



Fundamentals of Corporate Finance

Eleventh EDITION

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London Business School

Stewart C. Myers

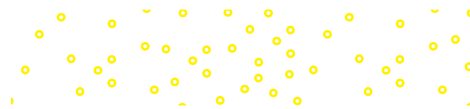
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FUNDAMENTALS OF CORPORATE FINANCE, ELEVENTH EDITION

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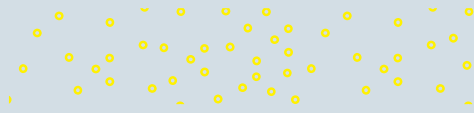
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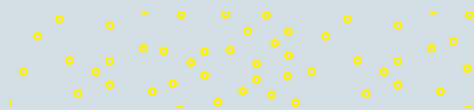
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Dedication To Our Families



About The Authors

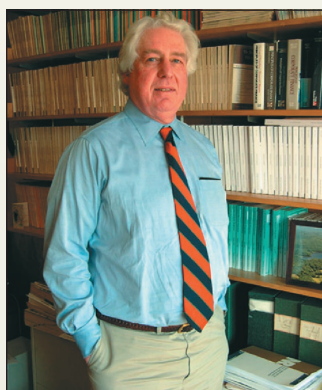


Courtesy of Richard A. Brealey

Richard A. Brealey

Emeritus Professor of Finance at the London Business School

Professor Brealey is the former president of the European Finance Association and a former director of the American Finance Association. He is a fellow of the British Academy and has served as Special Adviser to the Governor of the Bank of England and as director of a number of financial institutions. Professor Brealey is also the author (with Stewart Myers, Franklin Allen, and Alex Edmans) of this book's sister text, *Principles of Corporate Finance* (McGraw Hill).



Courtesy of Stewart C. Myers

Stewart C. Myers

Robert C. Merton (1970) Professor of Financial Economics at MIT's Sloan School of Management

Dr. Myers is past president of the American Finance Association and a research associate of the National Bureau of Economic Research. His research has focused on financing decisions, valuation methods, the cost of capital, and financial aspects of government regulation of business. Dr. Myers is a director of The Brattle Group, Inc. and is active as a financial consultant. He is also the author (with Richard Brealey, Franklin Allen, and Alex Edmans) of this book's sister text, *Principles of Corporate Finance* (McGraw Hill).



Courtesy of Alan J. Marcus

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Professor Marcus's main research interests are in derivatives and securities markets. He is co-author (with Zvi Bodie and Alex Kane) of the texts *Investments* and *Essentials of Investments* (McGraw Hill). Professor Marcus has served as a research fellow at the National Bureau of Economic Research. Professor Marcus also spent two years at Freddie Mac, where he helped to develop mortgage pricing and credit risk models. He currently serves on the Research Foundation Advisory Board of the CFA Institute.

This book is an introduction to corporate finance. It focuses on how companies invest in real assets, how they raise the money to pay for their investments, and how those assets ultimately affect the value of the firm. It also provides a broad overview of the financial landscape, 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. Needless to say, a firm's success or failure also depends, in large part, on its ability to find the capital that it requires.

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 how managers can make choices 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.

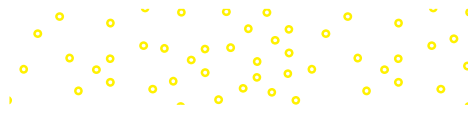
We organize the book around the key concepts of modern finance. These concepts, properly explained, simplify the subject. They are also practical. The tools of financial management are easier to grasp and use effectively when presented in a consistent conceptual framework. This text provides that framework.

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, 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 in *Fundamentals* 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 with many disparate goals might all agree that they 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, 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. 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 because 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 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, profitability index, and payback period. 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 discuss how positive-NPV projects reflect a competitive advantage, and we go on to look at various techniques such as sensitivity analysis, scenario analysis, and break-even analysis that help managers identify the key assumptions in their estimates. 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 diversifiable 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 initial 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. 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. It also describes how firms invest temporary surpluses of cash and how they can borrow to offset any temporary deficiency. Chapter 20 is conceptually straightforward, but it contains a large dollop of institutional material.

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.

