record date:* The declared dividends are distributable to those who are shareholders of record as of this specific date.
4. *Payment date:* The dividend checks are mailed to shareholders of record.

FIGURE 14.1
Example of the procedure for dividend payment

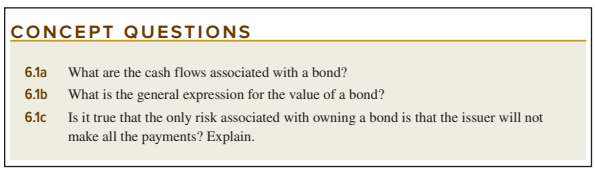
CRITICAL THINKING QUESTIONS ▶

Every chapter ends with a set of critical thinking questions that challenge the students to apply the concepts they learned in the chapter to new situations.



CRITICAL THINKING AND CONCEPTS REVIEW

- **LO 2** **14.1** **Dividend Policy Irrelevance.** How is it possible that dividends are so important, but, at the same time, dividend policy is irrelevant?
- **LO 4** **14.2** **Stock Repurchases.** What is the impact of a stock repurchase on a company's debt ratio? Does this suggest another use for excess cash?
- **LO 1** **14.3** **Life Cycle Theory of Dividends.** Explain the life cycle theory of dividend payments. How does it explain corporate dividend payments that are seen in the stock market?
- **LO 1** **14.4** **Dividend Chronology.** On Friday, December 8, Hometown Power Co.'s board of directors declares a dividend of 75 cents per share payable on Wednesday, January 17, to shareholders of record as of Wednesday, January 3. When is the ex-dividend date? If a shareholder buys stock before that date, who gets the dividends on those shares, the buyer or the seller?
- **LO 1** **14.5** **Alternative Dividends.** Some corporations, like one British company that offers its large shareholders free crematorium use, pay dividends in kind (i.e., offer their services to shareholders at below-market cost). Should mutual funds invest in stocks that pay these dividends in kind? (The fundholders do not receive these services.)



CONCEPT QUESTIONS

- **6.1a** What are the cash flows associated with a bond?
- **6.1b** What is the general expression for the value of a bond?
- **6.1c** Is it true that the only risk associated with owning a bond is that the issuer will not make all the payments? Explain.

◀ CONCEPT QUESTIONS

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.

EXAMPLE 11.4 Portfolio Variance and Standard Deviation

In Example 11.3, what are the standard deviations on the two portfolios? To answer, we first have to calculate the portfolio returns in the two states. We will work with the second portfolio, which has 50 percent in Stock A and 25 percent in each of Stocks B and C. The relevant calculations can be summarized as follows:

State of Economy	Probability of State	Returns			
		Stock A	Stock B	Stock C	Portfolio
Boom	.40	10%	15%	20%	13.75%
Bust	.60	8	4	0	5.00

The portfolio return when the economy booms is calculated as:

$$.50 \times 10\% + .25 \times 15\% + .25 \times 20\% = 13.75\%$$

◀ NUMBERED 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 that 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.

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.

TABLE 3.9
Summary of internal and sustainable growth rates

I. Internal growth rate

$$\text{Internal growth rate} = \frac{\text{ROA} \times b}{1 - \text{ROA} \times b}$$

where

ROA = Return on assets = Net income/Total assets
b = Plowback (retention) ratio
= Addition to retained earnings/Net income
= 1 – Dividend payout ratio

The internal growth rate is the maximum growth rate that can be achieved with no external financing of any kind.

II. Sustainable growth rate

$$\text{Sustainable growth rate} = \frac{\text{ROE} \times b}{1 - \text{ROE} \times b}$$

where

ROE = Return on equity = Net income/Total equity
b = Plowback (retention) ratio
= Addition to retained earnings/Net income
= 1 – Dividend payout ratio

The sustainable growth rate is the maximum growth rate that can be achieved with no external equity financing while maintaining a constant debt–equity ratio.

