

This International Student Edition is for use outside of the U.S.

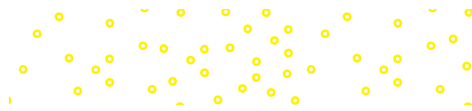
PRINCIPLES OF
Corporate Finance

Fourteenth EDITION

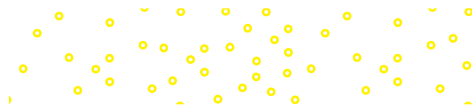


Brealey • Myers • Allen • Edmans

**Mc
Graw
Hill**



Principles *of* Corporate Finance



THE MCGRAW HILL SERIES IN FINANCE, INSURANCE, AND REAL ESTATE

Financial Management

Block, Hirt, and Danielsen

Foundations of Financial Management
Eighteenth Edition

Brealey, Myers, Allen, and Edmans

Principles of Corporate Finance
Fourteenth Edition

Brealey, Myers, and Allen

Principles of Corporate Finance, Concise
Second Edition

Brealey, Myers, and Marcus

Fundamentals of Corporate Finance
Eleventh Edition

Brooks

FinGame Online 5.0

Bruner

Case Studies in Finance: Managing for Corporate Value Creation
Eighth Edition

Cornett, Adair, and Nofsinger

Finance: Applications and Theory
Sixth Edition

Cornett, Adair, and Nofsinger

M: Finance
Fifth Edition

DeMello

Cases in Finance
Third Edition

Grinblatt (editor)

Stephen A. Ross, Mentor: Influence through Generations

Grinblatt and Titman

Financial Markets and Corporate Strategy
Second Edition

Higgins

Analysis for Financial Management
Thirteenth Edition

Ross, Westerfield, Jaffe, and Jordan

Corporate Finance
Thirteenth Edition

Ross, Westerfield, Jaffe, and Jordan

Corporate Finance: Core Principles and Applications
Sixth Edition

Ross, Westerfield, and Jordan

Essentials of Corporate Finance
Eleventh Edition

Ross, Westerfield, and Jordan

Fundamentals of Corporate Finance
Thirteenth Edition

Shefrin

Behavioral Corporate Finance: Decisions That Create Value
Second Edition

Investments

Bodie, Kane, and Marcus

Essentials of Investments
Twelfth Edition

Bodie, Kane, and Marcus

Investments
Twelfth Edition

Hirt and Block

Fundamentals of Investment Management
Tenth Edition

Jordan and Miller

Fundamentals of Investments: Valuation and Management
Ninth Edition

Stewart, Piros, and Heisler

Running Money: Professional Portfolio Management

Sundaram and Das

Derivatives: Principles and Practice
Second Edition

Financial Institutions and Markets

Rose and Hudgins

Bank Management and Financial Services
Ninth Edition

Rose and Marquis

Financial Institutions and Markets
Eleventh Edition

Saunders and Cornett

Financial Institutions Management: A Risk Management Approach
Tenth Edition

Saunders and Cornett

Financial Markets and Institutions
Eighth Edition

International Finance

Eun and Resnick

International Financial Management
Ninth Edition

Real Estate

Brueggeman and Fisher

Real Estate Finance and Investments
Seventeenth Edition

Ling and Archer

Real Estate Principles: A Value Approach
Sixth Edition

Financial Planning and Insurance

Allen, Melone, Rosenbloom, and Mahoney

Retirement Plans: 401(k)s, IRAs, and Other Deferred Compensation Approaches
Thirteenth Edition

Altfest

Personal Financial Planning
Second Edition

Kapoor, Dlabay, and Hughes

Focus on Personal Finance: An Active Approach to Help You Develop Successful Financial Skills
Seventh Edition

Kapoor, Dlabay, and Hughes

Personal Finance
Fourteenth Edition

Walker and Walker

Personal Finance: Building Your Future
Second Edition





Principles *of* Corporate Finance

FOURTEENTH EDITION

Richard A. Brealey

*Emeritus Professor of Finance
London Business School*

Stewart C. Myers

*Emeritus Professor of Financial Economics
Sloan School of Management
Massachusetts Institute of Technology*

Franklin Allen

*Professor of Finance and Economics
Imperial College London*

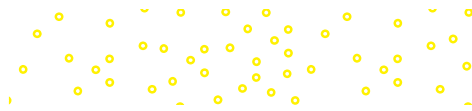
Alex Edmans

*Professor of Finance
London Business School*



**Mc
Graw
Hill**





PRINCIPLES OF CORPORATE FINANCE

Published by McGraw Hill LLC, 1325 Avenue of the Americas, New York, NY 10019. Copyright ©2023 by McGraw Hill LLC. All rights reserved. Printed in the United States of America. No part of this publication may be reproduced or distributed in any form or by any means, or stored in a database or retrieval system, without the prior written consent of McGraw Hill LLC, including, but not limited to, in any network or other electronic storage or transmission, or broadcast for distance learning.

Some ancillaries, including electronic and print components, may not be available to customers outside the United States.

This book is printed on acid-free paper.

1 2 3 4 5 6 7 8 9 LWI 27 26 25 24 23 22

ISBN 978-1-265-07415-9

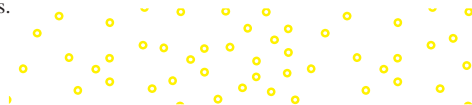
MHID 1-265-07415-1

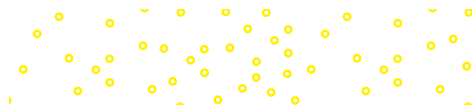
Cover Image:

All credits appearing on page or at the end of the book are considered to be an extension of the copyright page.

The Internet addresses listed in the text were accurate at the time of publication. The inclusion of a website does not indicate an endorsement by the authors or McGraw Hill LLC, and McGraw Hill LLC does not guarantee the accuracy of the information presented at these sites.

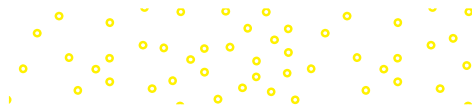
mheducation.com/highered



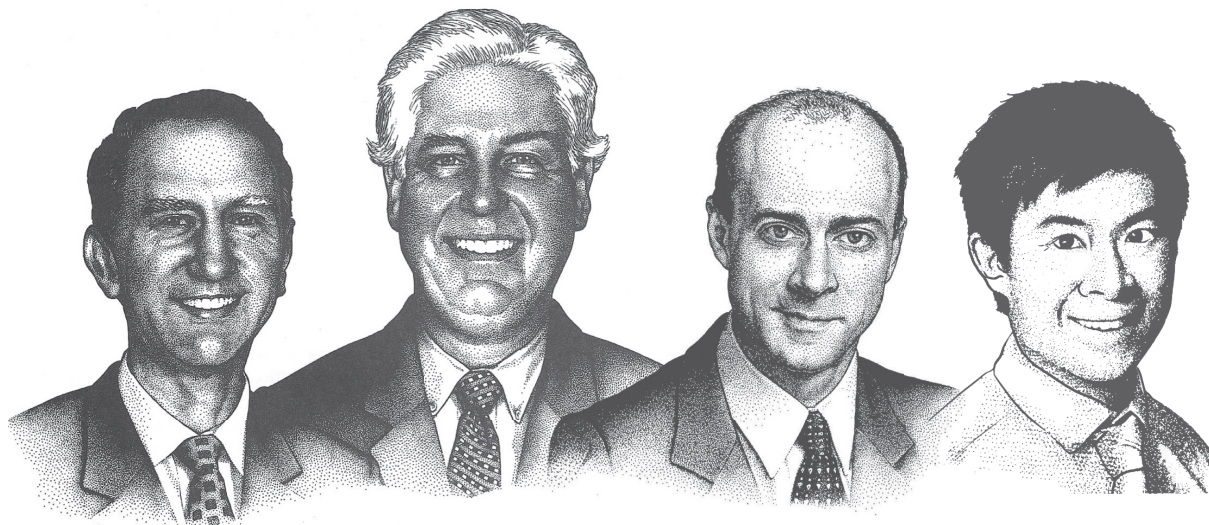


Dedication

To our parents.



About the Authors



›Richard A. Brealey

Emeritus Professor of Finance at London Business School. He 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 a special adviser to the Governor of the Bank of England and director of a number of financial institutions. Other books written by Professor Brealey include *Introduction to Risk and Return* from *Common Stocks*.

›Stewart C. Myers

Emeritus Professor of Financial Economics at MIT's Sloan School of Management. He is past president of the American Finance Association, a research associate at the National Bureau of Economic Research, a principal of the Brattle Group Inc., and a retired director of Entergy Corporation. His research is primarily concerned with the valuation of real and financial assets, corporate financial policy, and financial aspects of government regulation of business. He is the author of influential research papers on many topics, including adjusted present value, rate of return regulation, pricing and capital allocation in insurance, real options, and moral hazard and information issues in capital structure decisions.

›Franklin Allen

Professor of Finance and Economics, Imperial College London, and Emeritus Nippon Life Professor of Finance at the Wharton School of the University of Pennsylvania. He is past president of the American Finance Association, Western Finance Association, Society for Financial Studies, Financial Intermediation Research Society, and Financial Management Association. His research has focused on financial innovation, asset price bubbles, comparing financial systems, and financial crises. He is Director of the Brevan Howard Centre for Financial Analysis at Imperial College Business School.

›Alex Edmans

Professor of Finance at London Business School and Mercers School Memorial Professor of Business at Gresham College. He is Managing Editor of the *Review of Finance* and was previously a tenured professor at Wharton, where he won 14 teaching awards in six years. His research focuses on corporate finance, responsible business, and behavioral finance. He has spoken at the World Economic Forum in Davos and given the TED talk "What to Trust in a Post-Truth World" and the TEDx talk "The Social Responsibility of Business"; he is also advisor to several asset managers. He is the author of *Grow the Pie: How Great Companies Deliver Both Purpose and Profit*. Poets & Quants named him MBA Professor of the Year for 2021.

› This book describes the theory and practice of corporate finance. We hardly need to explain why financial managers have to master the practical aspects of their job, but we should spell out why down-to-earth managers need to bother with theory.

Managers learn from experience how to cope with routine problems. But the best managers are also able to respond to change. To do so you need more than time-honored rules of thumb; you must understand why companies and financial markets behave the way they do. In other words, you need a *theory* of finance.

That should not sound intimidating. Good theory helps you to grasp what is going on in the world around you. It helps you to ask the right questions when times change and new problems need to be analyzed. It also tells you which things you do *not* need to worry about. Throughout this book, we show how managers use financial theory to solve practical problems.

