新曲线出品
New Curves

Seventh Edition

Ross
Westerfield
Jordan

ESSENTIALS OF CORPORATE FINANCE

双语教学版

公司理财精要

[美] 斯蒂芬·罗斯　伦道夫·韦斯特菲尔德　布拉德福德·乔丹　著　张建平　译注

中国工信出版集团　人民邮电出版社
POSTS & TELECOM PRESS

公司理财精要

第 7 版

双语教学版

斯蒂芬·罗斯

〔美〕 伦道夫·韦斯特菲尔德　著

布拉德福德·乔丹

张建平　译注

人民邮电出版社

北　京

图书在版编目（CIP）数据

公司理财精要：第 7 版：双语教学版 /（美）罗斯，（美）韦斯特菲尔德，（美）乔丹 著；张建平 译．
—北京：人民邮电出版社，2016.4
ISBN 978-7-115-41524-0
I. ①公… II. ①罗… ②韦… ③乔… ④张… III. ①公司 – 财务管理 – 双语教学 – 教材 IV. ① F276.6
中国版本图书馆 CIP 数据核字（2016）第 000188 号

Stephen A. Ross, Randolph W. Westerfield, Bradford D. Jordan
Essentials of Corporate Finance, 7th Edition
ISBN 0-07-338246-9

公司理财精要（第 7 版，双语教学版）

◆ 著　　　［美］斯蒂芬·罗斯　伦道夫·韦斯特菲尔德　布拉德福德·乔丹
译　注　张建平
策　划　刘　力　陆　瑜
责任编辑　王润秋
装帧设计　陶建胜

◆ 人民邮电出版社出版发行　北京市丰台区成寿寺路 11 号
邮编　100164　电子邮件　315@ptpress.com.cn
网址　http://www.ptpress.com.cn
电话（编辑部）010-84937150　（市场部）010-84937152
三河市少明印务有限公司印刷
新华书店经销

◆ 开本：850 × 1092　1 /16
印张：42.5
字数：872 千字　2016 年 4 月第 1 版　2016 年 4 月第 1 次印刷
著作权合同登记号　图字：01-2012-3547
ISBN 978-7-115-41524-0

定价：128.00 元

本书如有印装质量问题，请与本社联系　电话：（010）84937153

用心字里行间　雕刻名著经典

新曲綫 New Curves | 用心雕刻每一本……

Essentials of Corporate Finance

SEVENTH EDITION

Stephen A. Ross
Massachusetts Institute of Technology

Randolph W. Westerfield
University of Southern California

Bradford D. Jordan
University of Kentucky

内容提要

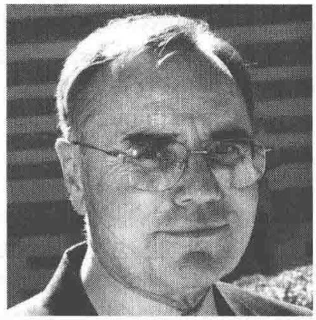
本书是美国金融协会前主席、著名金融/财务学者斯蒂芬·罗斯及其团队的一部财务管理名著，内容清晰简洁、通俗易懂，深受广大读者的好评。全书共分为九编 18 章，精选了财务管理入门、财务报表和现金流、未来现金流量的价值确定、股票与债券定价、资本预算、风险与收益、长期融资、短期理财等方面的核心内容；围绕公司理财的整体框架，运用现代财务管理的核心概念，系统且有效地传达了公司理财的基本理论、基本方法和实务技能。本书作为双语教材，对英文版的重点内容、生词术语等进行了翻译和注释。

