SMART | ZUTTER

FUNDAMENTALS OF INVESTING

FOURTEENTH EDITION

Prepare, Apply, Confirm and Develop Employability Skills with MyLab Finance

MyLabTM **Finance** is an online homework, tutorial, and assessment program constructed to work with this text to engage students and improve results. It was designed to help students develop and assess the skills and applicable knowledge that they will need to succeed in their courses and their future careers.

85%

of students said MyLab Finance helped them earn higher grades on homework, exams, or the course

*Source: 2017 Student Survey, n 4703

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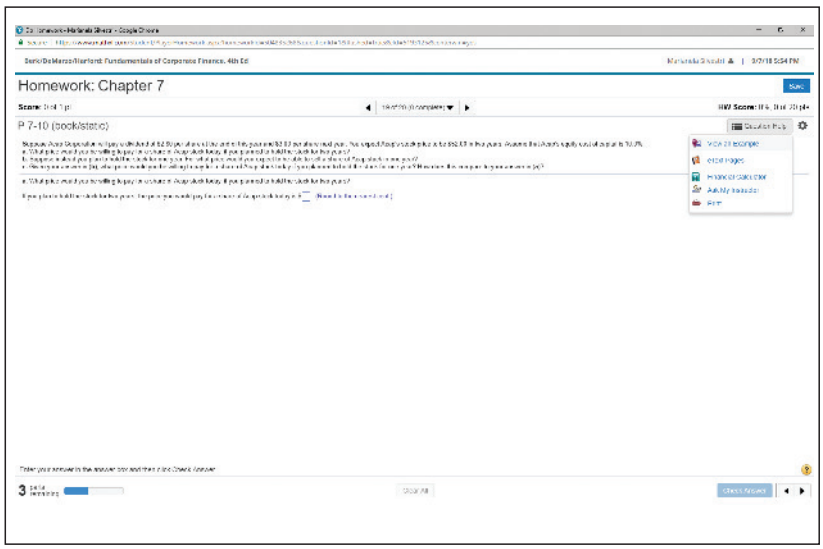
"MyLab Finance's primary benefit was that it helped me to learn how to solve problems and not just memorize information."

— Student,
Southern New Hampshire University

Question Help consists of homework and practice questions to give students unlimited opportunities to master concepts. **Learning aids** walk students through the problem—giving them assistance when they need it most.



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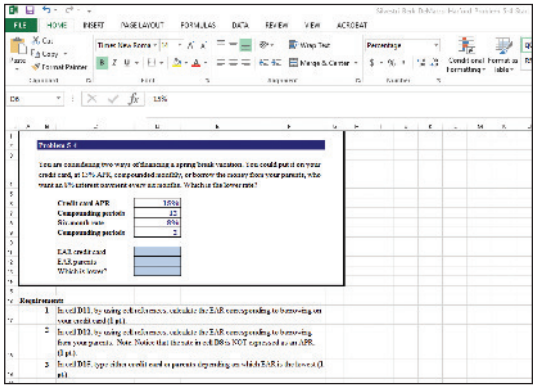
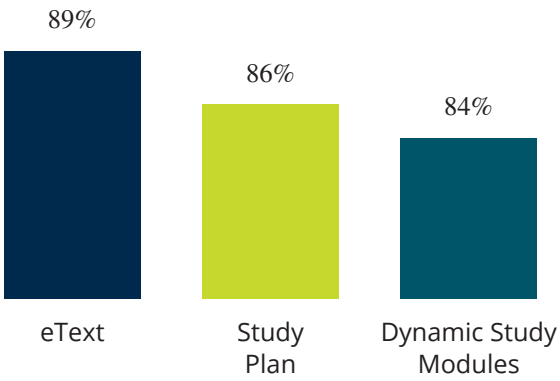


"I like how the 'give me an example' option works with the homework—it is nice to run through an example with guidance to learn how to solve these problems."

— Student, Virginia Polytechnic Institute and State University



% of students who found learning aid helpful

Dynamic Study Modules use the latest developments in cognitive science and help students study chapter topics by adapting to their performance in real time.

Pearson eText enhances student learning with engaging and interactive lecture and example videos that bring learning to life.

The **Gradebook** offers an easy way for you and your students to see their performance in your course.

85%

of students would tell their instructor to keep using MyLab Finance

For additional details visit: www.pearson.com/mylab/finance

Fundamentals of Investing

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Fundamentals of Investing

Fourteenth Edition

SCOTT B. SMART
Indiana University

CHAD J. ZUTTER
University of Pittsburgh

Pearson

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Dedicated to
our friends and mentors,
Dr. Lawrence J. Gitman and Michael D. Joehnk,
who trusted us as coauthors and successors of *Fundamentals of Investing*.
SBS
CJZ

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Brief Contents

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Part Four Investing in Fixed-Income Securities

Web Chapters

(at http://www.pearsonhighered.com/smart)

About the Authors

Scott B. Smart is a finance professor and the Whirlpool Finance Faculty Fellow at the Kelley School of Business at Indiana University. Dr. Smart received his B.B.A. from Baylor University and his M.A. and Ph.D. from Stanford University. His research focuses primarily on applied corporate finance topics and has been published in journals such as the *Journal of Finance*, the *Journal of Financial Economics*, the *Journal of Corporate Finance, Financial Management,* and others. His articles have been cited by business publications including *The Wall Street Journal, The Economist*, and *Business Week*. Winner of more than a dozen teaching awards, Dr. Smart has been listed multiple times as a top business school teacher by *Business Week*. He has held Visiting Professor positions at the University of Otago and Stanford University, and he worked as a Visiting Scholar for Intel Corporation, focusing on that company's mergers and acquisitions activity during the "Dot-com" boom in the late 1990s. As a volunteer, Dr. Smart currently serves on the boards of the Indiana University Credit Union and Habitat for Humanity. In his spare time he enjoys outdoor pursuits such as hiking and fly fishing.

Chad J. Zutter is a finance professor and the James Allen Faculty Fellow at the Katz Graduate School of Business at the University of Pittsburgh. Dr. Zutter received his B.B.A. from the University of Texas at Arlington and his Ph.D. from Indiana University. His research has a practical, applied focus and has been the subject of feature stories in, among other prominent outlets, *The Economist* and *CFO Magazine*. His papers have been cited in arguments before the U.S. Supreme Court and in consultation with companies such as Google and Intel. Dr. Zutter won the prestigious Jensen Prize for the best paper published in the *Journal of Financial Economics* and a best paper award from the *Journal of Corporate Finance*, where he is currently an Associate Editor. He has won teaching awards at the Kelley School of Business at Indiana University and the Katz Graduate School of Business at the University of Pittsburgh. Dr. Zutter also serves on the board of Lutheran SeniorLife, and prior to his career in academics, he was a submariner in the U.S. Navy. Dr. Zutter and his wife have four children and live in Pittsburgh, Pennsylvania. In his free time he enjoys horseback riding and downhill skiing.

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Preface

New to this Edition

Just as in all of our previous editions, we aim to stay current in the field of investments and to continue to craft a book that will truly meet the needs of students and professors.

In every chapter, our changes were designed to make the material more up to date and more relevant for students. A number of new topics have been added at appropriate places, and new features appear in each chapter of the fourteenth edition:

- New author videos of solutions to all in-text examples that students can see on MyLab Finance within the eText or Multimedia Library help them increase their understanding of the concept and application being demonstrated by the in-text example and act as a guide for the end-of-chapter problems or related assignments made by their professors.
- New GeoGebra animations for select in-chapter figures allow students to manipulate key model inputs to illustrate concepts and reinforce learning.
- A number of end-of-chapter problems are now offered in MyLab Finance as auto-graded Excel Projects. Using proven, field-tested technology, auto-graded Excel Projects allow instructors to seamlessly integrate Microsoft Excel content into their course without having to manually grade spreadsheets. Students have the opportunity to practice important finance skills in Excel, helping them to master key concepts and gain proficiency with the program.
- New Excel templates for many end-of-chapter problems are available in MyLab Finance. These templates do not solve problems for students but rather help students reach a solution faster by inputting data for them or by organizing facts presented in problems in a logical way.
- Student and instructor versions of the Excel Screenshots that appear throughout the chapters are available in MyLab Finance. Student versions only allow students to manipulate the input values, whereas instructors' Excel files available in the instructor resources area provide full access to the spreadsheet models.
- Updated financial calculator images better match the financial calculator available on MyLab Finance.
- Revised or replaced chapter openers and related end-of-chapter problems in every chapter help students see the real-world application of chapter content.
- New author videos introduce the main ideas of each chapter and highlight the application of key concepts and the connections between chapters.
- Expanded use of real-world data in examples, tables, figures, and end-of-chapter problems gives the text a more applied, practical feel and helps students understand that the skills they learn can help them personally or on the job.
- Updated Investor Facts boxes from the previous edition, and new ones to this edition, provide depth and breadth and again highlight the importance of investments concepts in the real world.

- A large percentage of the end-of-chapter problems were revised using interest rates, stock prices, and other values that better reflect market conditions at the time of the revision.

The *Fundamentals of Investing* Program

"Great firms aren't great investments unless the price is right." Those words of wisdom come from none other than Warren Buffett, who is, without question, one of the greatest investors ever. The words of Mr. Buffett sum up very nicely the essence of this book—namely, to help students learn to make informed investment decisions, not only when buying stocks but also when investing in bonds, mutual funds, or any other type of investment.

To enhance learning, we recommend pairing the text content with MyLab Finance, which is the teaching and learning platform that empowers students' independent learning. By combining trusted author content with digital tools and a flexible platform, MyLab personalizes the learning experience and will help students learn and retain key course concepts while developing skills that future employers are seeking in their candidates. From **author videos** to **Excel Projects**, MyLab Finance helps you teach your course, your way. Learn more at **www.pearson.com/mylab/finance**

Solving Teaching and Learning Challenges

The fact is, investing may sound simple, but it's not. Investors in today's turbulent financial markets confront many challenges when deciding how to invest their money. More than a decade after the 2008 meltdown in financial markets, investors are still more wary of risk than they were before the crisis. This book is designed to help students understand the risks inherent in investing and to give them the tools they need to answer the fundamental questions that help shape a sound investment strategy. For example, students want to know, what are the best investments for me? Should I buy individual securities, mutual funds, or exchange-traded funds? How do I make judgments about risk? Do I need professional help with my investments, and can I afford it? Clearly, investors need answers to questions like these to make informed decisions.

The language, concepts, and strategies of investing are foreign to many. To become informed investors, students must first become conversant with the many aspects of investing. Building on that foundation, they can learn how to make informed decisions in the highly dynamic investment environment. This fourteenth edition of *Fundamentals of Investing* provides the information and guidance needed by individual investors to make such informed decisions and to achieve their investment goals.

This book meets the needs of professors and students in the first investments course offered at colleges and universities, junior and community colleges, professional certification programs, and continuing education courses. Focusing on both individual securities and portfolios, *Fundamentals of Investing* explains how to develop, implement, and monitor investment goals after considering the risk and return of different types of investments. A conversational tone and liberal use of examples guide students through the material and demonstrate important points.

Hallmarks of *Fundamentals of Investing*

Using information gathered from academicians and practicing investment professionals, plus feedback from adopters, the fourteenth edition reflects the realities of today's investment environment. At the same time, the following characteristics provide a structured framework for successful teaching and learning.

