

Fundamentals of Corporate Finance

Richard A. Brealey

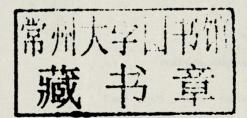
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FUNDAMENTALS OF CORPORATE FINANCE

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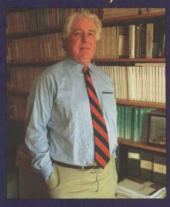
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Preface

This book is about corporate finance. It focuses on how companies invest in real assets, how they raise the money to pay for these investments, and how those assets ultimately affect the value of the firm. It also provides a broad introduction to the financial land-scape, discussing, for example, the major players in financial markets, the role of financial institutions in the economy, and how securities are traded and valued by investors. The book offers a framework for systematically thinking about most of the important financial problems that both firms and individuals are likely to confront.

Financial management is important, interesting, and challenging. It is *important* because today's capital investment decisions may determine the businesses that the firm is in 10, 20, or more years ahead. Also, a firm's success or failure depends in large part on its ability to find the capital that it needs.

Finance is *interesting* for several reasons. Financial decisions often involve huge sums of money. Large investment projects or acquisitions may involve billions of dollars. Also, the financial community is international and fast-moving, with colorful heroes and a sprinkling of unpleasant villains.

Finance is *challenging*. Financial decisions are rarely cut and dried, and the financial markets in which companies operate are changing rapidly. Good managers can cope with routine problems, but only the best managers can respond to change. To handle new problems, you need more than rules of thumb; you need to understand why companies and financial markets behave as they do and when common practice may not be best practice. Once you have a consistent framework for making financial decisions, complex problems become more manageable.

This book provides that framework. It is not an encyclopedia of finance. It focuses instead on setting out the basic *principles* of financial management and applying them to the main decisions faced by the financial manager. It explains why the firm's owners would like the manager to increase firm value and shows how managers choose between investments that may pay off at different points of time or have different degrees of risk. It also describes the main features of financial markets and discusses why companies may prefer a particular source of finance.

We organize the book around the key concepts of modern finance. These concepts, properly explained, simplify the subject. They are also practical. The tools of financial management are easier to grasp and use effectively when presented in a consistent conceptual framework. This text provides that framework.

Modern financial management is not "rocket science." It is a set of ideas that can be made clear by words, graphs, and numerical examples. The ideas provide the "why" behind the tools that good financial managers use to make investment and financing decisions.

We wrote this book to make financial management clear, useful, interesting, and fun for the beginning student. We set out to show that modern finance and good financial practice go together, even for the financial novice.

Fundamentals and Principles of Corporate Finance

This book is derived in part from its sister text *Principles of Corporate Finance*. The spirit of the two books is similar. Both apply modern finance to give students a working ability to make financial decisions. However, there are also substantial differences between the two books.

First, we provide much more detailed discussion of the principles and mechanics of the time value of money. This material underlies almost all of this text, and we spend a lengthy chapter providing extensive practice with this key concept. Second, we use numerical examples in this text to a greater degree than in *Principles*. Each chapter presents several detailed numerical examples to help the reader become familiar and comfortable with the material.

Third, we have streamlined the treatment of most topics. Whereas *Principles* has 34 chapters, *Fundamentals* has only 25. The relative brevity of *Fundamentals* necessitates a broader-brush coverage of some topics, but we feel that this is an advantage for a beginning audience.

Fourth, we assume little in the way of background knowledge. While most users will have had an introductory accounting course, we review the concepts of accounting that are important to the financial manager in Chapter 3.

Principles is known for its relaxed and informal writing style, and we continue this tradition in *Fundamentals*. In addition, we use as little mathematical notation as possible. Even when we present an equation, we usually write it in words rather than symbols. This approach has two advantages. It is less intimidating, and it focuses attention on the underlying concept rather than the formula.

Organizational Design

Fundamentals is organized in eight parts.

Part 1 (Introduction) provides essential background material. In the first chapter we discuss how businesses are organized, the role of the financial manager, and the financial markets in which the manager operates. We explain how shareholders want managers to take actions that increase the value of their investment, and we introduce the concept of the opportunity cost of capital and the trade-off that the firm needs to make when assessing investment proposals. We also describe some of the mechanisms that help to align the interests of managers and shareholders. Of course, the task of increasing shareholder value does not justify corrupt and unscrupulous behavior. We therefore discuss some of the ethical issues that confront managers.

