Financial Management

Core Concepts

THIRD EDITION

Raymond Brooks

ALWAYS LEARNING

PEARSON

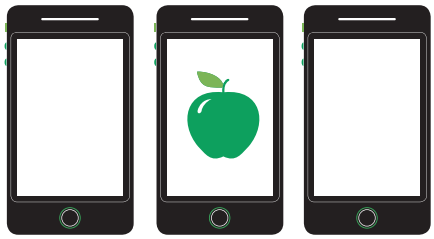
Prepare, Apply, and Confirm with MyFinanceLab™

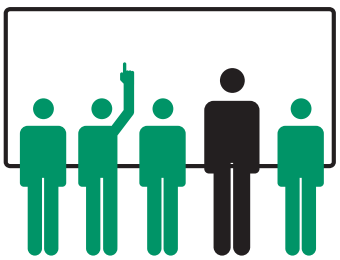
- **eText Features**—Keep students engaged in learning on their own time, while helping them achieve greater conceptual understanding of course material through author-created solutions videos and animations.

- **Dynamic Study Modules**—Work by continuously assessing student performance and activity, then using data and analytics to provide personalized content in real time to reinforce concepts that target each student's particular strengths and weaknesses.

- **Hallmark Features**—Personalized Learning Aids, like Help Me Solve This, View an Example, and instant feedback are available for further practice and mastery when students need the help most!

- **Learning Catalytics**—Generates classroom discussion, guides lecture, and promotes peer-to-peer learning with real-time analytics. Now, students can use any device to interact in the classroom.





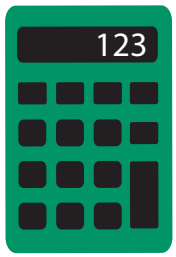
- **Adaptive Study Plan**—Assists students in monitoring their own progress by offering them a customized study plan powered by Knewton, based on Homework, Quiz, and Test results. Includes regenerated exercises with unlimited practice and the opportunity to prove mastery through quizzes on recommended learning objectives.

Prepare, Apply, and Confirm with MyFinanceLab™

- **Worked Solutions**—Provide step-by-step explanations on how to solve select problems using the exact numbers and data that were presented in the problem. Instructors will have access to the Worked Solutions in preview and review mode.

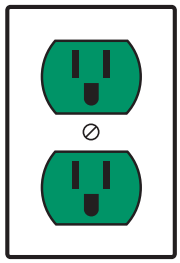
- **Algorithmic Test Bank**—Instructors have the ability to create multiple versions of a test or extra practice for students.

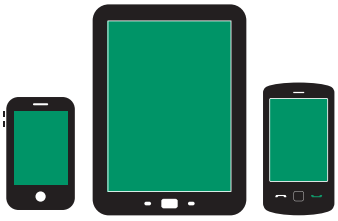
- **Financial Calculator**—The Financial Calculator is available as a smartphone application, as well as on a computer, and includes important functions such as cash flow, net present value, and internal rate of return. Fifteen helpful tutorial videos show the many ways to use the Financial Calculator in MyFinanceLab.



- **Reporting Dashboard**—View, analyze, and report learning outcomes clearly and easily. Available via the Gradebook and fully mobile-ready, the Reporting Dashboard presents student performance data at the class, section, and program levels in an accessible, visual manner.

- **LMS Integration**—Link from any LMS platform to access assignments, rosters, and resources, and synchronize MyLab grades with your LMS gradebook. For students, new direct, single sign-on provides access to all the personalized learning MyLab resources that make studying more efficient and effective.





- **Mobile Ready**—Students and instructors can access multimedia resources and complete assessments right at their fingertips, on any mobile device.

FINANCIAL MANAGEMENT
CORE CONCEPTS

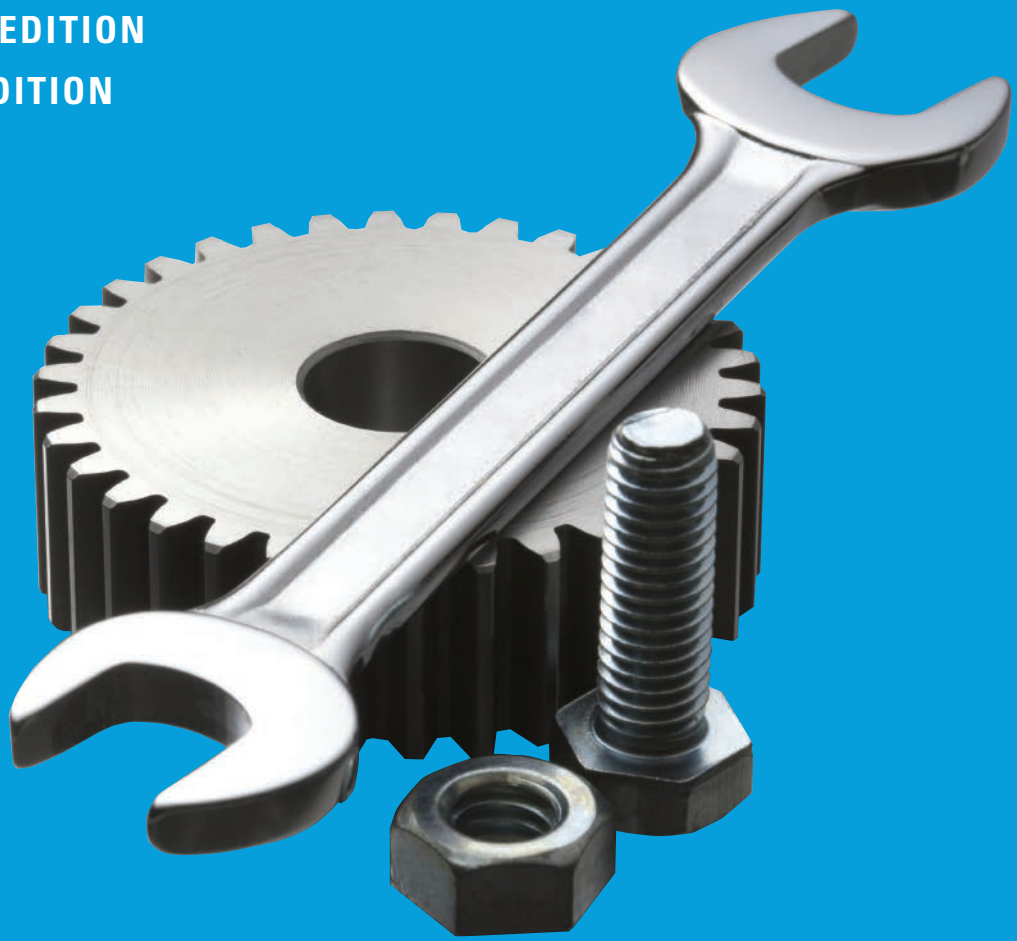
This page intentionally left blank

RAYMOND M. BROOKS

FINANCIAL MANAGEMENT
CORE CONCEPTS

GLOBAL EDITION

THIRD EDITION



PEARSON

Boston Columbus Indianapolis New York San Francisco
Amsterdam Cape Town Dubai London Madrid Milan Munich Paris Montréal Toronto
Delhi Mexico City São Paulo Sydney Hong Kong Seoul Singapore Taipei Tokyo

The Pearson Series in Finance

Berk/DeMarzo
*Corporate Finance**

*Corporate Finance: The Core**

Berk/DeMarzo/Harford
*Fundamentals of Corporate Finance**

Brooks
*Financial Management: Core Concepts**

Copeland/Weston/Shastri
Financial Theory and Corporate Policy

Dorfman/Cather
Introduction to Risk Management and Insurance

Eakins/McNally
*Corporate Finance Online**

Eiteman/Stonehill/Moffett
Multinational Business Finance

Fabozzi
Bond Markets: Analysis and Strategies

Fabozzi/Modigliani/Jones
Foundations of Financial Markets and Institutions

Finkler
Financial Management for Public, Health, and Not-for-Profit Organizations

Foerster
*Financial Management: Concepts and Applications**

Frasca
Personal Finance

Gitman/Zutter
*Principles of Managerial Finance**

*Principles of Managerial Finance—Brief Edition**

Haugen
The Inefficient Stock Market: What Pays Off and Why

Modern Investment Theory

Holden
Excel Modeling in Corporate Finance

Excel Modeling in Investments

Hughes/MacDonald
International Banking: Text and Cases

Hull
Fundamentals of Futures and Options Markets

Options, Futures, and Other Derivatives

Keown
*Personal Finance: Turning Money into Wealth**

Keown/Martin/Petty
*Foundations of Finance: The Logic and Practice of Financial Management**

Kim/Nofsinger
Corporate Governance

Madura
*Personal Finance**

Marthinsen
Risk Takers: Uses and Abuses of Financial Derivatives

McDonald
Derivatives Markets

Fundamentals of Derivatives Markets

Mishkin/Eakins
Financial Markets and Institutions

Moffett/Stonehill/Eiteman
Fundamentals of Multinational Finance

Nofsinger
Psychology of Investing

Pennacchi
Theory of Asset Pricing

Rejda/McNamara
Principles of Risk Management and Insurance

Smart/Gitman/Joehnk
*Fundamentals of Investing**

Solnik/McLeavey
Global Investments

Titman/Keown/Martin
*Financial Management: Principles and Applications**

Titman/Martin
Valuation: The Art and Science of Corporate Investment Decisions

Weston/Mitchell/Mulherin
Takeovers, Restructuring, and Corporate Governance

*denotes MyFinanceLab titles

Visit **www.myfinancelab.com** to learn more.

To Greta, Michael, Aracely, Tyler, and Allyson

Thanks for giving me such an enjoyable and fun-filled life.

