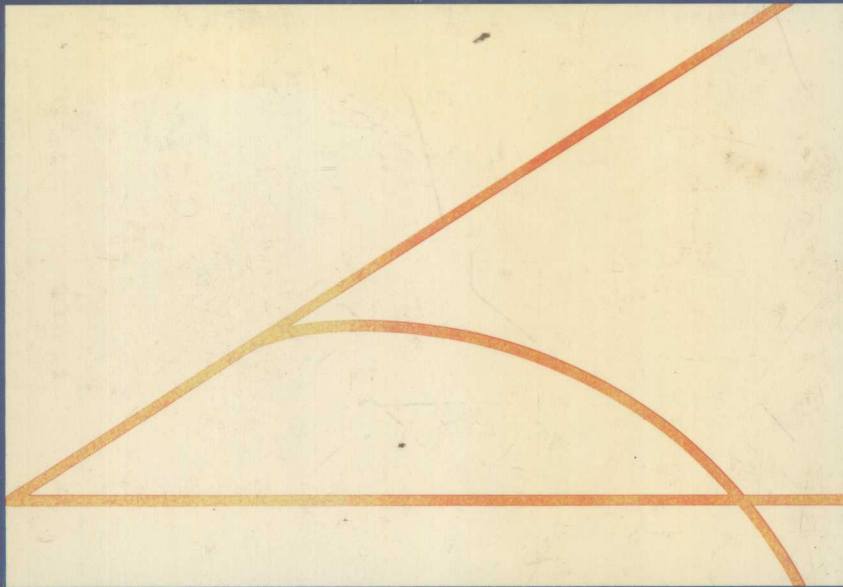


# FINANCIAL MANAGEMENT

THEORY AND PRACTICE

Fifth Edition



Eugene F. Brigham  
Louis C. Gapenski

# FINANCIAL MANAGEMENT

---

THEORY AND PRACTICE

Fifth Edition

**Eugene F. Brigham**  
*University of Florida*

**Louis C. Gapenski**  
*University of Florida*

**The Dryden Press**

Chicago New York San Francisco Philadelphia  
Montreal Toronto London Sydney Tokyo

Acquisitions Editor: Ann Heath  
Developmental Editor: Kathryn Jandeska/Judy Sarwark  
Project Editor: Cate Rzasa  
Design Director: Alan Wendt  
Production Manager: Barb Bahnsen  
Director of Editing, Design, and Production: Jane Perkins

Text and Cover Designer: Hunter Graphics, C. J. Petlick  
Copy Editor: Karen Steib  
Compositor: The Clarinda Company  
Text Type: 10/12 ITC Garamond Book

---

#### **Library of Congress Cataloging-in-Publication Data**

Brigham, Eugene F., 1930–  
Financial management.

Bibliography: p.  
Includes index.

I. Corporations—Finance. I. Gapenski, Louis C.

II. Title.

HG4026.B669 1988 658.1'5 87-15616

ISBN 0-03-012543-X

---

Printed in the United States of America  
9-039-98765

Copyright © 1988 by The Dryden Press, a division of Holt, Rinehart and Winston, Inc.

All rights reserved. No part of this publication may be reproduced or transmitted in any form or by any means, electronic or mechanical, including photocopy, recording, or any information storage and retrieval system, without permission in writing from the publisher.

Requests for permission to make copies of any part of the work should be mailed to: Permissions, Holt, Rinehart and Winston, Inc., Orlando, Florida 32887.