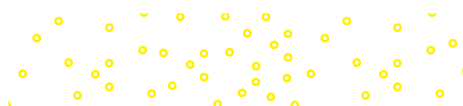
Part 8 (Conclusion) contains a concluding chapter (Chapter 25), in which we review the most important ideas covered in the text. We also introduce some interesting questions that either were unanswered in the text or are still puzzles to the finance profession. Thus, the last chapter is an introduction 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 only 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 Eleventh 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 sought 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. Often this has meant a word change here or a redrawn diagram there, but sometimes we have made more substantial changes. For example, the discussions of forward and spot exchange rates in Chapter 22 are now integrated, which makes the introduction to the material easier to understand. The material is substantially unchanged, but we think that the flow is much improved.

Updating For many firms, a major focus of the past few years has been on the impact of Covid. Not surprisingly, references to Covid crop up regularly in this new edition in discussions of risk management, estimating beta, setting dividend policy, and so on.

The dozens of real-firm examples in the text have been updated to reflect current events in the last three years. These should offer greater name recognition and salience to the typical reader.

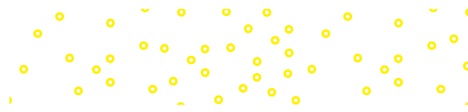
Of course, in each new edition we also try to ensure that any statistics are as up to date as possible. For example, since the previous edition, we have available an extra two years of data on security returns. These show up in the figures in Chapter 11 of the long-run returns on stocks, bonds, and bills. Accounting ratios, data on security ownership, dividend payments, and stock repurchases are just a few of the other cases where data have been brought up to date.

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 raises the question whether managers should maximize the value of stakeholders as a whole rather than that of the shareholders. Or look at the box in Chapter 15 that shows how SPACS emerged in 2021 as an important alternative to a traditional IPO for firms wishing to go public.

Chapter Summaries All chapter summaries have been reorganized into series of easy-to-digest bullet points.

More Worked Examples We have added more worked examples in the text, many of them taken from real companies.

Beyond the Page The Beyond the Page digital extensions and applications provide additional examples, anecdotes, spreadsheet programs, and more thoroughgoing



explanations of some topics. In this edition, we have updated them and added a number of additional applications and made them easier to access. For example, the applications are seamlessly available with a click on the e-version of the book, but they are also readily accessible in the traditional hard copy of the text using the shortcut URLs provided in the margins of relevant pages.

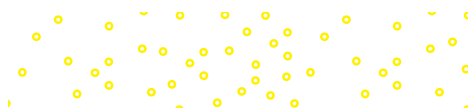
Specific Chapter Changes in the Eleventh Edition

Here are a few of the additions to chapter material:

- Chapter 1** contains updated and timely examples of real capital expenditure decisions by major corporations as well as an expanded discussion of corporate objectives.
- Chapter 2** includes a discussion of prediction markets in the most recent presidential election.
- Chapter 3** includes updated discussions that clarify the treatment of repurchases in the firm's equity accounts.
- Chapter 6** reorganizes and streamlines the introduction to bond markets and pricing.
- Chapter 7** provides new evidence on efficient markets as well as anomalies such as the GameStop bubble.
- Chapter 10** contains a new introduction to the capital investment process and the problems that arise when project valuations are consciously or unconsciously biased. We have also completely rewritten the section on scenario analysis.
- Chapter 12** now includes a discussion of how betas of many firms responded to the Covid pandemic and why historical estimates must sometimes be handled with care.
- Chapter 15** now includes a discussion of SPACs. We also discuss why the market reaction to new stock issues is different in some countries than others.
- Chapter 17** streamlines the treatment of dividends and stock dividends.
- Chapter 18** uses the example of Dynamic Mattress to show how long-term planning models can be used to derive the cash flow information for valuing a business.
- Chapter 20** reconsiders inventory policy in light of the supply chain disturbances resulting from the Covid pandemic.
- Chapter 21** provides a reworked overview of both sensible and less compelling motives for mergers. We have also expanded the discussion of the effect of mergers on society.
- Chapter 22** contains a reworked and reorganized introduction to spot and forward exchange rates.
- Chapter 24** provides an improved treatment of the different ways that firms may control their risks. We have also added a short section on valuing futures.