Vice President, Business Publishing: Donna Battista
Acquisitions Editor: Kate Fernandes
Editorial Assistant: Elissa Senra-Sargent
Vice President, Product Marketing: Maggie Moylan
Director of Marketing, Digital Services and Products: Jeanette Koskinas
Senior Product Marketing Manager: Alison Haskins
Executive Field Marketing Manager: Lori DeShazo
Senior Strategic Marketing Manager: Erin Gardner
Team Lead, Program Management: Ashley Santora
Program Manager: Kathryn Dinovo
Team Lead, Project Management: Jeff Holcomb
Project Manager: Carla Thompson
Associate Acquisitions Editor, Global Edition: Suchismita Ukil
Associate Project Editor, Global Edition: Amrita Kar
Project Manager, Global Edition: Vamanan Namboodiri
Manager, Media Production, Global Edition: Vikram Kumar
Senior Manufacturing Controller, Production, Global Edition: Trudy Kimber
Operations Specialist: Carol Melville
Creative Director: Blair Brown
Art Director: Jon Boylan
Vice President, Director of Digital Strategy and Assessment: Paul Gentile
Manager of Learning Applications: Paul DeLuca
Digital Editor: Megan Rees
Director, Digital Studio: Sacha Laustsen
Digital Studio Manager: Diane Lombardo
Digital Studio Project Manager: Melissa Honig
Digital Content Team Lead: Noel Lotz
Digital Content Project Lead: Miguel Leonarte
Full-Service Project Management and Composition: Cenveo® Publisher Services
Interior and Cover Designer: Lumina Datamatic Ltd
Cover Art: perfectlab/Shutterstock
Printer/Binder: Vivar, Malaysia
Cover Printer: Vivar, Malaysia

Microsoft and/or its respective suppliers make no representations about the suitability of the information contained in the documents and related graphics published as part of the services for any purpose. All such documents and related graphics are provided "as is" without warranty of any kind. Microsoft and/or its respective suppliers hereby disclaim all warranties and conditions with regard to this information, including all warranties and conditions of merchantability, whether express, implied or statutory, fitness for a particular purpose, title and non-infringement. In no event shall Microsoft and/or its respective suppliers be liable for any special, indirect or consequential damages or any damages whatsoever resulting from loss of use, data or profits, whether in an action of contract, negligence or other tortious action, arising out of or in connection with the use or performance of information available from the services.

The documents and related graphics contained herein could include technical inaccuracies or typographical errors. Changes are periodically added to the information herein. Microsoft and/or its respective suppliers may make improvements and/or changes in the product(s) and/or the program(s) described herein at any time. Partial screen shots may be viewed in full within the software version specified.

Microsoft® and Windows® are registered trademarks of the Microsoft Corporation in the U.S.A. and other countries. This book is not sponsored or endorsed by or affiliated with the Microsoft Corporation.

Pearson Education Limited
Edinburgh Gate
Harlow
Essex CM20 2JE
England

and Associated Companies throughout the world

Visit us on the World Wide Web at:
www.pearsonglobaleditions.com

© Pearson Education Limited 2016

The rights of Raymond Brooks to be identified as the authors of this work have been asserted by them in accordance with the Copyright, Designs and Patents Act 1988.

Authorized adaptation from the United States edition, entitled Financial Management: Core Concepts, 3rd edition, *ISBN 978-0-13-386669-8, by Raymond Brooks, published by Pearson Education © 2016.*

All rights reserved. No part of this publication may be reproduced, stored in a retrieval system, or transmitted in any form or by any means, electronic, mechanical, photocopying, recording or otherwise, without either the prior written permission of the publisher or a license permitting restricted copying in the United Kingdom issued by the Copyright Licensing Agency Ltd, Saffron House, 6–10 Kirby Street, London EC 1N 8TS.

All trademarks used herein are the property of their respective owners. The use of any trademark in this text does not vest in the author or publisher any trademark ownership rights in such trademarks, nor does the use of such trademarks imply any affiliation with or endorsement of this book by such owners.

ISBN-10: 1-292-10142-3
ISBN-13: 978-1-292-10142-2

British Library Cataloguing-in-Publication Data
A catalogue record for this book is available from the British Library

10 9 8 7 6 5 4 3 2 1

Typeset by Cenveo® Publisher Services
Printed and bound by Vivar, Malaysia

ABOUT THE AUTHOR

RAYMOND M. BROOKS is a Professor of Finance at Oregon State University. He has taught a variety of finance courses, including introduction to financial management, investments, advanced corporate finance, financial institutions, financial planning, and risk management. Previously, he taught at Washington University in St. Louis; the University of Southern Illinois, Edwardsville; and the University of Missouri–Columbia. Professor Brooks has authored a variety of articles on topics from dividends to when-issued trading. He has twice won best papers awards at financial conferences.

Professor Brooks was a springboard diver for the Oregon State swim team and continues to enjoy swimming, hiking, music, reading, and watching OSU athletic teams.

THE STUDENT FRONT AND CENTER

Designed for the nonfinance major, ***Financial Management: Core Concepts*** structures a student-centric learning environment built around three major competencies:

- Using tools
- Making connections
- Studying for success

Using the Power Tools of Finance

EXAMPLE 4.2 **Making retirement golden (present value of an annuity)**

MyFinanceLab Video

Problem Ben and Donna determine that upon retirement they will need to withdraw $50,000 annually at the end of each year for the next thirty years. They know that they can earn 4% each year on their investment. What is the present value of this annuity? In other words, how much will Ben and Donna need in their retirement account (at the beginning of their retirement) to generate this future cash flow?

Solution In this problem, we assume that Ben and Donna need to have the present value of the thirty-year annuity in their account at the start of their retirement, even though they will not make the first withdrawal of $50,000 until the end of the first year of retirement. They will make thirty withdrawals from this account during retirement. The investment rate is 4%. It is the same as the discount rate for the future payments of $50,000 that will come at the end of each year for the next thirty years. The known variables are $r = 4\%$, $n = 30$, and $PMT = \$50{,}000$. Solve for PV.

METHOD 1 **Using the equation**

First, calculate the PVIFA value for $n = 30$ and $r = 4\%$:

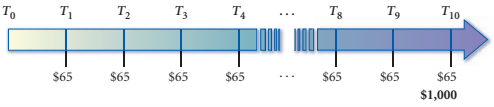
$$\frac{1 - [1/(1 + 0.04)^{30}]}{0.04} = \frac{[1 - (0.308319)]}{0.04} = 17.292033$$

Then multiply the annuity payment by this factor:

$$PV = \$50{,}000 \times 17.292033 = \mathbf{\$864{,}601.67}$$

Early TVM Tools. The author identifies the key concepts of finance as "tools." Students first need to learn how to use these tools of finance before they can apply them to larger problems. That's why the author drills down to basics quickly by developing time value of money (TVM) concepts and interest rates early in the course.

Figure 6.3 Future cash flow of the Merrill Lynch bond.



We can set out the future cash flow as shown in Figure 6.3. Note that in the time line T_0 represents the original issue date of July 15, 2008, and T_1 is the first annual coupon payment date of July 15, 2009. The annual payments continue for ten years, with T_{10} being the last payment on July 15, 2018. This point is a moment of recognition in which we can apply previously learned concepts: the coupon payments constitute an annuity stream, the same amount at regular intervals. The principal or par value of $1,000 also pays out at maturity. Here we recognize another key concept: the final amount is a lump-sum payment. So we now have the promised set of future cash flows for the Merrill Lynch bond.

Later Application and Visual Links. Students soon begin to see just how powerful these tools are. They learn to forge links between basic principles and new applications. A tool icon alerts students when a new tool is introduced and when a tool can be applied in a new situation.

Problem Solving: Technology Tools and the Three-Methods Approach

The author helps students develop their skills in problem solving by using a three-pronged approach that shows there are several paths to the same destination.

EXAMPLE 3.4 **Let's make a deal! (future value)**

Problem In 1867, Secretary of State William H. Seward purchased Alaska from Russia for the sum of $7,200,000, or about two cents per acre. At the time, the deal was dubbed Seward's Folly, but from our vantage point today, did Seward get a bargain after all? What would it cost today if the land were in exactly the same condition as it was 148 years ago and the prevailing interest rate over this time were 4%?

Solution At first glance, it seems as if we have a present value problem, not a future value problem, but it all depends on where we are standing in reference to time. Phrasing this question another way, we could ask, "What will the value of $7,200,000 be in 148 years at an annual interest rate of 4%?" Restated this way, we can more easily view the problem as a future value problem. A time line is particularly helpful in this instance. We can show the 148-year span from T_{-148} to T_0 or from T_0 to T_{148}.

Equation. He presents the equation and solves the problem mathematically.

METHOD 1 Using the equation

$$FV = PV \times (1 + r)^n = \$7{,}200{,}000 \times 1.04^{148}$$
$$= \$7{,}200{,}000 \times 313.8442 = \$\mathbf{2{,}389{,}278{,}156}$$

Calculator. He then solves the problem using a financial calculator, explaining the key strokes. The answer is displayed in red on the appropriate calculator key.

METHOD 2 Using the TVM keys

Input	148	4.0	−7,200,000	0	?
Key	N	I/Y	PV	PMT	FV
CPT					2,389,278,156

Spreadsheet. For some examples, an Excel® solution is added. The author explains the basic spreadsheet variables and how to set up the application.

METHOD 3 Using a spreadsheet

B6	fx	=FV(B1,B2,B3,B4,B5)

Use the future value function to find the price of Alaska ifpurchased today instead of148 years ago.