Chapter 2 surveys and sets out the functions of financial markets and institutions. This chapter also reviews the crisis of 2007–2009. The events of those years illustrate clearly why and how financial markets and institutions matter.

A large corporation is a team effort, and so the firm produces financial statements to help the players monitor its progress. Chapter 3 provides a brief overview of these financial statements and introduces two key distinctions—between market and book values and between cash flows and profits. This chapter also discusses some of the shortcomings in accounting practice. The chapter concludes with a summary of federal taxes.

Chapter 4 provides an overview of financial statement analysis. In contrast to most introductions to this topic, our discussion is motivated by considerations of valuation and the insight that financial ratios can provide about how management has added to the firm's value.

Part 2 (Value) is concerned with valuation. In Chapter 5 we introduce the concept of the time value of money, and, since most readers will be more familiar with their own financial affairs than with the big leagues of finance, we motivate our discussion by looking first at some personal financial decisions. We show how to value long-lived streams of cash flows and work through the valuation of perpetuities and annuities. Chapter 5 also contains a short concluding section on inflation and the distinction between real and nominal returns.

Chapters 6 and 7 introduce the basic features of bonds and stocks and give students a chance to apply the ideas of Chapter 5 to the valuation of these securities. We show how to find the value of a bond given its yield, and we show how prices of bonds fluctuate as interest rates change. We look at what determines stock prices and how stock valuation formulas can be used to infer the return that investors expect. Finally, we see how investment opportunities are reflected in the stock price and why analysts focus on the price-earnings multiple. Chapter 7 also introduces the concept of market efficiency. This concept is crucial to interpreting a stock's valuation; it also provides a

Preface

framework for the later treatment of the issues that arise when firms issue securities or make decisions concerning dividends or capital structure.

The remaining chapters of Part 2 are concerned with the company's investment decision. In Chapter 8 we introduce the concept of net present value and show how to calculate the NPV of a simple investment project. We then consider more complex investment proposals, including choices between alternative projects, machine replacement decisions, and decisions of when to invest. We also look at other measures of an investment's attractiveness—its internal rate of return, payback period, and profitability index. We show how the profitability index can be used to choose between investment projects when capital is scarce. The appendix to Chapter 8 shows how to sidestep some of the pitfalls of the IRR rule.

The first step in any NPV calculation is to decide what to discount. Therefore, in Chapter 9 we work through a realistic example of a capital budgeting analysis, showing how the manager needs to recognize the investment in working capital and how taxes and depreciation affect cash flows.

We start Chapter 10 by looking at how companies organize the investment process and ensure everyone works toward a common goal. We then go on to look at various techniques to help managers identify the key assumptions in their estimates, such as sensitivity analysis, scenario analysis, and break-even analysis. We explain the distinction between accounting break-even and NPV break-even. We conclude the chapter by describing how managers try to build future flexibility into projects so that they can capitalize on good luck and mitigate the consequences of bad luck.

Part 3 (Risk) is concerned with the cost of capital. Chapter 11 starts with a historical survey of returns on bonds and stocks and goes on to distinguish between the specific risk and market risk of individual stocks. Chapter 12 shows how to measure market risk and discusses the relationship between risk and expected return. Chapter 13 introduces the weighted-average cost of capital and provides a practical illustration of how to estimate it.

Part 4 (Financing) begins our discussion of the financing decision. Chapter 14 provides an overview of the securities that firms issue and their relative importance as sources of finance. In Chapter 15 we look at how firms issue securities, and we follow a firm from its first need for venture capital, through its initial public offering, to its continuing need to raise debt or equity.

Part 5 (Debt and Payout Policy) focuses on the two classic long-term financing decisions. In Chapter 16 we ask how much the firm should borrow and we summarize bankruptcy procedures that occur when firms can't pay their debts. In Chapter 17 we study how firms should set dividend and payout policy. In each case we start with Modigliani and Miller's (MM's) observation that in well-functioning markets the decision should not matter, but we use this observation to help the reader understand why financial managers in practice *do* pay attention to these decisions.

Part 6 (Financial Analysis and Planning) starts with long-term financial planning in Chapter 18, where we look at how the financial manager considers the combined effects of investment and financing decisions on the firm as a whole. We also show how measures of internal and sustainable growth help managers check that the firm's planned growth is consistent with its financing plans. Chapter 19 is an introduction to short-term financial planning. It shows how managers ensure that the firm will have enough cash to pay its bills over the coming year, and describes the principal sources of short-term borrowing. Chapter 20 addresses working capital management. It describes the basic steps of credit management, the principles of inventory management, and how firms handle payments efficiently and put cash to work as quickly as possible.