Clear Focus on the Individual Investor. According to a 2017 Gallup poll, 54% of Americans report having money invested in stocks either directly or indirectly through mutual funds or participation in 401(k)s. That percentage peaked at 65% in 2008 but fell for six consecutive years in the aftermath of the financial crisis and has only recently started rising again. The focus of *Fundamentals of Investing* has always been on the individual investor. This focus gives students the information they need to develop, implement, and monitor a successful investment program. It also provides students with a solid foundation of basic concepts, tools, and techniques. Subsequent courses can build on that foundation by presenting the advanced concepts, tools, and techniques used by institutional investors and money managers.

Comprehensive yet Flexible Organization. The text provides a firm foundation for learning by first describing the overall investment environment, including the various investment markets, information, and transactions. Next, it presents conceptual tools needed by investors—the concepts of return and risk and the basic approaches to portfolio management. It then examines the most popular types of investments—common stocks, bonds, and mutual funds. Following this series of chapters on investments is a chapter on how to construct and administer one's own portfolio. The final section of the book focuses on derivative securities—options and futures—which require more expertise. Although the first two parts of the textbook are best covered at the start of the course, instructors can cover particular investment types in just about any sequence. The comprehensive yet flexible nature of the book enables instructors to customize it to their own course structure and teaching objectives.

We have organized each chapter according to a decision-making perspective, and we have been careful always to point out the pros and cons of the various investments and strategies we present. With this information, individual investors can select the investment actions that are most consistent with their objectives. In addition, we have presented the various investments and strategies in such a way that students learn the decision-making implications and consequences of each investment action they contemplate.

Timely Topics. Current events, changing regulations, and other factors constantly reshape financial markets and investments. Virtually all topics in this book take into account changes in the investment environment. For example, several chapters that emphasize the tax consequences of an investment or strategy incorporate the latest tax changes passed as part of the Tax Cuts and Jobs Act in December 2017. In Chapter 2, we discuss how securities trading has changed in recent years, and we highlight the Spotify direct listing IPO as a potential threat to the traditional underwriting business of investment banks. Chapter 3 shares some advice from the Securities and Exchange Commission on the perils of investing in cryptocurrencies. Chapter 5 offers expanded content on the concept of correlation, using data on real companies to illustrate how correlation affects the performance of a portfolio. These are but a few of the examples of new content found throughout the text.

In addition, the fourteenth edition provides students access to short video clips from professional investment advisors. In these clips, which are carefully integrated into the content of each chapter, students will hear professionals sharing the lessons that they have learned through years of experience working as advisors to individual investors.

Globalization. One issue that is reshaping the world of investing is the growing globalization of securities markets. As a result, *Fundamentals of Investing* continues to stress the global aspects of investing. We initially look at the growing importance of international markets, investing in foreign securities (directly or indirectly), international investment performance, and the risks of international investing. In later chapters, we describe popular international investment opportunities and strategies as part of the coverage of each specific type of investment vehicle. This integration of international topics helps students understand the importance of maintaining a global focus when planning, building, and managing an investment portfolio. Global topics are highlighted by a globe icon in the margin.

1

The Investment Environment

MyLab Finance Chapter Introduction Video

LEARNING GOALS

After studying this chapter, you should be able to:

LG1 Understand the meaning of the term investment and list the attributes that distinguish one investment from another.

LG2 Describe the investment process and types of investors.

LG3 Discuss the principal types of investments.

LG4 Describe the purpose and content of an investment policy statement, review fundamental tax considerations, and discuss investing over the life cycle.

LG5 Describe the most common types of short-term investments.

LG6 Describe some of the main careers available to people with financial expertise and the role that investments play in each.

You have worked hard for your money. Now it is time to make your money work for you. Welcome to the world of investments. There are literally thousands of investments, from all around the world, from which to choose. How much should you invest, when should you invest, and which investments are right for you? The answers depend upon the knowledge and financial circumstances of each investor.

Financial news is plentiful, and finding financial information has become easier than ever. Traditional media outlets, including TV networks such as CNBC, Bloomberg Television, and Fox Business Network and print-based powerhouses such as *The Wall Street Journal* and *The Financial Times*, provide financial advice for individual investors. However, more people obtain investment information from the Internet than from all other sources combined. The Internet makes enormous amounts of information readily available, enables investors to trade securities with the click of a mouse, and provides free and low-cost access to tools that were once restricted to professional investors. All of this helps create a more level playing field—yet at the same time, such easy access can increase the risks for inexperienced investors.

Whether you are an experienced investor or a novice, the same investment fundamentals apply. Perhaps the most fundamental principle in investing, and one that you would be wise to keep in mind whenever you invest, is this—there is a tradeoff between an investment's risk and its return. Most people would like their investments to be as profitable as possible, but there is an almost unavoidable tendency for investments with the greatest profit potential to be associated with the highest risk. You will see examples of the link between risk and return throughout this text. First, we address the question, "What is an investment?"

1

Comprehensive, Integrated Learning System. The Learning Goal system begins each chapter with six Learning Goals, labeled with numbered icons. These goals anchor the most important concepts and techniques to be learned. The Learning Goal icons are then tied to key points in the chapter's structure, including:

- First-level headings
- Summary
- Discussion Questions
- Problems
- Cases

This tightly knit structure provides a clear road map for students—they know what they need to learn, where they can find it, and whether they've mastered it by the end of the chapter.

An **opening story** sets the stage for the content that follows by focusing on an investment situation involving a real company or real event, which is in turn linked to the chapter topics. Students see the relevance of the vignette to the world of investments.

In many cases, an end-of-chapter problem draws students back to the chapter opener and asks them to use the data in the opener to make a calculation or draw a conclusion to demonstrate what they learned in the chapter.

Examples illustrate key concepts and applications and, new to this edition, are paired with author-created solution videos in MyLab Finance (within the eText or Multimedia Library), as noted by the associated MyLab Finance Solution Video callout in the text. Students can watch the author videos to increase their understanding of the concept and application being demonstrated by the in-text example and as a guide for the end-of-chapter problems assigned by their professors.

Example

McDonald's Common Stock Return

MyLab Finance Solution Video

Suppose you purchased a single share of McDonald's common stock for $119.62 on January 3, 2017, the first day that the stock market was open for trading that year. During 2017 you received $3.83 in cash dividends. At the end of the year, you sold the stock for $172.12. You earned $3.83 in dividends and you realized a $52.50 capital gain ($172.12 sale price – $119.62 purchase price) for a total dollar return of $56.33. On a percentage basis, the return on McDonald's shares in 2017 is calculated as $56.33 ÷ $119.62 = 0.471 or 47.1%. If you continued to hold the stock rather than sell it, you would have earned the same return, but your capital gain would have been unrealized.

An Advisor's Perspective consists of short video clips of professional investment advisors discussing the investments topics covered in each chapter. Students can access the video clips on MyLab Finance.

AN ADVISOR'S PERSPECTIVE

Rick Loek, *CEO*, Calrima Financial and Insurance Agency

"There are three financial phases that we go through in life."

MyLab Finance

WATCH YOUR BEHAVIOR

Cut Your Taxes and Your Losses Several researchers have found that investors are very reluctant to sell stocks that have gone down in value, presumably because they hope to "get even" in the future. Holding losers rather than selling them is often a mistake because the tax code provides an incentive to sell these stocks. Investors can deduct realized investment losses (up to a point) against other forms of income, thereby lowering their tax liabilities.

Watch Your Behavior boxes appear in the margins of most chapters and highlight investment lessons gleaned from the behavioral finance literature.

INVESTOR FACTS

Apple on Top A firm's market capitalization, which equals the price per share times the number of shares outstanding, is a measure of its scale. On August 2, 2018, Apple Inc. became the first company in history with a market capitalization above $1 trillion. It wasn't alone in reaching that milestone very long. **Amazon.com** Inc. reached the $1 trillion mark just a month later on September 4.

Each chapter contains a handful of **Investor Facts**—brief sidebar items that give an interesting statistic or cite an unusual investment experience. These facts add a bit of seasoning to the concepts under review and capture a real-world flavor. The Investor Facts sidebars include material focused on topics such as art as an investment, the downgrade of the U.S. government's credit rating, the use of financial statements to detect accounting fraud, and recent issues of unusual securities such as bonds with 100-year maturities.

Famous Failures in Finance boxes—short, boxed discussions of real-life scenarios in the investments world, many of which focus on ethics—appear in selected chapters and on the book's website. Many of these boxes contain a Critical Thinking Question for class discussion, with guideline answers given in the Instructor's Manual.

FAMOUS FAILURES IN FINANCE

Implicit Guarantee Becomes Explicit

Debt securities issued by agencies such as the Federal National Mortgage Association (Fannie Mae) and the Federal Home Loan Mortgage Corporation (Freddie Mac) have generally had an implicit guarantee from the federal government, meaning that investors believed that these instruments could not go into default, even if they were not "officially" backed by the full faith and credit of the U.S. government. In 2007 as residential mortgage defaults began to rise, Fannie Mae and Freddie Mac came under severe financial distress. On September 7, 2008, the federal government effectively took over these institutions, injecting $100 billion of new capital into each to stabilize them and to reassure investors that these giants of the mortgage industry, which held or guaranteed about $5.5 trillion in residential mortgage debt, would not disappear. The capital infusion helped initially, but investor confidence in the two agencies was rocked again on August 8, 2011, when their credit ratings were downgraded. Standard & Poor's said that the downgrade reflected their "direct reliance on the U.S. government," which had seen its own credit rating downgraded three days earlier.

Key Equations are screened in yellow throughout the text to help readers identify the most important mathematical relationships. Select key equations also appear in the text's rear endpapers.

Equation 10.1

$$\text{Taxable equivalent yield} = \frac{\text{Yield on municipal bond}}{1 - \text{Marginal federal tax rate}}$$

Excel Screenshots Many chapters provide screenshots showing completed Excel models designed to solve in-chapter examples. The MyLab Excel icon indicates that student versions of these screenshots are available in MyLab Finance.

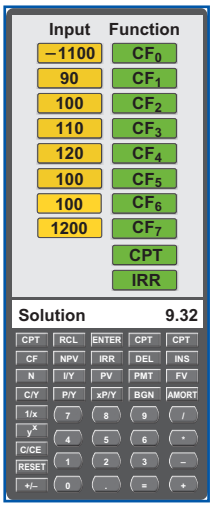
MyLab

	A	B
1	GROWTH RATE FOR A DIVIDEND STREAM	
2	Year	Dividend
3	2008	$1.55
4	2009	$1.66
5	2010	$1.74
6	2011	$1.85
7	2012	$2.18
8	2013	$2.46
9	2014	$2.70
10	2015	$2.88
11	2016	$2.98
12	2017	$3.06
13	Annual Growth Rate	7.85%

Entry in Cell B13 is
=RATE((A12-A3),0,-B3,B12,0).
The expression (A12-A3) in the entry calculates the number of years of growth. The minus sign appears before B3 because the first dividend is treated as a cash outflow and the last dividend as a cash inflow.

Calculator Keystrokes At appropriate spots in the text the student will find sections on the use of financial calculators, with marginal calculator graphics that show the inputs and functions to be used. The MyLab financial calculator callout in the text indicates that the reader can use the financial calculator tool in MyLab Finance to find the solution for an example by inputting the keystrokes shown in the calculator screenshot.

MyLab Finance
Financial Calculator



Concepts in Review questions appear at the end of each section of the chapter. These review questions allow students to test their understanding of each section before moving on to the next section of the chapter. Answers for these questions are available in the Multimedia Library of MyLab Finance, at the book's website, and by review of the preceding text.