Address orders:  
The Dryden Press  
Orlando, FL 32887

Address editorial correspondence:  
The Dryden Press  
908 N. Elm Street  
Hinsdale, IL 60521

The Dryden Press  
Holt, Rinehart and Winston  
Saunders College Publishing

## The Dryden Press Series in Finance

Brigham  
**Fundamentals of Financial Management,**  
*Fourth Edition*

Brigham and Gapenski  
**Financial Management: Theory and Practice,**  
*Fifth Edition*

Brigham and Gapenski  
**Intermediate Financial Management,**  
*Second Edition*

Campsey and Brigham  
**Introduction to Financial Management**

Clayton and Spivey  
**The Time Value of Money**

Cooley and Roden  
**Business Financial Management**

Cretien, Ball, and Brigham  
**Financial Management with Lotus 1-2-3**

Crum and Brigham  
**Cases in Managerial Finance,**  
*Sixth Edition*

Fama and Miller  
**The Theory of Finance**

Gardner and Mills  
**Managing Financial Institutions:  
An Asset/Liability Approach**

Gitman and Joehnk  
**Personal Financial Planning,**  
*Fourth Edition*

Goldstein Software, Inc.  
**Joe Spreadsheet**

Harrington  
**Case Studies in Financial Decision Making**

Johnson  
**Issues and Readings in Managerial Finance,**  
*Third Edition*

Johnson and Johnson  
**Commercial Bank Management**

Kidwell and Peterson  
**Financial Institutions, Markets, and Money,**  
*Third Edition*

Koch  
**Bank Management**

Martin, Cox, and MacMinn  
**The Theory of Finance:  
Evidence and Applications**

Mayo  
**Finance: An Introduction,**  
*Second Edition*

Mayo  
**Investments: An Introduction,**  
*Second Edition*

Myers  
**Modern Developments in  
Financial Management**

Pettijohn  
**PROFIT +**

Reilly  
**Investment Analysis and  
Portfolio Management,**  
*Second Edition*

Reilly  
**Investments,**  
*Second Edition*

Smith and Weston  
**PC Self-Study Manual for Finance**

Tallman and Neal  
**Financial Analysis and Planning Package**

Weston and Brigham  
**Essentials of Managerial Finance,**  
*Eighth Edition*

Weston and Copeland  
**Managerial Finance,**  
*Eighth Edition*

# Preface

Financial management has changed significantly since 1984, when we last updated this text. The strong inflationary pressures that pushed interest rates to unprecedented heights have abated, at least for now, and the stock market has hit a new all-time high. However, all the financial markets have become increasingly volatile. Furthermore, distinctions among financial institutions are becoming increasingly blurred, and the rapid development of new markets and securities has continued. Academic researchers have also been busy developing new theory, business practitioners have made increasing use of financial theory, and feedback from the “real world” has led to modifications and improvements in academic financial theory. Finally, computers, especially personal computers, are being used with increasing effectiveness to analyze financial decisions, and this usage makes it more important than ever that finance students understand how to structure problems in a form suitable for quantitative analysis. To a large extent, these trends have dictated the revisions made in this edition.

The book begins with basic concepts, focusing on security markets and the valuation process, and then goes on to show how specific techniques and decision rules can be used to help maximize the value of a firm. This organization has three important advantages:

1. Explaining early in the book how financial markets operate, and how security prices are determined within these markets, lays the groundwork for explaining how financial management can affect the value of the firm. Also, this organization gives students an early exposure to discounted cash flow techniques, to valuation concepts, and to methods of risk analysis, which in turn permits us to use and reinforce these key concepts throughout the book.
2. Structuring the book around markets and valuation concepts provides a unifying theme that is missing in many texts. Some finance texts develop a series of topics in modular form, then attempt to integrate them in later chapters. The organization used in *Financial Management* gives students a better and more comprehensive understanding of how the topics interact with one another.
3. Students — even those who do not plan to major in finance — generally enjoy working with stock and bond valuation models, rates of return, and the like. Since people’s ability to learn a subject is a function of their interest and motivation, and since *Financial Management* begins with a discussion of security prices and markets, the book’s organization is sound from a pedagogic standpoint.

## INTENDED MARKET AND USE

*Financial Management* is designed primarily for use as an introductory MBA text. However, it can be used as an undergraduate introductory text either with exceptionally good students or where the introductory course is taught over two terms. In the past, the book has also been used in the second corporate finance course, following the use of a lower-level book in the first course. *Financial Management* can still be used in this manner, but our more advanced book, *Intermediate Financial Management*, is generally preferable for the second corporate finance course.