Of course, the theory presented in this book is not perfect and complete—no theory is. There are some famous controversies where financial economists cannot agree. We have not glossed over these disagreements. We set out the arguments for each side and tell you where we stand.

Much of this book is concerned with understanding what financial managers do and why. But we also say what financial managers *should* do to increase company value. Where theory suggests that financial managers are making mistakes, we say so, while admitting that there may be hidden reasons for their actions. In brief, we have tried to be fair but to pull no punches.

This book may be your first view of the world of modern finance. If so, you will read first for new ideas, and for an understanding of how finance theory translates into practice. But eventually you will be in a position to make financial decisions, not just study them. At that point, you can turn to this book as a reference and guide.

› Changes in the Fourteenth Edition

What has changed in this edition? You will have seen the first change on the cover: Alex Edmans has joined the author team. Alex is a global authority in corporate finance, with particular expertise in corporate governance, responsible business, and behavioral finance—three areas we have significantly bolstered as we will shortly describe. In addition to being a leading researcher,

he has substantial practitioner expertise. He has also won a multitude of teaching awards at MIT, Wharton, and London Business School and is particularly noted for the ability to explain complex finance concepts in simple language. He recently gave a year-long Gresham College public lecture series on the principles of finance attended by a diverse audience, from schoolchildren to retirees.

This expansion of the author team has led to a number of important changes. For example, in recent years many observers have questioned companies' focus on profits and have suggested that managers should promote the interests of *all* stakeholders rather than simply seeking to maximize shareholder value. The issue is an important one and we have, therefore, added a new chapter, Chapter 20, that discusses these different corporate objectives, how far they conflict, and how a responsible business should behave.

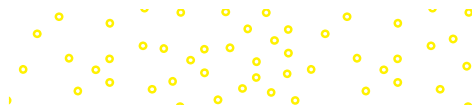
The structure of a firm's governance is closely related to its objectives. We have therefore moved the material on corporate governance and agency issues to Chapter 19, where it now sits next to the chapter on corporate objectives. This chapter has also been substantially rewritten.

Other chapters with major changes include the two chapters on the pricing of risky assets (Chapters 7 and 8). Chapter 7 now focuses on portfolio choice and a stock's effect on portfolio risk, while Chapter 8 concentrates on asset pricing. This is a clearer separation of topics than in previous editions; we think that it is more logical and helps understanding.

The discussion of market efficiency (Chapter 12) has also undergone substantial revision with additional and updated sections on empirical evidence. The chapter also contains an expanded discussion of behavioral finance and the evidence for behavioral biases.

Financial innovation today is being driven by technological developments such as artificial intelligence, big data, and cloud computing. Chapter 13 now includes a new section that reviews seven ways in which financial technology is changing financial practice.

U.S. financial managers work in a global environment and need to understand the financial systems of other countries. Also, many of the text's readers come from countries other than the United States. Therefore, in recent editions, we have progressively introduced more international material, including information about the major developing economies, such as China and India. Material on international differences in financing is now



integrated in Chapter 14, while Chapter 19 includes a discussion of governance systems around the world.

PEDAGOGICAL CHANGES

Throughout, we have tried to explain the material much more clearly--importantly, without dumbing it down. The style of this edition is more direct and less whimsical, with terms being precisely defined and key concepts made explicit rather than having to be inferred from the narrative. In many cases, the changes consist of some updated data here and a new example there. Often, these additions reflect some recent development in the financial markets or company practice.

We have also changed the introduction to each chapter to include summaries of the content of each of the chapter's sections. We think that this will make it easier for the reader to understand the organization of the chapter and to jump forward to a particular topic of interest. Chapters now also conclude with key takeaway bullet points summarizing the chapter's principal lessons.

Within each chapter we have interspersed a number of new self-test questions that provide an opportunity for readers to pause and check their understanding. Answers to these self-tests are located at the end of the chapter.

The Beyond the Page digital extensions and applications provide additional examples, anecdotes, spreadsheet programs, and more detailed explanations and practice examples of some topics. This extra material makes it possible to escape from the constraints of the printed page by providing more explanation for readers who need it and additional material for those who would like to dig deeper. There are now more than 150 of these apps. They 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. Check out mhhe.com/brealey14e to learn more.

Examples of these applications include:

- **Chapter 2** Would you like to learn more about how to use Excel spreadsheets to solve time value of money problems? A Beyond the Page application shows how to do so.
- **Chapter 3** Do you need to calculate a bond's duration, see how it predicts the effect of small interest rate changes on bond price, calculate the duration of a common stock, or learn how to measure convexity? The duration app allows you to do so.
- **Chapter 5** Want more practice in valuing annuities? There is an application that provides worked examples and hands-on practice.

- **Chapter 7** Ever wondered how COVID-19 has affected the risk of stocks in the travel industry? An app provides the answer.
- **Chapter 12** Want an example of how speculative trading can swamp the actions of arbitrageurs? The app on the explosion in the price of GameStop shares provides one.
- **Chapter 18** The text briefly describes the flow-to-equity method for valuing businesses, but using the method can be tricky. We provide an application that guides you step by step.
- **Chapter 22** The Black–Scholes Beyond the Page application provides an option calculator. It also shows how to estimate the option's sensitivity to changes in the inputs and how to measure an option's risk.

› Chapter Structure

Each chapter of the book includes an introductory preview, a list of key takeaways, and suggested further reading. The list of candidates for further reading is now voluminous. Rather than trying to include every important article, we largely list survey articles or general books. We give more specific references in footnotes.

In addition to the self-test questions within the chapter, each chapter is followed by a set of problems on both numerical and conceptual topics, together with a few challenge problems.

We include a Finance on the Web section in chapters where it makes sense to do so. This section now houses a number of Web Projects, along with new Data Analysis problems. These exercises seek to familiarize the reader with some useful websites and to explain how to download and process data from the web.

The book also contains 12 end-of-chapter Mini-Cases. These include specific questions to guide the case analyses. Answers to the mini-cases are available to instructors on the book's website.

Spreadsheet programs such as Excel are tailor-made for many financial calculations. Several chapters include boxes that introduce the most useful financial functions and provide some short practice questions. We show how to use the Excel function key to locate the function and then enter the data. We think that this approach is much simpler than trying to remember the formula for each function.

We conclude the book with a glossary of financial terms.

The 34 chapters in this book are divided into 12 parts. Parts 1, 2, and 3 cover valuation and capital investment

decisions, including portfolio theory, asset pricing models, and the cost of capital. Parts 4 through 9 cover financing decisions, payout policy and capital structure, corporate objectives and governance, options, debt financing, and risk management. Part 10 covers financial analysis, planning, and working-capital management. Part 11 covers mergers and acquisitions, and corporate restructuring. Part 12 concludes.

We realize that instructors will wish to select topics and may prefer a different sequence. We have therefore written chapters so that topics can be introduced in several logical orders. For example, there should be no difficulty in reading the chapters on financial analysis and planning before the chapters on valuation and capital investment.

» Acknowledgments

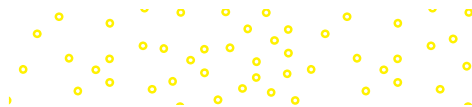
We have a long list of people to thank for their helpful criticism of earlier editions and for assistance in preparing this one. They include Faiza Arshad, Alejda de Cazenove Balsan, Donna Cheung, Kedran Garrison, Robert Pindyck, and Gretchen Slemmons at MIT; Elroy Dimson, Paul Marsh, Mike Staunton, and Stefania Uccheddu at London Business School; Lynda Borucki, Marjorie Fischer, Larry Kolbe, Michael Vilbert, Bente Villadsen, and Fiona Wang at The Brattle Group Inc.; Alex Triantis at Johns Hopkins University; Adam Kolasinski at Texas A&M University; Simon Gervais at Duke University; Michael Chui at Bank for International Settlements; Pedro Matos at the University of Virginia; Yupana Wiwattanakantang at National University of Singapore; Nickolay Gantchev at Warwick University; Tina Horowitz at the University of Pennsylvania; Lin Shen at INSEAD; Darien Huang at Tudor Investment; Julie Wulf at Harvard University; Jinghua Yan at SAC Capital; Bennett Stewart at EVA Dimensions; and Mobeen Iqbal, Antoine Uettwiller and Tong Yu at Imperial College London.

We would also like to thank the dedicated experts who have helped with updates to the instructor materials and online content in Connect and LearnSmart, including Nicholas Racculia.

We want to express our appreciation to those instructors whose insightful comments and suggestions were invaluable to us during the revision process:

Ibrahim Affaneh *Indiana University of Pennsylvania*
 Neyaz Ahmed *University of Maryland*
 Alexander Amati *University of Connecticut*
 Anne Anderson *Middle Tennessee State University*
 Noyan Arsen *Koc University*

Anders Axvarn *Gothenburg University*
 John Banko *University of Florida, Gainesville*
 Michael Barry *Boston College*
 Jan Bartholdy *Aarhus University*
 Penny Belk *Loughborough University*
 Omar Benkato *Ball State University*
 Erik Benrud *Indiana University*
 Ronald Benson *University of Maryland, University College*
 Peter Berman *University of British Columbia*
 Kevin Boeh *University of Washington*
 Tom Boulton *Miami University of Ohio*
 Edward Boyer *Temple University*
 Alon Brav *Duke University*
 Jean Canil *University of Adelaide*
 Robert Carlson *Bethany College*
 Chuck Chahyadi *Eastern Illinois University*
 Chongyang Chen *Pacific Lutheran University*
 Fan Chen *University of Mississippi*
 Bill Christie *Vanderbilt University*
 Celtin Ciner *University of North Carolina, Wilmington*
 John Cooney *Texas Tech University*
 Charles Cuny *Washington University, St. Louis*
 John Davenport *Regent University*
 Ray DeGennaro *University of Tennessee, Knoxville*
 Adri DeRidder *Uppsala University*
 William Dimovski *Deakin University, Melbourne*
 David Ding *Nanyang Technological University*
 Robert Duvic *University of Texas at Austin*
 Susan Edwards *Grand Valley State University*
 Riza Emekter *Robert Morris University*
 Robert Everett *Millersville University*
 Dave Fehr *Southern New Hampshire University*
 Donald Flagg *University of Tampa*
 Frank Flanegin *Robert Morris University*
 Zsuzanna Fluck *Michigan State University*
 Connel Fullenkamp *Duke University*
 Mark Garmaise *University of California, Los Angeles*
 Sharon Garrison *University of Arizona*
 Christopher Geczy *University of Pennsylvania*
 George Geis *University of Virginia*
 Bradford Gibbs *Brown University*
 Stuart Gillan *University of North Texas*
 Felix Goltz *Edhec Business School*
 Ning Gong *Deakin Business School*
 Levon Goukasian *Pepperdine University*
 Gary Gray *Pennsylvania State University*
 C. J. Green *Loughborough University*
 Mark Griffiths *Miami University*
 Anthony Gu *SUNY Geneseo*
 Re-Jin Guo *University of Illinois, Chicago*
 Pia Gupta *California State University, Long Beach*
 Ann Hackert *Idaho State University*
 Winfried Hallerbach *Robeco Asset Management*
 Milton Harris *University of Chicago*
 Mary Hartman *Bentley College*
 Glenn Henderson *University of Cincinnati*
 Donna Hitscherich *Columbia University*
 Ronald Hoffmeister *Arizona State University*
 James Howard *University of Maryland, College Park*
 George Jabbour *George Washington University*
 Ravi Jagannathan *Northwestern University*