Part 7 (Special Topics) covers several important but somewhat more advanced topics—mergers (Chapter 21), international financial management (Chapter 22), options (Chapter 23), and risk management (Chapter 24). Some of these topics are touched on in earlier chapters. For example, we introduce the idea of options in Chapter 10, when we

show how companies build flexibility into capital projects. However, Chapter 23 generalizes this material, explains at an elementary level how options are valued, and provides some examples of why the financial manager needs to be concerned about options. International finance is also not confined to Chapter 22. As one might expect from a book that is written by an international group of authors, examples from different countries and financial systems are scattered throughout the book. However, Chapter 22 tackles the specific problems that arise when a corporation is confronted by different currencies.

Part 8 (Conclusion) contains a concluding chapter (Chapter 25), in which we review the most important ideas covered in the text. We also introduce some interesting questions that either were unanswered in the text or are still puzzles to the finance profession. Thus the last chapter is an introduction to future finance courses as well as a conclusion to this one.

Routes through the Book

There are about as many effective ways to organize a course in corporate finance as there are teachers. For this reason, we have ensured that the text is modular, so that topics can be introduced in different sequences.

We like to discuss the principles of valuation before plunging into financial planning. Nevertheless, we recognize that many instructors will prefer to move directly from Chapter 4 (Measuring Corporate Performance) to Chapter 18 (Long-Term Financial Planning) in order to provide a gentler transition from the typical prerequisite accounting course. We have made sure that Part 6 (Financial Analysis and Planning) can easily follow Part 1.

Similarly, we like to discuss working capital after the student is familiar with the basic principles of valuation and financing, but we recognize that here also many instructors prefer to reverse our order. There should be no difficulty in taking Chapter 20 out of order.

When we discuss project valuation in Part 2, we stress that the opportunity cost of capital depends on project risk. But we do not discuss how to measure risk or how return and risk are linked until Part 3. This ordering can easily be modified. For example, the chapters on risk and return can be introduced before, after, or midway through the material on project valuation.

Changes in the Seventh Edition

Users of previous editions of this book will not find dramatic changes in either the material or the ordering of topics. But throughout we have tried to make the book more up to date and easier to read. Here are some of the ways that we have done this.

Improving the Flow A major part of our effort in revising this text was spent on improving the flow. Sometimes this has meant a word change here or a redrawn diagram there, but in several instances we have made more substantial changes. For example, we now introduce the concept of the investment trade-off and the cost of capital in Chapter 1. We think it fits more naturally there. Look also at the start of Chapter 4 (Measuring Corporate Performance). We emphasize here that financial ratios serve to show how much value management has added and what the sources of that value are. Figure 4.1 signposts the questions that managers need to ask and some of the financial ratios that help to answer them. We think that this introduction serves to prevent the chapter from becoming a tedious list of ratios. Similarly, in Chapter 8, we have reworked the discussion of the internal rate of return and its pitfalls and believe that the discussion of IRR now flows more easily.

Updating Of course, in each new edition we try to ensure that any statistics are as up to date as possible. For example, since the previous edition we have available an extra 3 years of data on security returns. These show up in the figures in Chapter 11 of the long-run returns on stocks, bonds, and bills. Measures of EVA, data on security ownership, bond yields, and dividend and repurchase payouts are just a few of the other cases where data have been brought up to date.

Preface Xi

Recent Events Not surprisingly, there are plenty of references in this edition to the crisis of 2007–2009 and its impact on financial managers. But there are also many less dramatic examples of recent changes in the financial landscape. For example, as you might expect, in our discussion of ethical issues, Bernard Madoff steps briefly on stage. Another example is Chapter 3 (Accounting and Finance), where you will find a discussion of SOX, of mark-to-market accounting, and of recent developments in international accounting standards.

Concepts Agency theory and behavioral finance are not new ideas, but the dot-com boom and bust and the financial crisis have focused increased attention on them. That is reflected in several places throughout the book. The material on efficient markets in Chapter 7 now includes a section on price bubbles as well as a discussion of behavioral biases. Other topics that have received increasing emphasis include company valuation, real options, and stock repurchases.

New Illustrative Boxes The text contains a number of boxes with illustrative real-world examples. Many of these are new. Look, for example, at the box in Chapter 1 that discusses the difficult ethical issues raised by Goldman Sachs' sale of a package of low-grade mortgages during the financial crisis, the box in Chapter 6 that introduces credit default swaps, or the box in Chapter 17 that describes the dividend cut by JPMorgan.