There is too much material in the text to cover everything thoroughly in one term, and it is certainly not possible to go over everything in class. However, most students, and especially MBA students, can read on their own and understand reasonably well all but the most technical sections, so classroom coverage of everything is not necessary. In our introductory MBA course, we have taken two somewhat different approaches. At times, we have covered only the material in Chapters 1–15 plus Chapters 21 and 22, or 17 chapters in total. At other times, we have covered the entire text. Obviously, we cover things in greater depth when we assign less material, but in both situations, we expect students to learn much of the assigned materials by reading the book, and we concentrate on the more difficult concepts in class.

We have also made a special effort to make the text useful as a reference book. It is important that students have materials available for use in subsequent case courses and for on-the-job application after graduation. Based on reviewer comments, on a study of the leading casebooks, on our own experience in consulting assignments, on our work with executive development programs, and on discussions with numerous financial executives, we have tried to put into the book those materials that students will need to deal with most real-world financial decisions.

## MAJOR CHANGES IN THE FIFTH EDITION

Based on student comments, on reviewers' suggestions, and on economic developments such as the recent change in tax laws, we have made a number of substantial changes in the fifth edition as summarized below:

### Updates

We updated the entire book to reflect recent changes in tax laws, interest rates, financial markets, takeovers, and the like. The biggest update, by far, is in the tax area. This edition and all its ancillary materials incorporate fully the provisions of the Tax Reform Act of 1986, including (1) new personal and corporate rates, (2) elimination of the capital gains differential, (3) elimination of the investment tax credit, and (4) new depreciation rates. These changes have significant implications for dividend policy, capital structure policy, capital budgeting analysis, and lease analysis, and we have specifically addressed the impact of the new law in relevant chapters.

## Size

Although we wanted the book to be useful as a reference source, the sheer bulk of the fourth edition intimidated many students. Thus, we have reduced the size of the book by more than 200 pages, primarily by streamlining some discussions and by eliminating certain technical materials not generally covered in most introductory courses, especially materials that are covered in advanced courses normally taken by finance majors. However, where we deleted material, we added references to journal articles and to other books, especially *Intermediate Financial Management*. Over the years, we added discussions of both interesting nuances and technical issues that are not of concern to most MBAs. To streamline the book, we deleted a number of these items, but we provided a reference to where they were covered in *Intermediate* for use by students who might be doing a special report on a given topic.

## Introductory Examples

Each chapter begins with a real-world example that highlights the key issues in the chapter. These examples both motivate students to read the chapter and help them see where it is headed. The examples were updated to reflect current developments in finance.

## Financial Calculators and Microcomputers

In the third edition, published in 1982, we took the traditional approach to time value of money — we used tables. In the fourth edition, we included footnotes to show how financial calculators could be used to solve most compound interest problems. Today, calculator costs have come down, and their power has gone up, to the point where a business student should purchase a financial calculator. Thus, in the fifth edition, we focus on calculator, rather than tabular, solutions. We still discuss the traditional approach, but primarily as an aid to understanding the mathematical concepts which underlie discounted cash flow analysis rather than as a way to actually solve problems.

Also, rapid advances in computer hardware and software are revolutionizing financial management. Powerful personal computers are now available to any business that can afford to hire a business student, and new software makes it easy to do things that were simply not feasible a few years ago. Today, a business that does not use microcomputers in its financial planning process is about as competitive as a student who tries to take a finance exam without a financial calculator. Therefore, wherever possible, we have included a discussion of how PCs are being used to help make better financial decisions. This orients students toward the kind of business environment they will face upon graduation.

Obviously, some students do not have access to a computer, so the text is written so that it can be covered without ever going near one. However, for those institutions whose students do have access to a PC and *Lotus 1-2-3*®, we have provided models for both selected end-of-chapter problems and for some cases, as discussed on the following pages.