3.2 RATIO ANALYSIS

Another way of avoiding the problems involved in comparing companies of different sizes is to calculate and compare **financial ratios**. Such ratios are ways of comparing and investigating the relationships between different pieces of financial information. We cover some of the more common ratios next, but there are many others that we don't touch on.

One problem with ratios is that different people and different sources frequently don't compute them in exactly the same way, and this leads to much confusion. The specific

financial ratios
Relationships determined from a firm's financial information and used for comparison purposes.

◀ KEY TERMS

These are printed in blue the first time they appear and are defined within the text and in the margin.

KEY EQUATIONS ▶

These are called out in the text and identified by equation numbers. Appendix B shows the key equations by chapter.

B Key Equations

CHAPTER 2

1. The balance sheet identity, or equation:
   Assets = Liabilities + Shareholders' equity [2.1]
2. The income statement equation:
   Revenues – Expenses = Income [2.2]
3. The cash flow identity:
   Cash flow from assets = Cash flow to creditors + Cash flow to stockholders [2.3]
7. The times interest earned (TIE) ratio:

$$\text{Times interest earned ratio} = \frac{\text{EBIT}}{\text{Interest}} \quad [3.7]$$

8. The cash coverage ratio:

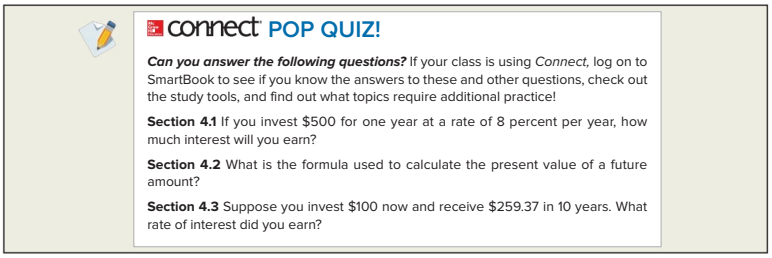
$$\text{Cash coverage ratio} = \frac{\text{EBIT} + \text{Depreciation}}{\text{Interest}} \quad [3.8]$$

9. The inventory turnover ratio:

Maximize the market value of the existing owners' equity.

◀ HIGHLIGHTED PHRASES

Throughout the text, important ideas are presented separately and printed in boxes to indicate their importance to the students.



connect POP QUIZ!

Can you answer the following questions? If your class is using *Connect*, log on to SmartBook to see if you know the answers to these and other questions, check out the study tools, and find out what topics require additional practice!

Section 4.1 If you invest $500 for one year at a rate of 8 percent per year, how much interest will you earn?

Section 4.2 What is the formula used to calculate the present value of a future amount?

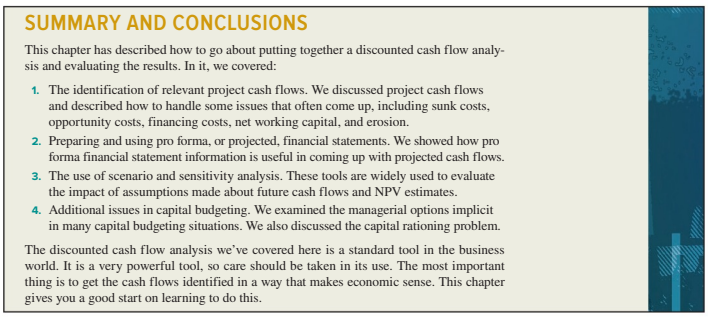
Section 4.3 Suppose you invest $100 now and receive $259.37 in 10 years. What rate of interest did you earn?

◀ CONNECT POP QUIZ

This end-of-chapter feature gives students a quick glimpse into how close they are to mastering the material. Students test their knowledge with practice questions from McGraw-Hill's SmartBook. This can be a great way to engage your Connect-using students!

CHAPTER SUMMARY AND CONCLUSIONS ▶

These paragraphs review the chapter's key points and provide closure to the chapter.