	A	B	C	D	E
1	Rate	0.04			
2	Nper	148			
3	Pmt	0			
4	Pv	($ 7,200,000.00)			
5	Type	0			
6	Fv	$2,389,278,156			

The Overall Intent? To develop in the student an intuition about which problem-solving approach works best for a particular problem—in other words, to develop an informed "do-it-yourself" attitude toward the tools of technology.

THE STUDENT FRONT AND CENTER

Finance Follies boxes in *Financial Management*

CHAPTER 1

The Financial Meltdown of 2008

CHAPTER 7

Irrational Expectations: Bulbs and Bubbles

CHAPTER 8

"Dangerous to Your Wealth": Is Investing Just Gambling?

"Scam of the Century": Bernie Madoff and the $50 Billion Fraud

CHAPTER 9

IBM Exits the Consumer Software Market: Misreading Future Cash Flows

CHAPTER 10

Boston's "Big Dig" Gets Dug Under

CHAPTER 14

Cooking the Books at Enron and WorldCom

CHAPTER 16

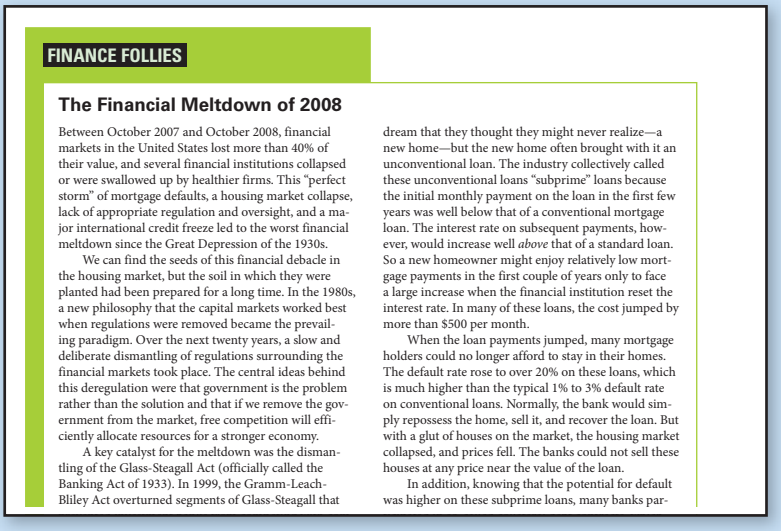
Hedge Funds: Some Really Smart Guys Get into Big Trouble

CHAPTER 18

Rino International

Making Connections

With the Real World. "Finance Follies" capture some fascinating examples of current and historical scandals and manias and give the student context for the necessity of studying finance.



FINANCE FOLLIES

The Financial Meltdown of 2008

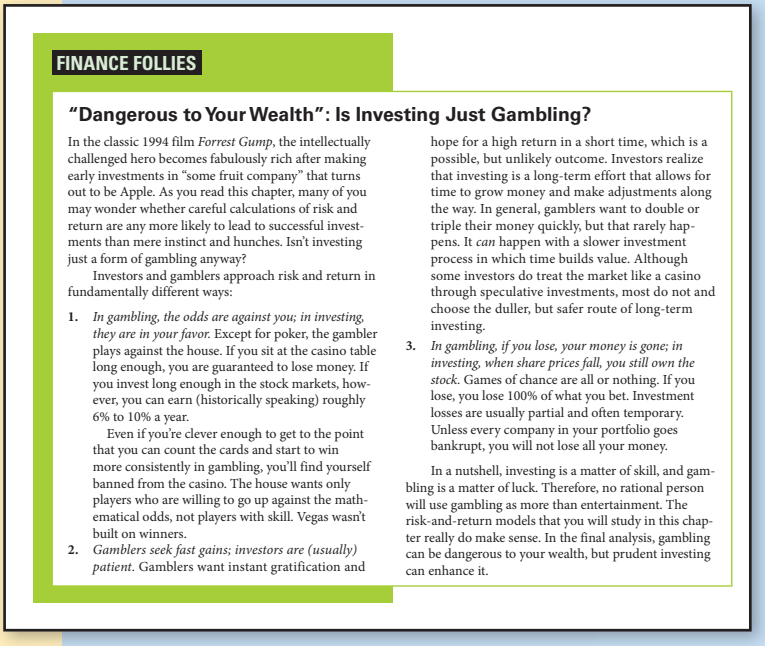
Between October 2007 and October 2008, financial markets in the United States lost more than 40% of their value, and several financial institutions collapsed or were swallowed up by healthier firms. This "perfect storm" of mortgage defaults, a housing market collapse, lack of appropriate regulation and oversight, and a major international credit freeze led to the worst financial meltdown since the Great Depression of the 1930s.

We can find the seeds of this financial debacle in the housing market, but the soil in which they were planted had been prepared for a long time. In the 1980s, a new philosophy that the capital markets worked best when regulations were removed became the prevailing paradigm. Over the next twenty years, a slow and deliberate dismantling of regulations surrounding the financial markets took place. The central ideas behind this deregulation were that government is the problem rather than the solution and that if we remove the government from the market, free competition will efficiently allocate resources for a stronger economy.

A key catalyst for the meltdown was the dismantling of the Glass-Steagall Act (officially called the Banking Act of 1933). In 1999, the Gramm-Leach-Bliley Act overturned segments of Glass-Steagall that dream that they thought they might never realize—a new home—but the new home often brought with it an unconventional loan. The industry collectively called these unconventional loans "subprime" loans because the initial monthly payment on the loan in the first few years was well below that of a conventional mortgage loan. The interest rate on subsequent payments, however, would increase well *above* that of a standard loan. So a new homeowner might enjoy relatively low mortgage payments in the first couple of years only to face a large increase when the financial institution reset the interest rate. In many of these loans, the cost jumped by more than $500 per month.

When the loan payments jumped, many mortgage holders could no longer afford to stay in their homes. The default rate rose to over 20% on these loans, which is much higher than the typical 1% to 3% default rate on conventional loans. Normally, the bank would simply repossess the home, sell it, and recover the loan. But with a glut of houses on the market, the housing market collapsed, and prices fell. The banks could not sell these houses at any price near the value of the loan.

In addition, knowing that the potential for default was higher on these subprime loans, many banks par-



FINANCE FOLLIES

"Dangerous to Your Wealth": Is Investing Just Gambling?

In the classic 1994 film *Forrest Gump*, the intellectually challenged hero becomes fabulously rich after making early investments in "some fruit company" that turns out to be Apple. As you read this chapter, many of you may wonder whether careful calculations of risk and return are any more likely to lead to successful investments than mere instinct and hunches. Isn't investing just a form of gambling anyway?

Investors and gamblers approach risk and return in fundamentally different ways:

1. *In gambling, the odds are against you; in investing, they are in your favor.* Except for poker, the gambler plays against the house. If you sit at the casino table long enough, you are guaranteed to lose money. If you invest long enough in the stock markets, however, you can earn (historically speaking) roughly 6% to 10% a year.

   Even if you're clever enough to get to the point that you can count the cards and start to win more consistently in gambling, you'll find yourself banned from the casino. The house wants only players who are willing to go up against the mathematical odds, not players with skill. Vegas wasn't built on winners.
2. *Gamblers seek fast gains; investors are (usually) patient.* Gamblers want instant gratification and hope for a high return in a short time, which is a possible, but unlikely outcome. Investors realize that investing is a long-term effort that allows for time to grow money and make adjustments along the way. In general, gamblers want to double or triple their money quickly, but that rarely happens. It *can* happen with a slower investment process in which time builds value. Although some investors do treat the market like a casino through speculative investments, most do not and choose the duller, but safer route of long-term investing.
3. *In gambling, if you lose, your money is gone; in investing, when share prices fall, you still own the stock.* Games of chance are all or nothing. If you lose, you lose 100% of what you bet. Investment losses are usually partial and often temporary. Unless every company in your portfolio goes bankrupt, you will not lose all your money.

In a nutshell, investing is a matter of skill, and gambling is a matter of luck. Therefore, no rational person will use gambling as more than entertainment. The risk-and-return models that you will study in this chapter really do make sense. In the final analysis, gambling can be dangerous to your wealth, but prudent investing can enhance it.

With Careers. "Putting Finance to Work" answers a question students often ask: "Why do I need to take a finance course, anyway?" These snapshots of widely varied careers show that specific finance concepts are used in many different career paths.

PUTTING FINANCE TO WORK

Information Technology

The quality of short-term financial plans and forecasts depends completely on the quality of information that goes into them. The cash flow forecast requires us to know what inventory we have on hand, where it is, how long we expect to hold it before we sell it, and how long it takes us to replace it. It requires us to know how much money our customers owe us and when we expect them to pay. The sales forecast requires data on what we sold recently, what we sold in the same period last year, and what trends are developing. For a company like McDonald's that handles thousands of transactions a minute in every corner of the globe, an apparently simple question such as "How much cash do we have on hand?" is not that simple.

These data requirements present a challenge even for relatively uncomplicated businesses that manufacture just a few products like furniture or that retail a single product like automobiles. For a company such as Procter and Gamble that manufactures an array of consumer products from many different raw materials in many locations or for a retailer such as CVS or Walgreen's that seems to sell everything from alarm clocks to zinc tablets, the problem stretches the imagination. Without such information, our plans and forecasts are little more than a shot in the dark.

Fortunately, financial executives can usually retrieve accurate and timely data with a few keystrokes or clicks of the mouse. Business software can produce many types of protecting, transmitting, and retrieving such information lie in the realm of information technology, or IT. Those who work in the management of information go by many names, including systems analysts, business analysts, information technology specialists, information managers, and database managers. Whatever we call them, their role is critical to an organization's financial management. They design, develop, implement, and support the systems that make this information usable, retrievable, and secure. Depending on their area of specialization, they may design or adapt software to specific requirements, and they can play a key role in choosing and supporting hardware to run the systems. Because they work closely with managers and staff in the major business functions such as marketing, operations, accounting, and finance, IT specialists must have a good understanding of those functions and their needs. Often, different functions such as finance and marketing will need the same information, but in different formats.