CONCEPTS IN REVIEW

Answers available at http:// www.pearson.com /mylab/finance

10.1 What appeal do bonds hold for investors? Give several reasons why bonds make attractive investment outlets.

10.2 How would you describe the behavior of market interest rates and bond returns over the past 50 years? Do swings in market interest rates have any bearing on bond returns? Explain.

10.3 Identify and briefly describe the five types of risk to which bonds are exposed. What is the most important source of risk for bonds in general? Explain.

The **end-of-chapter summary** makes Fundamentals of Investing an efficient study tool by integrating chapter contents with online Study Plans available in MyLab Finance. A thorough summary of the key concepts—What You Should Know—is directly linked with the text and online resources—Where to Practice.

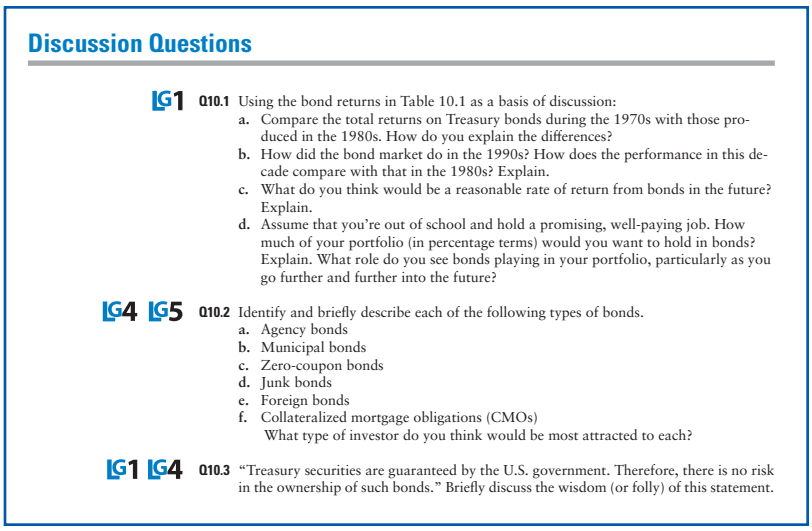
Learning Goal icons precede each summary item, which begins with a boldfaced restatement of the learning goal.

MyLab Finance

Here is what you should know after reading this chapter. Mylab Finance will help you identify what you know and where to go when you need to practice.

What You Should Know	Key Terms	Where to Practice
NOTE The end-of-chapter summaries restate the chapter's Learning Goals and review the key points of information related to each goal.	**NOTE** A list of Key Terms gathers in one place the new vocabulary presented in each chapter.	
LG1 **Understand the meaning of the term *investment* and list the attributes that distinguish one investment from another.** An investment is any asset into which investors can place funds with the expectation of generating positive income and/or increasing their value. The returns from investing are received either as income or as increased value. Some of the attributes that distinguish one type of investment from another include whether the investment is a security or property; direct or indirect; debt, equity, or derivative; low risk or high risk; short term or long term; and domestic or foreign.	debt, *p. 4* derivative securities, *p. 4* direct investment, *p. 3* domestic investments, *p. 5* equity, *p. 4* foreign investments, *p. 5* indirect investment, *p. 3* investment, *p. 2* liquidity, *p. 2* long-term investments, *p. 5* portfolio, *p. 2* property, *p. 2* returns, *p. 2* risk, *p. 4* securities, *p. 2* short-term investments, *p. 5*	MyLab Finance Study Plan 1.1

Discussion Questions, keyed to Learning Goals, guide students to integrate, investigate, and analyze the key concepts presented in the chapter. Many questions require that students apply the tools and techniques of the chapter to investment information they have obtained and then make a recommendation with regard to a specific investment strategy or vehicle. These project-type questions are far broader than the Concepts in Review questions within the chapter. Answers to Discussion Questions are available for instructors in the Instructor's Manual on the Instructor's Resource Center.



Discussion Questions

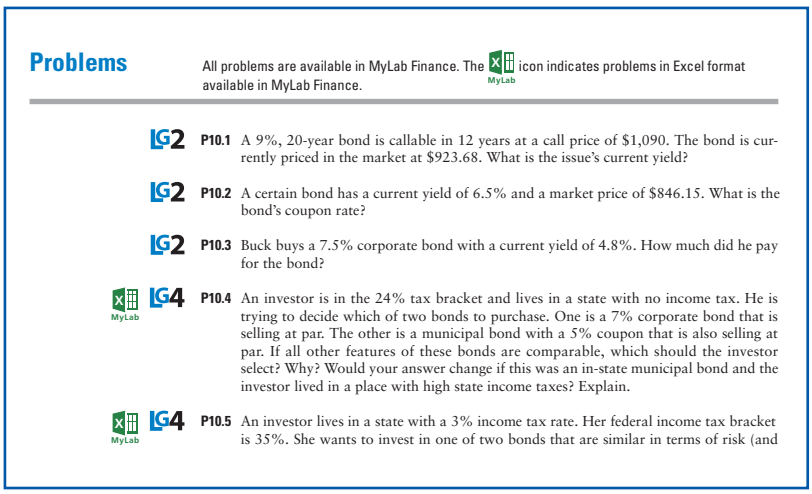
LG1 **Q10.1** Using the bond returns in Table 10.1 as a basis of discussion:
- **a.** Compare the total returns on Treasury bonds during the 1970s with those produced in the 1980s. How do you explain the differences?
- **b.** How did the bond market do in the 1990s? How does the performance in this decade compare with that in the 1980s? Explain.
- **c.** What do you think would be a reasonable rate of return from bonds in the future? Explain.
- **d.** Assume that you're out of school and hold a promising, well-paying job. How much of your portfolio (in percentage terms) would you want to hold in bonds? Explain. What role do you see bonds playing in your portfolio, particularly as you go further and further into the future?

LG4 LG5 **Q10.2** Identify and briefly describe each of the following types of bonds.
- **a.** Agency bonds
- **b.** Municipal bonds
- **c.** Zero-coupon bonds
- **d.** Junk bonds
- **e.** Foreign bonds
- **f.** Collateralized mortgage obligations (CMOs)

What type of investor do you think would be most attracted to each?

LG1 LG4 **Q10.3** "Treasury securities are guaranteed by the U.S. government. Therefore, there is no risk in the ownership of such bonds." Briefly discuss the wisdom (or folly) of this statement.

Expanded and Revised Problem Sets offer additional review and homework opportunities and are keyed to Learning Goals. Answers/solutions are available for instructors in the Instructor's Manual on the Instructor's Resource Center.



Problems

All problems are available in MyLab Finance. The MyLab icon indicates problems in Excel format available in MyLab Finance.

LG2 **P10.1** A 9%, 20-year bond is callable in 12 years at a call price of $1,090. The bond is currently priced in the market at $923.68. What is the issue's current yield?

LG2 **P10.2** A certain bond has a current yield of 6.5% and a market price of $846.15. What is the bond's coupon rate?

LG2 **P10.3** Buck buys a 7.5% corporate bond with a current yield of 4.8%. How much did he pay for the bond?

MyLab LG4 **P10.4** An investor is in the 24% tax bracket and lives in a state with no income tax. He is trying to decide which of two bonds to purchase. One is a 7% corporate bond that is selling at par. The other is a municipal bond with a 5% coupon that is also selling at par. If all other features of these bonds are comparable, which should the investor select? Why? Would your answer change if this was an in-state municipal bond and the investor lived in a place with high state income taxes? Explain.

MyLab LG4 **P10.5** An investor lives in a state with a 3% income tax rate. Her federal income tax bracket is 35%. She wants to invest in one of two bonds that are similar in terms of risk (and

New! Indicated by the MyLab Excel icon, Excel templates for many end-of-chapter Problems are available in MyLab Finance. These templates do not solve problems for students, but rather help students reach a solution faster by inputting data for them or by organizing facts presented in problems in a logical way. In addition, in this edition we provide electronic Excel-based versions of many in-text tables, so students can see how the calculations in the tables work, and they can alter the baseline assumption in the printed tables to see how changing assumptions affects the main results of each table. In Chapter 1 students are directed to the website www.pearson.com/mylab/finance, where they can complete a spreadsheet tutorial, if needed.

Two **Case Problems**, keyed to the Learning Goals, encourage students to use higher-level critical thinking skills: to apply techniques presented in the chapter, to evaluate alternatives, and to recommend how an investor might solve a specific problem. Again, Learning Goals show the student the chapter topics on which the case problems focus.

Case Problem 10.1 Max and Veronica Develop a Bond Investment Program

LG1 LG4

Max and Veronica Shuman, along with their teenage sons Terry and Thomas, live in Portland, Oregon. Max is a sales rep for a major medical firm, and Veronica is a personnel officer at a local bank. Together they earn an annual income of about $100,000. Max has just learned that his recently departed rich uncle has named him in his will to the tune of some $250,000 after taxes. Needless to say, the family is elated. Max intends to spend $50,000 of his inheritance on a number of long-overdue family items (like some badly needed remodeling of their kitchen and family room, the down payment on a new Porsche Boxster, and braces to correct Tom's overbite). Max wants to invest the remaining $200,000 in various types of fixed-income securities.

Max and Veronica have no unusual income requirements or health problems. Their only investment objectives are that they want to achieve some capital appreciation, and they want to keep their funds fully invested for at least 20 years. They would rather not have to rely on their investments as a source of current income but want to maintain some liquidity in their portfolio just in case.

Questions

a. Describe the type of bond investment program you think the Shuman family should

CFA Exam Questions

Investing in Common Stocks

Following is a sample of 11 Level-I CFA exam questions that deal with many topics covered in Chapters 6, 7, 8, and 9 of this text, including the use of financial ratios, various stock valuation models, and efficient market concepts. (*Note*: When answering some of the questions, remember: "Forward P/E" is the same as a P/E based on estimated earnings one year out.) When answering the questions, give yourself 1½ minutes for each question; the objective is to correctly answer 8 of the 11 questions in a period of 16½ minutes.

1. Holding constant all other variables and excluding any interactions among the determinants of value, which of the following would most likely increase a firm's price-to-earnings multiple?
   a. The risk premium increases.
   b. The retention rate increases.
   c. The beta of the stock increases.

2. A rationale for the use of the price-to-sales (P/S) approach is:
   a. Sales are more volatile than earnings.
   b. P/S ratios assess cost structures accurately.
   c. Revenues are less subject to accounting manipulation than earnings.

3. A cyclical company tends to
   a. have earnings that track the overall economy.
   b. have a high price-to-earnings ratio.
   c. have less volatile earnings than the overall market.

4. Consider a company that earned $4.00 per share last year and paid a dividend of $1.00. The firm has maintained a consistent payout ratio over the years and analysts expect this to continue. The firm is expected to earn $4.40 per share next year, and the stock is expected to sell for $30.00. The required rate of return is 12%. What is the best estimate of the stock's current value?
   a. $44.00
   b. $22.67
   c. $27.77

5. A stock's current dividend is $1 and its expected dividend is $1.10 next year. If the investor's required rate of return is 15% and the stock is currently trading at $20.00, what is the implied expected price in one year?
   a. $21.90
   b. $22.00
   c. $23.00

6. A firm has total revenues of $187,500, net income of $15,000, total current liabilities of $50,000, total common equity of $75,000, and total assets of $150,000. What is the firm's ROE?
   a. 15%
   b. 20%
   c. 24%

CFA Exam Questions from the 2010 Level One Curriculum and the *CFA Candidate Study Notes, Level 1, Volume 4* are now at the end of each part of the book, starting at Part Two. Due to the nature of the material in some of the early chapters, the CFA questions for Parts One and Two are combined and appear at the end of Part Two. These questions offer students an opportunity to test their investment knowledge against that required for the CFA Level-I exam.