## Computer-Oriented Problems

Computer-oriented problems, along with models written in *Lotus 1-2-3*, were added to most chapters, and a diskette containing the models is available to adopting instructors. There are 35 of these problems, and they are identified by a diskette logo below the problem number. (For example, see Problem 2-5 on Page 52.) The computerized problems are designed to show students how computers and spreadsheet programs can assist in financial analyses, especially in the key areas of sensitivity and scenario analysis, which are used today in virtually all types of financial planning and decision processes. Essentially, very little knowledge of computers or of *Lotus 1-2-3* is required to use the models, but when students see how powerful these models can be, they are often motivated to learn more about *Lotus 1-2-3* and computer modeling in general. This is a great help — and rightly so — when students go into the job market.

## Organization and Content

We made a number of changes in the organization and content of the book. The following are the most important ones:

1. Major works on asymmetric information and signaling theory have appeared in recent years. We have incorporated this material into relevant sections of the book, especially in the areas of capital structure and dividend policy.
2. Much current research is also being conducted on mergers, divestitures, and, more generally, the battle for corporate control. We have placed more emphasis on the research in this area, especially in the corporate restructuring chapter.
3. Our discussion of cash management has been updated to focus on current practices rather than decades-old academic models that have limited relevance to modern corporate decision making.
4. The bankruptcy material was condensed and placed as an appendix to the long-term debt chapter. In conjunction with this change, multiple discriminant analysis is now covered as an appendix to the financial analysis chapter.
5. International finance concepts have been integrated throughout the book in sections entitled “Multinational Finance.”
6. The difference between accounting income and cash flows is now discussed earlier in the text (in Chapter 2) and given greater emphasis.
7. The concept of modified IRR (IRR\*), which assumes reinvestment at the cost of capital out to a terminal date, was added to the discussion of capital budgeting decision rules.
8. Our coverage of risk analysis in capital budgeting was reformulated to emphasize the differences between a project’s stand-alone, within-firm, and market risk.
9. The discussion of option pricing was expanded to include the binomial model.
10. Our coverage of working capital was condensed from four to three chapters.
11. Chapters 21 and 22 (Financial Statement Analysis and Financial Planning and Control) were modified to make it easier to cover them either late in the course,



where they are used as a course capstone, or early in the course, where they can be used to introduce (or review) basic accounting concepts. The two orderings both work well, so instructors can choose the sequence which best fits their particular needs. We suggest covering Chapters 21 and 22 after Chapter 3 if cases that deal with financial analysis are to be used early in the course. Otherwise, students seem to get more out of this material toward the end of the course, when it can be used to tie earlier materials together.

## ANCILLARY MATERIALS

The package of ancillary materials which accompanies *Financial Management* is perhaps the most complete available with any finance text. The following items are available free of charge to adopting instructors:

1. **Instructor's Manual.** A comprehensive, 400-page manual is available to instructors who adopt the book. The manual contains (1) a suggested course outline, (2) extensive lecture notes that focus on topics students find most difficult, (3) seven cases, one for each major section, with solutions, and (4) answers to all text questions and problems.
2. **Transparencies.** A set of transparency acetates, designed to highlight key materials in each chapter and keyed to the lecture notes in the *Instructor's Manual*, is available from The Dryden Press. In addition, the manual is designed to make it easy to xerox transparencies of end-of-chapter problem solutions.
3. **Cases.** The *Instructor's Manual* contains seven cases and solutions that can be used in the introductory MBA course. These cases are all modeled with *Lotus 1-2-3*, although they can be worked without a computer. They cover the following topics: (1) capital budgeting, (2) capital structure analysis, (3) bond refunding, (4) lease analysis, (5) cash budgeting, (6) financial analysis, and (7) financial forecasting.
4. **Problem Diskette.** This diskette contains the *Lotus 1-2-3* models that accompany selected end-of-chapter problems.
5. **Case Diskette.** This diskette contains the *1-2-3* models for the seven cases included in the *Instructor's Manual*.
6. **Test Bank.** A test bank with more than 600 class-tested questions and problems in objective format is available both in hardcopy form and on computer diskettes. The test bank questions are, in general, more challenging than those in most test banks, and they are well suited for exams. (Most other test banks are more suitable for quizzes than for midterm and final exams.)