Abu Jalal *Suffolk University*
 Nancy Jay *Mercer University*
 Thadavillil Jithendranathan *University of Saint Thomas*
 Travis Jones *Florida Gulf Coast University*
 Kathleen Kahle *University of Arizona*
 Jarl Kallberg *NYU, Stern School of Business*
 Ron Kaniel *University of Rochester*
 Steve Kaplan *University of Chicago*
 Eric Kelley *University of Tennessee, Knoxville*
 Arif Khurshed *Manchester Business School*
 Ken Kim *University at Buffalo School of Management, SUNY*
 Jiro Kondo *McGill University*
 C. R. Krishnaswamy *Western Michigan University*
 George Kutner *Marquette University*
 Dirk Laschanzky *University of Iowa*
 Scott Lee *University of Nevada, Las Vegas*
 Becky Lafrancois *Colorado School of Mines*
 Bob Lightner *San Diego Christian College*
 David Lins *University of Illinois, Urbana*
 Brandon Lockhart *University of Nebraska, Lincoln*
 David Lovatt *University of East Anglia*
 Greg Lucado *University of the Sciences in Philadelphia*
 Debbie Lucas *Massachusetts Institute of Technology*
 Brian Lucey *Trinity College, Dublin*
 Suren Mansinghka *University of California, Irvine*
 Ernst Maug *University of Mannheim*
 George McCabe *University of Nebraska*
 Eric McLaughlin *California State University, Pomona*
 Joe Messina *San Francisco State University*
 Tim Michael *University of Houston, Clear Lake*
 Dag Michalsen *BI Norwegian Business School*
 Franklin Michello *Middle Tennessee State University*
 Peter Moles *University of Edinburgh*
 Katherine Morgan *Columbia University*
 James Nelson *East Carolina University*
 James Owens *West Texas A&M University*
 Darshana Palkar *Minnesota State University, Mankato*
 Claus Parum *Copenhagen Business School*
 Dilip Patro *Federal Deposit Insurance Corporation (FDIC)*
 John Percival *Minerva University*
 Birsal Pirim *The Ohio State University*
 Latha Ramchand *University of Houston*
 Narendar V. Rao *Northeastern University*
 Rathin Rathinasamy *Ball State University*
 Raghavendra Rau *University of Cambridge*
 Joshua Rauh *Stanford University*
 Charu Reheja *TriageLogic Group*
 Thomas Rhee *California State University, Long Beach*
 Tom Rietz *University of Iowa*
 Robert Ritchey *Texas Tech University*
 Michael Roberts *University of Pennsylvania*
 Mo Rodriguez *Texas Christian University*
 John Rozycki *Drake University*
 Frank Ryan *San Diego State University*
 Patricia Ryan *Colorado State University*
 George Sarraf *University of California, Irvine*
 Eric Sartell *Whitworth University*
 Marc Schauten *Vrije Universiteit Amsterdam*
 Anjolein Schmeits *NYU Stern School of Business*
 Brad Scott *Webster University*
 Nejat Seyhun *University of Michigan*

Jay Shanken *Emory University*
 Chander Shekhar *University of Melbourne*
 Hamid Shomali *Golden Gate University*
 Richard Simonds *Michigan State University*
 Bernell Stone *Brigham Young University*
 John Strong *College of William & Mary*
 Avaniidhar Subrahmanyam *University of California, Los Angeles*
 Tim Sullivan *UKG (Ultimate Kronos Group)*
 Shrinivasan Sundaram *Ball State University*
 Chu-Sheng Tai *Texas Southern University*
 Tom Tallerico *Dowling College*
 Stephen Todd *Loyola University, Chicago*
 Walter Torous *University of California, Los Angeles*
 Emery Trahan *Northeastern University*
 Gary Tripp *Southern New Hampshire University*
 Ilias Tsiakas *University of Guelph*
 David Vang *St. Thomas University*
 Nikhil Varaiya, *San Diego State University*
 Steve Venti *Dartmouth College*
 Joseph Vu *DePaul University*
 John Wald *University of Texas, San Antonio*
 Chong Wang *Naval Postgraduate School*
 Faye Wang *University of Illinois, Chicago*
 Kelly Welch *University of Kansas*
 Jill Wetmore *Saginaw Valley State University*
 John Wheeler *University of Michigan*
 Patrick Wilkie *University of Virginia*
 Matt Will *University of Indianapolis*
 David Williams *Texas A&M University, Commerce*
 Kalman Vadasz *Stevens Institute of Technology*
 Art Wilson *George Washington University*
 Albert Wang *Auburn University*
 Shee Wong *University of Minnesota, Duluth*
 Bob Wood *Tennessee Tech University*
 Fei Xie *University of Delaware*
 Minhua Yang *University of Central Florida*
 David Zalewski *Providence College*
 Chenying Zhang *University of Pennsylvania*

This list is surely incomplete. We know how much we owe to our colleagues at London Business School, MIT's Sloan School of Management, Imperial College London, and the University of Pennsylvania's Wharton School. In many cases, the ideas that appear in this book are as much their ideas as ours.

We would also like to thank all those at McGraw Hill Education who worked on the book, including Chuck Synovec, Executive Brand Manager; Allison McCabe-Carroll, Senior Product Developer; Trina Mauer, Executive Marketing Manager; Fran Simon, Project Manager; and Matt Diamond, Designer.

Richard A. Brealey

Stewart C. Myers

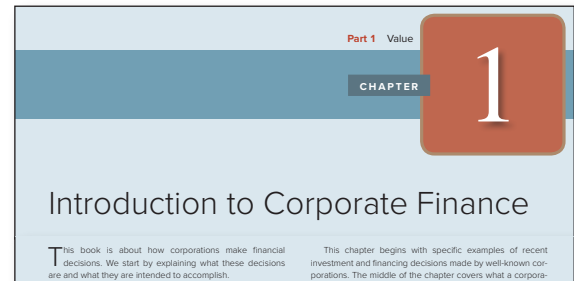
Franklin Allen

Alex Edmans

Pedagogical Features

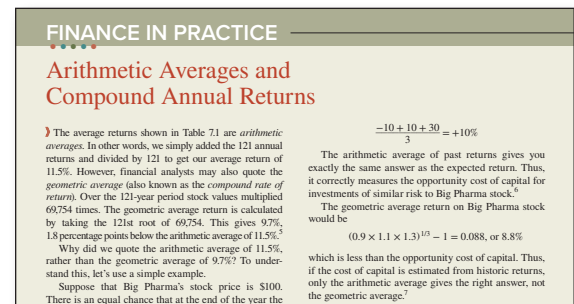
› Chapter Overview

Each chapter begins with a brief narrative and outline to explain the concepts that will be covered in more depth. Useful websites related to material for each part are provided in the Connect library.



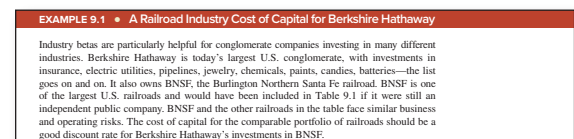
› Finance in Practice Boxes

Relevant news articles, often from financial publications, appear in various chapters throughout the text. Aimed at bringing real-world flavor into the classroom, these boxes provide insight into the business world today.



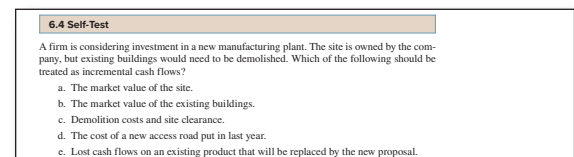
› Numbered Examples

Numbered and titled examples are called out within chapters to further illustrate concepts. Students can learn how to solve specific problems step-by-step and apply key principles to answer concrete questions and scenarios.



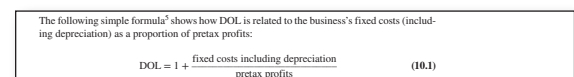
› Self-Test Questions

Each chapter includes a number of self-test questions that allow students to check their understanding. Answers to these questions are given at the end of the chapter.



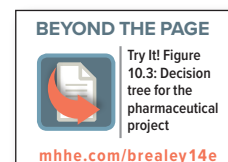
› Numbered Equations

Where a result can be stated formally, we do so in the form of a numbered equation. However, we are also careful to explain the intuition behind a financial theory, so that readers without a quantitative background should be able to read with understanding.



› Beyond the Page Interactive Content and Applications

Additional resources and hands-on applications are just a click away. Students can use the web address or click on the icon in the eBook to learn more about key concepts and try out calculations, tables, and figures when they go Beyond the Page.



Excel

Spreadsheet Functions Boxes

These boxes provide detailed examples of how to use Excel spreadsheets when applying financial concepts. Questions that apply to the spreadsheet follow for additional practice.

USEFUL SPREADSHEET FUNCTIONS

Estimating Stock and Market Risk

Spreadsheets such as Excel have some built-in statistical functions that are useful for calculating risk measures. You can find these functions by clicking *fx* on the Excel toolbar. If you then click on the function that you wish to use, Excel will ask you for the inputs that it needs. At the bottom left of the function box, there is a Help facility with an example of how the function is used.

Here is a list of useful functions for estimating stock and market risk. You can enter the inputs for all these functions as numbers or as the addresses of cells that contain the numbers. Note that different versions of Excel may use slightly different names for these functions.

- VAR.P** and **STDEV.P**: Calculate variance and standard deviation of a series of numbers, as shown in Section 7-2.
- VAR.S** and **STDEV.S**: Footnote 12 of Chapter 7 noted that when variance is estimated from a sample of observations (the usual case), a correction should be made for the loss of a degree of freedom. **VAR.S** and **STDEV.S** provide the corrected measures. For any large sample **VAR.S** and **VAR.P** will be similar.
- SLOPE**: Useful for calculating the beta of a stock or portfolio.
- CORREL**: Useful for calculating the correlation between the returns on any two investments.
- COVARIANCE.P** and **COVARIANCE.S**: Portfolio risk depends on the covariance between the returns on each pair of stocks. These functions calculate the covariance.
- RSQ**: R-squared is the square of the correlation coefficient and is useful for measuring the proportion of the variance of a stock's returns that can be explained by the market.
- AVERAGE**: Calculates the average of any series of numbers.