In MyLab Finance on the Course Home page, there are three Sample CFA Exams. Each of these exams is patterned after the CFA Level-I exam and comes with detailed guideline answers. The exams deal only with topics that are actually covered in the fourteenth edition of *Fundamentals of Investing* and are meant to replicate as closely as possible the types of questions that appear on the standard Level-I Exam. The Sample CFA Exams on MyLab Finance come in three lengths: 30 questions, 40 questions, and 50 questions. Each exam is unique and consists of a different set of questions, so students can take any one or all of the exams without running into any duplicate questions. For the most part, these questions are adapted from past editions of the CFA Candidate Study Notes. Answers are included for immediate reinforcement.

Additional MyLab Finance Features

A Powerful Homework and Test Manager. A powerful homework and test manager lets you create, import, and manage online homework assignments, quizzes, and tests that are automatically graded. You can choose from a wide range of assignment options, including time limits, proctoring, and maximum number of attempts allowed. The bottom line: MyLab Finance means less time grading and more time teaching.

Study Plan. The Study Plan gives personalized recommendations for each student, based on his or her ability to master the learning objectives in your course. This allows students to focus their study time by pinpointing the precise areas they need to review, and allowing them to use customized practice and learning aids—such as videos, eTexts, tutorials, and more—to help students stay on track.

Pearson eText. Pearson eText enhances learning—both in and out of the classroom. Students can take notes, highlight, and bookmark important content, or engage with interactive lecture and example videos that bring learning to life (available with select titles) anytime, anywhere via MyLab or the app. Pearson eText enhances learning—both in and out of the classroom. Worked examples, videos, and interactive tutorials bring learning to life, while algorithmic practice and self-assessment opportunities test students' understanding of the material—anytime, anywhere via MyLab or the app.

Learning Management System (LMS) Integration. You can now link from Blackboard Learn, Brightspace by D2L, Canvas, or Moodle to MyLab Finance. Access assignments, rosters, and resources, and synchronize grades with your LMS gradebook. For students, single sign-on provides access to all the personalized learning resources that make studying more efficient and effective.

Excel Projects. Using proven, field-tested technology, auto-graded Excel Projects let you seamlessly integrate Microsoft Excel content into your course without having to manually grade spreadsheets. Students can practice important statistical skills in Excel, helping them master key concepts and gain proficiency with the program. They simply download a spreadsheet, work live on a statistics problem in Excel, and then upload that file back into MyLab Finance. Within minutes, they receive a report that provides personalized, detailed feedback to pinpoint where they went wrong in the problem.

Financial Calculator. Students can access a fully functional Financial Calculator inside MyLab Finance and a financial calculator app that they can download to their iPhone®, iPad®, or Android device—so they can perform financial calculations and complete assignments, all in the same place.

Question Help. Question Help consists of homework and practice questions to give students unlimited opportunities to master concepts. If students get stuck, learning aids like Help Me Solve This, View an Example, eText Pages, and a Financial Calculator walk them through the problem and show them helpful info in the text—giving them assistance when they need it most.

Worked Out Solutions. Worked Out Solutions are available to students when they are reviewing their submitted and graded homework. They provide step-by-step explanations on how to solve the problem using the exact numbers and data presented in the original problem. Instructors have access to Worked Out Solutions in preview and review mode.

Visit www.pearson.com/mylab/finance to access all the available features included with the fourteenth edition of *Fundamentals of Investing*.

Developing Employability Skills

For students to succeed in a rapidly changing job market, they should be aware of their career options and how to go about developing skills that prepare them to pursue those career opportunities. In this book and in MyLab Finance, we focus on developing these skills in a variety of ways.

Excel modeling skills—Each chapter offers students opportunities to work with Excel spreadsheets available on MyLab to build Excel models to solve investment problems. Many chapters provide Excel screenshots showing completed models designed to solve in-chapter examples.

Ethical reasoning skills—The Famous Failures in Finance boxes appearing in each chapter often highlight ethical problems arising in the investments context as well as the potential consequences of unethical actions by investment professionals. These boxes will help students recognize the ethical temptations they are likely to face while pursuing an investments career or as they invest their own money.

Critical thinking skills—Nearly every significant investment decision involves critical thinking because making optimal decisions means weighing tradeoffs of alternative decisions, such as the risk/reward tradeoff inherent in making any investment. To weigh these tradeoffs, students must first learn how to quantify them. Nearly every chapter in this book talks about the quantitative benefits and costs of different investments, and students who master this content will be in a strong position to make better investment decisions on behalf of their clients and themselves.

Data analysis skills—Investments is all about data. Analysts have to identify the data that is relevant for a particular investments problem, and they must know how to process that data in a way that leads to a good investment decision. In-chapter examples and end-of-chapter problems require students to sort out relevant from irrelevant data and to use the data that is available to make clear recommendations about what course of action an investor should take.

Instructor Teaching Resources

We recognize the key role of a complete and creative package of materials to supplement a basic textbook. We believe that the following materials, offered with the fourteenth edition, will enrich the investments course for both students and instructors.

Supplements available to instructor at www.pearsonhighered.com/irc	Features of the Supplement
Instructor's Manual	• Teaching outlines • Chapter summaries • Key concepts • Chapter overviews • Solutions to all questions and problems in the text
Test Bank	More than 1,800 multiple-choice, true/false, short-answer, and graphing questions with these annotations: • Type (multiple-choice, true/false, short-answer, essay • Topic (the term or concept the question supports) • Learning outcome • AACSB learning standard (written and oral communication; ethical understanding and reasoning; analytical thinking; information technology; interpersonal relations and teamwork; diverse and multicultural work; reflective thinking; application of knowledge)
Computerized TestGen	TestGen allows instructors to: • Customize, save, and generate classroom tests • Edit, add, or delete questions from the test item files • Analyze test results • Organize a database of tests and student results.
PowerPoints	PowerPoints include lecture notes, key equations, and figures and tables from the text. In addition, these slides meet accessibility standards for students with disabilities. Features include but are not limited to: • Keyboard and screen reader access • Alternative text for images • High color contrast between background and foreground colors

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Scott B. Smart
Chad J. Zutter

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1 The Investment Environment

MyLab Finance Chapter Introduction Video

LEARNING GOALS

After studying this chapter, you should be able to:

LG1 Understand the meaning of the term investment and list the attributes that distinguish one investment from another.

LG2 Describe the investment process and types of investors.

LG3 Discuss the principal types of investments.

LG4 Describe the purpose and content of an investment policy statement, review fundamental tax considerations, and discuss investing over the life cycle.

LG5 Describe the most common types of short-term investments.

LG6 Describe some of the main careers available to people with financial expertise and the role that investments play in each.

You have worked hard for your money. Now it is time to make your money work for you. Welcome to the world of investments. There are literally thousands of investments, from all around the world, from which to choose. How much should you invest, when should you invest, and which investments are right for you? The answers depend upon the knowledge and financial circumstances of each investor.

Financial news is plentiful, and finding financial information has become easier than ever. Traditional media outlets, including TV networks such as CNBC, Bloomberg Television, and Fox Business Network and print-based powerhouses such as *The Wall Street Journal* and *The Financial Times,* provide financial advice for individual investors. However, more people obtain investment information from the Internet than from all other sources combined. The Internet makes enormous amounts of information readily available, enables investors to trade securities with the click of a mouse, and provides free and low-cost access to tools that were once restricted to professional investors. All of this helps create a more level playing field—yet at the same time, such easy access can increase the risks for inexperienced investors.

Whether you are an experienced investor or a novice, the same investment fundamentals apply. Perhaps the most fundamental principle in investing, and one that you would be wise to keep in mind whenever you invest, is this—there is a tradeoff between an investment's risk and its return. Most people would like their investments to be as profitable as possible, but there is an almost unavoidable tendency for investments with the greatest profit potential to be associated with the highest risk. You will see examples of the link between risk and return throughout this text. First, we address the question, "What is an investment?"

Investments and the Investment Process

LG1 LG2

NOTE The Learning Goals shown at the beginning of the chapter are keyed to text discussions using these icons.

You are probably already an investor. If you have money in a savings account, you have at least one investment to your name. An **investment** is any asset into which you place funds with the expectation that it will generate positive income and/or increase its value. A collection of different investments is called a **portfolio**.

The rewards, or **returns**, from investing come in two basic forms: income and increased value. Money invested in a savings account provides income in the form of periodic interest payments. A share of common stock may also provide income (in the form of dividends), but investors often buy stock because they expect its price to rise. That is, common stock offers both income and the chance of an increased value. In the United States since 1900, the average annual return on a savings account has been a little more than 4%. The average annual return on common stock has been about 11.5%. Of course, during major market downturns (such as the one that occurred in 2008), the returns on nearly all investments fall well below these long-term historical averages.

Is cash placed in a non-interest-bearing checking account an investment? No, because it fails both tests of the definition: It does not provide added income, and its value does not increase. In fact, over time inflation erodes the purchasing power of money left in a non-interest-bearing checking account.

Attributes of Investments

When you invest, the organization in which you invest—whether it is a company or a government entity—offers you the prospect of a future benefit in exchange for the use of your funds. You are giving up the use of your money, or the opportunity to use that money to consume goods and services today, in exchange for the prospect of having more money, and thus the ability to consume goods and services, in the future. Organizations compete for the use of your funds, and just as retailers compete for customers' dollars by offering a wide variety of products with different characteristics, organizations attempting to raise funds from investors offer a wide variety of investments with different attributes. As a result, investments of every type are available, from virtually zero-risk savings accounts at banks, which in recent years offered returns hovering barely above 0%, to shares of common stock in high-risk companies that might skyrocket or plummet in a short time. The investments you choose will depend on your resources, your goals, and your willingness to take risk. We can describe a number of attributes that distinguish one type of investment from another.

NOTE Investor Facts offer interesting or entertaining tidbits of information.

INVESTOR FACTS

Art as an Asset Is art a good investment? Paintings and other artworks trade infrequently (i.e., they are illiquid), so measuring the investment performance of art is difficult. Using sophisticated statistical methods, one study pegged the average annual return on art (from 1961 to 2013) at just over 6%. That figure is higher than the returns earned on investments in real estate and U.S. government securities but below returns delivered by commodities, corporate bonds, and common stocks.

(Source: Based on "Does It Pay to Invest In Art? A Selection-Corrected Returns Perspective," *Review of Financial Studies*, 2016.)

Securities or Property **Securities** are investments issued by firms, governments, or other organizations that represent a financial claim on the issuer's resources. The most common securities are stocks and bonds, but more exotic types such as stock options are available as well. One benefit of investing in securities is that they often have a high degree of **liquidity**, meaning that you can sell securities and convert them into cash quickly without incurring substantial transaction costs and without having an adverse impact on the security's price. Stocks issued by large companies, for example, tend to be highly liquid, and investors trade billions of shares of stock each day in the markets all over the world. The focus of this text is primarily on the most basic types of securities.