A number of other items are available for purchase by students:

1. **Study Guide.** This supplement outlines the key sections of each chapter, gives some self-test questions for each chapter, and provides a set of solved problems similar to those in the test bank.
2. **Casebooks.** A tax update edition of *Cases in Managerial Finance*, Sixth Edition (Dryden Press, 1986), by Roy L. Crum and Eugene F. Brigham, is well suited

for use with this text. In addition, a collection of Harvard-type cases by Diana Harrington, *Case Studies in Financial Decision Making*, also coordinated with this text, is available (Dryden Press, 1985). Note that both of these casebooks have *Lotus 1-2-3* models available which can be used in conjunction with the cases.

**3. Readings Books.** A new readings book, *Issues and Readings in Managerial Finance*, Third Edition (Dryden Press, 1987), edited by Ramon E. Johnson, provides an excellent mix of theoretical and practical articles which can be used to supplement the text.

**4. Computer Books.** A new Dryden book, *Finance With Lotus 1-2-3: Text, Cases, and Models*, by Eugene F. Brigham and Dana Aberwald, is available to teach students how to use *Lotus 1-2-3* and to explain how commonly encountered problems in financial management can be analyzed using this powerful software. For individuals or schools that do not have access to *Lotus 1-2-3*, a powerful new Lotus workalike, *Joe Spreadsheet*, by Goldstein Software Inc., is available from Dryden.

## ACKNOWLEDGMENTS

We would like to thank the 33 professors who reviewed all or parts of the book and provided us with detailed comments and suggestions for the fifth edition: Les Barenbaum, William J. Bertin, Kirt Butler, Margaret Considine, John S. Cotner, Bernard C. Dill, Gregg Dimkoff, Richard B. Edelman, Dan French, Philip Glasgo, R. Stevenson Hawkey, Kendall P. Hill, John Houston, James F. Jackson, Duncan Kretovich, Martin Laurence, Judy Maese, Thomas E. McCue, Jamshid Mehran, David Nachman, Robert Niendorf, Kenneth Riener, Pietra Rivoli, Antonio Rodriguez, Ronald E. Shrieves, Jaye B. Smith, Edward Stendardi, Glen Strasburg, Ernest Swift, George Trivoli, George P. Tsetsekos, Edward R. Wolfe, and Dennis Zocco. A great many people helped with the book during its first four editions, and we would also like to thank them:

Michael Adler	Russ Boisjoly	Roy Crum
Ed Altman	Kenneth Boudreaux	Brent Dalrymple
Robert Angell	Donald Boyd	Fred Dellva
Vincent Apilado	Patricia Boyer	Mark Dorfman
Bob Aubey	Mary Broske	David Durst
Guilford Babcock	Bill Brueggeman	Edward Dyl
Peter Bacon	B. J. Campsey	A. Edwards
Thomas Bankston	Bob Carleson	John Ezzell
Charles Barngrover	Stephen Celec	Mike Ferri
William Beedles	Donald Chance	John Finnerty
Moshe Ben-Horim	S. K. Choudhury	James Garvin
Bill Beranek	Lal Chugh	Adam Gehr
Roger Bey	Phil Cooley	Walt Goulet
John Bildersee	David Crary	Edwin Grossnickle

