FUNDAMENTALS of FINANCIAL MANAGEMENT

第九版

财务管理基础

尤金·F·布里格姆(Eugene F. Brigham)
乔尔·F·休斯敦(Joel F. Houston)

CFA系列

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财务管理基础

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序

世界金融市场的蓬勃发展需要大量合格的金融从业人员，需要有全球通行的金融语言和行为标准。无论投资者、企业还是金融管理层都需要用统一、规范的标准来衡量金融分析人员的知识水平、道德规范和专业化程度，从而建立起对他们所提供的金融服务和所管理的金融资产的信赖。由此，特许金融分析师（Chartered Financial Analyst，简称CFA）应运而生。

作为全球通行的、最权威的金融市场专业人员的资格认证，CFA创办于20世纪60年代初。主办CFA考试和授予CFA特许状的权威机构是美国投资管理研究协会。目前，CFA资格授予各个投资领域内的专业人士，包括基金经理、证券分析师、财务总监、投资顾问、投资银行家、交易员等等。CFA要求它的持有人建立严格而广泛的金融知识体系，掌握金融投资行业各核心领域的理论与实践知识，包括从投资组合管理到金融资产估价，从衍生证券到固定收益证券以及定量分析。与此相适应，CFA的课程设置和考试内容深深根植于投资管理的实践，涉及广泛的金融投资方面的基础知识，并且考试标准和阅读书目每年都在变化，以反映投资领域的最新变化。

为适应经济日益全球化、信息化、金融化的发展趋势，促进我国资本市场的发展，并配合CFA资格考试在国内的展开，以方便广大考生应考，以及满足相关财经领域从业人员和广大师生的学习需求，中信出版社推出了CFA系列丛书。该系列包含两个子系列：影印系列和翻译系列，我们衷心地希望这套丛书的推出能够对广大的读者有所帮助。

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THE HARCOURT COLLEGE PUBLISHERS SERIES IN FINANCE

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Capital Budgeting and Long-Term
Financing Decisions
Third Edition

Siegel and Siegel
Futures Markets

Smith and Spudeck
Interest Rates: Principles and Applications

Stickney and Brown
Financial Reporting and Statement
Analysis: A Strategic Perspective
Fourth Edition

M	Maturity value of a bond
M/B	Market-to-book ratio
MCC	Marginal cost of capital
MIRR	Modified internal rate of return
MRP	Maturity risk premium
MVA	Market value added
N	Calculator key denoting number of periods
n	(1) Life of a project or investment (2) Number of shares outstanding
$N(d_i)$	Represents area under a standard normal distribution function
NPV	Net present value
NOWC	Net operating working capital
P	(1) Price of a share of stock; P_0 = price of the stock today (2) Sales price per unit of product sold
P_c	Conversion price
P_f	Price of good in foreign country
P_h	Price of good in home country
P_N	A stock's horizon, or terminal, value
P/E	Price/earnings ratio
PMT	Payment of an annuity
PPP	Purchasing power parity
PV	Present value
PVA_n	Present value of an annuity for n years
PVIF	Present value interest factor for a lump sum
PVIFA	Present value interest factor for an annuity
Q	Quantity produced or sold
r	Correlation coefficient
ROA	Return on assets
ROE	Return on equity
RP	Risk premium
RP_M	Market risk premium
RR	Retention rate
S	Sales
SML	Security Market Line
Σ	Summation sign (capital sigma)
σ	Standard deviation (lowercase sigma)
σ^2	Variance
t	Time period
T	Marginal income tax rate
TIE	Times interest earned
V	Variable cost per unit
V_B	Bond value
VC	Total variable costs
WACC	Weighted average cost of capital
X	Exercise price of option
YTC	Yield to call
YTM	Yield to maturity

PREFACE

The ninth edition continues to offer the most complete and integrated teaching system available.