If, say, you need to know the standard error of your estimate of beta, you can obtain more detailed statistics by going to the *Tools* menu and clicking on *Data Analysis* and then on *Regression*.

Spreadsheet Questions

The following questions provide opportunities to practice each of the Excel functions.

- (**VAR.P** and **STDEV.P**) Choose two well-known stocks and download the latest 61 months of adjusted prices from finance.yahoo.com. Calculate the monthly returns for each stock. Now find the variance and standard deviation of the returns for each stock by using **VAR.P** and **STDEV.P**. Annualize the variance by multiplying by 12 and the standard deviation by multiplying by the square root of 12.
- (**AVERAGE**, **VAR.P**, and **STDEV.P**) Now calculate the annualized variance and standard deviation for a portfolio that each month has equal holdings in the two stocks. Is the result more or less than the average of the standard deviations of the two stocks? Why?
- (**SLOPE**) Download the Standard & Poor's index for the same period (its symbol is **SP500**). Find the beta of each stock and of the portfolio. (*Note:* You need to enter the stock returns as the Y-values and market returns as the X-values.) Is the beta of the portfolio more or less than the average of the betas of the two stocks?
- (**CORREL**) Calculate the correlation between the returns on the two stocks. Use this measure and your earlier estimates of each stock's variance to calculate the variance of a portfolio that is evenly divided between the two stocks. (You may need to reread Section 7-3 to refresh your memory of how to do this.) Check that you get the same answer as when you calculated the portfolio variance directly.
- (**COVARIANCE.P**) Repeat Question 4, but now calculate the covariance directly rather than from the correlations and variances.

Microsoft Excel

Excel Exhibits

Select tables are set as spreadsheets, and the corresponding Excel files are also available in Connect and through the Beyond the Page features.

	Year								
	0	1	2	3	4	5	6	7	
1 Capital investment	12,000							-1,949 ^a	
2 Accumulated depreciation		2,000	4,000	6,000	8,000	10,000	12,000	0	
3 Year-end book value	12,000	10,000	8,000	6,000	4,000	2,000	0	0	
4 Working capital		550	1,289	3,261	4,890	3,583	2,002	0	
5 Revenues		523	12,887	32,610	48,901	35,834	19,717		
6 Expenses	4,000	3,037	8,939	20,883	30,809	23,103	13,602		
7 Depreciation ^b		2,000	2,000	2,000	2,000	2,000	2,000	0	
8 Pretax profit (5 - 6 - 7 - 1)	-4,000	-4,514	1,948	9,727	16,092	10,731	4,115	1,949 ^a	
9 Tax at 21%		-840 ^c	-948	409	2,043	3,379	2,254	864	409
10 Profit after tax (8 - 9)	-3,160	-3,566	1,539	7,684	12,713	8,477	3,251	1,540	

TABLE 6.2 Initial forecast data for guano project.

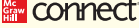
^a In the income statement, the initial investment of \$12 million is depreciated straight-line over the six years.
^b Gain on sale of assets. The asset has been entirely depreciated for tax purposes and the entire sales price is, therefore, subject to tax.
^c A negative tax payment means a cash inflow, assuming that IM&C can use the tax loss on the guano project to shield income from the rest of its operations.

End-of-Chapter Features

► Problem Sets

Beside each end-of-chapter problem we note the section of the chapter to which the question relates. This helps instructors create assignments and makes it simpler for students to look back for help. These end-of-chapter problems give students hands-on practice with key concepts and applications.

PROBLEM SETS

 Select problems are available in McGraw-Hill's *Connect*. Please see the preface for more information.

- 1. Behavioral biases (S11.1)** Explain why setting a higher discount rate is not a cure for upward-biased cash-flow forecasts.
- 2. Behavioral biases (S11.1)** Look back to the cash flows for projects F and G in Section 5-3. The cost of capital was assumed to be 10%. Assume that the forecasted cash flows for projects of this type are overstated by 8% on average. That is, the forecast for each cash flow from each project should be reduced by 8%. But a lazy financial manager, unwilling to take the time to argue with the projects' sponsors, instructs them to use a discount rate of 18%.
 - a. What are the projects' true NPVs?
 - b. What are the NPVs at the 18% discount rate?
 - c. Are there any circumstances in which the 18% discount rate would give the correct NPVs? (*Hint: Could upward bias be more severe for more-distant cash flows?*)
- 3. Market values (S11.2)** Your brother-in-law wants you to join him in purchasing a building on the outskirts of town. You and he would then develop and run a Taco Palace restaurant. Both of you are extremely optimistic about future real estate prices in this area, and your brother-in-law has prepared a cash-flow forecast that implies a large positive NPV. This calculation assumes sale of the property after 10 years. What further calculations should you do before going ahead?

CHALLENGE PROBLEMS

- 20. Economic rents (S11.3)** Accidental setbacks can result in negative rents in any year. But can a project have *expected* positive rents in some years and negative expected rents in other years? Explain.
- 21. Economic rents (S11.3)** The manufacture of polysyllabic acid is a competitive industry. Most plants have an annual output of 100,000 tons. Operating costs are \$0.90 a ton, and the sales price is \$1 a ton. A 100,000-ton plant costs \$100,000 and has an indefinite life. Its current scrap value of \$60,000 is expected to decline to \$57,900 over the next two years.


Phlogiston Inc. proposes to invest \$100,000 in a plant that employs a new low-cost process to manufacture polysyllabic acid. The plant has the same capacity as existing units, but operating costs are \$0.85 a ton. Phlogiston estimates that it has two years' lead over each of its rivals in use of the process but is unable to build any more plants itself before year 2. Also it believes that demand over the next two years is likely to be sluggish and that its new plant will therefore cause temporary overcapacity.

You can assume that there are no taxes and that the cost of capital is 10%.

► Excel Problems

Most chapters contain problems, denoted by an icon, specifically linked to Excel spreadsheets that are available in Connect and through the Beyond the Page features.

BEYOND THE PAGE

 Try It! The Black-Scholes model
mhhe.com/brealey14e

- 3. Expansion options (S23.1)** You own a one-year call option to buy one acre of Los Angeles real estate. The exercise price is \$2 million, and the current, appraised market value of the land is \$1.7 million. The land is currently used as a parking lot, generating just enough money to cover real estate taxes. The annual standard deviation is 15% and the interest rate 12%. How much is your call worth? Use the Black-Scholes formula. You may find it helpful to go to the spreadsheet for Chapter 22, which calculates Black-Scholes values (see the Beyond the Page feature).

» Finance on the Web

These web exercises give students the opportunity to explore financial websites on their own. The web exercises make it easy to include current, real-world data in the classroom.

FINANCE ON THE WEB

You can download data for Questions 1 and 2 from finance.yahoo.com. Refer to the Useful Spreadsheet Functions box near the end of Chapter 9 for information on Excel functions.

1. Download to a spreadsheet the last three years of monthly adjusted stock prices for Coca-Cola (KO), Citigroup (C), and Pfizer (PFE).
 - a. Calculate the monthly returns.
 - b. Calculate the monthly standard deviation of those returns (see Section 7-2). Use the Excel function STDEV.P to check your answer. Find the annualized standard deviation by multiplying by the square root of 12.
 - c. Use the Excel function CORREL to calculate the correlation coefficient between the monthly returns for each pair of stocks. Which pair provides the greatest gain from diversification?
 - d. Calculate the standard deviation of returns for a portfolio with equal investments in the three stocks.
2. A large mutual fund group such as Fidelity offers a variety of funds. They include *sector funds* that specialize in particular industries and *index funds* that simply invest in the market index. Log on to www.fidelity.com and find first the standard deviation of returns on the Fidelity Spartan 500 Index Fund, which replicates the S&P 500. Now find the standard deviations for different sector funds. Are they larger or smaller than the figure for the index fund? How do you interpret your findings?

» Mini-Cases

Mini-cases are included in select chapters so students can apply their knowledge to real-world scenarios.

MINI-CASE

Waldo County

Waldo County, the well-known real estate developer, worked long hours, and he expected his staff to do the same. So George Chavez was not surprised to receive a call from the boss just as George was about to leave for a long summer's weekend.

Mr. County's success had been built on a remarkable instinct for a good site. He would exclaim "Location! Location! Location!" at some point in every planning meeting. Yet finance was not his strong suit. On this occasion, he wanted George to go over the figures for a new \$90 million outlet mall designed to intercept tourists heading downeast from Bar Harbor through southern Maine. "First thing Monday will do just fine," he said as he handed George the file. "I'll be in my house in Bar Harbor if you need me."

George's first task was to draw up a summary of the projected revenues and costs. The results are shown in Table 10.6. Note that the mall's revenues would come from two sources: The company would charge retailers an annual rent for the space they occupied and, in addition, it would receive 5% of each store's gross sales.

Construction of the mall was likely to take three years. The construction costs could be depreciated straight-line over 15 years starting in year 3. As in the case of the company's other developments, the mall would be built to the highest specifications and would not need to be rebuilt until year 17. The land was expected to retain its value, but could not be depreciated for tax purposes.

Construction costs, revenues, operating and maintenance costs, and local real estate taxes were all likely to rise in line with inflation, which was forecasted at 2% a year. Local real estate taxes are deductible for corporate tax. The company's corporate tax rate was 25% and the cost of capital was 9% in nominal terms.

George decided first to check that the project made financial sense. He then proposed to look at some of the things that might go wrong. His boss certainly had a nose for a good retail project, but he was not infallible. The Salome project had been a disaster because store sales had turned out to be 40% below forecast. What if that happened here? George wondered just how far sales could fall short of forecast before the project would be underwater.

In this edition, we have gone to great lengths to ensure that our supplements are equal in quality and authority to the text itself.

MCGRAW HILL'S CONNECT

Less Managing. More Teaching. Greater Learning.

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

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

McGraw Hill's *Connect* Features



connect® *Connect* offers a number of powerful tools and features to make managing

assignments easier, so faculty can spend more time teaching. With *Connect*, students can engage with their coursework anytime and anywhere, making the learning process more accessible and efficient. *Connect* offers the features described here.

Simple Assignment Management

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

- Create and deliver assignments easily from 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.