More Worked Examples We have added more worked examples in the text, many of them taken from real companies. For instance, when we discuss company valuation in Chapter 7, we show how the constant-growth model can be used to value Aqua America.

New Calculator and Spreadsheet Boxes We have reworked the explanations of how to use calculators or spreadsheets to solve financial problems. For example, we have shown how use of the function key can guide users through spreadsheet functions. We believe that this is much simpler than remembering the formula for each function. As in past editions, every spreadsheet in the text is available on the text Web site at www.mhhe.com/bmm7e. We have also written many new Web exercises, several of which require the student to download data into a spreadsheet for analysis.

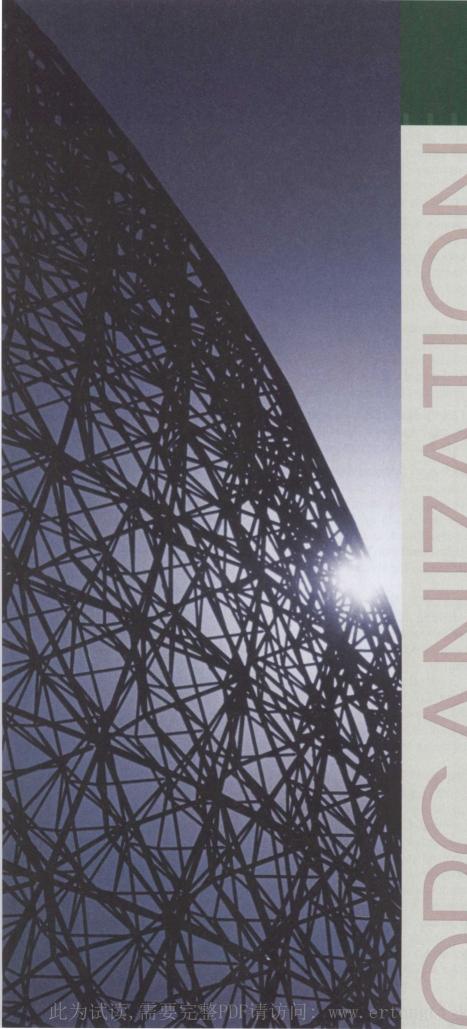
Assurance of Learning

Assurance of learning is an important element of many accreditation standards. *Fundamentals of Corporate Finance, Seventh 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 are referred to in 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.

AACSB Statement

The McGraw-Hill Companies is a proud corporate member of AACSB International. Understanding the importance and value of AACSB accreditation, *Fundamentals of Corporate Finance, Seventh Edition*, has sought to recognize the curricula guidelines detailed in the AACSB standards for business accreditation by connecting selected questions in the test bank to the general knowledge and skill guidelines found in the AACSB standards.

The statements contained in *Fundamentals of Corporate Finance, Seventh Edition*, are provided only as a guide for the users of this text. The AACSB leaves content coverage and assessment within the purview of individual schools, the mission of the school, and the faculty. While *Fundamentals of Corporate Finance, Seventh Edition*, and the teaching package make no claim of any specific AACSB qualification or evaluation, we have, within the test bank, labeled selected questions according to the six general knowledge and skills areas.



New and Enhanced Pedagogy

A great deal of effort has gone into expanding and enhancing the features in Fundamentals of Corporate Finance.

WALK-THROUGH

Brealey / Myers / Marcus

Your guide through the challenging landscape of corporate finance.

Chapter Opener

Each chapter begins with a chapter narrative to help set the tone for the material that follows. Learning Objectives are also included to provide a quick introduction to the material students will learn and should understand fully before moving to the next chapter.

CHAPTER

The Time Value of Money

Key Terms in the Margin

Key terms are presented in bold and defined in the margin as they are introduced. A glossary is also available at the back of the book.

5.4 Level Cash Flows: Perpetuities and Annuities

Frequently, you may need to value a stream of equal cash flows. For example, a home mortgage might require the homeowner to make equal monthly payments for the life of the loan. For a 30-year loan, this would result in 360 equal payments. A 4-year car loan might require 48 equal monthly payments. Any such sequence of equally spaced, level cash flows is called an **annuity**. If the payment stream lasts forever, it is called a perpetuity.