When *Fundamentals* was first published nearly 25 years ago, our intent was to write an introductory finance text that students could truly understand. Today, a generation later, *Fundamentals* has become the leading undergraduate finance text. Our goal with this ninth edition has been to produce a book and ancillary package that not only holds its lead but sets a new standard for finance textbooks. By incorporating the latest developments in the fields of finance, education, and publishing into *Fundamentals* and its related ancillaries, we have made the ninth edition the most complete and integrated learning package available. And, of course, its clarity, accuracy, and student accessibility remain as strong as ever.

Finance is an exciting, challenging, and ever-changing discipline. Changing technology and increased globalization are dramatically transforming financial practices and markets. In this ninth edition we strive to communicate the excitement, and to demonstrate how these changes are affecting finance and other aspects of business.

Changing technology has affected not only *what* we teach but also *how* we teach. More and more, we find ourselves using computer spreadsheets and the Internet to supplement our classroom lectures. With this in mind, we developed a set of integrated spreadsheets and Internet exercises and placed them (as appropriate) throughout the book and ancillaries. These items, which are available both on a CD-ROM and via the Internet, will make it easier for instructors to teach and for students to learn the fundamentals of financial management.

In developing and improving *Fundamentals*, we tried to convey the excitement and ever-changing nature of finance and to make students realize its importance and relevance. More often than not, students discover that finance is more interesting and relevant than they had anticipated. Nevertheless, finance remains a challenging subject for many students, and we kept this in mind as we developed the text and its supporting materials. Without sacrificing rigor, we tried to explain each topic as clearly and completely as possible.

Of course, an introductory finance course should be more than just a series of topics—students must understand not only the basic concepts but also how they fit together. With this in mind, *Fundamentals* begins with a discussion of financial objectives, where we show how managers and investors use financial statements to determine how well firms are meeting those objectives. We also discuss how incentive compensation, along with the threat of takeovers, motivates managers to improve performance and how that benefits both stockholders and society at large. We also describe early on the financial environment, financial forecasting, the fundamental trade-off between risk and return, and the

time value of money. Then we build on these basic concepts to explain how stock and bond prices are determined.

Building on this background, subsequent chapters explain the financial tools and techniques that are used to help firms maximize value by improving decisions. Included here are capital budgeting techniques, procedures for determining the capital structure, and various aspects of working capital management. The final section of the book consists of four chapters that deal with derivatives and risk management, multinational financial management, hybrid financing, and mergers.

Our organization has four important advantages:

Four important advantages of the ninth edition's organization.

1. Explaining early on how accounting data are used, how pro forma financial statements are projected, how financial markets operate, and how security prices are determined helps students understand how financial management affects stock prices. Also, the early coverage of risk analysis, time value of money, and valuation techniques permits us to use and reinforce those concepts throughout the remainder of the book.
2. Structuring the book around markets and valuation enhances continuity and helps students see how the various topics are related to one another.
3. Most students—even those who do not plan to major in finance—are interested in stock and bond values, rates of return, and the like. Because one's ability to learn a topic is a function of his or her interest and motivation, and because *Fundamentals* covers securities and security markets early, our organization is pedagogically sound.
4. Once the basic concepts have been established, it is easier for students to understand how and why corporations make specific investment and financing decisions and how they develop and execute their working capital policies.

RELATIONSHIP TO OTHER DRYDEN BOOKS

The growing body of financial knowledge makes it difficult, if not impossible, to include all that one might desire in one textbook. This led Gene Brigham to coauthor two other texts that deal with materials that go beyond what can be covered in an introductory course. The first of these books is a comprehensive book aimed primarily at MBAs (*Financial Management: Theory and Practice*, ninth edition, coauthored with Louis C. Gapenski and Michael C. Ehrhardt). The second is an upper-level undergraduate text (*Intermediate Financial Management*, sixth edition, coauthored with Louis C. Gapenski and Phillip R. Daves).

Also, some time ago a survey of professors indicated that some preferred a smaller, more streamlined textbook than *Fundamentals*. With that in mind, we created yet another text, *Fundamentals of Financial Management: Concise Second Edition*. The development of *Concise* forced us to rethink the book with the goal of pruning less essential and/or redundant materials. This led to improvements that we carried over to *Fundamentals* to make the ninth edition an even better book.