John Groth	Terry Martell	E. N. Roussakis
Manak Gupta	Andy McCollough	Dexter Rowell
Donald Hakala	Larry Merville	James Sachlis
Robert Haugen	James Millar	Abdul Saḍik
Robert Hehre	Carol Moerdyk	Mary Jane Scheuer
George Hettenhouse	Bob Moore	Carl Schweser
Haws Heymann	Frederic Morrissey	Sol Shalit
Pearson Hunt	Tim Nantell	Ron Shrieves
Kose John	Bill Nelson	Joe Sinkey
Craig Johnson	Bob Nelson	Don Sorenson
Keith Johnson	Tim O'Brien	Kenneth Stanly
Ramon Johnson	Dennis O'Connor	Don Stevens
Ray Jones	Jim Pappas	Glen Strasburg
Gus Kalogeras	Rich Pettit	Al Sweetser
Michael Keenan	Dick Pettway	Philip Swensen
Don Knight	Hugo Phillips	Ernest Swift
Jarowslaw Komarynsky	John Pinkerton	Gary Tallman
Harold Krogh	Gerald Pogue	Craig Tapley
Charles Kroncke	R. Potter	Russ Taussig
Larry Lang	R. Powell	Mel Tysseland
P. Lange	Chris Prestopino	Howard Van Auken
Howard Lanser	Howard Puckett	Pretorious Van den Dool
Wayne Lee	Herbert Quigley	Pieter Vanderburg
John Lewis	George Racette	Paul Vanderheiden
Charles Linke	Bob Radcliffe	Jim Verbrugge
Jim Longstreet	Bill Rentz	Tony Wingler
Bob Magee	Charles Rini	Don Woods
Phil Malone	John Ritchie	

In addition, all or major parts of the book were reviewed by the following executives: James Dunn, GT&E; Larry Hastie, Bendix Corporation; Victor Leavengood, General Telephone of Florida; Archie Long, General Motors; and James Taggart, Tampa Electric Company.

Special thanks are due to David T. Brown, who coauthored the chapter on corporate restructuring; to Art Herrmann, who coauthored the bankruptcy appendix; to Dilip Shome, who coauthored the capital structure theory chapter; to Dana Aberwald and Mary Alice Hanebury, who worked on the *Lotus 1-2-3* problem and case models; to Edward R. Wolfe, who reviewed the end-of-chapter problems; and to Robert J. Porter, who reviewed the self-test problems. Kimberly McCollough worked through all the major parts of the book and ancillaries to help us remove errors, and Steve Ambrose, Bob Karp, and Carol Stanton typed and helped proof the various manuscripts. The Dryden Press staff, especially Barb Bahnsen, Ann Heath, Kathryn Jandeska, Mary Jarvis, Jane Perkins, Cate Rzasa, Judy Sarwark, Bill Schoof, Karen Steib, Betsy Webster, and Alan Wendt, helped greatly with all phases of the revision.

## ERRORS IN THE TEXT

At this point in the preface, authors of most books say something like this: "We appreciate all the help we received from the people listed above, but any remaining errors are, of course, our own responsibility." And in many books there are plenty of remaining errors. Having experienced difficulties with errors ourselves, both as students and as instructors, we resolved to avoid this problem in *Financial Management*. As a result of the error detection procedures used, we are convinced that it is virtually free of mistakes.

Some of our colleagues suggested that if we are so confident about the book's accuracy, we should offer a reward to people who find errors. With this in mind, but primarily because we want to detect any remaining errors and correct them in subsequent printings, we hereby offer a reward of \$7.50 per error (misspelled word, arithmetic mistake, and the like) to the first person who reports it to us. (Any error that has follow-through effects is counted as two errors only.) Two accounting students have set up a foolproof audit system to make sure we pay off. Accounting students tend to be skeptics!

## CONCLUSION

Finance is, in a real sense, the cornerstone of the enterprise system, so good financial management is vitally important to the economic health of business firms, and hence to the nation and the world. Because of its importance, finance should be widely and thoroughly understood, but this is easier said than done. The field is relatively complex, and it is undergoing constant change in response to shifts in economic conditions. All of this makes finance stimulating and exciting, but also challenging and sometimes perplexing. We sincerely hope that *Financial Management* will meet its own challenge by contributing to a better understanding of the financial system.