本书可作为财务管理双语课程教材，也可作为市场营销、运营管理、会计等专业以及 MBA 学生的双语参考教材，又可为财务专业的初学者和非财务人员提供参考。

About the Authors 作者简介

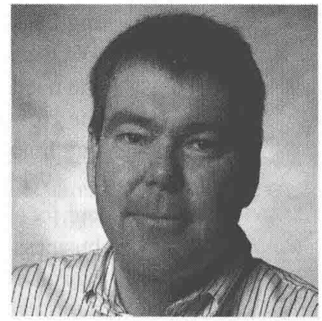
Stephen A. Ross
Sloan School of Management,
Franco Modigliani Professor of Finance and Economics, Massachusetts Institute of Technology

Stephen A. Ross is the Franco Modigliani Professor of Finance and Economics at the Sloan School of Management, Massachusetts Institute of Technology. One of the most widely published authors in finance and economics, Professor Ross is recognized for his work in developing the Arbitrage Pricing Theory and his substantial contributions to the discipline through his research in signaling, agency theory, option pricing, and the theory of the term structure of interest rates, among other topics. A past president of the American Finance Association, he currently serves as an associate editor of several academic and practitioner journals. He is a trustee of CalTech.



Randolph W. Westerfield
Marshall School of Business,
University of Southern California

Randolph W. Westerfield is Dean Emeritus of the University of Southern California's Marshall School of Business and is the Charles B. Thornton Professor of Finance. He came to USC from the Wharton School, University of Pennsylvania, where he was the chairman of the finance department and a member of the finance faculty for 20 years. He is a member of several public company boards of directors including Health Management Associates, Inc., and the Nicholas Applegate Growth Fund. His areas of expertise include corporate financial policy, investment management, and stock market price behavior.



Bradford D. Jordan
Gatton College of Business and Economics, *University of Kentucky*

Bradford D. Jordan is Professor of Finance and holder of the Richard W. and Janis H. Furst Endowed Chair in Finance at the University of Kentucky. He has a long-standing interest in both applied and theoretical issues in corporate finance and has extensive experience teaching all levels of corporate finance and financial management policy. Professor Jordan has published numerous articles on issues such as the cost of capital, capital structure, and the behavior of security prices. He is a past president of the Southern Finance Association, and he is coauthor of *Fundamentals of Investments: Valuation and Management,* 5th edition, a leading investments text, also published by McGraw-Hill/Irwin.

From the Authors 前言

When we first wrote *Essentials of Corporate Finance,* we thought there might be a small niche for a briefer book that really focused on what students with widely varying backgrounds and interests needed to carry away from an introductory finance course. We were wrong. There was a huge niche! What we learned is that our text closely matches the needs of instructors and faculty at hundreds of schools across the country. As a result, the growth we have experienced through the first six editions of *Essentials* has far exceeded anything we thought possible.

With the seventh edition of *Essentials of Corporate Finance,* we have continued to refine our focus on our target audience, which is the undergraduate student taking a core course in business or corporate finance. This can be a tough course to teach. One reason is that the class is usually required of all business students, so it is not uncommon for a majority of the students to be nonfinance majors. In fact, this may be the only finance course many of them will ever have. With this in mind, our goal in *Essentials* is to convey the most important concepts and principles at a level that is approachable for the widest possible audience.

To achieve our goal, we have worked to distill the subject down to its bare essentials (hence, the name of this book), while retaining a decidedly modern approach to finance. We have always maintained that the subject of corporate finance can be viewed as the working of a few very powerful intuitions. We also think that understanding the "why" is just as important, if not more so, than understanding the "how," especially in an introductory course. Based on the gratifying market feedback we have received from our previous editions, as well as from our other text, *Fundamentals of Corporate Finance* (now in its ninth edition), many of you agree.

By design, this book is not encyclopedic. As the table of contents indicates, we have a total of 18 chapters. Chapter length is about 30 pages, so the text is aimed squarely at a single-term course, and most of the book can be realistically covered in a typical semester or quarter. Writing a book for a one-term course necessarily means some picking and choosing, with regard to both topics and depth of coverage. Throughout, we strike a balance by introducing and covering the essentials (there's that word again!) while leaving some more specialized topics to follow-up courses.