College students who major in computer science, computer engineering, or management information systems prepare for careers in information technology. Some schools offer information technology as a concentration within the business major. These programs, and others with similar names, overlap considerably, but computer science and computer engineering programs usually re-

With Different Kinds of Businesses. "Mini-Cases" at the end of every chapter put abstract concepts to work in the types of organizations for which students will later work. The cases feature small businesses, large corporations, town organizations, and start-ups.

MINI-CASE

Richardses' Tree Farm, Inc.: The Continuing Saga

This mini-case is available in MyFinanceLab.

Richardses' Tree Farm, Inc. is doing well after its incorporation. Jake Richards, president, chief of operations, and majority shareholder, currently has a planting of 10,000 three-year-old Japanese dogwood trees in a recently introduced pink-flowered variety. Richards can sell this type of tree at a higher price than the more common white-flowered variety. The trees are now 6 feet tall on average and can command $24 each. At present, Richards has priced 8-foot trees at $34 and 10-foot trees at $40. Landscape contractors avoid trees larger than 10 feet tall because they are difficult to transplant successfully. With average weather, the 6-foot trees will be 8 feet tall in three years and 10 feet tall in six years.

Jake has to make financial decisions almost every day. Today's decision involves present value and future value computations, which Jake learned as a student at Oregon State University. He wants to know if he should sell the trees immediately at 6 feet tall, three years from now at 8 feet tall, or six years from now at 10 feet tall.

Size	Age	Current Market Value
6′	3 years	$24.00
8′	6 years	$34.00
10′	9 years	$40.00

Questions

1. Because of inflation, Jake expects the price at which he can sell the trees to increase by 3% per year. What price does he expect to receive if he keeps the trees until they reach 8 feet or 10 feet tall?
2. If Jake discounts the future price of the trees at 10% per year, what is the present value of their future prices?
3. Using the time value of money equation, compute the growth rate of the trees between the third year and the sixth year and between the sixth year and the ninth year.
4. When should Jake sell the trees?
5. **Challenge question.** A major landscape contractor who has bid successfully on a large-scale Boston beautification and urban greening project has offered to buy all 10,000 flowering dogwood trees at a price of $28,000, payable immediately. However, the contractor does not need the trees for three years. If Jake accepts, he will be obliged to deliver 10,000 trees three years from today. If anything should happen to his own crop, he would need to buy trees on the open market at the prevailing price, which might be higher or lower than the price estimated in Question 1. Should Jake accept the offer if his required rate of return is 10%? *Hint:* What is the present value of the price he expects to receive for the trees three years in the future?

Putting Finance to Work boxes in *Financial Management*

CHAPTER 1
Now Hiring

CHAPTER 2
Look Before You Leap

CHAPTER 3
Sports Agent

CHAPTER 4
Modeling the Future with Actuarial Science

CHAPTER 6
Municipal Manager

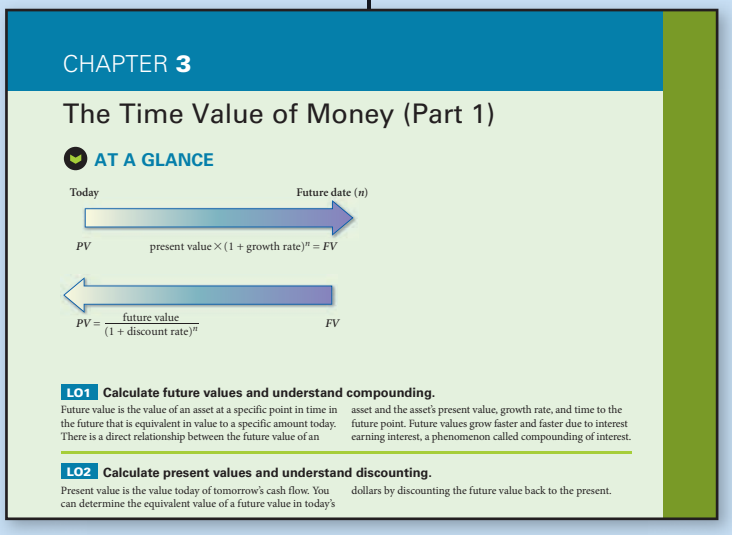
CHAPTER 9
Marketing and Sales: Your Product = Your Customer's Capital Budgeting Decision

CHAPTER 12
Information Technology

CHAPTER 13
Operations Management

CHAPTER 15
Corporate Law

THE STUDENT FRONT AND CENTER


CHAPTER 3

The Time Value of Money (Part 1)

AT A GLANCE

Today — Future date (n)

PV — present value × (1 + growth rate)^n = FV

PV = future value / (1 + discount rate)^n — FV

LO1 Calculate future values and understand compounding.

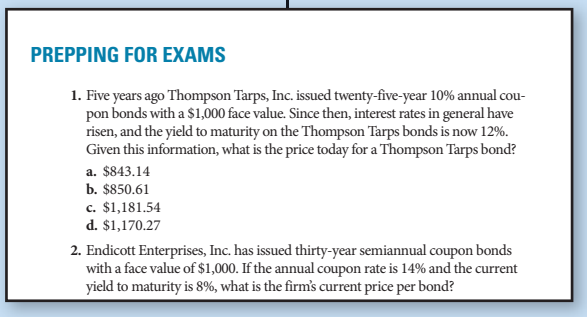
Future value is the value of an asset at a specific point in time in the future that is equivalent in value to a specific amount today. There is a direct relationship between the future value of an asset and the asset's present value, growth rate, and time to the future point. Future values grow faster and faster due to interest earning interest, a phenomenon called compounding of interest.

LO2 Calculate present values and understand discounting.

Present value is the value today of tomorrow's cash flow. You can determine the equivalent value of a future value in today's dollars by discounting the future value back to the present.

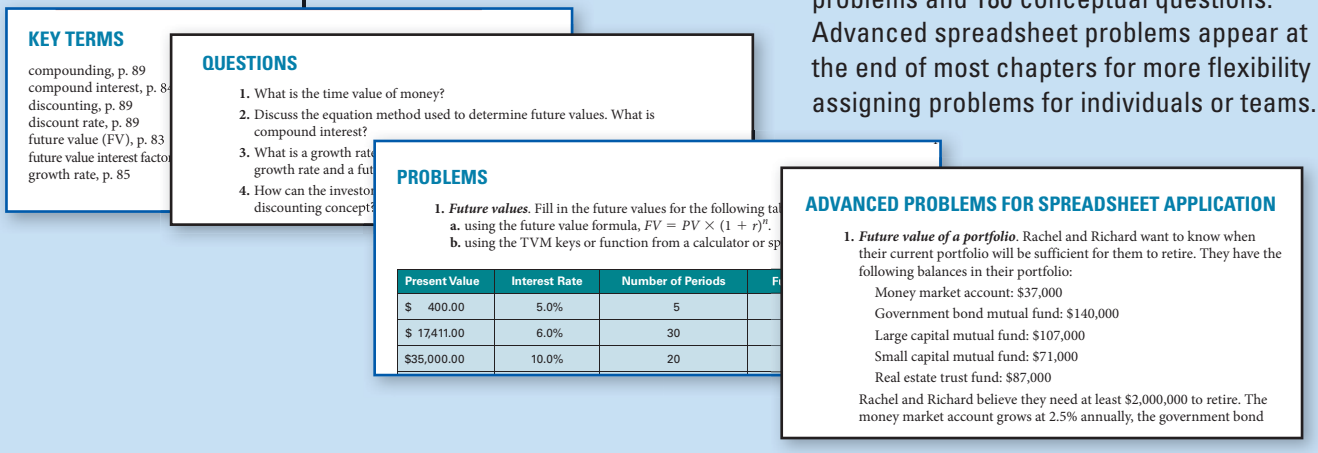
Studying for Success

For the Student on the Go. Tear-out Summary Cards for every chapter provide instantaneous mini-reviews. In addition to summarizing the main points of the chapter, these portable study aids include mathematical notation, calculator keys, and key equations, all great to read over right before an exam!


PREPPING FOR EXAMS

1. Five years ago Thompson Tarps, Inc. issued twenty-five-year 10% annual coupon bonds with a $1,000 face value. Since then, interest rates in general have risen, and the yield to maturity on the Thompson Tarps bonds is now 12%. Given this information, what is the price today for a Thompson Tarps bond?
   a. $843.14
   b. $850.61
   c. $1,181.54
   d. $1,170.27
2. Endicott Enterprises, Inc. has issued thirty-year semiannual coupon bonds with a face value of $1,000. If the annual coupon rate is 14% and the current yield to maturity is 8%, what is the firm's current price per bond?

For Students with Test Anxieties. "Prepping for Exams" is designed for those students who worry about how well they will do on the finance exam. To build confidence and expose students to the types of problems they will see on some exams, multiple-choice questions at the end of each chapter are pulled directly from the test bank. Answers are printed in the back of the book in Appendix 5.


KEY TERMS

compounding, p. 89
compound interest, p. 84
discounting, p. 89
discount rate, p. 89
future value (FV), p. 83
future value interest factor
growth rate, p. 85

QUESTIONS

1. What is the time value of money?
2. Discuss the equation method used to determine future values. What is compound interest?
3. What is a growth rate
   growth rate and a fut
4. How can the investor
   discounting concept?