Although *Concise* has been well received, there are two significant advantages to a more complete book such as *Fundamentals:*

1. *Fundamentals* provides professors with more flexibility in designing their courses.
2. *Fundamentals* is a more complete reference book for students after they complete the course. This is especially important for nonfinance majors, who will not otherwise have access to the materials contained in *Fundamentals* but omitted from *Concise.* In this regard, it should be noted that *Fundamentals'* chapters are written in a modular, self-contained format, specifically designed to make it easy for students to read them on their own.

INTENDED MARKET

All chapters are written in a flexible, modular format.

Fundamentals is intended for use in an introductory finance course. The key chapters can be covered in a one-term course, but supplemented with cases and some outside readings, the book can be used for a two-term course. When it is used in a one-term course, instructors generally cover only selected chapters, leaving the others for students to examine on their own or for use as reference in later courses and after graduation. Note also that we made every effort to write all the chapters in a flexible, modular format, which will help instructors cover the material in whatever sequence they choose.

INNOVATIONS FOR THE NINTH EDITION

Analyzing Financial Decisions with Spreadsheets Spreadsheet programs such as *Microsoft Excel* are ideally suited for analyzing many financial issues, and a knowledge of spreadsheets is rapidly becoming essential for people in business. Therefore, we "modernized" the book by indicating how spreadsheets are used to deal with the issues discussed in the text.

In the text chapters, we discuss finance concepts, provide examples of the concepts, and explain how the analysis necessary to make optimal financial decisions is done. Where the analysis involves arithmetic, we assume that students are using calculators to do the math. However, if the problem is one that could be solved more efficiently with a computer, we state this and briefly describe how the computer would be used. These explanations are short, easy to follow, and can be skipped without loss of continuity. Thus, students will get an idea of how they could go from calculators to spreadsheets, but they can stop at that point. However, if instructors want to emphasize computers in the course, or if individual students want to learn more about spreadsheets on their own, the text itself and a spreadsheet ancillary make that relatively easy. We developed a spreadsheet model for each chapter in the book except Chapter 1. These models show exactly how the decisions dealt with in the chapter can be analyzed with an *Excel* spreadsheet. Therefore, our models include a good bit of explanation and serve both as an *Excel* tutorial and as a template for analyzing whatever financial issues are covered in the particular chapter.

The models are contained on a CD-ROM that accompanies each textbook, and they are also accessible from the Harcourt College web site. As noted above, the models are not necessary for going through the book and learning the essential financial concepts. However, if a student wants to learn how these concepts are implemented in the real world, and thus get a leg up in the job market, the disk and the models will be a big help. And, of course, if an instructor wants to build spreadsheet analysis into the course, our models will provide an excellent platform.

Increased Emphasis on Cash Flow and Economic Value The ninth edition includes an expanded discussion on moving beyond accounting statements to cash flows and economic value. These concepts are integrated throughout the book.

Relocation of Chapter on Financial Forecasting The chapter on financial forecasting (formerly Chapter 15) has been moved up to Chapter 4 so that it now follows financial statement analysis. Introducing forecasting earlier enables us to show more clearly how one uses historical data to help develop plans for future improvements and also how forecasted cash flows affect stock and bond valuation and capital budgeting decisions.

Revised Discussion of the Term Structure of Interest Rates We simplified and modernized the term structure discussion in Chapter 5. We eliminated much of the arcane term structure theory and instead make a smooth transition from our earlier discussion of interest rate levels to a discussion of the factors that influence the shape and level of the yield curve.

The Free Cash Flow Approach to Stock Valuation We discuss the standard dividend growth model for stock valuation, but because that model is inadequate for many purposes, we added a section on the free cash flow approach to corporate valuation. This approach is particularly useful when dealing with newly formed companies, with divisions of large corporations, and with firms that are being evaluated as part of a merger analysis.

Significantly Revised Discussion of the Cost of Capital We reworked and simplified the cost of capital chapter (Chapter 10). Our earlier discussion was unnecessarily complicated, and we spent too much time on flotation costs and break points in view of the fact that established firms rarely issue new stock. We now focus on the need to adjust the corporate cost of capital to account for differential project risk.