The other things we have always stressed, and have continued to improve with this edition, are readability and pedagogy. *Essentials* is written in a relaxed, conversational style that invites the students to join in the learning process rather than being a passive information absorber. We have found that this approach dramatically increases students' willingness to read and learn on their own. Between larger and larger class sizes and the ever-growing demands on faculty time, we think this is an essential (!) feature for a text in an introductory course.

Throughout the development of this book, we have continued to take a hard look at what is truly relevant and useful. In doing so, we have worked to downplay purely theoretical issues and minimize the use of extensive and elaborate calculations to illustrate points that are either intuitively obvious or of limited practical use.

As a result of this process, three basic themes emerge as our central focus in writing *Essentials of Corporate Finance:*

An Emphasis on Intuition We always try to separate and explain the principles at work on a commonsense, intuitive level before launching into any specifics. The underlying ideas are discussed first in very general terms and then by way of examples that illustrate in more concrete terms how a financial manager might proceed in a given situation.

A Unified Valuation Approach We treat net present value (NPV) as the basic concept underlying corporate finance. Many texts stop well short of consistently integrating this important principle. The most basic and important notion, that NPV represents the excess of market value over cost, often is lost in an overly mechanical approach that emphasizes computation at the expense of comprehension. In contrast, every subject we cover is firmly rooted in valuation, and care is taken throughout to explain how particular decisions have valuation effects.

A Managerial Focus Students shouldn't lose sight of the fact that financial management concerns management. We emphasize the role of the financial manager as decision maker, and we stress the need for managerial input and judgment. We consciously avoid "black box" approaches to finance, and, where appropriate, the approximate, pragmatic nature of financial analysis is made explicit, possible pitfalls are described, and limitations are discussed.

Today, as we prepare to once again enter the market, our goal is to stick with and build on the principles that have brought us this far. However, based on an enormous amount of feedback we have received from you and your colleagues, we have made this edition and its package even more flexible than previous editions. We offer flexibility in coverage and pedagogy by providing a wide variety of features in the book to help students to learn about corporate finance. We also provide flexibility in package options by offering the most extensive collection of teaching, learning, and technology aids of any corporate finance text. Whether you use just the textbook, or the book in conjunction with other products, we believe you will find a combination with this edition that will meet your current as well as your changing needs.

Stephen A. Ross
Randolph W. Westerfield
Bradford D. Jordan

本教材的组织
Organization of the Text

We designed *Essentials of Corporate Finance* to be as flexible and modular as possible. There are a total of nine parts, and, in broad terms, the instructor is free to decide the particular sequence. Further, within each part, the first chapter generally contains an overview and survey. Thus, when time is limited, subsequent chapters can be omitted. Finally, the sections placed early in each chapter are generally the most important, and later sections frequently can be omitted without loss of continuity. For these reasons, the instructor has great control over the topics covered, the sequence in which they are covered, and the depth of coverage.

Just to get an idea of the breadth of coverage in the seventh edition of *Essentials*, the following grid presents for each chapter some of the most significant new features, as well as a few selected chapter highlights. Of course, in every chapter, figures, opening vignettes, boxed features, and in-chapter illustrations and examples using real companies have been thoroughly updated as well. In addition, the end-of-chapter material has been completely revised.

Chapters	Selected Topics	Benefits to Users
PART ONE	**Overview of Financial Management**	
Chapter 1	*New* opener on "Say on Pay."	Highlights important development regarding the very current question of appropriate executive compensation.
	Updated corporate ethics box with Bank of America purchase of Merrill Lynch.	Describes ethical issues in the context of the Great Recession of 2008–2009 and the controversial BoA acquisition.
	New material on Microsoft/Yahoo! takeover battle.	Illustrates important aspects of corporate governance using these well-known companies.
	Goal of the firm and agency problems.	Stresses value creation as the most fundamental aspect of management and describes agency issues that can arise.
	Ethics, financial management, and executive compensation.	Brings in real-world issues concerning conflicts of interest and current controversies surrounding ethical conduct and management pay.
PART TWO	**Understanding Financial Statements and Cash Flow**	
Chapter 2	Cash flow vs. earnings.	Clearly defines cash flow and spells out the differences between cash flow and earnings.
	Market values vs. book values.	Emphasizes the relevance of market values over book values.
	New box on fair value accounting.	Explains fair value accounting, which became highly controversial for banks in the 2008–2009 recession.