PROBLEMS

1. ***Future values***. Fill in the future values for the following ta
   a. using the future value formula, $FV = PV \times (1 + r)^n$.
   b. using the TVM keys or function from a calculator or sp

Present Value	Interest Rate	Number of Periods	F
$ 400.00	5.0%	5	
$ 17,411.00	6.0%	30	
$35,000.00	10.0%	20	

ADVANCED PROBLEMS FOR SPREADSHEET APPLICATION

1. ***Future value of a portfolio***. Rachel and Richard want to know when their current portfolio will be sufficient for them to retire. They have the following balances in their portfolio:
   Money market account: $37,000
   Government bond mutual fund: $140,000
   Large capital mutual fund: $107,000
   Small capital mutual fund: $71,000
   Real estate trust fund: $87,000
   Rachel and Richard believe they need at least $2,000,000 to retire. The money market account grows at 2.5% annually, the government bond

For the Student Who Wants Practice. The book features approximately 400 end-of-chapter problems and 180 conceptual questions. Advanced spreadsheet problems appear at the end of most chapters for more flexibility in assigning problems for individuals or teams.

For the Visual Student. Illustrations with a Purpose help students visualize important financial concepts. The time line is given special treatment in the all-important time value of money and capital budgeting chapters. To depict movement, present value is always in a lighter shade and future value in a darker shade, and PV is always on the left and FV always on the right. This setup makes it easier to see compounding from the present into the future and discounting "back from the future" to the present.

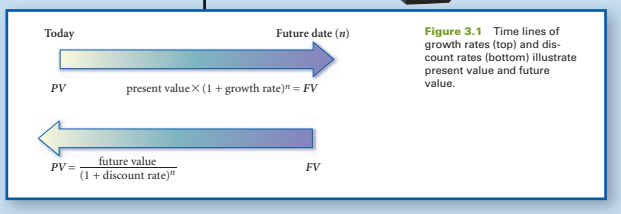


Figure 3.1 Time lines of growth rates (top) and discount rates (bottom) illustrate present value and future value.

Graphic illustrations are occasionally presented as another way of "seeing" a concept. All illustrations say something about finance.

The compounding of interest over time accelerates the growth of money.

For the Student Who Wants More Practice. MyFinanceLab, a fully integrated online home and tutorial system, enables students to complete problems and receive immediate feedback and help. **MyFinanceLab** also has a special section of spreadsheet problems for Chapters 2 through 18 that provide an opportunity to work more data-intensive problems with spreadsheet applications. See the front endpapers for more details on **MyFinanceLab**.

MyFinanceLab

RESOURCES FOR THE INSTRUCTOR

Instructor's Manual

Written by Jim DeMello of Western Michigan University, the Instructor's Manual contains the following for each chapter:

- Answers and solutions to all end-of-chapter questions and problems
- Big-picture overviews
- Lecture launchers, often with real-world examples of the chapter concepts
- Chapter outlines, suitable as lecture notes, with appropriate PowerPoint slides referenced
- Trouble spots or pitfalls that students often encounter
- Additional examples and homework problems with worked-out solutions

PowerPoint Presentation

Prepared by Jim DeMello of Western Michigan University, the PowerPoint presentation includes lecture outlines, with equations and examples on separate slides; an assortment of new worked-out examples to provide fresh input on key points; and all chapter figures.

Computerized Test Bank

Written by Curt Bacon of Southern Oregon University and checked for accuracy by Michael J. Woodworth, the computerized test bank features approximately 1,800 questions and solutions broken down by chapter into multiple-choice questions of conceptual and numeric types, true-or-false questions, and short-essay questions. The test bank is written in TestGen, an easy-to-use testing software program that allows instructors to view, edit, and add questions. It is also available in MyFinanceLab.

MyFinanceLab

MyFinanceLab, a fully integrated online homework and tutorial system, enables students to complete problems and receive immediate feedback and help. See the front endpapers for details.

FROM THE AUTHOR

WITH THE ENCOURAGEMENT of Donna Battista and a wonderful set of individuals at Pearson, our team started out on the journey of writing this textbook. We are now in the third edition of a process that has been a great adventure. The first and second editions were very successful, and our audience (student users), reviewers, and adopters provided some insightful suggestions for this third edition. But the general concepts and approach to the book have remained true to the original design we followed in the first edition.

What's New in the Third Edition

- Of course, we have updated the material that was time-related. For example, the interest rates now reflect the historically low levels of the first decade of the twenty-first century.
- Additionally, we have continued to strengthen the Chapter 12 material on cash flow.
- We have increased the coverage on cash flow management in Chapter 13.
- We have provided additional insight on ratio analysis in Chapter 14 so that the temporal nature of these ratios is more apparent.
- We have added a new tear-out Summary Card of key formulas and spreadsheet functions following the chapter Summary Cards at the back of the book.
- The third edition MyFinanceLab course will include an enhanced eText with animated figures and author-created solutions videos for in-text examples.

We began with a simple concept. When a student takes an introductory finance class, he or she may encounter a wonderful instructor with great teaching talent and insight. But outside of class, it is the book and the support materials with which the student forms a learning partnership. *Therefore, the book and support materials need to put the student front and center.* They need to present the information in such a way that it connects directly to the student's experiences. So our goal in this book is to introduce the core concepts of finance in a way that reconnects the student to his or her personal financial experiences, provides student-centered feedback in a timely and understandable fashion, and then uses such experiences as a springboard into the world of corporate finance.

The introductory finance class is the first and last class in finance for the vast majority of college students. The perspective of these students often differs from that of students majoring in finance. They need a book that shows why finance matters across disciplines and that builds from the basics to more complex topics in an organic approach. Our purpose throughout the presentation of topics has been to make the material as simple as possible, but not overly simplified. It is this balance that we hope creates a solid foundation for the fundamental concepts of finance for *all* students.

The evolution of technical support for finance has been amazing. Students now have advanced calculators and spreadsheet software that can provide solutions to many of the basic financial problems. However, understanding finance is more than just solving a financial problem with the aid of these technological

tools. These different tools are all interconnected, and students who can move seamlessly from one to another gain a better understanding of the basics behind the answer. So the book presents three methods to solve many financial problems: the equation approach, the calculator approach, and the spreadsheet approach. In this way, students see that there are different roads to the same destination.

The evolution of technical support has also been great for the instructor. MyFinanceLab has been developed to provide the extra support that time constraints often prevent an instructor from providing to students. With every end-of-chapter problem formatted in MyFinanceLab, an instructor can assign a text-related problem that students solve online with technical support. The problem's solution is available to students, and the marking of individual student homework assignments is completed by MyFinanceLab. In addition, MyFinanceLab has features such as Help Me Solve This, which leads students step by step through the problem with a different set of numbers.

The student is at the heart of this book. Our hope is that we have made the path easier and finance more transparent.

ACKNOWLEDGMENTS

I OWE A GREAT DEAL OF GRATITUDE to the many people who helped create this book.

First, I would like to thank the marvelous people at Pearson Education, especially the editors on the first edition of the text: development editor Mary Clare McEwing and Donna Battista, Vice President, Business Publishing. Mary Clare and Donna were great supporters and contributors from the inception of the first edition to final production. For the third edition, I owe much gratitude to acquisitions editor Kate Fernandes and program manager Kathryn Dinovo. All of these individuals have put as much love into the book as I have.

Carla Thompson and Jeff Holcomb of Pearson and Heidi Allgair of Cenveo® Publisher Services, along with the rest of the team at Cenveo, pulled off a superb production job. I also salute Miguel Leonarte and Melissa Honig of Pearson for the technological expertise they brought to the product, particularly in the development of the MyFinanceLab and the Web site for the book. Jerilyn Bockorick of Cenveo Publisher Services did a magnificent job on the interior design and gave us a splendid cover. My marketing manager, Maggie Moylan, spent productive time in talks with me, coaxing out the differential advantages of the book and putting all to use in a terrific marketing campaign.

I am particularly grateful to Robert Hartwig of Worcester State College for his creative work on the "Putting Finance to Work" boxes, the "Finance Follies" snapshots, and the "Mini-Cases" at the end of each chapter. Bob has been a great contributor to the project, although he did not know at the beginning how rich the source material would be for the "Finance Follies" boxes!

I have been most fortunate in having a talented team of supplement authors on this project. Curt Bacon of Southern Oregon University did an excellent job on the test bank, and Jim DeMello of Western Michigan University made great contributions with his authorship of the Instructor's Manual and PowerPoint slides. I would also like to single out Joe Walker of the University of Alabama at Birmingham, who did a meticulous job of reviewing the chapters for accuracy and checking the end-of-chapter solutions in the Instructor's Manual, as well as Michael J. Woodworth, who reviewed the test bank for accuracy. Also, a special thank-you to Kevin Thorpe, one of my teaching assistants, who helped with the solutions to the end-of-chapter questions and problems.

All the reviewers of the book—and there were many—provided exceptional insights for improving the various drafts, adding new dimensions to the chapters, and pointing out new directions to explore. I am most grateful to these instructors for lending their time and expertise to this project; their names appear on the following pages.

I cannot sufficiently thank those who inspired this book: my students at Oregon State University. Hundreds of them used the book in preliminary form and provided valuable feedback on all aspects of the presentation. I will forever be grateful for their patience and understanding.

Finally, I thank my wife, Greta, for her endless support and encouragement.

To all these people, my profound thanks. Your countless contributions have made for a better book and the writing of it all worthwhile.