Equally spaced level stream of cash flows, with a finite maturity.

perpetuity

Stream of level cash payments that never ends

How to Value Perpetuities

Some time ago the British government borrowed by issuing loans known as consols. Consols are perpetuities. In other words, instead of repaying these loans, the British government pays the investors a fixed annual payment in perpetuity (forever)

How might we value such a security? Suppose that you could invest \$100 at an interest rate of 10%. You would earn annual interest of $10 \times $100 = 10 per year and

Numbered Examples

Numbered and titled examples are integrated in each chapter. Students can learn how to solve specific problems step-by-step as well as gain insight into general principles by seeing how they are applied to answer concrete questions and scenarios.

EXAMPLE 5.8 Winning Big at the Lottery

In August 2006 eight lucky meatpackers from Nebraska pooled their money to buy Powerball lottery tickets and won a record \$365 million. We suspect that the winners received unsolicited congratulations, good wishes, and requests for money from dozens of more or less worthy charities, relations, and newly devoted friends. In response, they could fairly point out that the prize wasn't really worth \$365 million. That sum was to be paid in 30 equal annual installments of \$12.167 million each.

Assuming that the first payment occurred at the end of 1 year, what was the present value of the prize? The interest rate at the time was about 6%. The present value of the prize? The interest rate at the time was about 6%. The present value of these payments is simply the sum of the present values of each annual payment. But rather than valuing the payments separately, it is much easier to treat them as a 30-year annuity. To value this annuity, we simply multiply \$12.167 million by the 30-year annuity factor:

$$PV = 12.167 \times 30$$
-year annuity factor

$$= 12.167 \times \left[\frac{1}{r} - \frac{1}{r(1+r)^{30}} \right]$$

At an interest rate of 6%, the annuity factor is

$$\left[\frac{1}{.06} - \frac{1}{.06(1.06)^{30}}\right] = 13.7648$$

(We could also look up the annuity factor in Table A.3.) The present value of the cash page is \$12 13.764 \$167.5 million less than the auch

What makes Brealey/Myers/Marcus such a powerful learning tool?

Spreadsheet **Solutions Boxes**

These boxes provide the student with detailed examples of how to use Excel spreadsheets when applying financial concepts. Questions that apply to the spreadsheet follow and their solutions are given at the end of the applicable chapter. Denoted by an icon, these spreadsheets are available on the book Web site at www.mhhe. com/bmm7e.

Excel Exhibits

Selected exhibits are set as Excel spreadsheets. They are also available on the book Web site at www.mhhe.com/ bmm7e.

Finance in Practice

These are excerpts that appear in most chapters, usually from the financial press, providing real-life illustrations of the chapter's topics, such as ethical choices in finance, disputes about stock valuation, financial planning, and credit analysis.

Multiple Cash Flows While uneven cash-flow problems are conceptually straightforward, they rapidly become tedious and prone to errors from "typos," even if you use a financial calculator. It really helps to use spreadsheets. The following figure is a spreadsheet solution of Example 5.7. The spreadsheet lists the time until each payment in column A. This value is used for the number of periods (nper) in the PV formula in column C. The values for the cash flow in each future period are entered as negative numbers in the PV formula. The present values (column C) therefore appear as positive numbers. Column E shows an alternative to the use of the PV function, where we calculate present values directly. An interactive version of this spreadsheet can be found at Spreadsheet Questions Spreadsheet Questions 5.1 Find the present value of the three payments at interest rates of 5% and 11%. Explain why the values change as they do. 5.2 Total payments over the 3 years are \$16,000. What is the present value if the three payments are instead \$6,000, \$5,000, \$5,000. \$5,000 Why does the present value fall? (Use an interest rate of 8%.) e cel

A	В	C	D	E	e cel
Quarter:	First	Second	Third	Fourth	-
					You can find this spreadsheet at www.mhhe.
A. Accounts Receivable					com/bmm7e.
Receivables (beginning of period)	30.0	32.5	30.7	38.2	
Sales	87.5	78.5	116.0	131.0	
Collections					
On sales in current period (80%)	70.0	62.8	92.8	104.8	
On sales in previous period (20%) ^a	15.0	17.5	15.7	23.2	
Total collections	85.0	80.3	108.5	128.0	
Receivables (end of period) = Rows 4+5-9	32.5	30.7	38.2	41.2	
B. Cash Budget		9			
Sources of cash					
Collections of accounts receivable (row 9)	85.0	80.3	108.5	128.0	
Other	1.5	0.0	12.5	0.0	
Total collections	86.5	80.3	121.0	128.0	
Uses of cash		-			
Payments of accounts payable	65.0	60.0	55.0	50.0	
Labor & other expenses	30.0	30.0	30.0	30.0	
Capital expenses	32.5	1.3	_5.5	8.0	

FINANCE IN PRACTICE

The Hazards of Secured Bank Lending

The Hazards of Secured Bank Lending

The National Safety Council of Australia's Victoria Division
had been a sleepy outflit until John Fredrich took over. Under
Its new management, NSC members trained like commandos and were prepared to go anywhere and do anything.