Automatic Grading

When it comes to studying, time is precious. *Connect* helps students learn more efficiently by providing feedback and practice material when they need it, where they need it. When it comes to teaching, the instructor's

time is also precious. The grading function enables the instructor to:

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

Test Builder Within Connect

Available within *Connect*, Test Builder is a cloud-based tool that enables instructors to format tests that can be printed or administered within an 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:

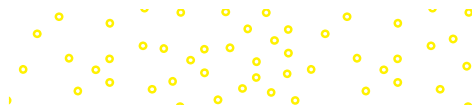
- Access all test bank content from a particular title.
- Easily pinpoint the most relevant content through robust filtering options.
- Manipulate the order of questions or scramble questions and/or answers.
- Pin questions to a specific location within a test.
- Determine your preferred treatment of 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.

Instructor Library

The *Connect* Instructor Library provides additional resources to improve student engagement in and out of class. This library contains information about the book and the authors, as well as all of the instructor supplements, many of which were carefully updated for this edition by Nicholas Racculia, St. Vincent College.


- **Instructor's Manual** The Instructor's Manual contains an overview of each chapter, teaching tips, learning objectives, challenge areas, key terms, and



an annotated outline that provides references to the PowerPoint slides.

- **Solutions Manual** The Solutions Manual contains solutions to all basic, intermediate, and challenge problems found at the end of each chapter.
- **Test Bank** The Test Bank contains hundreds of multiple-choice and short answer/discussion questions, updated based on the revisions of the authors. The level of difficulty varies, as indicated by the easy, medium, or difficult labels.
- **PowerPoint Presentations** The PowerPoint presentations contain exhibits, outlines, key points, and summaries in a visually stimulating collection of slides. The instructor can edit, print, or rearrange the slides to fit the needs of his or her course.
- **Beyond the Page** 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** There are templates for select exhibits, as well as various end-of-chapter problems that have been set as Excel spreadsheets—all denoted by an icon. They correlate with specific concepts in the text and allow students to work through financial problems and gain experience using spreadsheets. Useful Spreadsheet Functions Boxes are sprinkled throughout the text to provide helpful prompts on working in Excel.

SmartBook: Diagnostic and Adaptive Learning of Concepts

 **SMARTBOOK**® SmartBook®, powered by LearnSmart, is the first and only adaptive reading experience designed to change the way students read and learn. It creates a personalized reading experience by highlighting the most important concepts a student needs to learn at each moment in time. As a student engages with SmartBook, the reading experience continuously adapts by highlighting content based on what the student knows and doesn't know. This ensures that the focus is on the content he or she needs to learn, while simultaneously promoting long-term retention of material. Use SmartBook's real-time reports to quickly identify the concepts that require more attention from individual students—or the entire class. The end result? Students

are more engaged with course content, can better prioritize their time, and come to class ready to participate.

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, practice materials, 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

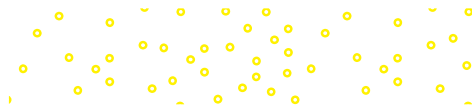
- View scored work immediately and track individual or group performance with assignment and grade reports.
- Access an instant view of student or class performance relative to learning objectives.

TEGRITY CAMPUS: LECTURES 24/7



Tegrity in Connect is a tool that makes class time available 24/7 by automatically capturing every lecture. With a simple one-click start-and-stop process, you capture all computer screens and corresponding audio in a format that is easy to search, frame by frame. Students can replay any part of any class with easy-to-use, browser-based viewing on a PC, Mac, iPad, or other mobile devices.

Educators know that the more students can see, hear, and experience class resources, the better they learn. In fact, studies prove it. Tegrity's unique search feature helps students efficiently find what they need, when they need it, across an entire semester of class recordings. Help turn your students' study time into learning moments immediately supported by your lecture. With Tegrity, you also increase intent listening and class participation by easing students' concerns about note-taking. Using Tegrity in Connect will make it more likely you will see students' faces, not the tops of their heads.



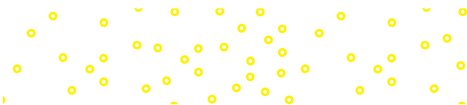


MCGRAW HILL CUSTOMER CARE CONTACT INFORMATION

At McGraw Hill, we understand that getting the most from new technology can be challenging. That's why our services don't stop after you purchase our products. You can e-mail our Product Specialists 24 hours a day

to get product training online. Or you can search our knowledge bank of Frequently Asked Questions on our support website.

For Customer Support, call 800-331-5094 or visit **www.mhhe.com/support**. One of our Technical Support Analysts will be able to assist you in a timely fashion.





connect[®]

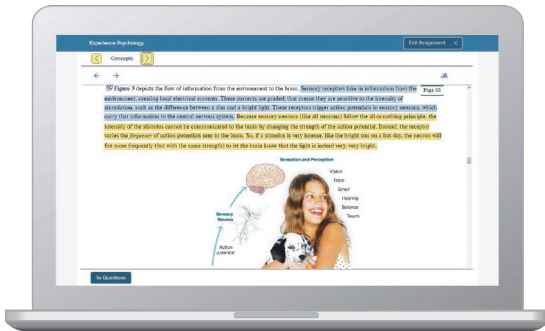
Instructors: Student Success Starts with You

Tools to enhance your unique voice

Want to build your own course? No problem. Prefer to use an OLC-aligned, prebuilt course? Easy. Want to make changes throughout the semester? Sure. And you'll save time with Connect's auto-grading too.

65%

Less Time Grading



Laptop: McGraw Hill; Woman/dog: George Doyle/Getty Images

Study made personal

Incorporate adaptive study resources like SmartBook[®] 2.0 into your course and help your students be better prepared in less time. Learn more about the powerful personalized learning experience available in SmartBook 2.0 at www.mheducation.com/highered/connect/smartbook

Affordable solutions, added value



Make technology work for you with LMS integration for single sign-on access, mobile access to the digital textbook, and reports to quickly show you how each of your students is doing. And with our Inclusive Access program you can provide all these tools at a discount to your students. Ask your McGraw Hill representative for more information.

Padlock: Jobalou/Getty Images

Solutions for your challenges



A product isn't a solution. Real solutions are affordable, reliable, and come with training and ongoing support when you need it and how you want it. Visit www.supportateverystep.com for videos and resources both you and your students can use throughout the semester.

Checkmark: Jobalou/Getty Images

SUPPORT AT
every step

Students: Get Learning that Fits You

Effective tools for efficient studying

Connect is designed to help you be more productive with simple, flexible, intuitive tools that maximize your study time and meet your individual learning needs. Get learning that works for you with Connect.

Study anytime, anywhere

Download the free ReadAnywhere app and access your online eBook, SmartBook 2.0, or Adaptive Learning Assignments when it's convenient, even if you're offline. And since the app automatically syncs with your Connect account, all of your work is available every time you open it. Find out more at www.mheducation.com/readanywhere

"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



Calendar: owattaphotos/Getty Images

Everything you need in one place

Your Connect course has everything you need—whether reading on your digital eBook or completing assignments for class, Connect makes it easy to get your work done.

Learning for everyone

McGraw Hill works directly with Accessibility Services Departments and faculty to meet the learning needs of all students. Please contact your Accessibility Services Office and ask them to email accessibility@mheducation.com, or visit www.mheducation.com/about/accessibility for more information.

Top: Jenner Images/Getty Images, Left: Hero Images/Getty Images, Right: Hero Images/Getty Images



Brief Contents

Preface vii

Part One: Value

1	Introduction to Corporate Finance	1
2	How to Calculate Present Values	21
3	Valuing Bonds	52
4	Valuing Stocks	84
5	Net Present Value and Other Investment Criteria	119
6	Making Investment Decisions with the Net Present Value Rule	149

Part Two: Risk

7	Introduction to Risk, Diversification, and Portfolio Selection	184
8	The Capital Asset Pricing Model	222
9	Risk and the Cost of Capital	248

Part Three: Best Practices in Capital Budgeting

10	Project Analysis	276
11	How to Ensure That Projects Truly Have Positive NPVs	301

Part Four: Financing Decisions and Market Efficiency

12	Efficient Markets and Behavioral Finance	327
13	An Overview of Corporate Financing	368
14	How Corporations Issue Securities	399

Part Five: Payout Policy and Capital Structure

15	Payout Policy	434
16	Does Debt Policy Matter?	459
17	How Much Should a Corporation Borrow?	485
18	Financing and Valuation	518

Part Six: Corporate Objectives and Governance

19	Agency Problems and Corporate Governance	555
20	Stakeholder Capitalism and Responsible Business	588

Part Seven: Options

21	Understanding Options	614
22	Valuing Options	637
23	Real Options	666

Part Eight: Debt Financing

24	Credit Risk and the Value of Corporate Debt	691
25	The Many Different Kinds of Debt	710
26	Leasing	744

Part Nine: Risk Management

27	Managing Risk	763
28	International Financial Management	799

Part Ten: Financial Planning and Working Capital Management

29	Financial Analysis	828
30	Financial Planning	857
31	Working Capital Management	888

Part Eleven: Mergers, Corporate Control, and Governance

32	Mergers	918
33	Corporate Restructuring	950

Part Twelve: Conclusion

34	Conclusion: What We Do and Do Not Know about Finance	977
----	--	-----

Preface vii

I Part One: Value

1 Introduction to Corporate Finance 1

- 1-1** Corporate Investment and Financing Decisions 2
Investment Decisions/Financing Decisions/What Is a Corporation?/The Role of the Financial Manager
- 1-2** The Financial Goal of the Corporation 8
Shareholders Want Managers to Maximize Market Value/A Fundamental Result: Why Maximizing Shareholder Wealth Makes Sense/Should Managers Maximize Shareholder Wealth?/The Investment Trade-Off/Agency Problems and Corporate Governance
- 1-3** Key Questions in Corporate Finance 14
 Key Takeaways 15 • Problem Sets 16 • Solutions to Self-Test Questions 18 • Appendix: Why Maximizing Shareholder Value Makes Sense 19

2 How to Calculate Present Values 21

- 2-1** How to Calculate Future and Present Values 22
Calculating Future Values/Calculating Present Values/Valuing an Investment Opportunity/Net Present Value/Risk and Present Value/Present Values and Rates of Return/Calculating Present Values When There Are Multiple Cash Flows/The Opportunity Cost of Capital
- 2-2** How to Value Perpetuities and Annuities 30
How to Value Perpetuities/How to Value Annuities/Valuing Annuities Due/Calculating Annual Payments/Future Value of an Annuity
- 2-3** How to Value Growing Perpetuities and Annuities 37
Growing Perpetuities/Growing Annuities

- 2-4** How Interest Is Paid and Quoted 39
Continuous Compounding

Key Takeaways 44 • Problem Sets 45 • Solutions to Self-Test Questions 50 • Finance on the Web 51