Chapters	Selected Topics	Benefits to Users
Chapter 3	Additional explanation of alternative formulas for sustainable and internal growth rates.	Expanded explanation of growth rate formulas clears up a common misunderstanding about these formulas and the circumstances under which alternative formulas are correct.
	New example comparing ratios for Lowe's and Home Depot.	Provides real-world context using two similar and familiar companies.
	New example comparing Du Pont breakdowns for Yahoo! and Google.	Also provides real-world context using two similar and familiar companies.
PART THREE	**Valuation of Future Cash Flows**	
Chapter 4	First of two chapters on time value of money.	Relatively short chapter introduces just the basic ideas on time value of money to get students started on this traditionally difficult topic.
Chapter 5	Second of two chapters on time value of money.	Covers more advanced time value topics with numerous examples, calculator tips, and Excel spreadsheet exhibits. Contains many real-world examples.
PART FOUR	**Valuing Stocks and Bonds**	
Chapter 6	Bond valuation.	Thorough coverage of bond price/yield concepts.
	Interest rates and inflation.	Highly intuitive discussion of inflation, the Fisher effect, and the term structure of interest rates.
	"Clean" vs. "dirty" bond prices and accrued interest.	Clears up the pricing of bonds between coupon payment dates and also bond market quoting conventions.
	NASD's TRACE system and transparency in the corporate bond market.	Up-to-date discussion of new developments in fixed income with regard to price, volume, and transactions reporting.
	"Make-whole" call provisions.	Up-to-date discussion of relatively new type of call provision that has become very common.
Chapter 7	Stock valuation.	Thorough coverage of constant and nonconstant growth models.
	NYSE and Nasdaq Market operations.	Up-to-date description of major stock market operations.
	New box on the BATS exchange.	Explains how an Internet-based stock exchange operates.
PART FIVE	**Capital Budgeting**	
Chapter 8	*New* opener on GE's "Ecomagination" program.	Illustrates the growing importance of "green" business.
	First of two chapters on capital budgeting.	Relatively short chapter introduces key ideas on an intuitive level to help students with this traditionally difficult topic.
	NPV, IRR, MIRR, payback, discounted payback, accounting rate of return.	Consistent, balanced examination of advantages and disadvantages of various criteria.
Chapter 9	Project cash flow.	Thorough coverage of project cash flows and the relevant numbers for a project analysis.
	Scenario and sensitivity "what-if" analyses.	Illustrates how to actually apply and interpret these tools in a project analysis.