They saved people from drowning, fought fires, found lost
bushwalkers, and worth down mines. Their lavish equipment
included 22 helicopters, 8 aircraft, and a mini-submarine.

Soon the NSC began selling its services internationally.

Unfortunately the NSC's paramillitary outflic cost millions of
dollars to run—far more than it earned in revenue. Friedrich
bridged the gap by borrowing \$A236 million of debt. The
banks were happy to lend because the NSC's debt appeared
well segume a point the company showed \$A107.10

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Six years after Friedrich was appointed CEO, his massive

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Calculator Boxes and Exercises

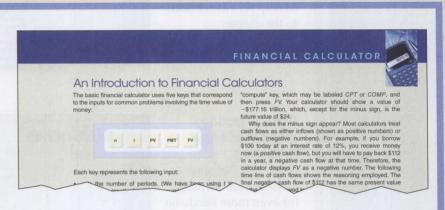
In a continued effort to help students grasp the critical concept of the time value of money, many pedagogical tools have been added throughout the first section of the text. Financial Calculator boxes provide examples for solving a variety of problems, with directions for the three most popular financial calculators.

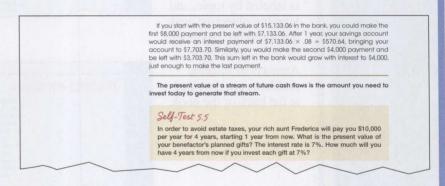
Self-Test Questions

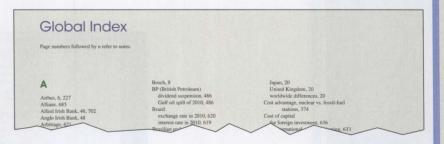
Provided in each chapter, these helpful questions enable students to check their understanding as they read. Answers are worked out at the end of each chapter.

Global Index

The Global Index appears at the end of the text for easy reference to international material.







End-of-Chapter Material



Summary

This feature helps review the key points and learning objectives to help provide closure to the chapter.

SUMMARY

between the bond's coupon rate, current yield, and yield to maturity? (LOI)

A bond is a long-term debt of a government or corporation. When you own a bond, you receive a fixed interest payment each year until the bond matures. This payment is known as the coupon. The coupon rate is the annual coupon payment expressed as a fraction of the bond's face value is repaid. In the United States most bonds have a face value of \$1,000. The current yield is the annual coupon payment expressed as a percentage of the bond price. The yield to maturity measures the average rate of return to an investor who purchases the bond and holds it until maturity, accounting for coupon income as well as the difference between purchase price and face value.

How can one find the market price of a bond given its yield to maturity on comparable bonds. The bond payments discounted at the bond's yield to maturity or comparable bonds. The bond payments discounted at the bond's yield to maturity equal the bond price. You may also start with the bond price and sath at interest rate the bond offer and single present of bond payments to be present who of bond payments to

Quiz, Practice, and Challenge **Problems**

New end-of-chapter problems are included for even more hands-on practice. Each question is labeled by topic, and learning objective, and questions are separated by level of difficulty. Answers to selected problems are provided at the back of the book.

QUESTIONS

a connect QUIZ

2. Hedging. (LO2)

Heoging. (LCC)
a. An investor currently holding \$1 million in long-term Treasury bonds becomes concerned about increasing volatility in interest rates. She decides to hedge her risk by using Treasury bond futures contracts. Should she buy or sell such contracts?
b. The treasurer of a corporation that will be issuing bonds in 3 months also is concerned about interest rate volatility and wants to lock in the price at which he could sell 8% coupon bonds. How would he use Treasury bond futures contracts to hedge his firm's position?