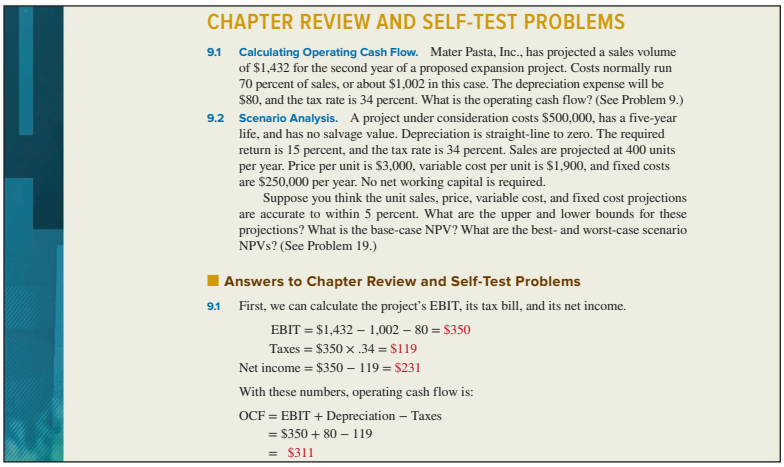


SUMMARY AND CONCLUSIONS

This chapter has described how to go about putting together a discounted cash flow analysis and evaluating the results. In it, we covered:

1. The identification of relevant project cash flows. We discussed project cash flows and described how to handle some issues that often come up, including sunk costs, opportunity costs, financing costs, net working capital, and erosion.
2. Preparing and using pro forma, or projected, financial statements. We showed how pro forma financial statement information is useful in coming up with projected cash flows.
3. The use of scenario and sensitivity analysis. These tools are widely used to evaluate the impact of assumptions made about future cash flows and NPV estimates.
4. Additional issues in capital budgeting. We examined the managerial options implicit in many capital budgeting situations. We also discussed the capital rationing problem.

The discounted cash flow analysis we've covered here is a standard tool in the business world. It is a very powerful tool, so care should be taken in its use. The most important thing is to get the cash flows identified in a way that makes economic sense. This chapter gives you a good start on learning to do this.



CHAPTER REVIEW AND SELF-TEST PROBLEMS

9.1 Calculating Operating Cash Flow. Mater Pasta, Inc., has projected a sales volume of $1,432 for the second year of a proposed expansion project. Costs normally run 70 percent of sales, or about $1,002 in this case. The depreciation expense will be $80, and the tax rate is 34 percent. What is the operating cash flow? (See Problem 9.)

9.2 Scenario Analysis. A project under consideration costs $500,000, has a five-year life, and has no salvage value. Depreciation is straight-line to zero. The required return is 15 percent, and the tax rate is 34 percent. Sales are projected at 400 units per year. Price per unit is $3,000, variable cost per unit is $1,900, and fixed costs are $250,000 per year. No net working capital is required.

Suppose you think the unit sales, price, variable cost, and fixed cost projections are accurate to within 5 percent. What are the upper and lower bounds for these projections? What is the base-case NPV? What are the best- and worst-case scenario NPVs? (See Problem 19.)

Answers to Chapter Review and Self-Test Problems

9.1 First, we can calculate the project's EBIT, its tax bill, and its net income.

EBIT = $1,432 − 1,002 − 80 = $350
Taxes = $350 × .34 = $119
Net income = $350 − 119 = $231

With these numbers, operating cash flow is:

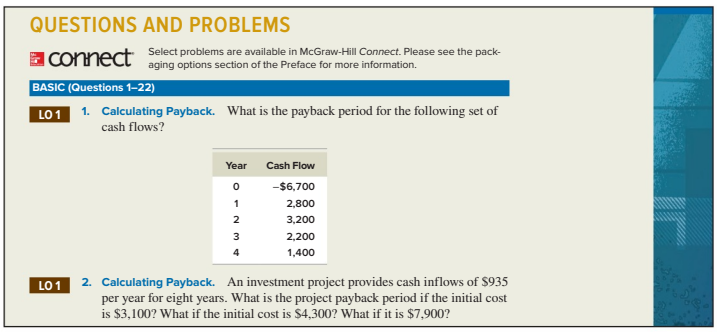
OCF = EBIT + Depreciation − Taxes
= $350 + 80 − 119
= $311