Chapters	Selected Topics	Benefits to Users
PART SIX	**Risk and Return**	
Chapter 10	*New* international material on the stock market risk premium.	Uses equity risk premiums for longer time periods across numerous countries to show that the U.S. experience has not been unusual.
	Capital market history.	Extensive coverage of historical returns, volatilities, and risk premiums.
	Market efficiency.	Efficient markets hypothesis discussed along with common misconceptions.
	Geometric vs. arithmetic returns.	Discusses calculation and interpretation of geometric returns. Clarifies common misconceptions regarding appropriate use of arithmetic vs. geometric average returns.
Chapter 11	Diversification, systematic, and unsystematic risk.	Illustrates basics of risk and return in a straightforward fashion.
	Beta and the security market line.	Develops the security market line with an intuitive approach that bypasses much of the usual portfolio theory and statistics.
PART SEVEN	**Long-Term Financing**	
Chapter 12	*New* opener on BASF's cost of capital.	Shows that companies use the WACC for performance evaluation and planning purposes.
	Cost of capital estimation.	Intuitive development of the WACC and a complete, Web-based illustration of cost of capital for a real company.
	Geometric vs. arithmetic growth rates.	Both approaches are used in practice. Clears up issues surrounding growth rate estimates.
Chapter 13	Basics of financial leverage.	Illustrates effect of leverage on risk and return.
	Optimal capital structure.	Describes the basic trade-offs leading to an optimal capital structure.
	Financial distress and bankruptcy.	Briefly surveys the bankruptcy process.
Chapter 14	*New* significantly rewritten to reflect latest research on dividend policy, including the life cycle theory and the impact of the 2003 dividend tax cut.	Brings students the latest thinking on dividend policy and also the results of a natural experiment—the 2003 dividend tax cut.
	Dividends and dividend policy.	Describes dividend payments and the factors favoring higher and lower payout policies. Includes recent survey results on setting dividend policy.
Chapter 15	IPO valuation.	Extensive, up-to-date discussion of IPOs, including the 1999–2000 period.
	Dutch auctions.	Explains uniform price ("Dutch") auctions using Google IPO as an example.
PART EIGHT	**Short-Term Financial Management**	
Chapter 16	*New* opener on inventory periods in the auto industry.	Describes the importance of inventory periods in the context of the auto industry's distress in the 2008–2009 recession.
	Operating and cash cycles.	Stresses the importance of cash flow timing.
	Short-term financial planning.	Illustrates creation of cash budgets and potential need for financing.

Chapters	Selected Topics	Benefits to Users
Chapter 17	Cash collection and disbursement.	Examination of systems used by firms to handle cash inflows and outflows.
	Credit management.	Analysis of credit policy and implementation.
	Inventory management.	Brief overview of important inventory concepts.
PART NINE	**Topics in Business Finance**	
Chapter 18	*New* opener on the U.S. dollar/Canadian "loonie" exchange rate.	Looks at the impact of exchange rate changes and explains how a strengthening currency isn't necessarily a good thing.
	Foreign exchange.	Covers essentials of exchange rates and their determination.
	International capital budgeting.	Shows how to adapt basic DCF approach to handle exchange rates.
	Exchange rate and political risk.	Discusses hedging and issues surrounding sovereign risk.

Learning Solutions 学习方案

In addition to illustrating relevant concepts and presenting up-to-date coverage, *Essentials of Corporate Finance* strives to present the material in a way that makes it engaging and easy to understand. To meet the varied needs of the intended audience, *Essentials of Corporate Finance* is rich in valuable learning tools and support.

Each feature can be categorized by the benefit to the student:

- Real financial decisions
- Application tools
- Study aids

REAL FINANCIAL DECISIONS

We have included two key features that help students connect chapter concepts to how decision makers use this material in the real world.

Chapter-Opening Vignettes
Each chapter begins with a contemporary real-world event to introduce students to chapter concepts.

PART FOUR Valuing Stocks and Bonds

chapter 6

Interest Rates and Bond Valuation

AFTER STUDYING THIS CHAPTER, YOU SHOULD BE ABLE TO:

- LO 1 Identify important bond features and types of bonds.
- LO 2 Describe bond values and why they fluctuate.
- LO 3 Discuss bond ratings and what they mean.
- LO 4 Evaluate the impact of inflation on interest rates.
- LO 5 Explain the bond structure of interest rates and the determinants of bond yields.

In its most basic form, a bond is a pretty simple thing. You lend a company some money, say $1,000. The company pays you interest regularly, and it repays the original loan amount of $1,000 at some point in the future. But bonds also can have complex features, and, in 2008, a type of bond known as a mortgage-backed security, or MBS, was causing havoc in the global financial system.