Property, on the other hand, consists of investments in real property or tangible personal property. *Real property* refers to land, buildings, and

INVESTOR FACTS

Smart People Own Stocks The stock market participation rate refers to the percentage of households that invest in stocks directly or indirectly. A study of investors from Sweden found that an extra year of schooling increased the stock market participation rate by two percentage points and increased the share of wealth that individuals invested in stocks by 10%. Another study looked at investors from Finland and found a remarkable connection between IQ and stock market participation—people with higher IQ scores were much more likely to invest in stocks than were people with lower IQ scores. More remarkable still, the IQ measure used in this study was the score on a test given to Finnish males when they were 19 or 20 years old as part of their induction to military service. IQ scores measured at that early age were a very strong predictor of whether these men would invest in stocks much later in life.

(Sources: Based on "Learning to Take Risks? The Effect of Education on Risk Taking in Financial Markets," *Review of Finance*, 2018; "IQ and Stock Market Participation," *Journal of Finance*, 2011.)

things permanently affixed to the land. *Tangible personal property* includes items such as gold, artwork, antiques, and other collectibles. In most cases, property is not as easy to buy or sell as are securities, so we would say that property tends to be a relatively illiquid investment. Investors who want to sell a building or a painting may have to hire (and compensate) a real estate agent or an art dealer to locate a buyer, and it may take weeks or months to sell the property.

Direct or Indirect A **direct investment** is one in which an investor directly acquires a claim on a security or property. If you buy shares of common stock in a company such as Apple, then you have made a direct investment, and you are a part owner of that firm. An **indirect investment** is an investment in a collection of securities or properties managed by a professional investor. For example, when you send your money to a mutual fund company such as Vanguard or Fidelity, you are making an indirect investment in the assets held by these mutual funds.

Direct ownership of common stock has been on the decline in the United States for many years. For example, in 1945 households owned (directly) more than 90% of the common stocks listed in the United States. Over time that percentage dropped to its current level of about 30.5% (by comparison, 64% of U.S. households own a home). The same trend has occurred in most of the world's larger economies. In the United Kingdom, for example, households' direct ownership of shares fell from roughly 66% to 14% in the past half century. Today, households directly hold less than one-quarter of outstanding shares in most of the world's major stock markets, as Figure 1.1 shows.

Just as direct stock ownership by households has been falling, indirect ownership has been rising. The percentage of U.S. households that owned mutual funds (one means of obtaining indirect ownership of stocks and other investments) rose from about 5% in 1980 to almost 55% in 2017. Individuals have indirect ownership in stocks through many other types of financial institutions besides mutual funds. In 1945 institutional investors such as pension funds, hedge funds, and mutual funds combined held just less than 2% of the outstanding stock in the United States, but today their direct ownership is approaching 70%.

Tax policy helps to explain the decline in direct stock ownership by individuals and the related rise in direct ownership by institutions such as mutual funds and pension funds. Starting in 1978, section 401(k) of the Internal Revenue Code allowed employees to avoid paying tax on earnings that they elect to receive as deferred compensation, such as in a retirement savings plan. Since then, most large companies have adopted so-called 401(k) plans, which allow employees to avoid paying current taxes on the income that they contribute to a 401(k) plan. Employees are taxed on this income when they withdraw it during their retirement years. Typically, mutual fund companies manage 401(k) plans, so stocks held in these plans represent indirect ownership for the workers and direct ownership for the mutual fund companies.

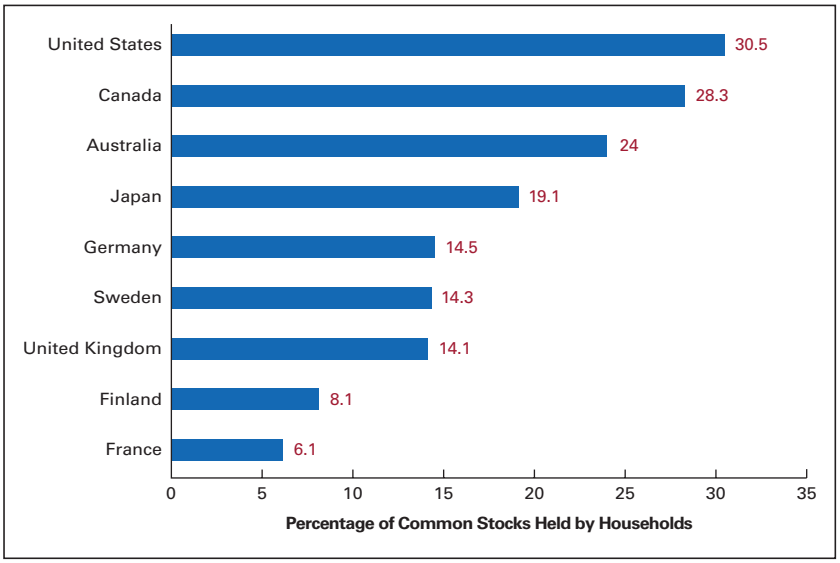
An important element of this trend is that individuals who trade stocks directly often deal with professional investors who sell the shares those individuals want to buy or buy what individuals want to sell. For instance, in 2018 Fidelity, one of the largest investment management companies in the world, had $2.5 trillion in assets in its various mutual funds, trusts, and other accounts, and the company employed approximately 40,000 people, many of whom had advanced investments training and access to

FIGURE 1.1

Direct Stock Ownership by Households

The figure shows the percentage of common stocks in each country that is owned directly by households. In most countries, households own less than one-quarter of the value of listed common stocks in the country.

(Source: Data from "Government Policy and Ownership of Equity Securities," *Journal of Financial Economics*, 2014, Vol. 111, Issue 1, pp. 70–85.)



a tremendous amount of information about the companies in which they invest. Given the preponderance of institutional investors in the market today, individuals are wise to consider the advantages possessed by the people with whom they are trading.

Debt, Equity, or Derivative Securities Most investments fall into one of three broad categories—debt, equity, or derivatives. **Debt** is simply a loan that obligates the borrower to make periodic interest payments and to repay the full amount of the loan by some future date. When companies or governments need to borrow money, they issue securities called *bonds*. When you buy a bond, you lend money to the issuer. The issuer agrees to pay you interest and to repay the original loan at a specified time.

Equity represents ongoing ownership in a business or property. An equity investment may be held as a security or by title to a specific property. The most common type of equity security is *common stock*.

Derivative securities derive their value from an underlying security or asset. Stock *options* are an example. A stock option is an investment that grants the right to purchase (or sell) a share of stock at a fixed price for a limited time. The option's value depends on the market price of the underlying stock.

Low- or High-Risk Investments Investments also differ on the basis of risk. **Risk** reflects the uncertainty surrounding the return that a particular investment will generate. To oversimplify things slightly, the more uncertain the return associated with an investment, the greater its risk. One of the most important strategies that investors use to manage risk is **diversification**, which simply means holding different types of assets in an investment portfolio.

As you invest over your lifetime, you will be confronted with a continuum of investments that range from low risk to high risk. For example, stocks are generally considered riskier than bonds because stock returns vary over a much wider range and are harder to predict than are bond returns. However, it is not difficult to find high-risk bonds that are riskier than the stock of a financially sound firm.

In general, investors face a tradeoff between risk and return—to obtain higher returns, investors usually have to accept greater risks. Low-risk investments provide a relatively predictable, but also relatively low, return. High-risk investments provide much higher returns on average, but they also have the potential for much larger losses.

Short- or Long-Term Investments The life of an investment may be either short or long. **Short-term investments** typically mature within one year. **Long-term investments** are those with longer maturities or, like common stock, with no maturity at all.

NOTE Discussions of international investing are highlighted by this icon.

Domestic or Foreign As recently as 30 years ago, U.S. citizens invested almost exclusively in purely **domestic investments**: the debt, equity, and derivative securities of U.S.-based companies and governments. The same could be said of investors in many other countries. In the past, most people invested the vast majority of their money in securities issued by entities located in their home countries. Today investors routinely also look for **foreign investments** (both direct and indirect) that might offer more attractive returns than purely domestic investments. Even when the returns offered by foreign investments are not higher than those found in domestic securities, investors may still choose to make foreign investments because they help them build more diversified portfolios, which in turn helps limit exposure to risk. Information on foreign companies is readily available, and it is relatively easy to make foreign investments.

The Structure of the Investment Process

The investment process brings together *suppliers* who have extra funds and *demanders* who need funds. Households, governments, and businesses are the key participants in the investment process, and each of these participants may act as a supplier or a demander of funds at a particular time. However, there are some general tendencies. Households who spend less than their income have savings, and they want to invest those surplus funds to earn a return. Households, then, are generally *net suppliers* of funds. Governments, on the other hand, often spend more than their tax revenues, so they issue bonds and other debt securities to raise additional funds. Governments are typically *net demanders* of funds. Businesses are also *net demanders* of funds most of the time. They issue debt or equity securities to finance new investments and other activities.

Suppliers and demanders of funds usually come together by means of a financial institution or a financial market. **Financial institutions** are organizations, such as banks, mutual funds, and insurance companies, that pool the resources of households and other savers and use those funds to make loans and to invest in securities. **Financial markets** are markets in which suppliers and demanders of funds trade financial assets, typically with the assistance of intermediaries such as securities brokers and dealers. All types of investments, including stocks, bonds, commodities, and foreign currencies, trade in financial markets.

The dominant financial market in the United States is the *securities market*. It includes stock markets, bond markets, and options markets. Similar markets exist in most major economies throughout the world. The prices of securities traded in these markets are determined by the interactions of buyers and sellers, just as other prices are established in other kinds of markets. For example, if the number of Facebook shares that investors want to buy is greater than the number that investors want to sell, the price of Facebook stock will rise. As new information about the company becomes available, changes in supply (investors who want to sell) and demand (investors who want to buy) may result in a new market price. Financial markets streamline the process of bringing together buyers and sellers, so investors can transact with each other

quickly and inexpensively. Financial markets provide another valuable function by establishing market prices for securities that are easy for market participants to monitor. For example, a firm that launches a new product may get an early indication of how that product will be received in the market by seeing whether investors drive the firm's stock price up or down as they learn about the new product.

Figure 1.2 is a diagram of the investment process. Note that the suppliers of funds may transfer their resources to the demanders through financial institutions, through financial markets, or in direct transactions. As the broken lines show, financial institutions can participate in financial markets as either suppliers or demanders of funds. For the economy to grow and prosper, funds must flow to those with attractive investment opportunities. If individuals began suddenly hoarding their excess funds rather than putting them to work in financial institutions and markets, then organizations in need of funds would have difficulty obtaining them. As a result, government spending, business expansion, and consumer purchases would decline, and economic activity would slow.