◀ CHAPTER REVIEW AND SELF-TEST PROBLEMS

Review and self-test problems appear after the chapter summaries. Detailed answers to the self-test problems immediately follow. These questions and answers allow students to test their abilities in solving key problems related to the content of the chapter. These problems are mapped to similar problems in the end-of-chapter material. The aim is to help students work through difficult problems using the authors' work as an example.

END-OF-CHAPTER QUESTIONS AND PROBLEMS ▶

We have found that many students learn better when they have plenty of opportunity to practice. We therefore provide extensive end-of-chapter questions and problems linked to Learning Objectives. The questions and problems are generally separated into three levels—Basic, Intermediate, and Challenge. All problems are fully annotated so that students and instructors can readily identify particular types. Throughout the text, we have worked to supply interesting problems that illustrate real-world applications of chapter material. Answers to selected end-of-chapter problems appear in Appendix C.



QUESTIONS AND PROBLEMS

connect Select problems are available in McGraw-Hill *Connect*. Please see the packaging options section of the Preface for more information.

BASIC (Questions 1–22)

LO 1 **1. Calculating Payback.** What is the payback period for the following set of cash flows?

Year	Cash Flow
0	−$6,700
1	2,800
2	3,200
3	2,200
4	1,400

LO 1 **2. Calculating Payback.** An investment project provides cash inflows of $935 per year for eight years. What is the project payback period if the initial cost is $3,100? What if the initial cost is $4,300? What if it is $7,900?

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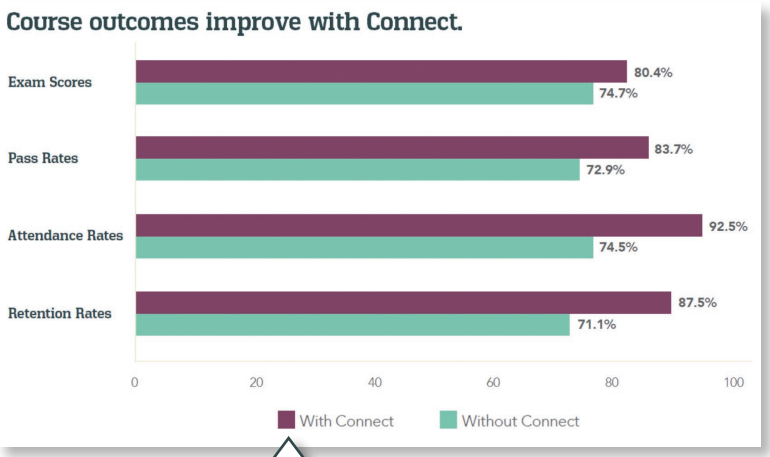

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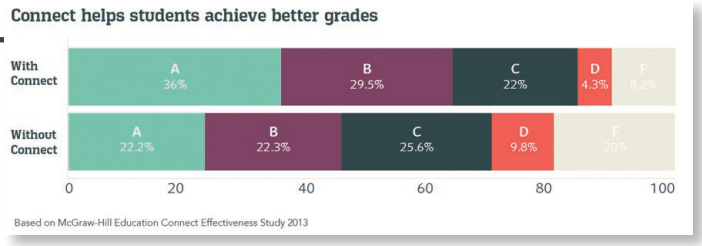

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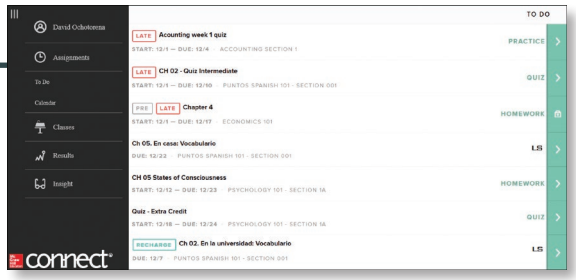