An MBS, as the name suggests, is a bond that is backed by a pool of home mortgages. The bondholders receive payments derived from payments on the underlying mortgages, and these pay-

REALITY BYTES

Collectibles as Investments?

It used to be that trading in collectibles such as baseball cards, art, and old toys occurred mostly at auctions, swap meets, and collectible shops, all of which were limited to regional traffic. However, with the growing popularity of online auctions such as eBay, trading in collectibles has expanded to an international arena. The most visible form of collectible is probably the baseball card, but Furbies, Beanie Babies, and Pokémon cards have been extremely hot collectibles in the recent past. However, it's not just fad items that spark interest from collectors; virtually anything of sentimental value from days gone by is considered collectible, and, more and more, collectibles are being viewed as investments.

Collectibles typically provide no cash flows, except when sold, and condition and buyer sentiment are the major determinants of value. The rates of return have been amazing at times, but care is needed in interpreting them. For example, in 2008, an Original Class I 1804 silver dollar sold for $3,737,500. The coin was one of only eight of its type known to still exist. While this looks like a whopping price increase to the untrained eye, check for yourself that the actual return on the investment was only about 7.70 percent per year. Not too bad, but nowhere near the return most people expect from looking at the sales price.

Comic books have recently grown in popularity among collectors. The X-Men, who first appeared in 1963, are a popular group of superheroes. The *X-Men* #1 comic book, which also introduced the world to arch villain Magneto, hit the shelves in September 1963 at a cover price of 50 cents. In August 2008, a copy of this issue had mutated to a price of $53,775 at auction. This seems like a very high return to the untrained eye, and indeed it is! Check for yourself that the return was about 29.36 percent per year.

Stamp collecting (or philately) is a popular activity. Possibly the most desirable stamp in the world is the 1918 "inverted Jenny," which has a Curtiss JN-4 Jenny aircraft inadvertently printed upside down. Originally sold for 24 cents, one of these stamps was auctioned in 2009 for $260,000. See for yourself that this represents an annual return of about 16.50 percent. Unfortunately for the seller, this particular stamp was slightly damaged. An undamaged inverted Jenny sold for $977,500 at the end of 2007, an annual return of 18.65 percent.

Reality Bytes Boxes
Most chapters include at least one *Reality Bytes* box, which takes a chapter issue and shows how it is being used right now in everyday financial decision making.

APPLICATION TOOLS

Because there is more than one way to solve problems in corporate finance, we include many sections that encourage students to learn or brush up on different problem-solving methods, such as financial calculator and Excel spreadsheet skills.

Chapter Cases

Located at the end of most chapters, these cases focus on hypothetical company situations that embody corporate finance topics. Each case presents a new scenario, data, and a dilemma. Several questions at the end of each case require students to analyze and focus on all of the material they learned from the chapters in that part. Great for homework or in-class exercises and discussions!

CHAPTER CASE

FINANCING S&S AIR'S EXPANSION PLANS WITH A BOND ISSUE

Mark Sexton and Todd Story, the owners of S&S Air, have decided to expand their operations. They instructed their newly hired financial analyst, Chris Guthrie, to enlist an underwriter to help sell $20 million in new 10-year bonds to finance construction. Chris has entered into discussions with Renata Harper, an underwriter from the firm of Crowe & Mallard, about which bond features S&S Air should consider and what coupon rate the issue will likely have.

Although Chris is aware of the bond features, he is uncertain as to the costs and benefits of some features, so he isn't clear on how each feature would affect the coupon rate of the bond issue. You are Renata's assistant, and she has asked you to prepare a memo to Chris describing the effect of each of the following bond features on the coupon rate of the bond. She would also like you to list any advantages or disadvantages of each feature.