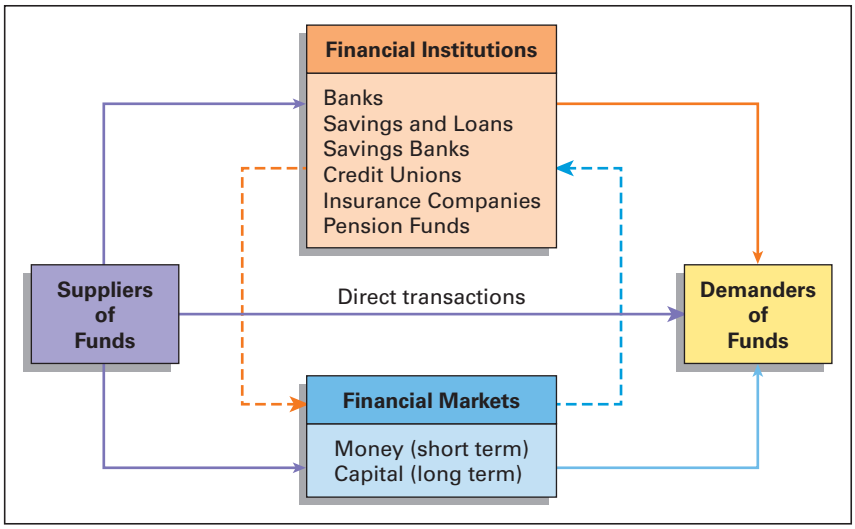
When households have surplus funds to invest, they must decide whether to make the investment decisions themselves or to delegate some or all of that responsibility to professionals. This leads to an important distinction between two types of investors in the financial markets. **Individual investors** manage their own funds to achieve their financial goals. Individuals who lack the time or expertise to make investment decisions often employ **institutional investors**—investment professionals who earn their living by managing other people's money. These professionals trade large volumes of securities for individuals, as well as for businesses and governments. Institutional investors include banks, life insurance companies, mutual funds, pension funds, and hedge funds.

Both individual and institutional investors apply similar fundamental principles when deciding how to invest money. However, institutional investors generally control larger sums of money and have more sophisticated analytical skills than do most individual investors. *The information presented in this text is aimed primarily at you—the individual investor*. Mastering this material represents only the first step that you need to take to develop the expertise you need if you want to become an institutional investor.

FIGURE 1.2

The Investment Process

Financial institutions participate in the financial markets as well as transfer funds between suppliers and demanders. Although the arrows go only from suppliers to demanders, for some transactions (e.g., the sale of a bond or a college loan), the principal amount borrowed by the demander from the supplier (the lender) is eventually returned.



CONCEPTS IN REVIEW

Answers available at www.pearson.com/mylab/finance

NOTE The Concepts in Review questions at the end of each text section encourage you, before you move on, to test your understanding of the material you've just read.

1.1 Define the term investment, and explain why individuals invest.

1.2 Differentiate among the following types of investments, and cite an example of each: (a) securities and property investments; (b) direct and indirect investments; (c) debt, equity, and derivative securities; and (d) short-term and long-term investments.

1.3 What is the relation between an investment's risk and its return?

1.4 Define the term risk, and explain how risk is used to differentiate among investments.

1.5 What are foreign investments, and what role do they play for the individual investor?

1.6 Describe the structure of the overall investment process. Explain the role played by financial institutions and financial markets.

1.7 Classify the roles of (a) government, (b) business, and (c) individuals as net suppliers or net demanders of funds.

1.8 Differentiate between individual investors and institutional investors.

Types of Investments

LG3 A wide variety of investments is available to individual investors. As you have seen, investments differ in terms of risk, maturity, and many other characteristics. We devote the bulk of this text to describing the characteristics of different investments and the strategies that you may use when you buy and sell these investments. Table 1.1 summarizes some basic information about the major types of investments that we will study.

Short-Term Investments

Short-term investments have a life of one year or less and usually (but not always) carry little or no risk. People buy these investments to put idle funds to use before transferring the money into a long-term investment. Short-term investments are also appealing to conservative investors who are reluctant to put their funds in riskier, long-term assets such as stocks or bonds.

Short-term investments provide liquidity because investors can convert them into cash quickly with little or no loss in value. Liquidity is important to investors because it is impossible to know when an emergency or other unplanned event will make it necessary to obtain cash by selling an investment. At such a time, selling an investment quickly is important. Of course, an investor willing to sell at a bargain price can convert almost any asset to cash quickly, but an investment that is liquid doesn't require such a concession. Liquid investments give investors peace of mind that they can to get their hands on cash quickly if they need it without having to sell their investments at fire-sale prices.

Common Stock

Common stock is an equity investment that represents ownership in a corporation. Each share of common stock represents a fractional ownership interest in the firm. For example, in early 2018, Amazon had just over 484 million shares of stock outstanding. If you bought 100 shares of Amazon, you would be a part owner of that company, though your ownership stake would be just 0.000021%! Owners of common stock usually have the right to vote at shareholders' meetings, but for most individual investors, the voting rights are less important than the return they hope to earn.

TABLE 1.1 MAJOR TYPES OF INVESTMENTS

Type	Description	Examples	Where Covered in This Book
Short-term investments	Savings instruments with lives of 1 year or less. Used to warehouse idle funds and to provide liquidity.	Deposit accounts, U.S. Treasury bills (T-bills), Certificates of deposit (CDs), Commercial paper, Money market mutual funds	Ch. 1
Common stock	Equity investments that represent ownership in a corporation.		Chs. 6–9
Fixed-income securities	Investments that make fixed cash payments at regular intervals.	Bonds, Convertible securities Preferred stock	Chs. 10, 11 Web Ch. 16
Mutual funds	Companies that pool money from many investors and invest funds in a diversified portfolio of securities.	Large-cap funds, Growth funds	Ch. 12
Exchange-traded funds	Investment funds, typically index funds, that are exchange listed and, therefore, exchange traded.	Stock index funds, Bond index funds	Ch. 12
Hedge funds	Alternative investments, usually in pools of underlying securities, available only to sophisticated investors, such as institutions and individuals with significant assets.	Long and short equities, Funds of funds	Ch. 12
Derivative securities	Securities that are neither debt nor equity but are structured to exhibit the characteristics of the underlying assets from which they derive their value.	Options Futures	Ch. 14 Ch. 15
Other popular investments	Various other investments that are widely used by investors.	Tax-advantaged investments Real estate Tangibles	Web Ch. 17 Web Ch. 18 Web Ch. 18

The return on common stock comes from two sources: dividends and capital gains. **Dividends** are payments the corporation makes to its shareholders. Companies are not required to pay dividends, and most firms that are small or are growing very rapidly do not pay dividends. As firms grow and accumulate cash, they often start paying dividends, just as Hawaiian Airlines did in 2017. Companies that pay dividends usually pay them quarterly. **Capital gains** occur when the stock price rises above an investor's initial purchase price. Capital gains may be *realized* or *unrealized*. If you sell a stock for more than you paid for it, you have realized a capital gain. If you continue to hold the stock rather than sell it, you have an unrealized capital gain.

Example»

McDonald's Common Stock Return

MyLab Finance Solution Video

Suppose you purchased a single share of McDonald's common stock for $119.62 on January 3, 2017, the first day that the stock market was open for trading that year. During 2017 you received $3.83 in cash dividends. At the end of the year, you sold the stock for $172.12. You earned $3.83 in dividends and you realized a $52.50 capital gain ($172.12 sale price – $119.62 purchase price) for a total dollar return of $56.33. On a percentage basis, the return on McDonald's shares in 2017 is calculated as $56.33 ÷ $119.62 = 0.471 or 47.1%. If you continued to hold the stock rather than sell it, you would have earned the same return, but your capital gain would have been unrealized.

As mentioned earlier, since 1900 the average annual rate of return on common stocks has been about 11.5%, so 2017 was a good year for McDonald's. As a fast food producer, McDonald's stock generally performs better when the economy is growing (as it was in 2017) and consumers are more willing to pay for food at restaurants rather than eating at home.

Fixed-Income Securities

Fixed-income securities are investments that offer a periodic cash payment that may be fixed in dollar terms or may vary according to a predetermined formula (for example, the formula might dictate that cash payments rise if a general rise in market interest rates occurs). Some offer contractually guaranteed returns, meaning that the issuer of the security (i.e., the borrower) must fulfill a promise to make payments to investors or risk being sued. Other fixed-income securities come with the expectation of regular payments even if a contractual obligation is absent. Because of their relatively predictable cash payments, fixed-income securities tend to be popular during periods of economic uncertainty when investors are reluctant to invest in riskier securities such as common stocks. Fixed-income securities are also attractive during periods of high interest rates when investors seek to "lock in" high returns, especially if interest rates are above the inflation rate. The most common fixed-income securities are bonds, convertible securities, and preferred stock.

Bonds

Bonds are long-term debt instruments issued by corporations and governments. A bondholder has a contractual right to receive periodic interest payments plus return of the bond's *principal, face value*, or *par value* (the original loan amount) at maturity.

If you purchased a bond with a $1,000 par value paying 6% interest in semiannual installments, you would receive an interest payment equal to $1,000 × 6% × ½ year = $30 every six months. At maturity you would also receive the bond's $1,000 face value. Bonds vary a great deal in terms of liquidity, so they may or may not be easy to sell prior to maturity.

Since 1900 the average annual rate of return on long-term government bonds has been about 5.3%. Corporate bonds are riskier because they are not backed by the full faith and credit of the U.S. government and, therefore, tend to offer slightly higher returns than government bonds provide.

Convertible Securities

A **convertible security** is a special type of fixed-income investment. It has a feature permitting the investor to convert it into a specified number of shares of common stock. Convertibles provide the fixed-income benefit of a bond (interest) while offering the price-appreciation (capital gain) potential of common stock.

Preferred Stock

Like common stock, **preferred stock** represents an ownership interest in a corporation and has no maturity date. Unlike common stock, preferred stock has a fixed dividend payment (in either dollar or percentage terms), and preferred stockholders often have no voting rights. Firms are generally required to pay dividends on preferred shares before they pay dividends on their common shares. Furthermore, if a firm is having financial difficulties and decides to stop paying preferred dividends, it may have to make up all of the dividend payments that it skipped before paying dividends on common shares. Investors typically purchase preferred stocks for the dividends they pay, but preferred shares may also provide capital gains.

Mutual Funds

A **mutual fund** is a portfolio of stocks, bonds, or other assets purchased with a pool of funds contributed by many different investors and managed by an *investment company* on behalf of its clients. In addition to mutual funds, investment companies operate similar investment vehicles such exchange-traded funds (ETFs). Investors in a mutual fund or an ETF own an interest in the fund's collection of securities. Most individual investors who own stocks do so indirectly by purchasing mutual funds that hold stocks. When they send money to a mutual fund, investors buy shares in the fund (as opposed to shares in the companies in which the fund invests), and the price of the mutual fund's shares reflects the value of the assets that the fund holds. Mutual funds allow investors to construct well-diversified portfolios without having to invest a large sum of money. After all, it's cheaper to buy shares in a fund that holds 500 stocks than it is to buy shares in 500 companies on your own. In the last three decades, the mutual fund industry has experienced tremendous growth. The number of equity mutual funds (i.e., funds that invest mainly or exclusively in common stock) has more than quadrupled since 1980.

INVESTOR FACTS

The Feeling's Mutual! In 2017, the 16,818 funds managed by investment companies in the United States accounted for investment assets of $22 trillion. These mutual funds and ETFs held 31% of all U.S. stocks and managed 24% of all household financial assets.

(Source: 2018 Investment Company Fact Book, downloaded from **http://www.icifactbook.org/**, accessed May 9, 2018)

Most mutual fund managers follow one of two broad approaches when selecting specific securities for their funds. In an *actively managed fund*, managers try to identify and purchase securities that are undervalued and are therefore likely to perform particularly well in the future. Or managers try to identify overvalued securities that may perform poorly and avoid those investments. The goal of an actively managed fund is to earn a higher return than some sort of benchmark. For a mutual fund that invests in stocks, a common goal is to earn a return that is higher than the return on a market index like the Standard & Poor's 500 Stock Index (S&P 500). In a *passively managed fund*, managers make no attempt to identify under- or overvalued securities. Instead, they buy a diversified portfolio of stocks and try to mimic or match the return on a market index. Because these funds provide returns that are close to the returns on a market index, they are called *index funds*. For more than a decade, index funds have been growing, meaning that they have been attracting new dollars from investors, while actively managed funds have been shrinking as investors withdraw dollars from those funds to invest in passively managed funds.