Assurance of Learning

Assurance of learning is an important element of many accreditation standards. *Fundamentals of Corporate Finance*, Eleventh 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

McGraw-Hill Education is a proud corporate member of AACSB International. Understanding the importance and value of AACSB accreditation, *Fundamentals of Corporate Finance*, Eleventh 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*, Eleventh 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*, Eleventh 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.

Example
6.1 ▶
Semiannual Coupon Payments

When we valued our Treasury bond, we assumed that interest payments occur annually. This is the case for bonds in many European countries, but in the United States, most bonds make coupon payments *semiannually*. So when you hear that a bond in the United States has a coupon rate of 7.5%, you can generally assume that the bond makes a payment every six months of $\$75/2 = \37.50 . Similarly, when investors in the United States refer to the bond's interest rate, they usually mean the semiannual interest rate. Thus, an interest rate quoted at 3% really means that the six-month rate is $3\%/2 = 1.5\%$.⁴

The actual six-monthly cash flows on the 7.5% Treasury bond are illustrated in Figure 6.2. To value the bond a bit more precisely, we should have discounted this series of semiannual payments by the semiannual rate of interest as follows:

$$PV = \frac{37.5}{1.015} + \frac{37.5}{1.015^2} + \frac{37.5}{1.015^3} + \dots + \frac{37.5}{1.015^8} + \frac{1,037.5}{1.015^8} = \$1,168.43$$

Spreadsheet Solutions Bond Valuation

Excel and most other spreadsheet programs provide built-in functions to compute bond values and yields. They typically ask you to input both the date you buy the bond (called the *settlement date*) and the maturity date of the bond.

The Excel function for bond value is:

=PRICE(settlement date, maturity date, annual coupon rate, yield to maturity, redemption value as percent of face value, number of coupon payments per year)

If you can't remember the formula, just remember that you can go to the Formulas tab in Excel, and from the Financial tab pull down the PRICE function, which will prompt you for the necessary inputs.) For our 7.5% coupon bond, we would enter the values shown in the spreadsheet below.

Alternatively, we could simply enter the following function in Excel:

=PRICE DATE(2020,11,15), DATE(2024,11,15), .075, 03, 100, 1)

The DATE function in Excel, which we use for both the settlement and maturity dates, uses the format DATE(year,month,day). We assume the bond makes its coupon payments on the 15th of each month, which is most common, and that it is also purchased and redeemed on the 15th.

Notice that the coupon rate and yield to maturity are expressed as decimals, not percentages. In most cases, redemption value will be 100 (i.e., 100% of face value), and the resulting price will be expressed as a percent of face value. Occasionally, however, you may encounter bonds that pay off at a premium or discount to face value. One example

SPREADSHEET 10.1 Financial projections for Bloorer's magnosium mine (dollar values in millions). This table repeats the analysis in Spreadsheet 9.1 except that expenses are now broken down into variable and fixed expenses.

	A	B	C	D	E	F	G	H
1	A. Inputs							
2	Initial Investment	150						
3	Salvage value	20						
4	Initial revenues	150						
5	Variable costs (% of revenues)	40.0%						
6	Initial fixed costs	40						
7	Inflation rate (%)	5.0%						
8	Discount rate (%)	12.0%						
9	Receivables (% of sales)	16.7%						
10	Inventory (% of next year's costs)	15.0%						
11	Tax rate (%)	21.0%						
12								
13	Year:	0	1	2	3	4	5	6
14	B. Capital Investments							

Finance in Practice Boxes

These are excerpts that appear in most chapters, often 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.

Finance in Practice Finding bond information on the web

A firm may sell dozens of issues of bonds to the public. For example, there are currently around 25 FedEx bond issues outstanding with various maturity dates and coupon rates. Because of the plethora of bonds, many issues do not trade on any particular day, so pricing information can be, at best, irregular. Moreover, most bonds do not trade on public exchanges. Instead, they trade through an electronic network linking together bond dealers. It can be quite difficult for individual investors to find current information on any particular bond.