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Assurance of learning is an important element of many accreditation standards. *Essentials of Corporate Finance*, ninth edition, is designed specifically to support your assurance of learning initiatives. Each chapter in the book begins with a list of numbered learning objectives which appear throughout the end-of-chapter problems and exercises. Every test bank question is also linked to one of these objectives, in addition to level of difficulty, topic area, Bloom's Taxonomy level, and AACSB skill area. Connect, McGraw-Hill's online homework solution, and *EZ Test*, McGraw-Hill's easy-to-use test bank software, can search the test bank by these and other categories, providing an engine for targeted Assurance of Learning analysis and assessment.

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Instructor Supplements

- **Instructor's Manual (IM)**

  Prepared by Steven Dolvin, Butler University

  A great place to find new lecture ideas! This 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 Joseph Smolira, Belmont University

  The *Essentials* Solutions Manual provides detailed solutions to the extensive end-of-chapter material, including concept review questions, quantitative problems, and cases. Select chapters also contain calculator solutions.

- **Test Bank**

  Prepared by Kay Johnson

  Great format for a better testing process! All questions closely link with the text material, listing section number, Learning Objective, Bloom's Taxonomy Question Type, and AACSB topic when applicable. Each chapter covers a breadth of topics and types of questions, including questions that test the understanding of the key terms; questions patterned after the learning objectives, concept questions, chapter-opening vignettes, boxes, and highlighted phrases; multiple-choice and true/false problems patterned after the end-of-chapter questions, in basic, intermediate, and challenge levels; and essay questions to test problem-solving skills and more advanced understanding of concepts. Each chapter also includes new problems that pick up questions directly from the end-of-chapter material and convert them into parallel test bank questions. For your reference, each test bank question in this part is linked with its corresponding question in the end-of-chapter section.

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Acknowledgments

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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 will 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 send your comments to Dr. Brad Jordan, c/o Editorial—Finance, McGraw-Hill Education, 1333 Burr Ridge Parkway, Burr Ridge, IL 60527.

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

Brief Contents

Contents

PART EIGHT SHORT-TERM FINANCIAL MANAGEMENT

List of Boxes

FINANCE MATTERS

Essentials of Corporate Finance

1 Introduction to Financial Management

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.

LEARNING OBJECTIVES

After studying this chapter, you should be able to:

- **LO 1** Discuss the basic types of financial management decisions and the role of the financial manager.
- **LO 2** Identify the goal of financial management.
- **LO 3** Compare the financial implications of the different forms of business organizations.
- **LO 4** Describe the conflicts of interest that can arise between managers and owners.

Please visit us at essentialsofcorporatefinance.blogspot.com for the latest developments in the world of corporate finance.

To begin our study of financial management, we address two central issues. First: What is corporate, or business, finance and what is the role of the financial manager? Second: What is the goal of financial management?

1.1 FINANCE: A QUICK LOOK

Before we plunge into our study of "corp. fin.," we think a quick overview of the finance field might be a good idea. Our goal is to clue you in on some of the most important areas in finance and some of the career opportunities available in each. We also want to illustrate some of the ways finance fits in with other areas such as marketing, management, and accounting.

The Four Basic Areas

Traditionally, financial topics are grouped into four main areas:

1. Corporate finance
2. Investments
3. Financial institutions
4. International finance

We discuss each of these next.

Corporate Finance The first of these four areas, corporate finance, is the main subject of this book. We begin covering this subject with our next section, so we will wait until then to get into any details. One thing we should note is that the term *corporate finance* seems to imply that what we cover is only relevant to corporations, but the truth is that almost all of the topics we consider are much broader than that. Maybe *business finance* would be a little more descriptive, but even this is too narrow because at least half of the subjects we discuss in the pages ahead are really basic financial ideas and principles applicable across all the various areas of finance and beyond.