3 Valuing Bonds 52

- 3-1** Using the Present Value Formula to Value Bonds 53
A Short Trip to Paris to Value a Government Bond/Back to the United States: Semiannual Coupons and Bond Prices
- 3-2** How Bond Prices Vary with Yields 57
Duration and Interest-Rate Sensitivity
- 3-3** The Term Structure of Interest Rates 62
Spot Rates, Bond Prices, and the Law of One Price/Measuring the Term Structure/Why the Discount Factor Declines as Faturity Increases
- 3-4** Explaining the Term Structure 68
Expectations Theory of the Term Structure/Interest Rate Risk/Inflation Risk
- 3-5** Real and Nominal Interest Rates 70
Indexed Bonds and the Real Rate of Interest/What Determines the Real Rate of Interest?/Inflation and Nominal Interest Rates
- 3-6** The Risk of Default 74
Corporate Bonds and Default Risk/Sovereign Bonds and Default Risk

Key Takeaways 77 • Further Reading 78 • Problem Sets 78 • Solutions to Self-Test Questions 83 • Finance on the Web 83

4 Valuing Stocks 84

- 4-1** How Stocks Are Traded 85
Trading Results for Cummins/Market Price vs. Book Value
- 4-2** Valuation by Comparables 88
- 4-3** Dividends and Stock Prices 90



Dividends and Capital Gains/Two Versions of the Dividend Discount Model

- 4-4** Dividend Discount Model Applications 95
Using the Constant-Growth DCF Model to Set Water, Gas, and Electricity Prices/DCF Models with Two or More Stages of Growth
- 4-5** Income Stocks and Growth Stocks 101
Calculating the Present Value of Growth Opportunities for Establishment Electronics
- 4-6** Valuation Based on Free Cash Flow 105
Valuing the Concatenator Business/Valuation Format/Estimating Horizon Value

Key Takeaways 110 • Problem Sets 112 • Solutions to Self-Test Questions 116 • Finance on the Web 117 • Mini-Case: Reeby Sports 117

5 Net Present Value and Other Investment Criteria 119

- 5-1** A Review of the Net Present Value Rule 119
Net Present Value's Competitors/Five Points to Remember about NPV
- 5-2** The Payback and Accounting Rate of Return Rules 123
The Payback Rule/Accounting Rate of Return
- 5-3** The Internal Rate of Return Rule 126
Calculating the IRR/The IRR Rule/Pitfall 1—Lending or Borrowing?/Pitfall 2—Multiple Rates of Return/Pitfall 3—Mutually Exclusive Projects/Pitfall 4—What Happens When There Is More Than One Opportunity Cost of Capital/The Verdict on IRR
- 5-4** Choosing Capital Investments When Resources Are Limited 135
How Important Is Capital Rationing in Practice?

Key Takeaways 139 • Further Reading 140 • Problem Sets 140 • Solutions to Self-Test Questions 145 • Mini-Case: Vegetron's CFO Calls Again 146

6 Making Investment Decisions with the Net Present Value Rule 149

- 6-1** Forecasting a Project's Cash Flows 150

Rule 1: Discount Cash Flows, Not Profits/Rule 2: Discount Incremental Cash Flows and Ignore Non-Incremental Cash Flows/Rule 3: Treat Inflation Consistently/Rule 4: Separate Investment and Financing Decisions/Rule 5: Forecast Cash Flows after Taxes

- 6-2** Corporate Income Taxes 157
Depreciation Deductions/Tax on Salvage Value/Tax Loss Carry-Forwards
- 6-3** A Worked Example of a Project Analysis 159
The Three Components of Project Cash Flows/Cash Flow from Capital Investment/Operating Cash Flow/Investment in Working Capital/How to Construct a Set of Cash Flow Forecasts: An Example/Capital Investment/Operating Cash Flow/Investment in Working Capital/Accelerated Depreciation and First-Year Expensing/Project Analysis
- 6-4** How to Choose between Competing Projects 165
Problem 1: The Investment Timing Decision/Problem 2: The Choice between Long- and Short-Lived Equipment/Problem 3: When to Replace an Old Machine/Problem 4: Cost of Excess Capacity

Key Takeaways 171 • Further Reading 172 • Problem Sets 172 • Solutions to Self-Test Questions 180 • Mini-Case: New Economy Transport (A) 181 • New Economy Transport (B) 182

I Part Two: Risk

7 Introduction to Risk, Diversification, and Portfolio Selection 184

- 7-1** The Relationship between Risk and Return 184
Over a Century of Capital Market History/Using Historical Evidence to Evaluate Today's Cost of Capital
- 7-2** How to Measure Risk 190
Variance and Standard Deviation/Calculating Risk/Estimating Future Risk
- 7-3** How Diversification Reduces Risk 195
Specific and Systematic Risk/Diversification with Many Stocks

7-4 Systematic Risk Is Market Risk 201
Portfolio Choice with Borrowing and Lending/Market Risk

7-5 Should Companies Diversify? 209

Key Takeaways 210 • Further Reading 211 • Problem Sets 212 • Solutions to Self-Test Questions 219 • Finance on the Web 220

8 The Capital Asset Pricing Model 222

8-1 Market Risk Is Measured by Beta 222
The Market Portfolio/Why Betas Determine Portfolio Risk

8-2 The Relationship between Risk and Return 228
What If a Stock Did Not Lie on the Security Market Line?/The Capital Market Line and the Security Market Line/The Logic behind the Capital Asset Pricing Model/Intuition: Why Do High Beta and High Returns Go Together?/Applying the Capital Asset Pricing Model

8-3 Does the CAPM Hold in the Real World? 233
How Large Is the Return for Risk?/Are Returns Unrelated to All Other Characteristics?

8-4 Some Alternative Theories 237
Arbitrage Pricing Theory/A Comparison of the Capital Asset Pricing Model and Arbitrage Pricing Theory/The Three-Factor Model

Key Takeaways 241 • Further Reading 242 • Problem Sets 242 • Solutions to Self-Test Questions 246 • Finance on the Web 247

9 Risk and the Cost of Capital 248

9-1 Company and Project Costs of Capital 249
Company Cost of Capital for CSX/Three Warnings/What about Investments That Are Not Average Risk?/Perfect Pitch and the Cost of Capital

9-2 Estimating Beta and the Company Cost of Capital 254
Estimating Beta/Portfolio Betas

9-3 Analyzing Project Risk 257
1. The Determinants of Asset Betas/2. Don't Be Fooled by Diversifiable Risk/3. Avoid Fudge Factors in Discount Rates/Discount Rates for International Projects

9-4 Certainty Equivalents 263

Key Takeaways 266 • Further Reading 268 • Problem Sets 268 • Solutions to Self-Test Questions 273 • Finance on the Web 273 • Mini-Case: The Jones Family Incorporated 273

I Part Three: Best Practices in Capital Budgeting

10 Project Analysis 276

10-1 Sensitivity and Scenario Analysis 277
Value of Information/Limits to Sensitivity Analysis/Stress Tests and Scenario Analysis

10-2 Break-Even Analysis and Operating Leverage 281
Break-Even Analysis/Operating Leverage

10-3 Real Options and the Value of Flexibility 284
The Option to Expand/The Option to Abandon/Production Options/Timing Options/More on Decision Trees/Pro and Con Decision Trees

Key Takeaways 291 • Further Reading 292 • Problem Sets 292 • Solutions to Self-Test Questions 298 • Mini-Case: Waldo County 299

11 How to Ensure That Projects Truly Have Positive NPVs 301

11-1 Behavioral Biases in Investment Decisions 302

11-2 Avoiding Forecast Errors 303

11-3 How Competitive Advantage Translates into Positive NPVs 308

11-4 Marvin Enterprises Decides to Exploit a New Technology—An Example 312
Forecasting Prices of Gargle Blasters/The Value of Marvin's New Expansion/Alternative Expansion Plans/The Value of Marvin Stock/The Lessons of Marvin Enterprises

Key Takeaways 319 • Further Reading 319 • Problem Sets 320 • Solutions to Self-Test Questions 325 • Mini-Case: Ecsy-Cola 326

I Part Four: Financing Decisions and Market Efficiency

12 Efficient Markets and Behavioral Finance 327

12-1 Differences between Investment and Financing Decisions 328

NPV Matters for Both Investment and Financing Decisions/The NPV of Financing Decisions Is Zero in Efficient Markets/The NPV of Financing Decisions in Inefficient Markets

12-2 The Efficient Market Hypothesis 330

Forms of Market Efficiency/Why Do We Expect Markets to Be Efficient?

12-3 Implications of Market Efficiency 335

What Market Efficiency Does Not Imply/What if Markets Are Not Efficient? Implications for the Financial Manager

12-4 Are Markets Efficient? The Evidence 345

Weak-Form Efficiency/Semistrong-Form Efficiency/Strong-Form Efficiency

12-5 Behavioral Finance 352

Sentiment/Limits to Arbitrage/Agency and Incentive Problems

Key Takeaways 360 • Further Reading 361 • Problem Sets 362 • Solutions to Self-Test Questions 366 • Finance on the Web 367

13 An Overview of Corporate Financing 368

13-1 Patterns of Corporate Financing 369

How Much Do Firms Borrow?