Reorganized Capital Budgeting Coverage Plus an Expanded Discussion of Real Options More attention is devoted to estimating project risk. To help students better understand how risk affects the capital budgeting de-

cision, we now include sensitivity and scenario analysis as part of the chapter on estimating cash flows. We also now include a separate chapter that looks at special topics such as real options and projects with unequal lives.

Changes to Capital Structure Chapter The ninth edition more clearly describes how changes in capital structure affect the cost of debt and equity. The Hamada equation is introduced into the analysis to provide students with a more direct way to estimate optimal capital structure.

As always, we updated and clarified both the text and the end-of-chapter problems, and we made numerous improvements in the pedagogy. In particular, we updated the real-world examples and pointed out recent developments in the financial environment. We also removed some of the more technical appendixes from the text and have instead included them as part of our newly designed web site. Finally, we expanded the coverage of certain topics whose importance has increased, and we deleted redundant and less important material to streamline the discussion and improve the flow. Some of the more important changes are noted in the following table:

CONTENTS

PART I INTRODUCTION TO FINANCIAL MANAGEMENT

Chapter 1 An Overview of Financial Management

- A new "Technology Matters" box discusses how electronic commerce is changing the way firms operate.

Chapter 2 Financial Statements, Cash Flow, and Taxes

- Added a discussion of EBITDA and a section on "Modifying Accounting Data for Managerial Decisions." Updated federal tax section.

Chapter 3 Analysis of Financial Statements

- Added EBITDA coverage and price/cash flow ratios to reflect analysts' increased focus on these items.

Chapter 4 Financial Planning and Forecasting

- Financial forecasting has been moved up from Chapter 15 to follow the financial statement analysis chapter. New section on strategic plans discusses mission statements, corporate scope, corporate objectives, and corporate strategies. New sections on operating plans and financial plans.

Chapter 5 The Financial Environment: Markets, Institutions, and Interest Rates

- Updated to reflect important changes in the financial environment. Simplified and modernized the term structure discussion. New "Industry Practice" box describes the various stock market indexes.

PART II FUNDAMENTAL CONCEPTS IN FINANCIAL MANAGEMENT

Chapter 6 Risk and Rates of Return

- Added discussion on calculating investment returns and the implications of a changing stock market risk premium.

Chapter 7 Time Value of Money

- Added spreadsheets as a solution method for TVM problems. The spreadsheet discussions occur throughout the chapter and where relevant in other parts of the text. New "Technology Matters" box on how to use the Internet for financial planning.

PART III FINANCIAL ASSETS

Chapter 8 Bonds and Their Valuation

- Added spreadsheet solution method to solve bond problems.

Chapter 9 Stocks and Their Valuation

- Added discussion of alternative approaches for valuing common stocks, including a new valuation method based on free cash flows.

PART IV INVESTING IN LONG-TERM ASSETS: CAPITAL BUDGETING

Chapter 10 The Cost of Capital

- Added the following sections: "Adjusting the Cost of Capital for Risk," "Estimating Project Risk," "Using the CAPM to Estimate the Risk-Adjusted Cost of Capital," and "Techniques for Measuring Beta Risk." Simplified the breakpoint discussion.

Chapter 11 The Basics of Capital Budgeting

- We now illustrate how spreadsheets are used in capital budgeting.

Chapter 12 Cash Flow Estimation and Risk Analysis

Chapter 13 Other Topics in Capital Budgeting

- Sensitivity analysis and scenario analysis are now included as part of the chapter on estimating cash flows. This new approach allows students to see how risk affects capital budgeting decisions. Built inflation directly into cash flows, and reduced discussion of replacement projects.
- Expanded discussion on real options.

PART V CAPITAL STRUCTURE AND DIVIDEND POLICY

Chapter 14 Capital Structure and Leverage

- Hamada equation is introduced to quantify how changing capital structure might affect the cost of capital.

Chapter 15 Distributions to Shareholders: Dividends and Share Repurchases

- Expanded discussion of stock repurchases.