The Financial Industry Regulatory Authority (FINRA) is a so-called self-regulatory organization that oversees brokerage and securities firms making markets in bonds and other securities. One of its goals has been to foster transparency. To this end, its website makes it far easier for individuals to obtain up-to-date information on bonds.

Go to finra-markets.morningstar.com/BondCenter, click on the *Bonds* tab on the left side of the page, click on the *Search* tab, and enter a company name or ticker symbol, for example, FedEx or FDXX. When you submit your request, you will be given a list of all bonds issued by FedEx. Click on any bond, and you will find a page like the one in this box. The page contains information about the bond's coupon, yield, issue size, and the price and date of its most recent trade.

Bond detail for FedEx

Financial 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 most popular financial calculators.

Financial Calculator Using a Financial Calculator to Compute Bond Yield

You can use a financial calculator to calculate the yield to maturity on our 7.5% Treasury bond. The inputs are:

	n	i	PV	PMT	FV
Inputs	4		1167.72	75	1000
Compute		3			

Now compute *i* and you should get an answer of 3%.

Let's now redo this calculation but recognize that the coupons are paid semiannually. Instead of four annual coupon payments of \$37.50, the bond makes eight semiannual payments of \$37.50. If the bond is selling for \$1,167.72, we can find the semiannual yield as follows:

	n	i	PV	PMT	FV
Inputs	8		1167.72	37.5	1000
Compute		1.1509			

This yield to maturity, of course, is a six-month yield, not an annual one. Bond dealers would typically annualize the semiannual rate by doubling it, so the yield to maturity would be quoted as $1.1509 \times 2 = 2.3018\%$.

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.


10.4 Self-Test

What would be the accounting break-even level of sales if the capital investment was only \$120 million? (Continue to assume that variable costs are 40% of revenues.)

“Beyond the Page” Interactive Content and Applications

Additional resources and hands-on applications are just a click away. Students can tap or click the icons in the e-version or use the direct web links to learn more about key concepts and try out calculations, tables, and figures when they go “Beyond the Page.”

BEYOND THE PAGE



Blooper project analysis

www.mhhe.com/brealey11e

Accounting Break-Even Analysis

The *accounting break-even* point is the level of sales at which profits are zero or, equivalently, at which total revenues equal total costs. As we have seen, some costs are fixed regardless of the level of output. Other costs vary as output changes.

When you first analyzed Blooper's mining project, you came up with the following estimates for initial revenues and costs:

Web Exercises

Select chapters include Web Exercises that allow students to utilize the Internet to apply their knowledge and skills with real-world companies.

WEB EXERCISE

1. Can you guess Hewlett-Packard's incremental cost for producing one computer? You probably have that amount in your wallet or purse! This gives the company considerable operating leverage. Let's estimate the degree of operating leverage for HP (ticker symbol HPQ). Go to the annual income statement, which you can find at finance.yahoo.com. Assume that selling, general, administrative, R&D, and depreciation expenses are fixed and cost of goods sold (which Yahoo! calls *cost of revenue*) is variable. Estimate the degree of operating leverage for HP for the last year (annual).

Minicases

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

MINICASE

Maxine Peru, the CEO of Peru Resources, hardly noticed the plate of savory quenelles de brochet and the glass of Corton Charlemagne '94 on the table before her. She was absorbed by the engineering report handed to her just as she entered the executive dining room.

The report described a proposed new mine on the North Ridge of Mt. Zircon. A vein of transcendental zirconium ore had been discovered there on land owned by Ms. Peru's company. Test borings indicated sufficient reserves to produce 340 tons per year of transcendental zirconium over a 7-year period.

The vein probably also contained hydrated zircon gemstones. The amount and quality of these zircons were hard to predict because they tended to occur in "pockets." The new mine might come across one, two, or dozens of pockets. The mining engineer guessed that 150 pounds per year might be found. The current price for high-quality hydrated zircon gemstones was \$3,300 per pound.

Peru Resources was a family-owned business with total assets of \$5 million and cash reserves of \$4 million. The company had experienced overruns of 10% or 15% were common in the mining business. In addition, new environmental regulations, if enacted, could increase the cost of the mine by \$1.5 million.