Eugene F. Brigham  
Louis C. Gapenski

*Graduate School of Business Administration  
University of Florida  
Gainesville, Florida 32611*

*October 1987*

# FINANCIAL MANAGEMENT

---

THEORY AND PRACTICE

Fifth Edition

# Contents in Brief

<b>Part I</b>	<b>Foundations of Financial Management</b>	<b>1</b>
Chapter 1	An Overview of Financial Management	3
Chapter 2	Financial Statements, Taxes, and Cash Flows	27
Chapter 3	Financial Markets, Institutions, and Interest Rates	55
<b>Part II</b>	<b>Valuation and the Cost of Capital</b>	<b>87</b>
Chapter 4	Discounted Cash Flow Analysis	89
Chapter 5	Valuation Models	125
Chapter 6	Risk and Rates of Return	169
Chapter 7	The Cost of Capital	219
<b>Part III</b>	<b>Capital Budgeting</b>	<b>253</b>
Chapter 8	The Basics of Capital Budgeting	255
Chapter 9	Cash Flow Estimation and Other Topics in Capital Budgeting	287
Chapter 10	Risk Analysis and the Optimal Capital Budget	321
	<i>Appendix 10A: Capital Rationing</i>	<i>361</i>
<b>Part IV</b>	<b>Capital Structure and Dividend Policy</b>	<b>367</b>
Chapter 11	Capital Structure Theory	369
Chapter 12	Capital Structure Policy	407
Chapter 13	Dividend Policy	457
<b>Part V</b>	<b>Long-Term Financing Decisions</b>	<b>493</b>
Chapter 14	Common Stock, Preferred Stock, and the Investment Banking Process	495
Chapter 15	Long-Term Debt	533
	<i>Appendix 15A: Bankruptcy and Reorganization</i>	<i>565</i>
	<i>Appendix 15B: Refunding Operations</i>	<i>573</i>
Chapter 16	Lease Financing	581
Chapter 17	Options, Warrants, Convertibles, and Futures	605

**Part VI Working Capital Management 641**

- Chapter 18 Working Capital Policy and Financing 643  
Chapter 19 Accounts Receivable and Inventory 677  
Chapter 20 Cash and Marketable Securities 721

**Part VII Financial Analysis and Planning 755**

- Chapter 21 Financial Statement Analysis 757  
*Appendix 21A: Multiple Discriminant Analysis 800*  
Chapter 22 Financial Planning and Control 807  
Chapter 23 Corporate Restructuring: Mergers, Divestitures,  
and Holding Companies 841  
Appendix A Mathematical Tables 871  
Appendix B Solutions to Selected End-of-Chapter Problems 881

# Contents

## **Part I Foundations of Financial Management 1**

### **Chapter 1 An Overview of Financial Management 3**

Increasing Importance of Financial Management 5 Alternative Forms of Business Organization 7 The Place of Finance in a Business Organization 10 The Goals of the Firm 11 Agency Relationships 13 Managerial Actions to Maximize Stockholder Wealth 18 The Economic Environment 20 Organization of the Book 20 Summary 21 Multinational Finance 22

### **Chapter 2 Financial Statements, Taxes, and Cash Flows 27**

Financial Statements and Securities 28 The Federal Income Tax System 31 Depreciation 40 Cash Flow Versus Accounting Income 44 Effects of Depreciation Methods on Taxes, Net Income, and Cash Flows 45 Summary 49

### **Chapter 3 Financial Markets, Institutions, and Interest Rates 55**

The Financial Markets 56 Financial Institutions 57 The Stock Market 61 The Cost of Money 63 Interest Rate Levels 65 The Determinants of Market Interest Rates 68 The Term Structure of Interest Rates 72 Other Factors That Influence Interest Rate Levels 76 Interest Rate Levels and Stock Prices 78 Interest Rates and Business Decisions 78 Summary 80