PART VI WORKING CAPITAL MANAGEMENT

Chapter 16 Managing Current Assets

Chapter 17 Financing Current Assets

- Increased the number of real-world examples, highlighting the importance of sound working capital management.

PART VII SPECIAL TOPICS IN FINANCIAL MANAGEMENT

Chapter 18 Derivatives and Risk Management

- Updated discussion of why companies use derivatives to manage risk.

Chapter 19 Multinational Financial Management

- Expanded discussion of the costs and benefits of multinational investment. More emphasis on how the cost of capital varies for domestic and international projects.

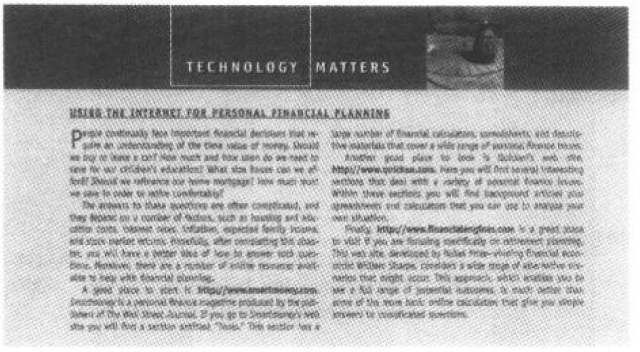
Chapter 20 Hybrid Financing: Preferred Stock, Leasing, Warrants, and Convertibles

- Updated discussion on valuing various types of hybrid securities.

Chapter 21 Mergers, LBOs, Derivatives, and Holding Companies

- Included a discussion of recent high-profile mergers.

NEW AND IMPROVED PEDAGOGY


TECHNOLOGY MATTERS

USING THE INTERNET FOR PERSONAL FINANCIAL PLANNING

People continually face important financial decisions that require an understanding of the time value of money. Should we buy or lease a car? How much and how soon do we need to save for our children's education? What size house can we afford? Should we refinance our home mortgage? How much must we save in order to retire comfortably?

The answers to these questions are often complicated, and they depend on a number of factors, such as housing and education costs, interest rates, inflation, expected family income, and stock market returns. Hopefully, after completing this chapter, you will have a better idea of how to answer such questions. Moreover, there are a number of online resources available to help with financial planning.

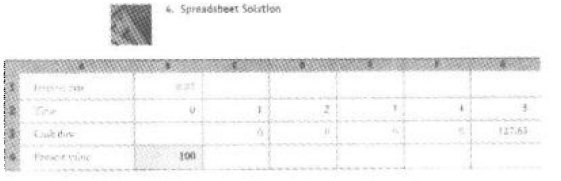
A good place to start is http://www.smartmoney.com. SmartMoney is a personal finance magazine produced by the publishers of the Wall Street Journal. If you go to SmartMoney's web site you will find a section entitled "Tools." This section has a large number of financial calculators, spreadsheets, and descriptive materials that cover a wide range of personal finance issues.

Another good place to look is Quicken's web site, http://www.quicken.com. Here you will find several interesting sections that deal with a variety of personal finance issues. Within these sections you will find background articles plus spreadsheets and calculators that you can use to analyze your own situation.

Finally, http://www.financialengines.com is a great place to visit if you are focusing specifically on retirement planning. This web site, developed by Nobel Prize–winning financial economist William Sharpe, considers a wide range of alternative scenarios that might occur. This approach, which enables you to see a full range of potential outcomes, is much better than some of the more basic online calculators that give you simple answers to complicated questions.

NEW! **"Technology Matters"** boxes illustrate how innovations in technology are changing the world of financial management.

NEW! We developed a **spreadsheet model** for each chapter in the book except Chapter 1. These models show exactly how the problems dealt with in the chapter can be solved with an *Excel* spreadsheet. In addition, **spreadsheet problems** that require students to use the spreadsheet model can be found with the end-of-chapter pedagogy. Electronic versions of the models are available on the text's companion web site and are included on the student CD-ROM that is packaged with every copy of the text.