QUESTIONS

1. The security of the bond, that is, whether the bond has collateral.
2. The seniority of the bond.
3. The presence of a sinking fund.
4. A call provision with specified call dates and call prices.
5. A deferred call accompanying the above call provision.
6. A make-whole call provision.
7. Any positive covenants. Also, discuss several possible positive covenants S&S Air might consider.
8. Any negative covenants. Also, discuss several possible negative covenants S&S Air might consider.
9. A conversion feature (note that S&S Air is not a publicly traded company).
10. A floating rate coupon.

Work the Web

These in-chapter boxes show students how to research financial issues using the Web and how to use the information they find to make business decisions. New to this edition, now all of the Work the Web boxes also include interactive follow-up questions and exercises.

WORK THE WEB

Bond quotes have become more available with the rise of the Web. One site where you can find current bond prices (from TRACE) is cxa.marketwatch.com/finra/BondCenter. We went to the site and entered "Dell" for the well-known computer manufacturer. We found a total of four bond issues outstanding. Below you will see the information we pulled up.

						Ratings			Last Sale	
Include in Watchlist	Bond Symbol	Issuer Name	Coupon	Maturity	Callable	Moody's	S&P	Fitch	Price	Yield
☐	DELL.GF	DELL INCORPORATED	4.70	04/15/2013	Yes	A2	NR	A	98.659	4.791
☐	DELL.GG	DELL INCORPORATED	5.65	04/15/2018	Yes	A2	NR	A	95.111	6.215
☐	DELL.GB	DELL INCORPORATED	7.10	04/15/2028	Yes	A2	A-	A	99.536	7.142
☐	DELL.GH	DELL INCORPORATED	6.50	04/15/2038	Yes	A2	A-	A	79.740	8.365

Most of the information is self-explanatory. The price and yield columns show the price and yield to maturity of the issues based on their most recent sales. If you need more information about a particular issue, clicking on it will give you more details such as coupon dates and call dates.

Questions

1. *Go to this Web site and find the last bond shown above. When was this bond issued? What was the size of the bond issue? What were the yield to maturity and price when the bond was issued?*
2. *When you search for Chevron bonds (CVX), you will find bonds for several companies listed. Why do you think Chevron has bonds issued with different corporate names?*

Explanatory Web Links

These Web links are provided in the margins of the text. They are specifically selected to accompany text material and provide students and instructors with a quick way to check for additional information using the Internet.

Bond Price Reporting

To learn more about TRACE, visit www.finra.org.

In 2002, transparency in the corporate bond market began to improve dramatically. Under new regulations, corporate bond dealers are now required to report trade information through what is known as the Transactions Report and Compliance Engine (TRACE). By 2009, transaction and price data were reported on more than 29,000 corporate bonds, which is essentially all publicly traded corporate bonds. More bonds will be added over time. A nearby *Work the Web* box shows how to get TRACE prices.

As we mentioned before, the U.S. Treasury market is the largest securities market in the world. As with bond markets in general, it is an OTC market, so there is limited transparency. However, unlike the situation with bond markets in general, trading in Treasury issues, particularly recently issued ones, is very heavy. Each day, representative prices for outstanding Treasury issues are reported.

To purchase newly issued corporate bonds, go to www.internotes.com.

Figure 6.3 shows a portion of the daily Treasury note and bond listings from *The Wall Street Journal* online. The only difference between a Treasury note and a Treasury bond is that notes have 10 years or less to maturity at the time of issuance. The entry that begins "2020 Feb 15" is highlighted. Reading from left to right, the "2020 Feb 15" tells us that the bond's maturity is February 15, 2020. The 8.500 is the bond's coupon rate. Treasury bonds all make semiannual payments and have a face value of $1,000, so this bond will pay $42.50 per six months until it matures.

What's On the Web?

These end-of-chapter activities show students how to use and learn from the vast amount of financial resources available on the Internet.

WHAT'S ON THE WEB?