In return for the services they provide, mutual funds (or rather, the investment companies that run the mutual funds) charge investors fees, and some of those fees are rolled together in a figure known as the *expense ratio*. The expense ratio is a fee charged to investors based on a percentage of the assets invested in a fund. It accrues daily and represents one of the primary costs that investors pay when they purchase mutual fund shares. For example, if an individual has $10,000 invested in a mutual fund with an expense ratio of 1%, then the fund will charge $100 per year to manage the individual's money.

Expense ratios are generally higher for funds that invest in riskier securities. For example, in 2017 the average expense ratio among mutual funds investing in stocks was 0.59%, meaning that investors would pay expenses equal to $59 per $10,000 invested. For funds that invest in bonds, the average expense ratio was 0.48%. **Money market mutual funds** (also called **money funds**) are mutual funds that invest solely in short-term investments. The average expense ratio for money market mutual funds in 2017 was just 0.25%.

Expense ratios also tend to be higher for actively managed funds. That shouldn't be surprising because actively managed funds are more expensive to operate. In 2017, the average expense ratio for equity index funds was 0.09%, just one-ninth of the average expense ratio for actively managed equity funds (0.78%). For many years, expense

ratios have been declining, a trend that is partly driven by the growing popularity of passively managed funds. The average expense ratio for equity mutual funds fell 27 basis points (or just over one quarter of one percent) in the last decade, from 0.86% in 2007 to 0.59% in 2017. Falling expense ratios is good news for mutual fund investors. Even so, there is considerable variation in expense ratios from one fund to another, so investors need to pay close attention to expenses before they choose a fund.

In addition to the expense ratio, some funds charge a fee called a *load*. A load may be charged up front when the investor initially buys shares in the fund, in which case it is called a *sales load*. Alternatively, when investors sell their shares the fund may charge a fee known as a *redemption fee* or *back-end load*. Typically, redemption fees are reduced or waived entirely if investors keep their money in the fund for a long time.

Exchange-Traded Funds

Like mutual funds, **exchange-traded funds** (**ETFs**) hold portfolios of securities, and investors buy shares in the ETF. ETFs are very similar to mutual funds. They allow investors to form well-diversified portfolios with low initial investments, and the fees charged by ETFs are generally quite low. However, there are some important differences between ETFs and mutual funds. The main distinction is that ETFs trade on exchanges, so investors can buy and sell an ETF at its current market price any time during regular trading hours. Mutual fund shares are not traded on exchanges, and when an investor buys (or sells) shares in a fund from an investment company, the transaction occurs at the end of the day using the fund's closing price, which is determined by adding up the values of the securities the fund holds at the end of the day and dividing by the number of shares in the fund. If stock prices are changing rapidly during the day, ETF investors may be able to take advantage of this by purchasing or selling their shares before prices hit their peak (or bottom). Investors in mutual funds have to wait until the day's end to learn the price at which they can trade fund shares.

Another important difference has to do with what happens to the money when investors buy or sell shares. When investors buy shares in a mutual fund, the fund has more money than it had before, so the fund's managers will likely use those funds to buy more securities. Similarly, if investors sell shares in the fund, the fund's managers may have to sell securities to raise the cash needed to redeem shares. If many investors want to sell their shares simultaneously, that may trigger a *fire sale*—the fund manager has to accept lower prices to quickly convert the fund's assets into cash. In contrast, ETF shares represent a fixed number of claims on a fixed portfolio. When investors buy ETF shares, they are simply acquiring them from other investors who want to sell their shares. There is no inflow or outflow of cash into the company that manages the ETF, and therefore there is no need to buy or sell additional securities in response to investors' transactions.

Launched in 1993, the first ETF was a broad-based equity fund designed to track the Standard & Poor's 500 Stock Index. Since then, both the number of ETFs and the amount of money invested in them has grown explosively. From 2007 to 2017, the number of ETFs grew 200%, and assets invested in those funds grew at an average rate of 19% per year. Even so, today there is about 5.5 times more money invested in mutual funds than in ETFs.

Hedge Funds

Like mutual funds, **hedge funds** buy securities with pooled money obtained from many different investors. Hedge funds are generally open to a narrower group of investors than are mutual funds. For example, the minimum investment required by a mutual fund might be a few hundred dollars, whereas the minimum

investment required to participate in a hedge fund runs into the hundreds of thousands of dollars. Despite the high minimum investment, hedge funds have grown in importance in recent years, with assets under management of approximately $3.5 trillion in 2018.

Hedge funds generally charge much higher fees than do mutual funds. Traditionally, hedge fund fees follow the "two and twenty" rule, which means that investors pay annual fees equal to 2% of the assets invested plus 20% of any gains the fund can achieve. The first component of the fee is the management fee and is independent of the fund's performance. The second component is the incentive fee. Investors do not pay incentive fees if a hedge fund earns a negative return in a particular year, and it is common for the incentive fee to have a "high-water mark" feature. The high-water mark specifies that the incentive fee is not payable until a hedge fund passes its previous peak value. For example, if a hedge fund loses 6% in one year and earns 10% the following year, the incentive fee will not be paid on the second year's entire 10% return. Instead, the fee will only apply to the increase in fund value above and beyond its previous peak. The fund has to earn back the 6% that it previously lost before new incentive fees kick in.

Hedge funds are not as closely regulated as are mutual funds, and they tend to invest in riskier and less liquid securities. The very name "hedge fund" suggests that these funds try to limit or hedge the risks that they take, and some hedge funds do operate with that goal in mind. However, other funds adopt very high-risk investment strategies. Nonetheless, the hedge-fund industry has experienced dramatic growth.

Derivative Securities

As the name suggests, derivative securities derive their value from an underlying security or asset. Many derivatives are among the most risky financial assets because they are designed to magnify price changes of the underlying asset. For example, when the price of oil moves up or down by $1 per barrel, the value of an oil futures contract (an agreement between two parties to trade oil on a future date at a specified price) moves $1,000 in the same direction. Investors may buy or sell derivatives to speculate on the movements of the underlying asset, but corporations also buy and sell derivatives to hedge against some of the risks they face. For instance, a cereal company may purchase wheat futures contracts as a kind of insurance against the possibility that wheat prices will rise.

Options **Options** are securities that give the investor an opportunity to buy or sell an underlying asset at a specified price for a limited time. The underlying asset is usually another security such as a share of common stock. Investors may trade stock options to speculate on a change in the price the underlying common stock. However, the buyer of a stock option is not guaranteed a return and could easily lose the entire amount invested if the underlying stock moves in the wrong direction. Two common types of options are *calls* and *puts*. Call options grant the right to buy and put options grant the right to sell an underlying asset at a fixed price.

Futures **Futures** are legally binding contracts stipulating that the seller will make delivery and the buyer will take delivery of an asset at a specific date and price. The underlying asset for a futures contract may be a commodity such as soybeans, pork bellies, platinum, or oil, or the underlying asset may be a financial instrument such as a foreign currency or a Treasury bond or even a stock index. Trading in commodity and financial futures is generally a highly specialized, high-risk proposition.

Other Popular Investments

Because the U.S. federal income tax rate for an individual can be as high as 37%, many investors look for **tax-advantaged investments** that provide higher after-tax returns by reducing the taxes investors must pay. For instance, municipal bonds, which are issued by state and local governments, make interest payments that are not subject to federal income taxation. Because investors do not have to pay taxes on the interest they receive on municipal bonds, they will accept lower interest rates on these investments than they will on similar bonds that make taxable interest payments.

Real estate consists of assets such as residential homes, raw land, and a variety of forms of income property, including warehouses, office and apartment buildings, and condominiums. The appeal of real estate investment is the potential returns in the forms of rental income, tax write-offs, and capital gains.

Tangibles are investment assets, other than real estate, that can be seen or touched. They include gold and other precious metals, gemstones, and collectibles such as coins, stamps, artwork, and antiques. People purchase these assets as investments in anticipation of price increases.

CONCEPTS IN REVIEW

Answers available at http://www.pearson.com/mylab/finance

1.9 What are short-term investments? How do they provide liquidity?

1.10 What is common stock, and what are its two sources of potential return?

1.11 Briefly define and differentiate among the following investments. Which offer fixed returns? Which are derivative securities? Which offer professional investment management?

a. Bonds
b. Convertible securities
c. Preferred stock
d. Mutual funds
e. Hedge funds
f. Options
g. Futures

Making Your Investment Plan

LG4

Investing can be conducted on a strictly intuitive basis or on the basis of plans carefully developed to achieve specific goals. Evidence favors the planned approach. Developing a well-thought-out investment plan encourages you to follow a disciplined approach to managing money. That discipline will help you avoid many common mistakes by keeping you focused on your goals during market swings. A good investment plan is a reminder of the goals that you are trying to achieve with your money, and it provides a kind of strategic roadmap to guide investment decisions over a lifetime. We suggest that your investment plan should begin with an Investment Policy Statement.

Writing an Investment Policy Statement

Large corporations typically have an investment policy statement (IPS) that spells out how the corporation will invest funds in the company retirement plan. Financial advisors write them for their clients. Our view is that an IPS is equally important

for individual investors like you. Writing such a statement forces you to think carefully about all aspects of your investment plan, a particularly useful exercise for a novice investor. If you have a spouse or partner, an IPS can help you work out (in advance) disagreements about how much money the two of you will save and how that money will be invested. In middle age, an IPS helps you assess the progress toward your long-term financial goals. Below we outline the major elements of a well-crafted IPS.

Summarize your current situation. In the opening section of the IPS, list the assets that you own. Set a target for how much money you can save and invest each month. Describe where the money that you plan to invest will come from. Given your income and your current spending habits, is it reasonable to expect that you will have surplus funds to invest? What tax rate do you face today, and how do you expect that to change in the future? Establish some broad guidelines for the initial asset allocation in your portfolio. What percentage of your funds do you want to invest in stocks, bonds, and other investments? Ask yourself how much money you think you can afford to lose, both in the short term (over a few months) and the long term (over a few years), and articulate your action plan when losses occur. Will you sell some of your investments, simply hold onto them, or continue making new investments each month according to the plan? Try to define your investment horizon. Will you need to access the funds you are investing in a year, in a decade, or at the end of your working life? If you plan to enlist the help of a professional investment advisor, describe the process that you will use to select that person. If you have already selected an advisor, list that person's contact information in your IPS and discuss the statement with him or her, perhaps even getting his or her signature on the document.

Specify your investment goals. Once you have outlined your current situation, write out your investment goals. **Investment goals** are the financial objectives you wish to achieve by investing. Are you trying to reach a specific target savings goal, such as accumulating enough money to make a down payment on a house? Or do you have a goal that is further out in the future, such as saving enough money to send your children to college or to provide enough income for your own retirement? Is your investment goal to generate more cash flow in the form of interest or dividends, or are you trying to shelter income from taxation? Achieving each of these goals may call for a different strategy. For each goal that you specify, try to determine how many years you will need to save and invest to achieve that goal, and how much money you need to invest each year to reach your goal.