Raymond M. Brooks

REVIEWERS

Khaled Abdou, *Penn State University–Berks*
Arvi Arunachalam, *Salisbury University*
Tom Ashman, *Eckerd College*
Ted Azarmi, *University of Tuebingen, Germany*
Curtis Bacon, *Southern Oregon University*
Robert J. Balik, *Western Michigan University*
John C. Banko, *University of Florida*
Robert Bartolacci, *Carnegie Mellon University*
Steve Bennett, *San Jose State University*
Karan Bhanot, *University of Texas, San Antonio*
Eugene Bland, *Texas A&M University, Corpus Christi*
Charles Blaylock, *Murray State University*
James Bohenick, *Pennsylvania State University*
Elizabeth Booth, *Michigan State University*
Lionel Booth, *Tulane University*
Patricia Born, *California State University, Northridge*
William Brunsen, *Eastern New Mexico University*
Alva Butcher, *University of Puget Sound*
Deanne Butchey, *Florida International University*
P. R. Chandy, *University of North Texas*
Eric Chen, *University of Saint Joseph*
Yi-Kai Chen, *National University of Kaohsiung, Taiwan*
Darla Chisholm, *Sam Houston State University*
Cetin Ciner, *University of North Carolina, Wilmington*
William Compton, *University of North Carolina, Wilmington*
Anthony Daly-Leonard, *Delaware County Community College*
Nandita Das, *Delaware State University*
Jim DeMello, *Western Michigan University*
Philip DeMoss, *West Chester University*
Anand Desai, *Kansas State University*
John Dobson, *California Polytechnic State University*
Jocelyn Evans, *College of Charleston*
Eurico Ferreira, *Indiana State University*
Mary Filice, *Columbia College, Chicago*
Roger Fuhrman, *North Central College*
Scott Fullwiler, *Wartburg College*
Lucia Gao, *University of Massachusetts Boston*
Sharon Garrison, *University of Arizona*
Sudip Ghosh, *Penn State University*
Cathy Goldberg, *University of San Francisco*
Levon Goukasian, *Pepperdine University*
Lori Grady, *Bucks County Community College*
Ed Graham, *University of North Carolina, Wilmington*
Joe Greco, *California State University, Fullerton*
Terry Grieb, *University of Idaho*
Harry Griffin, *Sam Houston State University*
Wei Guan, *University of South Florida, St. Petersburg*
Manak Gupta, *Temple University*
Lester Hadsell, *College at Oneonta, State University of New York*
Joseph Haley, *St. Cloud State University*
Pamela Hall, *Western Washington University*
Thomas Hall, *Christopher Newport University*
Robert Hartwig, *Worcester State College*
Eric Hayden, *University of Massachusetts, Boston*
Vanessa Holmes, *Pennsylvania State University, Worthington Scranton*
Ping Hsiao, *San Francisco State University*
Stephen Huffman, *University of Wisconsin, Oshkosh*
Rob Hull, *Washburn University*
Nancy Jay, *Mercer University*
Samuel Kyle Jones, *Stephen F. Austin State University*
Tejendra Kalia, *Worcester State College*
James Kaney, *California Polytechnic State University*
Howard Keen, *Temple University*
Jim Keys, *Florida International University*
Daniel Klein, *Bowling Green State University*
Raj Kohli, *Indiana University, South Bend*
Mark Lane, *Hawaii Pacific University*
Dina Layish, *Binghamton University*
Vance Lesseig, *Texas State University*
Donglin Li, *San Francisco State University*
Huimin Li, *West Chester University*
Jo-Ann Li, *Towson University*
Ralph Lim, *Sacred Heart University*
Angelo Luciano, *Columbia College, Chicago*
Thomas Lyon, *Rockhurst University*
Yulong Ma, *California State University, Long Beach*
Anne Macy, *West Texas A&M University*
Inayat Mangla, *Western Michigan University*
Iqbal Mansur, *Widener University*
Jon Matthews, *Central Carolina Community College*
Stefano Mazzotta, *Kennesaw State University*
Lee McClain, *Western Washington University*
Ilhan Meric, *Rider University*
Cynthia Miglietti, *Bowling Green State University*
Richard Mikolajczak, *Tidewater Community College*
James A. Milanese, *University of North Carolina, Greensboro*

Lalatendu Misra, *University of Texas, San Antonio*
John Mitchell, *Central Michigan University*
William Mosher, *Clark University*
Tom Nelson, *University of Colorado*
William B. Nelson, *Indiana University Northwest*
Srinivas Nippani, *Texas A&M University, Commerce*
Rosilyn Overton, *New Jersey City University*
James Owens, *West Texas A&M University*
Warren Palmer, *Beloit College*
Coleen Pantalone, *Northeastern University*
James Papademas, *Wilbur Wright College*
Ohannes George Paskelian, *University of Houston, Downtown*
Tony Plath, *University of North Carolina, Charlotte*
Rose Prasad, *Central Michigan University*
Vijayan Ramachandran, *Oklahoma City Community College*
Rathin Rathinasamy, *Ball State University*
Mario Reyes, *University of Idaho*
Stanley Roesler, *Eastern Connecticut State University*
David Russell, *California State University, Northridge*
William Sawatski, *Southwestern College*
Atul Saxena, *Georgia Guinnett College*
Dennis Shannon, *Webster University*
Maneesh Sharma, *Indiana-Purdue University*
Kilman Shin, *Ferris State University*
David Suk, *Rider University*
Kenneth Surbrugg, *Labette Community College*
Michael Townsend, *Canyon College*
Victor Wakeling, *Kennesaw State University*
Joe Walker, *University of Alabama, Birmingham*
Sally Wells, *Columbia College of Missouri*
Susan White, *University of Maryland*
Alex Wilson, *University of Arizona*
Fred Yeager, *St. Louis University*
Emily Zietz, *Middle Tennessee State University*

Focus Group Participants

John Banko, *University of Central Florida*
Rafiqul Bhuyan, *California State University, San Bernardino*
George Chang, *Bradley University*
Chiaku Chukwuogor-Ndu, *Eastern Connecticut State University*
Cetin Ciner, *University of North Carolina, Wilmington*
Beverly Frickel, *University of Nebraska, Kearney*
Luis Garcia-Feijoo, *Creighton University*
Anne Gleason, *University of Central Oklahoma*
Terry Grieb, *University of Idaho*
Thomas Krissek, *Northeastern Illinois University*
Francis Laatsch, *Bowling Green State University*
Richard Levy, *Roosevelt University*
Piman Limpaphayom, *Chulalongkorn University, Thailand*
Angelo Luciano, *Columbia College, Chicago*
Elisa Muresan, *Long Island University, Brooklyn*
Prakash Pai, *University of Texas of the Permian Basin*
Debbie Psihountas, *Webster University*
Rasoul Rezvanian, *Northeastern Illinois University*
Jimmy Senteza, *Drake University*
Janikan Supanvanij, *St. Cloud State University*
Chu-Sheng Tai, *Texas Southern University*
Jill Wetmore, *Saginaw Valley State University*

Pearson would like to thank and acknowledge Emmanouil Noikokyris (Kingston University) and Hossam E. M. Abdelkader (Ain Shams University) for their contribution to the Global Edition, and Alain Praet (University of Leuven), Izlin Ismail (University of Malaysia), Sherif Mohamed (Heriot-Watt University), and Hawati Janor (National University of Malaysia) for reviewing the Global Edition.

BRIEF CONTENTS

PART 1 Fundamental Concepts and Basic Tools of Finance 29

CHAPTER 1 Financial Management 30
CHAPTER 2 Financial Statements 54
CHAPTER 3 The Time Value of Money (Part 1) 82
CHAPTER 4 The Time Value of Money (Part 2) 109
CHAPTER 5 Interest Rates 142

PART 2 Valuing Stocks and Bonds and Understanding Risk and Return 173

CHAPTER 6 Bonds and Bond Valuation 174
CHAPTER 7 Stocks and Stock Valuation 208
CHAPTER 8 Risk and Return 240

PART 3 Capital Budgeting 283

CHAPTER 9 Capital Budgeting Decision Models 284
CHAPTER 10 Cash Flow Estimation 323
CHAPTER 11 The Cost of Capital 351

PART 4 Financial Planning and Evaluating Performance 381

CHAPTER 12 Forecasting and Short-Term Financial Planning 382
CHAPTER 13 Working Capital Management 411
CHAPTER 14 Financial Ratios and Firm Performance 449

PART 5 Other Selected Finance Topics 483

CHAPTER 15 Raising Capital 484
CHAPTER 16 Capital Structure 516
CHAPTER 17 Dividends, Dividend Policy, and Stock Splits 546
CHAPTER 18 International Financial Management 576

APPENDIX 1 Future Value Interest Factors 609
APPENDIX 2 Present Value Interest Factors 611
APPENDIX 3 Future Value Interest Factors of an Annuity 613
APPENDIX 4 Present Value Interest Factors of an Annuity 615
APPENDIX 5 Answers to Prepping for Exam Questions 617
GLOSSARY 627
INDEX 637
CREDITS 647

CONTENTS

PART 1

Fundamental Concepts and Basic Tools of Finance 29

1 Financial Management 30

1.1 The Cycle of Money 31
1.2 Overview of Finance Areas 32
1.3 Financial Markets 33
1.4 The Finance Manager and Financial Management 34
1.5 Objective of the Finance Manager 36
Profit Maximization 36
Maximizing Current Stock Price 37
Maximizing Equity Value 37
1.6 Internal and External Players 38
1.7 The Legal Forms of Business 39
Proprietorship 39
Partnership 40
Corporations 40
Hybrid Corporations 41
Not-for-Profit Corporations 42
1.8 The Financial Management Setting: The Agency Model 42
1.9 Corporate Governance and Business Ethics 45
FINANCE FOLLIES The Financial Meltdown of 2008 47
1.10 Why Study Finance? 48
PUTTING FINANCE TO WORK Now Hiring 48