13-2 Equity 372

Ownership of the Corporation/Preferred Stock

13-3 Debt 375

The Different Kinds of Debt/A Debt by Any Other Name

13-4 The Role of the Financial System 378

The Payment Mechanism/Borrowing and Lending/Pooling Risk/Information Provided by Financial Markets

13-5 Financial Markets and Intermediaries 381

Financial Intermediaries/Investment Funds/Financial Institutions

13-6 Financial Markets and Intermediaries around the World 387

Conglomerates and Internal Capital Markets

13-7 The Fintech Revolution 391

Payment Systems/Person-to-Person Lending/Crowdfunding/AI/ML Credit Scoring/Distributed Ledgers and Blockchains/Cryptocurrencies/Initial Coin Offerings

Key Takeaways 394 • Further Reading 395 • Problem Sets 396 • Solutions to Self-Test Questions 398 • Finance on the Web 398

14 How Corporations Issue Securities 399

14-1 Venture Capital 399

The Venture Capital Market

14-2 The Initial Public Offering 404

The Public-Private Choice/Arranging an Initial Public Offering/The Sale of Marvin Stock/The Underwriters/Costs of a New Issue/Underpricing of IPOs/Hot New-Issue Periods/The Long-Run Performance of IPO Stocks/Alternative Issue Procedures/Types of Auction: A Digression

14-3 Security Sales by Public Companies 416

Public Offers/The Costs of a Public Offer/Rights Issues/Market Reaction to Stock Issues

14-4 Private Placements 421

Key Takeaways 422 • Further Reading 423 • Problem Sets 423 • Solutions to Self-Test Questions 429 • Finance on the Web 429 • Appendix: Marvin's New-Issue Prospectus 430

I Part Five: Payout Policy and Capital Structure

15 Payout Policy 434

- 15-1** Facts about Payout 435
How Firms Pay Dividends/How Firms Repurchase Stock/The Information Content of Dividends/The Information Content of Share Repurchases
- 15-2** Dividends or Repurchases? Does the Choice Affect Shareholder Value? 440
Dividends or Repurchases? An Example/Stock Repurchases and DCF Valuation Models/Dividends and Share Issues
- 15-3** Dividend Clienteles 444
- 15-4** Taxes and Payout Policy 445
Empirical Evidence on Payout Policies and Taxes/Alternatives to the U.S. Tax System
- 15-5** Payout Policy and the Life Cycle of the Firm 449
The Agency Costs of Idle Cash/Payout and Corporate Governance

Key Takeaways 452 • Further Reading 453 • Problem Sets 453 • Solutions to Self-Test Questions 458 • Finance on the Web 458

16 Does Debt Policy Matter? 459

- 16-1** Financial Leverage and Shareholder Value 460
- 16-2** Modigliani and Miller's Proposition 1 461
The Law of the Conservation of Value/An Example of Proposition 1
- 16-3** Leverage and Expected Returns: MM's Proposition 2 466
Proposition 2/Leverage and the Cost of Equity/How Changing Capital Structure Affects the Equity Beta/Watch Out for Hidden Leverage
- 16-4** No Magic in Financial Leverage 473
Today's Unsatisfied Clienteles Are Probably Interested in Financial Innovation/Imperfections and Opportunities
- 16-5** A Final Word on the Cost of Capital 476

Key Takeaways 478 • Further Reading 478 • Problem Sets 479 • Solutions to Self-Test Questions 483 • Mini-Case: Claxton Drywall Comes to the Rescue 483

17 How Much Should a Corporation Borrow? 485

- 17-1** Debt and Taxes 486
How Do Interest Tax Shields Contribute to the Value of Stockholders' Equity?/Recasting Johnson & Johnson's Capital Structure/MM and Corporate Tax/Corporate and Personal Taxes
- 17-2** Costs of Financial Distress 492
Bankruptcy Costs/Evidence on Bankruptcy Costs/Direct versus Indirect Costs of Bankruptcy/Financial Distress without Bankruptcy/Agency Costs of Financial Distress/Risk Shifting: The First Game/Refusing to Contribute Equity Capital: The Second Game/And Three More Games, Briefly/What the Games Cost/Costs of Distress Vary with Type of Asset
- 17-3** The Trade-Off Theory of Capital Structure 503
- 17-4** The Pecking Order of Financing Choices 505
Debt and Equity Issues with Asymmetric Information/Implications of the Pecking Order/The Bright Side and the Dark Side of Financial Slack
- 17-5** The Capital Structure Decision 509
The Evidence/Is There a Theory of Optimal Capital Structure?

Key Takeaways 512 • Further Reading 513 • Problem Sets 513 • Solutions to Self-Test Questions 517 • Finance on the Web 517

18 Financing and Valuation 518

- 18-1** The After-Tax Weighted-Average Cost of Capital 519
Review of Assumptions/Mistakes People Make in Using the Weighted-Average Formula
- 18-2** Valuing Businesses 523
Valuing Rio Corporation/Estimating Horizon Value/Valuation by Comparables/Liquidation Value/WACC vs. the Flow-to-Equity Method

- 18-3 Using WACC in Practice 528**
Some Tricks of the Trade/Adjusting WACC when Debt Ratios and Business Risks Differ/Three-Step Procedure for Finding WACCs at Different Debt Ratios/Unlevering and Relevering Betas/Calculating Divisional WACCs/The Assumption of a Constant Debt Ratio in the After-Tax WACC/The Modigliani–Miller Formula
- 18-4 Adjusted Present Value 536**
APV for the Perpetual Crusher/Other Financing Side Effects/APV for Entire Businesses/APV and Limits on Interest Deductions/APV for International Investments
- 18-5 Your Questions Answered 541**
 Key Takeaways 543 • Further Reading 544 • Problem Sets 545 • Solutions to Self-Test Questions 549 • Finance on the Web 550 • Appendix: Discounting Safe, Nominal Cash Flows 551 • A Consistency Check 553

I Part Six: Corporate Objectives and Governance

19 Agency Problems and Corporate Governance 555

- 19-1 What Agency Problems Should You Watch Out For? 556**
Reduced Effort/Private Benefits/Overinvestment/Risk Taking/Short-Termism
- 19-2 Monitoring by the Board of Directors 560**
U.S. and U.K. Boards of Directors/European Boards of Directors
- 19-3 Monitoring by Shareholders 563**
Voting/Engagement/Exit
- 19-4 Monitoring by Auditors, Lenders, and Potential Acquirers 566**
Auditors/Lenders/Takeovers
- 19-5 Management Compensation 568**
Compensation Facts and Controversies/The Structure of CEO Pay
- 19-6 Government Regimes around the World 575**

Ownership and Control in Japan/Ownership and Control in Germany/Ownership and Control in Other Countries

- 19-7 Do These Differences Matter? 581**
Public Market Myopia/Growth Industries and Declining Industries

Key Takeaways 583 • Further Reading 584 • Problem Sets 585 • Solutions to Self-Test Questions 587 • Finance on the Web 587

20 Stakeholder Capitalism and Responsible Business 588

- 20-1 Who Are the Stakeholders? 589**
Employees/Customers/Suppliers/Local and Regional Communities/The Environment/The Government
- 20-2 The Case for Shareholder Capitalism 592**
Government Policy Ensures Companies Will Engage in Socially Responsible Behavior/Maximizing Shareholder Value Allows Investors to Pursue Social Objectives/Maximizing Shareholder Value Requires a Company to Invest in Stakeholders/Enlightened Shareholder Value/Decision Making under Enlightened Shareholder Value
- 20-3 The Case for Stakeholder Capitalism 596**
Well-Functioning Governments/No Comparative Advantage in Serving Society/Instrumental Decision Making Is Effective/The Challenge of Stakeholder Capitalism/Summary
- 20-4 Responsible Business 600**
Defining Responsible Business/Decision Making in Responsible Businesses/Summary
- 20-5 Responsible Business in Practice 605**
Shareholder Primacy in the United States and United Kingdom/Benefit Corporations/B Corps/Purpose/Reporting

Key Takeaways 611 • Further Reading 612 • Problem Sets 612 • Solutions to Self-Test Questions 613 • Finance on the Web 613

I Part Seven: Options

21 Understanding Options 614

- 21-1** Calls, Puts, and Shares 615
*Call Options and Payoff Diagrams/Put Options/
 Selling Calls and Puts/Payoff Diagrams Are Not
 Profit Diagrams*
- 21-2** Financial Alchemy with Options 619
Spotting the Option
- 21-3** What Determines the Value of a Call Option? 625
Risk and Option Values

Key Takeaways 630 • Further Reading 631 • Problem
 Sets 631 • Solutions to Self-Test Questions 636 •
 Finance on the Web 636

22 Valuing Options 637

- 22-1** A Simple Option-Valuation Model 638
*Why Discounted Cash Flow Won't Work for
 Options/Constructing Option Equivalents from
 Common Stocks and Borrowing/Risk-Neutral
 Valuation/Valuing the Amazon Put Option/Valuing
 the Put Option by the Risk-Neutral Method/The
 Relationship between Call and Put Prices*
- 22-2** The Binomial Method for Valuing Options 644
*Example: The Two-Step Binomial Method/The
 General Binomial Method/The Binomial Method
 and Decision Trees*
- 22-3** The Black–Scholes Formula 649
*Using the Black–Scholes Formula/How Black-
 Scholes Values Vary with the Stock Price/The Risk
 of an Option/The Black–Scholes Formula and the
 Binomial Method/Some Practical Examples*

- 22-4** Early Exercise and Dividend Payments 656
 Key Takeaways 658 • Further Reading 659 • Problem
 Sets 659 • Solutions to Self-Test Questions 663
 • Finance on the Web 664 • Mini-Case: Bruce
 Honiball's Invention 664

23 Real Options 666

- 23-1** The Option to Expand 666
*Questions and Answers about Blitzen's Mark II/
 Other Expansion Options*

- 23-2** Options in R&D 670
- 23-3** The Timing Option 672
*Valuing the Malted Herring Option/Optimal
 Timing for Real Estate Development*
- 23-4** The Abandonment Option 675
*Bad News for the Perpetual Crusher/Abandonment
 Value and Project Life/Temporary Abandonment*
- 23-5** Flexible Production and Procurement 678
Aircraft Purchase Options
- 23-6** Valuing Real Options 682
*A Conceptual Problem?/What about Taxes?/
 Practical Challenges*

Key Takeaways 685 • Further Reading 685 •
 Problem Sets 686 • Solutions to Self-Test
 Questions 690

I Part Eight: Debt Financing

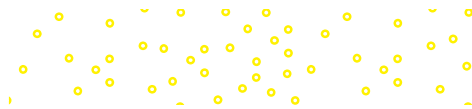
24 Credit Risk and the Value of Corporate Debt 691

- 24-1** Yields on Corporate Debt 692
*Distinguishing Promised and Expected Yields/
 What Determines the Yield Spread?*
- 24-2** Valuing the Option to Default 695
Finding Bond Values/The Value of Corporate Equity
- 24-3** Predicting the Probability of Default 699
*Statistical Models of Default/Structural Models of
 Default*

Key Takeaways 706 • Further Reading 706 • Problem
 Sets 707 • Solutions to Self-Test Questions 708 •
 Finance on the Web 709

25 The Many Different Kinds of Debt 710

- 25-1** Long-Term Corporate Bonds 711
*Bond Terms/Security and Seniority/Asset-Backed
 Securities/Call Provisions/Sinking Funds/Bond
 Covenants/Privately Placed Bonds/Foreign Bonds
 and Eurobonds*
- 25-2** Convertible Securities and Some Unusual
 Bonds 720



*The Value of a Convertible at Maturity/
Forcing Conversion/Why Do Companies Issue
Convertibles?/Valuing Convertible Bonds/A
Variation on Convertible Bonds: The Bond–
Warrant Package/Innovation in the Bond Market*

25-3 Bank Loans 727

*Commitment/Maturity/Rate of Interest/Syndicated
Loans/Security/Loan Covenants*

25-4 Commercial Paper and Medium-Term Notes 731

Commercial Paper/Medium-Term Notes

Key Takeaways 733 • Further Reading 734 •
Problem Sets 734 • Solutions to Self-Test
Questions 739 • Mini-Case: The Shocking Demise of
Mr. Thorndike 740 • Appendix: Project Finance 741 •
Appendix Further Reading 743

26 Leasing 744

26-1 What Is a Lease? 744

26-2 Why Lease? 746

*Sensible Reasons for Leasing/A Dubious Reason
for Leasing*

26-3 Rentals on an Operating Lease 747

Example of an Operating Lease/Lease or Buy?