## **Part II Valuation and the Cost of Capital 87**

### **Chapter 4 Discounted Cash Flow Analysis 89**

Future Value 90 Present Value 94 Future Value Versus Present Value 95 Future Value of an Annuity 96 Present Value of an Annuity 99 Perpetuities 102 Uneven Payment Streams 103 Determining Interest Rates 104 Semiannual and Other Compounding Periods 106 Continuous Compounding and Discounting 109 Amortized Loans 110 Summary 112

### **Chapter 5 Valuation Models 125**

Bond Values 126 Preferred Stock Valuation 140 Common Stock Valuation 141 Summary 157

### **Chapter 6 Risk and Rates of Return 169**

Defining and Measuring Risk 170 Expected Rate of Return 172 Portfolio Risk and the Capital Asset Pricing Model 180 The Relationship Between Risk and Rates of Return 194 Security Market Equilibrium 200 Physical Assets Versus Securities 204 A Word of Caution 205 Arbitrage Pricing Theory 205 Summary 207 Multinational Finance 208



**Chapter 7 The Cost of Capital 219**

Capital Components and Costs 220 Cost of Debt 221 Cost of Preferred Stock 222 Cost of Common Equity 223 Cost of Retained Earnings 224 The CAPM Approach 224 The DCF Approach 229 Bond Yield Plus Risk Premium Approach 231 Comparison of the CAPM, DCF, and Risk Premium Methods 232 Cost of Newly Issued Common Equity 233 Weighted Average Cost of Capital 235 The Cost of Depreciation-Generated Funds 241 Summary 242

**Part III Capital Budgeting 253****Chapter 8 The Basics of Capital Budgeting 255**

Project Proposals and Classifications 256 Similarities Between Capital Budgeting and Security Valuation 258 Capital Budgeting Decision Rules 259 Evaluation of the Decision Rules 266 Comparison of the NPV and IRR Methods 266 The Reinvestment Rate (Opportunity Cost) Assumption 270 Modified Internal Rate of Return (IRR\*) 272 Comparison of the NPV and PI Methods 274 Present Value of Future Costs 274 Multiple IRRs 275 The Post-Audit 277 Summary 278

**Chapter 9 Cash Flow Estimation and Other Topics in Capital Budgeting 287**

Cash Flow Estimation 288 Identifying the Relevant Cash Flows 289 Tax Effects 292 Salvage Value 292 Investment in Net Working Capital 293 An Example of Cash Flow Estimation 293 Replacement Analysis 299 Evaluating Projects with Unequal Lives 302 Abandonment Value 305 Adjusting for Inflation 307 Summary 310

**Chapter 10 Risk Analysis and the Optimal Capital Budget 321**

Introduction to Risk Assessment 322 Techniques for Measuring Stand-Alone Risk 323 The Impact of Abandonment on NPV and Project Risk 333 Market Risk 335 Techniques for Measuring Market Risk 337 Problems with Project Risk Assessment 338 Incorporating Project Risk and Capital Structure into Capital Budgeting Decisions 339 Risky Cash Outflows 340 The Optimal Capital Budget 343 Capital Rationing 348 Establishing the Optimal Capital Budget in Practice 348 Summary 349 Multinational Finance 350 10A: Capital Rationing 361

**Part IV Capital Structure and Dividend Policy 367****Chapter 11 Capital Structure Theory 369**

Key Terms and Equations 370 Early Theories of Capital Structure 373 The Modigliani-Miller Models 375 The Miller Model 382 Financial Distress and Agency Costs 386 Review of the Tradeoff Models 391 Asymmetric Information Theory 392 Our View of Capital Structure Theory 396 Summary 398

**Chapter 12 Capital Structure Policy 407**

Business and Financial Risk: Total Risk Perspective 408 Business and Financial Risk: Market Risk Perspective 417 Estimating the Target Capital