There was a cheaper design for the mine, which would reduce its cost by \$1.7 million and eliminate much of the uncertainty about cost overruns. Unfortunately, this design would require much higher fixed operating costs. Fixed costs would increase to \$850,000 per year at planned production levels.

The current price of transcendental zirconium was \$10,000 per ton, but there was no consensus about future prices.¹¹ Some experts were projecting rapid price increases to as much as \$14,000 per ton. On the other hand, there were pessimists saying that prices could be as low as \$7,500 per ton. Ms. Peru did not have strong views either way: Her best guess was that price would just increase with inflation at about 3.5% per year. (Mine operating costs would also increase with inflation.)

Peru had experienced a mining business, and she

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.

Instructor Library

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

Solutions Manual

Nicholas Racculia, Ph.D., at Saint Vincent's College worked with the authors to prepare this resource containing detailed and thoughtful solutions to all the end-of-chapter problems.

Instructor's Manual

This manual, also updated and enhanced by Nicholas Racculia 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.

Test Bank

Nicholas Racculia has also thoroughly reviewed and revised the test bank, adding new questions and ensuring that all of the content is closely correlated to the text. More than 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. Available within Connect, Test Builder is a cloud-based tool that enables instructors to format tests that can be printed or administered within a LMS. Test Builder offers a modern, streamlined interface for easy content configuration that matches course needs, without requiring a download.

Test Builder allows you to:

- access all test bank content from a particular title.
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- manipulate the order of questions or scramble questions and/or answers.
- pin questions to a specific location within a test.
- determine your preferred treatment of algorithmic questions.
- choose the layout and spacing.
- add instructions and configure default settings.

Test Builder provides a secure interface for better protection of content and allows for just-in-time updates to flow directly into assessments.

PowerPoint Presentations

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

Beyond the Page Content

The authors have created a wealth of additional examples, explanations, and applications, available for quick access by instructors and students. Each "Beyond the Page" feature is called out in the text with an icon that links directly to the content.

Excel Solutions and Templates

Excel templates are available in Connect for select exhibits and various end-of-chapter problems that have been set as Excel spreadsheets. They correlate with specific concepts in the text and allow students to work through financial problems and gain experience using spreadsheets. Also refer to the valuable Spreadsheet Solutions Boxes that are sprinkled throughout the text for some helpful prompts on working in Excel.

Student Study Center

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

- Offers students quick access to the Beyond the Page features, Excel files and templates, lectures, eBooks, and more.
- Provides instant practice material and study questions, easily accessible on the go.

Student Progress Tracking

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

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

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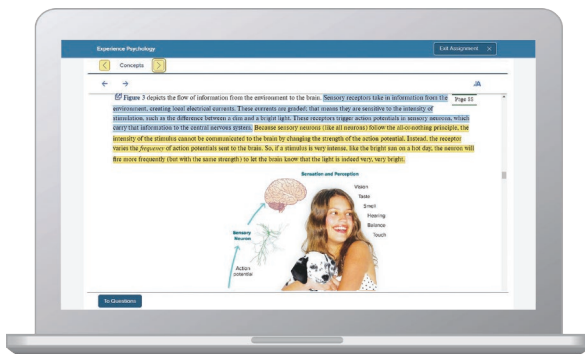
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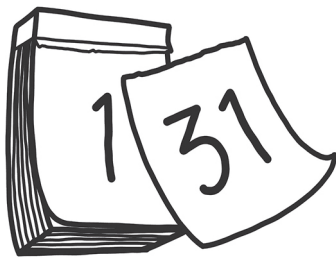
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"I really liked this app—it made it easy to study when you don't have your textbook in front of you."

- Jordan Cunningham,
Eastern Washington University



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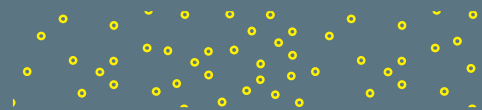
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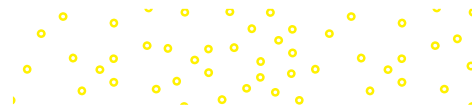
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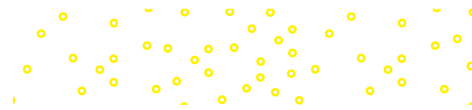
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