26-4 Valuing Financial Leases 750

*Example of a Financial Lease/Valuing the Lease
Contract/Comparing the Lease with an Equivalent
Loan/Financial Leases When There Are Limits on
the Interest Tax Shield/Leasing and the Internal
Revenue Service*

26-5 When Do Financial Leases Pay? 754

Leasing around the World

26-6 Setting Up a Leveraged Lease 756

Key Takeaways 757 • Further Reading 757 • Problem
Sets 758 • Solutions to Self-Test Questions 762

I Part Nine: Risk Management

27 Managing Risk 763

27-1 Why Manage Risk? 764

*Reducing the Risk of Cash Shortfalls or Financial
Distress/Agency Costs May Be Mitigated by
Risk Management/The Evidence on Risk
Management*

27-2 Insurance 767

27-3 Reducing Risk with Financial Options 769

*27-4 Forward and Futures Contracts 770
A Simple Forward Contract/Futures Exchanges/
The Mechanics of Futures Trading/Trading
and Pricing Financial Futures Contracts/Spot
and Futures Prices—Commodities/More about
Forwards and Futures*

27-5 Interest Rate Risk 776

*Forward Rates of Interest and the Term Structure/
Borrowing and Lending at Forward Interest Rates/
Forward Rate Agreements/Interest Rate Futures*

27-6 Swaps 779

*Interest Rate Swaps/Currency Swaps/Some
Other Swaps*

27-7 How to Set Up a Hedge 783

*Hedging Interest Rate Risk/Hedge Ratios and
Basis Risk*

27-8 Is “Derivative” a Four-Letter Word? 787

Key Takeaways 788 • Further Reading 789 • Problem
Sets 790 • Solutions to Self-Test Questions 795 •
Finance on the Web 796 • Mini-Case: Rensselaer
Advisers 796

28 International Financial Management 799

28-1 The Foreign Exchange Market 799

28-2 Some Basic Relationships 802

*Interest Rates and Exchange Rates/The Forward
Premium and Changes in Spot Rates/Changes in
the Exchange Rate and Inflation Rates/Interest
Rates and Inflation Rates/Is Life Really That
Simple?*

28-3 Hedging Currency Risk 812

Transaction Exposure and Economic Exposure

28-4 International Investment Decisions 814

The Cost of Capital for International Investments

28-5 Political Risk 817

Key Takeaways 820 • Further Reading 821 • Problem Sets 822 • Solutions to Self-Test 825 • Finance on the Web 826 • Mini-Case: Exacta, s.a. 826

I Part Ten: Financial Planning and Working Capital Management

29 Financial Analysis 828

29-1 Understanding Financial Statements 829

The Balance Sheet/The Income Statement

29-2 Measuring Company Performance 833

Economic Value Added/Accounting Rates of Return/Problems with EVA and Accounting Rates of Return

29-3 Measuring Efficiency 838

The DuPont Formula/Other Efficiency Measures

29-4 Measuring Leverage 841

Leverage and the Return on Equity

29-5 Measuring Liquidity 844

29-6 Interpreting Financial Ratios 846

Key Takeaways 849 • Further Reading 849 • Problem Sets 850 • Solutions to Self-Test Questions 855 • Finance on the Web 855

30 Financial Planning 857

30-1 What Are the Links between Short-Term and Long-Term Financing Decisions? 857

30-2 Tracing and Forecasting Changes in Cash 860

Tracing Changes in Cash/Forecasting Dynamic's Cash Needs

30-3 Developing a Short-Term Financial Plan 866

Dynamic Mattress's Financing Plan/Evaluating the Plan/Short-Term Financial Planning Models

30-4 Using Long-Term Financial Planning Models 869

Why Build Financial Plans?/A Long-Term Financial Planning Model for Dynamic Mattress/Pitfalls in Model Design/Choosing a Plan

30-5 Long-Term Planning Models and Company Valuation 874

30-6 The Relationship between Growth and External Financing 875

Key Takeaways 877 • Further Reading 877 • Problem Sets 878 • Solutions to Self-Test Questions 885 • Finance on the Web 887

31 Working Capital Management 888

31-1 The Working Capital Requirement 888

The Cash Cycle

31-2 Managing Inventories 892

31-3 Accounts Receivable Management 894

Terms of Sale/Credit Analysis/The Credit Decision/Collection Policy

31-4 Cash Management 900

How Purchases Are Paid For/Changes in Check Usage/Speeding Up Check Collections/Electronic Payment Systems/International Cash Management/Paying for Bank Services

31-5 Investing Surplus Cash 904

Investment Choices/Calculating the Yield on Money Market Investments/Returns on Money Market Investments/The International Money Market/Money Market Instruments

Key Takeaways 909 • Further Reading 910 • Problem Sets 910 • Solutions to Self-Test Questions 916 • Finance on the Web 917

I Part Eleven: Mergers, Corporate Control, and Governance

32 Mergers 918

32-1 Types of Merger 919

32-2 Some Sensible Motives for Mergers 919

Economies of Scale and Scope/Economies of Vertical Integration/Complementary Resources/Changes in Corporate Control/Industry Consolidation/Logic Does Not Guarantee Success

32-3 Some Dubious Motives for Mergers 923

Diversification/Increasing Earnings per Share: The Bootstrap Game/Lower Borrowing Costs/Management Motives

32-4 Estimating Merger Gains and Costs 928
Estimating NPV When the Merger Is Financed by Cash/Estimating NPV When the Merger Is Financed by Stock/Asymmetric Information/More on Estimating Costs—What If the Target’s Stock Price Anticipates the Merger?/Right and Wrong Ways to Estimate the Benefits of Mergers

32-5 The Mechanics of a Merger 932
Mergers, Antitrust Law, and Popular Opposition/The Form of Acquisition/Merger Accounting/Some Tax Considerations

32-6 Takeovers and the Market for Corporate Control 936

32-7 Merger Waves and Merger Profitability 938
Merger Waves/Who Gains and Loses from Mergers?/Buyers vs. Sellers/Mergers and Society

Key Takeaways 942 • Further Reading 943 • Problem Sets 943 • Solutions to Self-Test Questions 946 • Finance on the Web 947 • Appendix: Conglomerate Mergers and Value Additivity 948

33 Corporate Restructuring 950

33-1 Leveraged Buyouts 950
The RJR Nabisco LBO/Barbarians at the Gate?/Leveraged Restructurings

33-2 The Private-Equity Market 956
Private-Equity Partnerships/Are Private-Equity Funds Today’s Conglomerates?

33-3 Fusion and Fission in Corporate Finance 961
Spin-Offs/Carve-Outs/Asset Sales/Privatization and Nationalization

33-4 Bankruptcy 967
Is Chapter 11 Efficient?/Workouts/Alternative Bankruptcy Procedures

Key Takeaways 973 • Further Reading 973 • Problem Sets 974 • Solutions to Self-Test Questions 976

I Part Twelve: Conclusion

34 Conclusion: What We Do and Do Not Know about Finance 977

34-1 What We Do Know: The Seven Most Important Ideas in Finance 977

1. Net Present Value/2. The Capital Asset Pricing Model/3. Efficient Capital Markets/4. Value Additivity and the Law of Conservation of Value/5. Capital Structure Theory/6. Option Theory/7. Agency Theory

34-2 What We Do Not Know: 10 Unsolved Problems in Finance 980

1. What Determines Project Risk and Present Value?/2. Risk and Return—What Have We Missed?/3. How Important Are the Exceptions to the Efficient-Market Theory?/4. Is Management an Off-Balance-Sheet Liability?/5. How Can We Explain the Success of New Securities and New Markets?/6. How Can We Resolve the Payout Controversy?/7. What Risks Should a Firm Take?/8. What Is the Value of Liquidity?/9. How Can We Explain Merger Waves?/10. Why Are Financial Systems So Prone to Crisis?

34-3 A Final Word 986

GLOSSARY G-1

INDEX I-1

Note: Present value tables are available in Connect.

Introduction to Corporate Finance

This book is about how corporations make financial decisions. We start by explaining what these decisions are and what they are intended to accomplish.

Corporations invest in real assets, which generate income. Some of these assets, such as plant and machinery, are tangible; others, such as brand names and patents, are intangible. Corporations finance their investments through the money they earn from selling goods and services, and by raising additional cash through borrowing from banks or issuing shares to investors.

Thus, the financial manager faces two broad financial questions: First, what investments should the company make? Second, how should it pay for those investments? The investment decision involves spending money; the financing decision involves raising it.

A large corporation may have hundreds of thousands of shareholders. These shareholders differ in many ways, including their wealth, risk tolerance, and investment horizon. Yet we shall see that they usually share the same financial objective. They want the financial manager to increase the value of the corporation; in an efficient market, this will in turn increase its current stock price.

Thus, the secret of success in financial management is to increase value. That is easy to say but not very helpful. Instructing the financial manager to increase shareholder value is like advising an investor in the stock market to find stocks that will go up in the future. The problem is how to do it. That's the purpose of this book. It covers the concepts that govern good financial decisions, and it shows you how to use the tools of the trade of modern finance.

This chapter begins with specific examples of recent investment and financing decisions made by well-known corporations. The middle of the chapter covers what a corporation is and what its financial managers do. We conclude by explaining why increasing the market value of the corporation is a sensible financial goal.

Financial managers increase value whenever the corporation earns a higher return than shareholders can earn for themselves. The shareholders' investment opportunities *outside* the corporation set the standard for investments *inside* the corporation. Financial managers, therefore, refer to the *opportunity cost* of the capital contributed by shareholders.

Managers are, of course, human beings with their own interests and circumstances; they are not always the perfect servants of shareholders. Therefore, corporations must combine governance rules and procedures with appropriate incentives to make sure that all managers and employees pull together to increase value.

This chapter introduces five themes that occur again and again throughout the book:

1. Corporate finance is all about maximizing shareholder value.
2. Maximizing shareholder value involves considering the long-term consequences of all decisions, including their effects on stakeholders such as customers, employees, and the environment.
3. The opportunity cost of capital sets the standard for investment decisions.
4. A safe dollar is worth more than a risky dollar.
5. Good governance matters.