4. Spreadsheet Solution

	A	B	C	D	E	F	G
1	Interest rate	0.07					
2	Year	0	1	2	3	4	5
3	Cash flow		0	0	0	0	127.63
4	Present value	100					


CYBER PROBLEM

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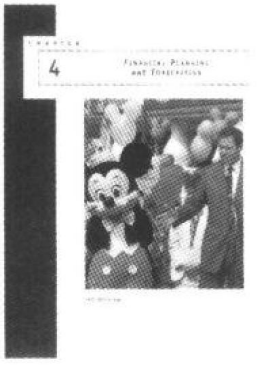
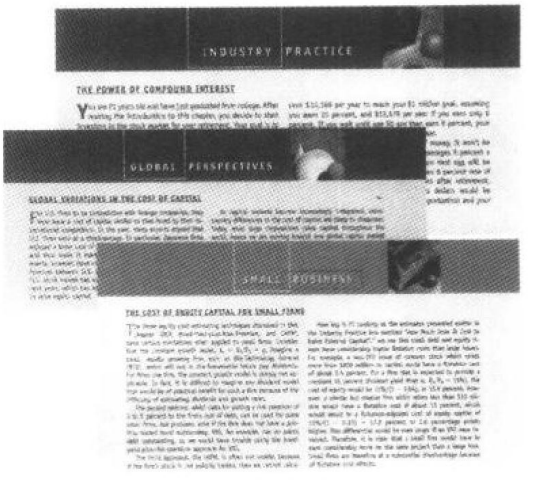
NEW! **Cyberproblems** — these end-of-chapter exercises plug students into the Internet, allowing them to hone their web research skills to solve financial problems. Additional cyberproblems are found on the companion web site for *Fundamentals* at **http://www.harcourtcollege.com/finance**. The cyberproblems were developed by Steven Bouchard and Christopher Buzzard.

TRIED AND TRUE PEDAGOGY

Other pedagogical elements and supporting materials have helped make *Fundamentals* so successful. Included are the following:



Each chapter opens with a **vignette** describing how an actual corporation has contended with the issues discussed in the chapter. These vignettes heighten students' interest by pointing out the real-world relevance and applicability of what might otherwise seem to be dry, technical material.



Throughout the book there are **"Industry Practice," "Global Perspectives,"** and **"Small Business"** boxes that provide real-world illustrations of how financial concepts are applied in practice.

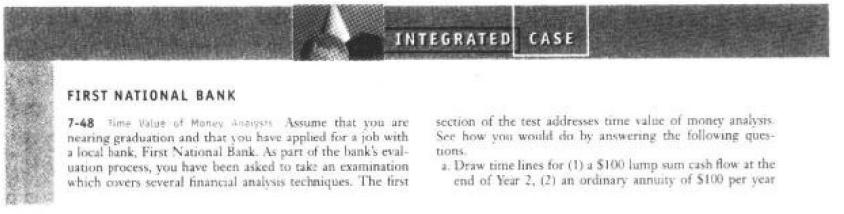
Throughout the book, key terms are highlighted in the text and defined in the margins. These **marginal glossaries** enable students to quickly find and review the key topics covered in the chapter.

Self-Test Questions, which serve as checkpoints for students to test their understanding, follow each major section of the chapters.

Web addresses are included in each chapter to give students access to additional information about the companies and government agencies discussed in the text.

Ohio State University has a web site with video clips of business professionals discussing various topics of interest in finance. The site can be found at **http://www.cob.ohio-state.edu/dept/fin/resources_education/clips.htm.** The two video clips relevant to capital budgeting come from Steve Walsh, assistant treasurer of JCPenney: "How We Do Capital Budgeting" and "On the Cost of Capital and Debt." Be forewarned that these files are quite large and are best downloaded using a rapid Internet link.

The **end-of-chapter** materials contain a large number of Questions, Self-Test Problems, Starter Problems, Exam-Type Problems, Problems, and Spreadsheet Problems. The problems vary in level of difficulty yet cover all the topics discussed in the chapter.



An **Integrated Case,** which is generally related to the vignette, appears at the end of each chapter. These "mini-cases" both illustrate and tie together the key topics covered in the chapter, hence, provide an ideal platform for lectures that systematically cover the key materials in the chapter.