PRACTICE PROBLEMS

- 7. Hedging with Futures versus Puts. A gold-mining firm is concerned about short-term volatility in its revenues. Gold currently sells for \$1,200 an ounce, but the price is volatile and could fall as low as \$1,000 or rise as high as \$1,400 in the next month. The company will bring 1,000 ounces to the market next month. (LO2)
 a. What will be total revenues if the firm remains unhedged for gold prices of \$1,000, \$1,200,

 - a. What will be total revenues it the Imm remains unhedged for gold prices of \$1,000, \$1,200,
 b. The futures price of gold for 1-month-shead delivery is \$1,080. What will be the firm's total revenues at each gold price if the firm enters a 1-month futures contract to deliver 1,000 ounces of gold?
 c. What will lotal revenues be if the firm buys a 1-month put option to sell gold for \$1,080 an ounce? The puts cost \$12 per ounce.

CHALLENGE PROBLEMS

- Option Portfolios. Repeat the three parts of Practice Problem 9 except that now the problem is
 to devise a package of investments with the payoffs shown in Figure 23.9. This package of
 investments is known as a "butterfly." (LOI)
- Option Pricing. Look again at the Google call option that we valued in Section 23.2. Suppose
 that by the end of January 2011 the price of Google stock could double to \$920 or halve to \$230.
 Everything else is unchanged from our example. (LO2)
 - a. What would be the value of the Google call in January 2011 if the stock price is \$920? If it
 - b. Show that a strategy of buying three calls provides exactly the same payoffs as borrowing the present value of \$460 from the bank and buying two shares.
 c. What is the net cash flow in July 2010 from the policy of borrowing PV(\$460) and buying

 - What does this you about value of the

Most chapters contain problems, denoted by an icon, specifically linked to Excel templates that are available on the book Web site at www.mhhe.com/bmm7e.

Nonconstant Growth. Better Mousetraps has come out with an improved product, and the world is beating a path to its door. As a result, the firm projects growth of 20% per year for 4 years. By then, other firms will have copycat technology, competition will drive down profit margins, and the sustainable growth rate will fall to 5%. The most recent annual dividend was e Cel $DIV_0 = 1$ per share. (LO2) DIV₀ = 1 per share. (LDZ)

a. What are the expected values of DIV₁, DIV₃, DIV₃, and DIV₄?

b. What is the expected stock price 4 years from now? The discount rate is 10%.

c. What is the stock price today?

d. Find the dividend yield, DIV₄/P₀.

e. What will next year's stock price, P₁, be?

f. What is the expected rate of return to an investor who buys the stock now and sells it in 1 year? 45. Nonconstant Growth. (LO2) e cel Nonconstant Growth. (LOZ)

A. Return to the previous problem, and compute the value of Better Mousetraps for assumed sustainable growth rates of 6% through 9%, in increments of .5%.

b. Compute the percentage change in the value of the firm for each 1-percentage-point increase in the assumed final growth rate, g.

c. What happens to the sensitivity of intrinsic value to changes in g? What do you conclude about the reliability of the dividend growth model when the assumed sustainable growth rate begins to approach the discount rate? 46. Yield Curve and Efficient Markets. If the yield curve is downward-sloping, meaning that long-term interest rates are lower than short-term interest rates, what might investors believe about future short-term interest rates? (LO5)

Web Exercises

New to this edition! Most chapters have Web Exercises that allow students to utilize the Internet to apply their knowledge and skills with real world companies.

- c. What happens to the sensitivity of intrinsic value to changes in g? What do you conclude about the reliability of the dividend growth model when the assumed sustainable growth rate begins to approach the discount rate?
- Vield Curve and Efficient Markets. If the yield curve is downward-sloping, meaning that long-term interest rates are lower than short-term interest rates, what might investors believe about future short-term interest rates? (LO5)

WEB EXERCISES

- Review Table 7.2, which lists the market values of several firms. Update the table. Which company's value has changed by the greatest percentage since 2010, when the table was created?
 (Hint: Look for the price per share and the number of shares outstanding. The product of the two is total market capitalization, Now calculate book value per share. Have the book values for any firm changed? Which seems to be more stable, book or market value? Why?
- From finance, aboo.com, obtain the price-earnings ratios of Adobe Systems (ADBE) and American Electric Power (AEP). Which of these two firms seems to be more of a "growth stock"? Now obtain a forecast of each firm's expected earnings per share in the conting year. You can find earnings forecasts on yahoo.com under "Analysts Estimates." What is the present value of growth opportunities for each firm as a fraction of the stock price? (Assume, for simplicity, that the required rate of return on the stocks is r = 8%.) Are the relative values you obtain for PVGO consistent with the P/E ratios?