For job descriptions in finance and other areas, visit www.careers-in-business.com.

Investments Broadly speaking, the investments area deals with financial assets such as stocks and bonds. Some of the more important questions include:

1. What determines the price of a financial asset, such as a share of stock?
2. What are the potential risks and rewards associated with investing in financial assets?
3. What is the best mixture of the different types of financial assets to hold?

Students who specialize in the investments area have various career opportunities. Being a stockbroker is one of the most common. Stockbrokers often work for large companies such as Merrill Lynch, advising customers on what types of investments to consider and helping them make buy and sell decisions. Financial advisers play a similar role, but are not necessarily brokers.

Portfolio management is a second investments-related career path. Portfolio managers, as the name suggests, manage money for investors. For example, individual investors frequently buy into mutual funds. Such funds are simply a means of pooling money that is then invested by a portfolio manager. Portfolio managers also invest and manage money for pension funds, insurance companies, and many other types of institutions.

Security analysis is a third area. A security analyst researches individual investments, such as stock in a particular company, and makes a determination as to whether the price is right. To do so, an analyst delves deeply into company and industry reports, along with a variety of other information sources. Frequently, brokers and portfolio managers rely on security analysts for information and recommendations.

These investments-related areas, like many areas in finance, share an interesting feature. If they are done well, they can be very rewarding financially (translation: You can make a lot of money). The bad news, of course, is that they can be very demanding and very competitive, so they are definitely not for everybody.

Financial Institutions Financial institutions are basically businesses that deal primarily in financial matters. Banks and insurance companies would probably be the most familiar to you. Institutions such as these employ people to perform a wide variety of finance-related tasks. For example, a commercial loan officer at a bank would evaluate whether a particular business has a strong enough financial position to warrant extending a

loan. At an insurance company, an analyst would decide whether a particular risk was suitable for insuring and what the premium should be.

International Finance International finance isn't so much an area as it is a specialization within one of the main areas we described earlier. In other words, careers in international finance generally involve international aspects of either corporate finance, investments, or financial institutions. For example, some portfolio managers and security analysts specialize in non-U.S. companies. Similarly, many U.S. businesses have extensive overseas operations and need employees familiar with such international topics as exchange rates and political risk. Banks frequently are asked to make loans across country lines, so international specialists are needed there as well.

Why Study Finance?

Who needs to know finance? In a word, you. In fact, there are many reasons you need a working knowledge of finance even if you are not planning a finance career. We explore some of these next.

Marketing and Finance If you are interested in marketing, you need to know finance because, for example, marketers constantly work with budgets, and they need to understand how to get the greatest payoff from marketing expenditures and programs. Analyzing costs and benefits of projects of all types is one of the most important aspects of finance, so the tools you learn in finance are vital in marketing research, the design of marketing and distribution channels, and product pricing, just to name a few areas.

Financial analysts rely heavily on marketing analysts, and the two frequently work together to evaluate the profitability of proposed projects and products. As we will see in a later chapter, sales projections are a key input in almost every type of new product analysis, and such projections are often developed jointly between marketing and finance.

Beyond this, the finance industry employs marketers to help sell financial products such as bank accounts, insurance policies, and mutual funds. Financial services marketing is one of the most rapidly growing types of marketing, and successful financial services marketers are very well compensated. To work in this area, you obviously need to understand financial products.

Accounting and Finance For accountants, finance is required reading. In smaller businesses in particular, accountants are often required to make financial decisions as well as perform traditional accounting duties. Further, as the financial world continues to grow more complex, accountants have to know finance to understand the implications of many of the newer types of financial contracts and the impact they have on financial statements. Beyond this, cost accounting and business finance are particularly closely related, sharing many of the same subjects and concerns.

Financial analysts make extensive use of accounting information; they are some of the most important end users. Understanding finance helps accountants recognize what types of information are particularly valuable and, more generally, how accounting information is actually used (and abused) in practice.