Key Terms 50
Questions 50
Prepping for Exams 51
MINI-CASE Richardses' Tree Farm Grows Up 53
■ Summary Card at end of text

2 Financial Statements 54

2.1 Financial Statements 55
The Balance Sheet 56
The Income Statement 58
Statement of Retained Earnings 61
2.2 Cash Flow Identity and the Statement of Cash Flows 61
The First Component: Cash Flow from Assets 62
The Second Component: Cash Flow to Creditors 64
The Third Component: Cash Flow to Owners 64
Putting It All Together: The Cash Flow Identity 65
The Statement of Cash Flows 65
Free Cash Flow 67
2.3 Financial Performance Reporting 67
Regulation Fair Disclosure 68
Notes to the Financial Statements 68
2.4 Financial Statements on the Internet 68
PUTTING FINANCE TO WORK Look Before You Leap 71

Key Terms 72
Questions 73
Prepping for Exams 73
Problems 75
Advanced Problems for Spreadsheet Application 78
MINI-CASE Hudson Valley Realty 80
■ Summary Card at end of text

3 The Time Value of Money (Part 1) 82

3.1 Future Value and Compounding Interest 83
The Single-Period Scenario 83
The Multiple-Period Scenario 83
Methods of Solving Future Value Problems 85
3.2 Present Value and Discounting 88
The Single-Period Scenario 88
The Multiple-Period Scenario 89
The Use of Time Lines 91
3.3 One Equation and Four Variables 91
3.4 Applications of the Time Value of Money Equation 93
PUTTING FINANCE TO WORK Sports Agent 98
3.5 Doubling of Money: The Rule of 72 99

Key Terms 100
Questions 100
Prepping for Exams 101
Problems 103

CONTENTS

Advanced Problems for Spreadsheet Application 107
MINI-CASE Richardses' Tree Farm, Inc.: The Continuing Saga 108
■ Summary Card at end of text

4 The Time Value of Money (Part 2) 109

4.1 Future Value of Multiple Payment Streams 110
4.2 Future Value of an Annuity Stream 111
Future Value of an Annuity: An Application 113
4.3 Present Value of an Annuity 115
4.4 Annuity Due and Perpetuity 118
PUTTING FINANCE TO WORK Modeling the Future with Actuarial Science 119
Perpetuity 121
4.5 Three Loan Payment Methods 122
Interest and Principal at Maturity of Loan (Discount Loan) 122
Interest as You Go, Principal at Maturity of Loan (Interest-Only Loan) 123
Interest and Principal as You Go (Amortized Loan) 123
4.6 Amortization Schedules 124
4.7 Waiting Time and Interest Rates for Annuities 126
4.8 Solving a Lottery Problem 128
4.9 Ten Important Points about the TVM Equation 131
Key Terms 131
Questions 132
Prepping for Exams 132
Problems 134
Advanced Problems for Spreadsheet Application 140
MINI-CASE Fitchminster Injection Molding, Inc.: Rose Climbs High 141
■ Summary Card at end of text

5 Interest Rates 142

5.1 How Financial Institutions Quote Interest Rates: Annual and Periodic Interest Rates 143
5.2 Effect of Compounding Periods on the Time Value of Money Equations 146
5.3 Consumer Loans and Amortization Schedules 150
5.4 Nominal and Real Interest Rates 154
5.5 Risk-Free Rate and Premiums 156
Maturity Premiums 158
5.6 Yield Curves 159
5.7 A Brief History of Interest Rates and Inflation in the United States 161
Key Terms 164
Questions 164
Prepping for Exams 164
Problems 166
Advanced Problems for Spreadsheet Application 170
MINI-CASE Sweetening the Deal: Povero Construction Company 171
■ Summary Card at end of text

PART 2

Valuing Stocks and Bonds and Understanding Risk and Return 173

6 Bonds and Bond Valuation 174

6.1 Application of the Time Value of Money Tool: Bond Pricing 175
Key Components of a Bond 175
Pricing a Bond in Steps 177
6.2 Semiannual Bonds and Zero-Coupon Bonds 180
Pricing Bonds after Original Issue 182
Zero-Coupon Bonds 183
Amortization of a Zero-Coupon Bond 185
6.3 Yields and Coupon Rates 186
The First Interest Rate: Yield to Maturity 186
The "Other" Interest Rate: Coupon Rate 188
Relationship of Yield to Maturity and Coupon Rate 188
6.4 Bond Ratings 190
6.5 Some Bond History and More Bond Features 192
6.6 U.S. Government Bonds 196
PUTTING FINANCE TO WORK Municipal Manager 197

CONTENTS

Pricing a U.S. Government Note or Bond 197
Pricing a Treasury Bill 198

Key Terms 200
Questions 200
Prepping for Exams 201
Problems 202
Advanced Problems for Spreadsheet Application 205
MINI-CASE Bay Path Cranberry Products 206
■ Summary Card at end of text

7 Stocks and Stock Valuation 208

7.1 Characteristics of Common Stock 209
Ownership 209
Claim on Assets and Cash Flow (Residual Claim) 209
Vote (Voice in Management) 210
No Maturity Date 210
Dividends and Their Tax Effect 210
Authorized, Issued, and Outstanding Shares 210
Treasury Stock 211
Preemptive Rights 211
7.2 Stock Markets 211
Primary Markets 211
Secondary Markets: How Stocks Trade 212
Bull Markets and Bear Markets 213
7.3 Stock Valuation 214
The Constant Dividend Model with an Infinite Horizon 216
The Constant Dividend Model with a Finite Horizon 217
The Constant Growth Dividend Model with an Infinite Horizon 220
The Constant Growth Dividend Model with a Finite Horizon 222
Nonconstant Growth Dividends 223
FINANCE FOLLIES Irrational Expectations: Bulbs and Bubbles 224
7.4 Dividend Model Shortcomings 225
7.5 Preferred Stock 228
7.6 Efficient Markets 229
Operational Efficiency 230
Informational Efficiency 230

Key Terms 231
Questions 232
Prepping for Exams 232
Problems 234
Advanced Problems for Spreadsheet Application 238
MINI-CASE Lawrence's Legacy: Part 1 239
■ Summary Card at end of text

8 Risk and Return 240

8.1 Returns 241
Dollar Profits and Percentage Returns 241
Converting Holding Period Returns to Annual Returns 242
Extrapolating Holding Period Returns 244
8.2 Risk (Certainty and Uncertainty) 245
FINANCE FOLLIES "Dangerous to Your Wealth": Is Investing Just Gambling? 245
8.3 Historical Returns 246
8.4 Variance and Standard Deviation as a Measure of Risk 250
Normal Distributions 252
8.5 Returns in an Uncertain World (Expectations and Probabilities) 253
FINANCE FOLLIES "Scam of the Century": Bernie Madoff and the $50 Billion Fraud 255
Determining the Probabilities of All Potential Outcomes 256
8.6 The Risk-and-Return Trade-Off 258
Investment Rules 259
8.7 Diversification: Minimizing Risk or Uncertainty 260
When Diversification Works 261
Adding More Stocks to the Portfolio: Systematic and Unsystematic Risk 264
8.8 Beta: The Measure of Risk in a Well-Diversified Portfolio 264
8.9 The Capital Asset Pricing Model and the Security Market Line 266
The Capital Asset Pricing Model 266
Application of the SML 268

Key Terms 271
Questions 271
Prepping for Exams 272
Problems 274

CONTENTS

Advanced Problems for Spreadsheet Application 280
MINI-CASE Lawrence's Legacy: Part 2 281
■ Summary Card at end of text

PART 3

Capital Budgeting 283

9 Capital Budgeting Decision Models 284

9.1 Short-Term and Long-Term Decisions 285
9.2 Payback Period 286
FINANCE FOLLIES IBM Exits the Consumer Software Market: Misreading Future Cash Flows 287
Discounted Payback Period 289
9.3 Net Present Value 291
Mutually Exclusive versus Independent Projects 292
Unequal Lives of Projects 294
Net Present Value Example: Equation and Calculator Function 296
9.4 Internal Rate of Return 297
Appropriate Discount Rate or Hurdle Rate 299
Problems with the Internal Rate of Return 301
Multiple Internal Rates of Return 301
PUTTING FINANCE TO WORK Marketing and Sales: Your Product = Your Customer's Capital Budgeting Decision 302
Reinvestment and Crossover Rates 303
Modified Internal Rate of Return 306
9.5 Profitability Index 308
9.6 Overview of Six Decision Models 309
Capital Budgeting Using a Spreadsheet 311

Key Terms 313
Questions 313
Prepping for Exams 313
Problems 315
Advanced Problems for Spreadsheet Application 321
MINI-CASE BioCom, Inc.: Part 1 321
■ Summary Card at end of text

10 Cash Flow Estimation 323

10.1 The Importance of Cash Flow 324
10.2 Estimating Cash Flow for Projects: Incremental Cash Flow 326
Sunk Costs 326
Opportunity Costs 327
Erosion Costs 327
Synergy Gains 329
Working Capital 330
FINANCE FOLLIES Boston's "Big Dig" Gets Dug Under 332
10.3 Capital Spending and Depreciation 332
Straight-Line Depreciation 333
Modified Accelerated Cost Recovery System 334
10.4 Cash Flow and the Disposal of Capital Equipment 336
10.5 Projected Cash Flow For a New Product 337

Key Terms 342
Questions 342
Prepping for Exams 343
Problems 344
Advanced Problems for Spreadsheet Application 348
MINI-CASE BioCom, Inc.: Part 2, Evaluating a New Product Line 350
■ Summary Card at end of text