Minicases

Integrative minicases allow students to apply their knowledge to relatively complex, practical problems and typical real-world scenarios.

MINICASE

Terence Breezeway, the CEO of Prairie Home Stores, wondered what retirement would be like. It was almost 20 years to the day since his uncle Jacob Breezeway, Prairie Home's Founder, had asked him to take responsibility for managing the company. Now it was time to spend more time riding and fishing on the old Lazy

Beta Ranch.

Under Mr. Breezeway's leadership Prairie Home had grown slowly but steadily and was solidly profitable. (Table 7.6 shows earnings, dividends, and book asset values for the last 5 years.) Most of the company's supermarkets had been modernized and its brand name was well known.

Mr. Breezeway was proud of this record, although he wished that Prairie Home could have grown more rapidly. He had passed up several opportunities to build new stores in adjacent counties. Prairie Home was still just a family company, Its common stock was distributed among 15 grandchildren and nephews of Jacob Breezeway, most of whom had come to depend on generous regular disciplends. The commitment to high dividend payout* had smines available or enjoyets.

Prairie Home's value depended not just on its current book value or earnings but on its future prospects, which were good. One financial projection (shown in the top panel of Table 7.7) called for growth in earnings of over 100% by 2022. Unfortunately, this plan would require retirestment of all of Prairie Home's earnings from 2016 to 2019. After that the company could resume its normal dividend payout and growth rate. Mr. Breezeway believed this plan was feasible. He was determined to step aside for the next generation of top management. But before retiring, he had to decide whether to recommend that Prairie Home Stores "go public"—and before that decision he had to know what the company was worth.

The next morning he rode thoughfully to work. He left his horse at the south corral and ambled down the dusty street to Mike Gordon's Saloon, where Francine Firewater, the company's CFO, was having her usual steak-and-beans breaffast. He asked, Firewater to prepare a formal report to Prairie Home stockholders, valuing the company on the assumption that its shares were publicly traded.

Supplements

In addition to the overall refinement and improvement of the text material, considerable effort was put into developing an exceptional supplement package to provide students and instructors with an abundance of teaching and learning resources.

For the Instructor

Instructor's Manual

Updated and enhanced by Peter Crabb, Northwest Nazarene University, this supplement includes a descriptive preface containing alternative course formats and case teaching methods, a chapter overview and outline, key terms and concepts, a description of the PowerPoint slides, video teaching notes, related Web links, and pedagogical ideas.

PowerPoint Presentation System

Prepared by Nicholas Racculia, Saint Vincent College and Thomas McLaughlin, these visually stimulating slides have been fully updated with colorful graphs, charts, and lists. The slides can be edited or manipulated to fit the needs of a particular course.

Print and Online Test Bank

Nicholas Racculia, Saint Vincent College, with help from Thomas McLaughlin, has revised and added new questions and problems. Over 2,000 true/false, multiple-choice, and discussion questions/problems are available to the instructor at varying levels of difficulty and comprehension. All questions are tagged by learning objective, topic, AACSB category, and Bloom's Taxonomy level. Complete answers are provided for all test questions and problems, and creating computerized tests is easy with EZ Test Online!

Solutions Manual

Peter Crabb, Northwest Nazarene University, has prepared this resource containing solutions to all the end-of-chapter problems. This can also be made available to your students or packaged with the text at a discount. Please contact your McGraw-Hill/Irwin representative for more details.

DVD

ISBN 13: 9780073363653 ISBN 10: 0073363650

Our professionally produced videos showcase key topics in corporate finance, such as time value of money and capital budgeting.

Online Support

Online Learning Center

Find a wealth of information online! At this book Web site, instructors have access to teaching supports such as electronic files of the ancillary materials and solutions templates for the Excel problems. Students have access to study materials created specifically for this text as well as the Excel spreadsheets, which have been denoted by an icon in the text. A link to the following support material, as described below, is also included.



McGraw-Hill Connect™ Finance

Less Managing. More Teaching. Greater Learning.

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

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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.

Simple Assignment Manage-

ment 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 and manually change grades or leave comments for students to review.
- Reinforce classroom concepts with practice tests and instant quizzes.

Self-Quiz and Study The Self-Quiz and Study (SQS) connects each student to the learning resources needed for success in the course. For each chapter, students:

- Take a practice test to initiate the Self-Quiz and Study.
- Immediately upon completing the practice test, see how their performance compares to chapter learning objectives.
- Receive SQS recommendations for specific readings from the text,