Management and Finance One of the most important areas in management is strategy. Thinking about business strategy without simultaneously thinking about financial strategy is an excellent recipe for disaster, and, as a result, management strategists must have a very clear understanding of the financial implications of business plans.

In broader terms, management employees of all types are expected to have a strong understanding of how their jobs affect profitability, and they are also expected to be able to

work within their areas to improve profitability. This is precisely what studying finance teaches you: What are the characteristics of activities that create value?

You and Finance Perhaps the most important reason to know finance is that you will have to make financial decisions that will be very important to you personally. Today, for example, when you go to work for almost any type of company, you will be asked to decide how you want to invest your retirement funds. We'll see in a later chapter that what you choose to do can make an enormous difference in your future financial well-being. On a different note, is it your dream to start your own business? Good luck if you don't understand basic finance before you start; you'll end up learning it the hard way. Want to know how big your student loan payments are going to be before you take out that next loan? Maybe not, but we'll show you how to calculate them anyway.

These are just a few of the ways that finance will affect your personal and business lives. Whether you want to or not, you are going to have to examine and understand financial issues, and you are going to have to make financial decisions. We want you to do so wisely, so keep reading.

CONCEPT QUESTIONS

1.1a What are the major areas in finance?

1.1b Besides wanting to pass this class, why do you need to understand finance?

1.2 BUSINESS FINANCE AND THE FINANCIAL MANAGER

Now we proceed to define business finance and the financial manager's job.

What Is Business Finance?

Imagine 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 investments? 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, but they are among the most important. Business finance, broadly speaking, is the study of ways to answer these three questions. We'll be looking at each of them in the chapters ahead.

The Financial Manager

For current issues facing CFOs, see www.cfo.com.

The financial management function is usually associated with a top officer of the firm, often called the chief financial officer (CFO) or vice president of finance. 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