11 The Cost of Capital 351

11.1 The Cost of Capital: A Starting Point 352
11.2 Components of the Weighted Average Cost of Capital 355
Debt Component 355
Preferred Stock Component 357
Equity Component 357
Retained Earnings 359
The Debt Component and Taxes 360
11.3 Weighting the Components: Book Value or Market Value? 360
Book Value 361
Adjusted Weighted Average Cost of Capital 362
Market Value 363
11.4 Using the Weighted Average Cost of Capital in a Budgeting Decision 364

Individual Weighted Average Cost of Capital for Individual Projects 365
11.5 Selecting Appropriate Betas for Projects 367
11.6 Constraints on Borrowing and Selecting Projects for the Portfolio 369

Key Terms 371
Questions 371
Prepping for Exams 371
Problems 374
Advanced Problems for Spreadsheet Application 378
MINI-CASE BioCom, Inc.: Part 3, A Fresh Look at the WACC 379
■ Summary Card at end of text

PART 4

Financial Planning and Evaluating Performance 381

12 Forecasting and Short-Term Financial Planning 382

12.1 Sources and Uses of Cash 384
12.2 Cash Budgeting and the Sales Forecast 385
Cash Inflow from Sales 388
Other Cash Receipts 389
12.3 Cash Outflow from Production 390
12.4 The Cash Forecast: Short-Term Deficits and Short-Term Surpluses 391
Funding Cash Deficits 392
Investing Cash Surpluses 394
12.5 Planning with Pro Forma Financial Statements 394
Pro Forma Income Statement 395
Pro Forma Balance Sheet 397
PUTTING FINANCE TO WORK Information Technology 400

Key Terms 401
Questions 401
Prepping for Exams 402
Problems 403
Advanced Problems for Spreadsheet Application 407
MINI-CASE Midwest Properties: Quarterly Forecasting 408
■ Summary Card at end of text

13 Working Capital Management 411

13.1 The Cash Conversion Cycle 412
Average Production Cycle 415
Average Collection Cycle 415
Average Payment Cycle 416
Putting It All Together: The Cash Conversion Cycle 417
13.2 Managing Accounts Receivable and Setting Credit Policy 418
Collecting Accounts Receivable 418
Credit: A Two-Sided Coin 419
Qualifying for Credit 420
Setting Payment Policy 422
Collecting Overdue Debt 425
13.3 The Float 425
Speeding Up the Collection Float (Shortening the Lag Time) 427
Extending Disbursement Float (Lengthening the Lag Time) 428
13.4 Inventory Management: Carrying Costs and Ordering Costs 428
ABC Inventory Management 429
Redundant Inventory Items 430
Economic Order Quantity 430
13.5 The Effect of Working Capital on Capital Budgeting 435
PUTTING FINANCE TO WORK Operations Management 436
Inventories and Daily Operations 437

Key Terms 439
Questions 439
Prepping for Exams 440
Problems 442
Advanced Problems for Spreadsheet Application 445
MINI-CASE Cranston Dispensers, Inc.: Part 1 446
■ Summary Card at end of text

CONTENTS

14 Financial Ratios and Firm Performance 449

14.1 Financial Statements 450
Benchmarking 451

14.2 Financial Ratios 455
Short-Term Solvency: Liquidity Ratios 456
Long-Term Solvency: Solvency or Financial Leverage Ratios 457
Asset Management Ratios 459
Profitability Ratios 461
Market Value Ratios 462
DuPont Analysis 464

14.3 External Uses of Financial Statements and Industry Averages 465
Cola Wars 466
Industry Ratios 468
FINANCE FOLLIES Cooking the Books at Enron and WorldCom 469

Key Terms 470
Questions 471
Prepping for Exams 471
Problems 473
Advanced Problems for Spreadsheet Application 479
MINI-CASE Cranston Dispensers, Inc.: Part 2 479
■ Summary Card at end of text

PART 5

Other Selected Finance Topics 483

15 Raising Capital 484

15.1 The Business Life Cycle 485

15.2 Borrowing for a Start-Up and Growing Business 485
Personal Funds and Family Loans 486
Commercial Bank Loans 486
Commercial Bank Loans through the Small Business Administration 486
Angel Financing and Venture Capital 487

15.3 Borrowing for a Stable and Mature Business: Bank Loans 491
Straight Loans 492
Discount Loans 492
Letters of Credit or Lines of Credit 493
Compensating Balance Loans 493

15.4 Borrowing for a Stable and Mature Business: Selling Bonds 494

15.5 Borrowing For a Stable and Mature Business: Selling Stock 496
Initial Public Offerings and Underwriting 497
Registration, Prospectus, and Tombstone 499
The Marketing Process: Road Show 499
The Auction 501
The Aftermarket: Dealer in the Shares 501
PUTTING FINANCE TO WORK Corporate Law 503

15.6 Other Borrowing Options for a Mature Business 504

15.7 The Final Phase: Closing the Business 506
Straight Liquidation: Chapter 7 506
Reorganization: Chapter 11 507

Key Terms 508
Questions 508
Prepping for Exams 508
Problems 510
Advanced Problems for Spreadsheet Application 513
MINI-CASE AK Web Developers.com 514
■ Summary Card at end of text

16 Capital Structure 516

16.1 Capital Markets: A Quick Review 517

16.2 Benefits of Debt 519
Earnings per Share as a Measure of the Benefits of Borrowing 520

16.3 Break-Even Earnings for Different Capital Structures 521

16.4 Pecking Order 524
Firms Prefer Internal Financing First 525
Firms Choose to Issue the Cheapest Security First and Use Equity as a Last Resort 525

16.5 Modigliani and Miller on Optimal Capital Structure 527
Capital Structure in a World of No Taxes and No Bankruptcy 527
Capital Structure in a World of Corporate Taxes and No Bankruptcy 531
Debt and the Tax Shield 531
16.6 The Static Theory of Capital Structure 534
Bankruptcy 534
Static Theory of Capital Structure 535
FINANCE FOLLIES Hedge Funds: Some Really Smart Guys Get into Big Trouble 536

Key Terms 538
Questions 538
Prepping for Exams 539
Problems 541
Advanced Problems for Spreadsheet Application 543
MINI-CASE General Energy Storage Systems: How Much Debt and How Much Equity? 544
■ Summary Card at end of text

17 Dividends, Dividend Policy, and Stock Splits 546

17.1 Cash Dividends 547
Buying and Selling Stock 547
Declaring and Paying a Cash Dividend: A Chronology 548
Different Types of Dividends 550
17.2 Dividend Policy 551
Dividend Clienteles 552
Dividend Policy Irrelevance 552
Dividend Policy in a World of No Taxes and No Transaction Costs 552
Reasons Favoring a Low- or No-Dividend-Payout Policy 556
Reasons Favoring a High-Dividend-Payout Policy 557
Optimal Dividend Policy 557
17.3 Selecting a Dividend Policy 558
Some Further Considerations in the Selection of a Dividend Policy 560
17.4 Stock Dividends, Stock Splits, and Reverse Splits 561
Reasons for Stock Splits 562
Reverse Splits 563
17.5 Specialized Dividend Plans 564
Stock Repurchase 564
Dividend Reinvestment Plans 566

Key Terms 568
Questions 568
Prepping for Exams 569
Problems 570
Advanced Problems for Spreadsheet Application 573
MINI-CASE East Coast Warehouse Club 574
■ Summary Card at end of text

18 International Financial Management 576

18.1 Managing Multinational Operations 577
Cultural Risk 577
Business Risk 580
Political Risk 580
FINANCE FOLLIES Rino International 581
18.2 Foreign Exchange 583
Purchasing Power Parity 583
Currency Exchange Rates 585
Cross Rates 586
Arbitrage Opportunities 588
Forward Rates 589
Using Forward Rates 591
Changing Spot Rates 593
18.3 Transaction, Operating, and Translation Exposures 593
Transaction Exposure 594
Operating Exposure 594
Translation Exposure 595
18.4 Foreign Investment Decisions 596

Key Terms 599
Questions 600
Prepping for Exams 600
Problems 602

CONTENTS

Advanced Problems for Spreadsheet Application 606

MINI-CASE Scholastic Travel Services, Inc. 607

- Summary Card at end of text

Appendix 1 Future Value Interest Factors 609

Appendix 2 Present Value Interest Factors 611

Appendix 3 Future Value Interest Factors of an Annuity 613

Appendix 4 Present Value Interest Factors of an Annuity 615

Appendix 5 Answers to Prepping for Exam Questions 617

Glossary 627

Index 637

Credits 647

PART **ONE**

Fundamental Concepts and Basic Tools of Finance

1

CHAPTER

1

Financial Management

In this text, we embark on a journey of the study of finance and financial management. It is probably your first trip through these uncharted waters, but you may already have an intuitive understanding of certain aspects of finance. If you have saved money, borrowed money, or loaned money, you have performed a fundamental activity of finance. Your intuition should serve you well as you develop your personal skill set for finance and financial management.

In this chapter, you will learn about finance activities, the main areas of finance, the key financial players, and the types of business organizations. Together, we'll examine the relationship of a company's officers to its

LEARNING OBJECTIVES

LO1
Describe the cycle of money, the participants in the cycle, and the common objective of borrowing and lending.

LO2
Distinguish the four main areas of finance and briefly explain the financial activities that each encompasses.

LO3
Explain the different ways of classifying financial markets.

LO4
Discuss the three main categories of financial management.

LO5
Identify the main objective of the finance manager and how he or she might meet that objective.

LO6
Explain how the finance manager interacts with both internal and external players.

LO7
Delineate the three main legal categories of business organizations and their respective advantages and disadvantages.

LO8
Illustrate agency theory and the principal-agent problem.

LO9
Define issues in corporate governance and business ethics.