14.1 Dividend Reinvestment Plans. Dividend reinvestment plans (DRIPs) permit shareholders to automatically reinvest cash dividends in the company. To find out more about DRIPs, go to www.fool.com and answer the following questions about DRIPS. What are the advantages Motley Fool lists for DRIPs? What are the different types of DRIPs? What is a direct purchase plan? How does a direct purchase plan differ from a DRIP?

14.2 Dividends. Go to www.earnings.com and find the list of dividends. How many companies went "ex" today? What is the largest declared dividend? For the stocks going "ex" today, what is the longest time until the payable date?

m/rwj

CALCULATOR HINTS

Annuity Present Values

To find annuity present values with a financial calculator, we need to use the **PMT** key (you were probably wondering what it was for). Compared to finding the present value of a single amount, there are two important differences. First, we enter the annuity cash flow using the **PMT** key, and, second, we don't enter anything for the future value, **FV**. So, for example, the problem we have been examining is a three-year, $500 annuity. If the discount rate is 10 percent, we need to do the following (after clearing out the calculator!):

Enter	3	10	500		
	N	I/Y	PMT	PV	FV
Solve for				-1,243.43	

As usual, we get a negative sign on the PV.

Calculator Hints

Calculator Hints is a self-contained section occurring in various chapters that first introduces students to calculator basics and then illustrates how to solve problems with the calculator. Appendix D goes into more detailed instructions by solving problems with two specific calculators.

How to Calculate Present Values with Multiple Future Cash Flows Using a Spreadsheet

SPREADSHEET STRATEGIES

Just as we did in our previous chapter, we can set up a basic spreadsheet to calculate the present values of the individual cash flows as follows. Notice that we have simply calculated the present values one at a time and added them up.

	A	B	C	D	E	F
1						
2			**Using a spreadsheet to value multiple cash flows**			
3						
4	What is the present value of $200 in one year, $400 the next year, $600 the next year, and					
5	$800 the last year if the discount rate is 12 percent?					
6						
7	Rate:	.12				
8						
9	Year	Cash flows	Present values	Formula used		
10	1	$200	$178.57	=PV(B7,A10,0,-B10)		
11	2	$400	$318.88	=PV(B7,A11,0,-B11)		
12	3	$600	$427.07	=PV(B7,A12,0,-B12)		
13	4	$800	$508.41	=PV(B7,A13,0,-B13)		
14						
15		Total PV:	**$1,432.93**	=SUM(C10:C13)		
16						
17	Notice the negative signs inserted in the PV formulas. These just make the present values have					
18	positive signs. Also, the discount rate in cell B7 is entered as B7 (an "absolute" reference)					
19	because it is used over and over. We could have just entered ".12" instead, but our approach is					
20	more flexible.					
21						
22						

Spreadsheet Strategies

The unique Spreadsheet Strategies feature is also in a self-contained section, showing students how to set up spreadsheets to solve problems—a vital part of every business student's education.

LO 1 **4. Calculating Annuity Present Values.** An investment offers $8,500 per year for 15 years, with the first payment occurring 1 year from now. If the required return is 9 percent, what is the value of the investment? What would the value be if the payments occurred for 40 years? For 75 years? Forever?

LO 1 **5. Calculating Annuity Cash Flows.** If you put up $25,000 today in exchange for a 7.9 percent, 12-year annuity, what will the annual cash flow be?

LO 1 **6. Calculating Annuity Values.** Your company will generate $45,000 in cash flow each year for the next nine years from a new information database. The computer system needed to set up the database costs $260,000. If you can borrow the money to buy the computer system at 8.25 percent annual interest, can you afford the new system?

LO 1 **7. Calculating Annuity Values.** If you deposit $4,000 at the end of each of the next 20 years into an account paying 9.5 percent interest, how much money

Spreadsheet Templates

Indicated by an Excel icon next to applicable end-of-chapter questions and problems, spreadsheet templates are available for selected problems on the Student Edition of the book's Web site, www.mhhe.com/rwj. For even more spreadsheet examples, check out Excel Master, also available on the Web site.