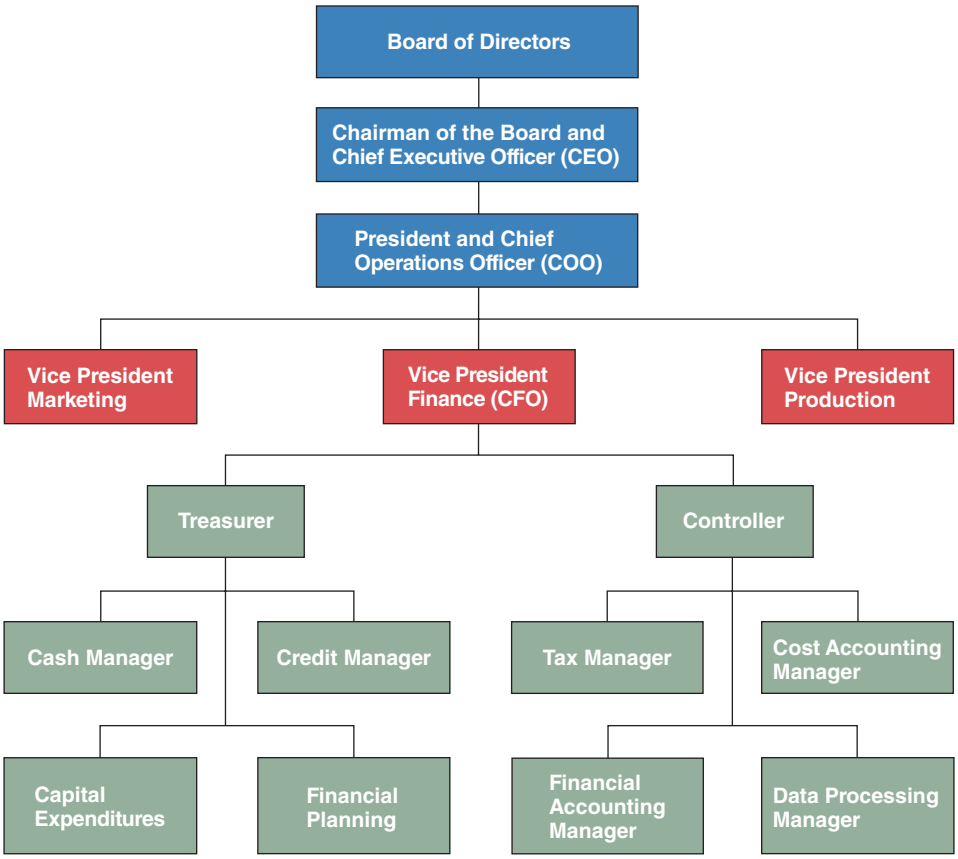

FIGURE 1.1

A simplified organizational chart

The exact titles and organization differ from company to company.

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 above, and the chapters ahead deal primarily with these issues. Our study thus bears mostly on activities usually associated with the treasurer's office. In a smaller firm, the treasurer and controller might be the same person, and there would be only one office.

Financial Management Decisions

As our 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 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.

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

Regardless of the specific investment under consideration, financial managers must be concerned with how much cash they expect to receive, 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, 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 mixture of debt and equity maintained by a firm.

Capital Structure The second question for the financial manager concerns how the firm obtains the financing it needs to support its long-term investments. A firm's **capital structure** (or financial structure) refers to 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? Second: What are the least expensive sources of funds for the firm?

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, businesses borrow money from a variety of lenders in a number of different 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 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 to our customers? (3) How will we obtain any needed short-term financing? (4) If we borrow in the short term, how and where should we do it? This is 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 of the questions that arise in the different areas. The chapters ahead contain greater detail.

CONCEPT QUESTIONS

1.2a What is the capital budgeting decision?

1.2b What do you call the specific mixture of long-term debt and equity that a firm chooses to use?

1.2c Into what category of financial management does cash management fall?

1.3 FORMS OF BUSINESS ORGANIZATION

Large firms in the United States, such as IBM and Apple, 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.

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. 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 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.

For more information on forms of business organization, visit www.nolo.com.

The life of a sole proprietorship is limited to the owner's life span, and, importantly, the amount of equity that can be raised is limited to 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 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 do 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 for 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 by a general partner is not easily transferred because a new partnership must 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, 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.

corporation
A business created as a distinct legal entity owned by one or more individuals or entities.

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 own existence. For example, the bylaws describe how directors are elected. 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. Management is 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 the reasons the corporate form is superior when it comes to raising cash. If a corporation needs new equity, it can sell new shares of stock and attract new investors. The number of owners can be huge; larger corporations have many thousands or even millions of stockholders. For example, the General Electric Company (better known as GE) has about 10 billion shares outstanding and 4 million shareholders.

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.

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. Thus, an LLC is essentially a hybrid of a partnership and a 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, one of Wall Street's last remaining partnerships, decided to convert from a private 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.

A Corporation by Another Name . . .

The corporate form has many variations around the world. Exact laws and regulations differ, 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*.

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

TABLE 1.1

International corporations

You can find the translation for any business type at www.corporate information.com.

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

CONCEPT QUESTIONS

1.3a What are the three forms of business organization?

1.3b What are the primary advantages and disadvantages of sole proprietorships and partnerships?

1.3c What is the difference between a general and a limited partnership?

1.3d Why is the corporate form superior when it comes to raising cash?

1.4 THE GOAL OF FINANCIAL MANAGEMENT

To study financial decision making, we first need to understand the goal of financial management. Such an understanding is important because it leads to an objective basis for making and evaluating financial decisions.

Profit Maximization

Profit maximization would probably be the most commonly cited business goal, but this is not a very precise objective. Do we mean profits this year? If so, then actions such as deferring maintenance, letting inventories run down, and 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 unclear exactly what this means. First, do we mean something like accounting net income or earnings per share? As we will see, these 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 the appropriate trade-off between current and future profits.

The Goal of Financial Management in a Corporation

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