Articulate your investment philosophy. In this part of the IPS, you'll want to spell out your investment philosophy, your views about the types of investments you're willing to make, how often you are willing to adjust your portfolio through trading, and other matters that will shape your portfolio. Perhaps the most important aspect of your investment philosophy is your risk tolerance. Your investment philosophy should indicate how much volatility in the value of your portfolio that you are willing to tolerate. For example, you might say that your portfolio should be designed to minimize the chance of losing more than 20% in a year. Your policy should indicate how important diversification is to you and how many types of investments you plan to own. Your philosophy will specify the investments you are not willing to purchase. Perhaps you will choose not to invest in certain industries for ethical reasons, or you will declare that only "plain vanilla" investments like

stocks and bonds should be part of your portfolio (no derivatives or exotic investments, please). If you are working with a financial advisor, you may specify how frequently you will change the portfolio by trading, or you may provide guidelines about the trading costs or (in the case of mutual funds and ETFs) the management fees you're willing to pay. In this section of the IPS you may choose to articulate your assumptions about the returns that you expect different types of investments to earn.

NOTE Watch Your Behavior boxes provide insights about common mistakes that investors make gleaned from research in the field of behavioral finance.

Set investment selection guidelines. For each type of investment, or asset class, that you expect to hold (e.g., stocks, bonds, mutual funds), establish guidelines for how specific investments in that asset class will be selected. For example, if you plan to hold mutual funds, will you invest in actively or passively managed funds? In your selection process, how much importance will you place on a fund's track record (i.e., its past performance or the experience and education of the fund manager) and how much on its expense ratio and other costs of investing in the fund? If you plan to invest directly in stocks, will you focus on large, well-known companies, or are you more interested in emerging high-tech companies? Does it matter to you whether the stocks you buy pay dividends? When you are deciding which bonds to purchase, will you focus more heavily on the creditworthiness of the bond issuer or on other features of the bond such as its maturity or the interest rate that it offers?

Assign responsibility for selecting and monitoring investments. In this part of the IPS, you indicate whether you will make your own investment selections or enlist the help of an advisor. Likewise, you establish a plan for monitoring your investments. Do you plan to evaluate your investment performance quarterly, semiannually, or just once a year?

What criteria will you use to determine whether your investments are meeting your expectations? Any risky investment is bound to have periods when it performs poorly, so your IPS should provide some guidance about how long you are willing to tolerate subpar performance before making a change in the portfolio. Similarly, an investment that performs particularly well for a year or two will inevitably account for a rising fraction of the portfolio's overall value. Your IPS may describe the conditions under which you might sell some of your better performing investments simply to rebalance the portfolio.

WATCH YOUR BEHAVIOR

Watch Your Investments, But Not Too Closely Researchers have uncovered an interesting aspect of investor behavior. Individuals who monitor their portfolios less frequently tend to invest more in risky assets. Almost by definition, risky investments will frequently experience periods of low or even negative returns, even though over long periods of time risky assets tend to earn higher returns than safe assets do. When investors check their portfolios frequently, they apparently find it uncomfortable to observe the periods when risky investments perform badly, so they simply take less risk. One study found that when a new law in Israel prevented retirement funds from displaying returns for any period shorter than 12 months, investors put more of their money in riskier assets. In the long run, taking very little risk leads to very low returns, so it is not clear that watching investments too closely is a good thing.

(Source: Based on "The Display of Information and Household Investment Behavior," Finance and Economics Discussion Series 2017-043, Board of Governors of the Federal Reserve System.)

Considering Personal Taxes

Knowledge of the tax laws can help you reduce taxes and increase the after-tax dollars you have for investing. Because tax laws are complicated and subject to frequent revision, we present only the key concepts and how they apply to investment transactions.

Basic Sources of Taxation When forming your investment plans, you should consider both federal and state and local taxes. The federal income tax is the major form of personal taxation. Since the Tax Cuts and Jobs Act of 2017, federal tax rates range from 10% to 37%, although tax rates will rise again in 2026 unless Congress acts to extend those tax cuts into the future.

State and local taxes vary widely. Top earners in California face a tax rate of 13.3%, and eight other states have tax rates on high-income households that range from 8% to 9.9%. Some cities, especially large East Coast cities, also have local income taxes that typically range between 1% and 4%. In addition to income taxes, state and local governments rely heavily on sales and property taxes as a source of revenue.

Income taxes at the federal, state, and local levels have a great impact on investment returns. Property taxes can have a sizable impact on real estate and other forms of property investment.

Types of Income The income of individuals is classified into three basic categories:

- *Active income* consists of everything from wages and salaries to bonuses, tips, and pension income. Active income is made up of income earned on the job as well as most other forms of noninvestment income.
- *Portfolio income* includes earnings generated from various types of investments. This category covers most (but not all) types of investments from savings accounts, stocks, bonds, and mutual funds to options and futures. For the most part, portfolio income consists of interest, dividends, and capital gains (the profit on the sale of an investment).
- *Passive income* is a special category of income composed chiefly of income derived from real estate, limited partnerships, and other forms of tax-advantaged investments.

Ordinary Income Whether it's classified as active, portfolio, or passive, ordinary income is taxed at the federal level at one of seven rates: 10%, 12%, 22%, 24%, 32%, 35%, or 37%. There is one tax-rate structure for taxpayers who file individual returns and another for those who file joint returns with a spouse. Table 1.2 shows the 2018 tax rates and income brackets for these two categories. Note that the rates are *progressive*; that is, income is taxed in a tiered progression—the first portion of a taxpayer's income is taxed at one rate, the next portion at a higher rate, and so on. Under a progressive tax structure, an investor's *marginal tax rate*, the tax rate paid on the last dollar of income, may be different than the *average tax rate*, the ratio of total taxes due to total taxable income. An example demonstrates ordinary income taxation.

TABLE 1.2 FEDERAL INCOME TAX RATES AND BRACKETS FOR INDIVIDUAL AND JOINT RETURNS (DUE BY APRIL 15, 2019)

	Taxable Income	
Tax Rates	Individual Returns	Joint Returns
10%	$0 to $9,525	$0 to $19,050
12%	$9,526 to $38,700	$19,051 to $77,400
22%	$38,701 to $82,500	$77,401 to $165,000
24%	$82,501 to $157,500	$165,001 to $315,000
32%	$157,501 to $200,000	$315,001 to $400,000
35%	$200,001 to $500,000	$400,001 to $600,000
37%	Over $500,000	Over $600,000

Example

Tax Liabilities, Average Tax, and Marginal Tax

MyLab Finance Solution Video

Consider the Ellis sisters, Joni and Cara. Both are single. Joni's taxable income is $50,000. Cara's is $100,000. Using the tax rates and income brackets in Table 1.2, we can calculate their taxes as follows:

Joni:

$$0.10 \times \$9{,}525 + 0.12 \times (\$38{,}700 - \$9{,}525) + 0.22 \times (\$50{,}000 - \$38{,}700)$$
$$= \$952.50 + \$3{,}501 + \$2{,}486 = \$6{,}939.50$$

Cara:

$$0.10 \times \$9{,}525 + 0.12 \times (\$38{,}700 - \$9{,}525) + 0.22 \times (\$82{,}500 - \$38{,}700)$$
$$+ 0.24 \times (\$100{,}000 - \$82{,}500) = \$952.50 + \$3{,}501 + \$9{,}636 + \$4{,}200$$
$$= \$18{,}289.50$$

Notice that Joni pays about 13.9% of her income in taxes ($6,939.50 ÷ $50,000) while Cara's taxes amount to 18.3% of her income ($18,289.50 ÷ $100,000). The progressive nature of the federal income tax structure means that Cara pays a higher fraction of her income in taxes—although her taxable income is twice Joni's, Cara's income tax is about 2.6 times Joni's. Because Cara's income is higher than Joni's, she faces a higher marginal tax rate. Cara's last dollar of income is taxed at a 24% rate, whereas Joni's last dollar is taxed at just 22%. You can build a spreadsheet model like the one below to automate these calculations, so you can calculate the tax bill for an individual taxpayer with any income level.

NOTE This icon indicates that there is a downloadable Excel file available on MyLab Finance that matches the text's content at the point where the icon appears.

MyLab

	A	B	C	D	E	F	G
1	TAX RATES, INCOME BRACKETS, AND INCOME TAX FOR INDIVIDUAL RETURNS (2018)						
2							
3		Individual Returns					
4	Tax Rates (% of income)	Taxable Income			Base Tax	+	(Marginal rate × amount over base bracket)
5	10%	$0	to	$9,525	$0.00	+	(10% × amount over $0)
6	12%	$9,526	to	$38,700	$952.50	+	(12% × amount over $9,525)
7	22%	$38,701	to	$82,500	$4,453.50	+	(22% × amount over $38,700)
8	24%	$82,501	to	$157,000	$14,089.50	+	(24% × amount over $82,500)
9	32%	$157,001	to	$200,000	$32,089.50	+	(32% × amount over $157,000)
10	35%	$200,001	to	$500,000	$45,689.50	+	(35% × amount over $200,000)
11	37%	Over		$500,000	$150,689.50	+	(37% × amount over $500,000)
12							
13				Joni's Income	$50,000		
14		Joni's Income Tax			$6,939.50		
15							
16				Cara's Income	$100,000		
17		Joni's Income Tax			$18,289.50		

Capital Gains and Losses A *capital asset* is property owned and used by the taxpayer for personal reasons, pleasure, or investment. The most common types are securities and real estate, including one's home. A *capital gain* represents the amount by which the proceeds from the sale of a capital asset exceed its original purchase price. Under current tax law, several tax rates apply to capital gains income depending on the length of the investment holding period and the taxpayer's income. For assets held more than 12 months, the tax law classifies capital gains as long term and taxes them at rates ranging from 0% for

TABLE 1.3 FEDERAL INCOME LONG-TERM CAPITAL GAINS TAX RATES AND BRACKETS FOR INDIVIDUAL AND JOINT RETURNS (DUE BY APRIL 15, 2019)

	Taxable Income	
Tax Rates	Individual Returns	Joint Returns
0%	$0 to $38,600	$0 to $77,200
15%	$38,601 to $425,800	$77,201 to $479,000
20%	Over $425,800	Over $479,000

low-income taxpayers to 23.8% for high-income earners. For assets held less than 12 months, the law classifies capital gains as short term and taxes them at the ordinary income rates in Table 1.2. Table 1.3 shows the 2018 tax brackets and rates that apply to long-term capital gains for single taxpayers and married taxpayers filing a joint return. For single taxpayers earning more than $200,000 (or married taxpayers earning more than $250,000), an additional 3.8% tax on investment income applies, bringing the top tax rate on long-term capital gains to 23.8%.

Example

Capital Gains and Total Tax

MyLab Finance Solution Video

Imagine that James McFail, a single person who has other taxable income totalling $75,000, sold 500 shares of stock at $12 per share. He purchased this stock at $10 per share. The total capital gain on this transaction was $1,000 [500 shares × ($12/share − $10/share)]. James's taxable income totals $76,000, and he is in the 22% tax bracket (see Table 1.2).

If James held the asset for more than 12 months, based on his income he would have to pay a 15% tax on the $1,000 capital gain. His total tax would be calculated as follows:

Ordinary income ($75,000)

$$0.10 \times \$9{,}525 + 0.12 \times (\$38{,}700 - \$9{,}525) + 0.22 \times (\$75{,}000 - \$38{,}700) = \$952.50 + \$3{,}501 + \$7{,}986 = \$12{,}439.50$$

Capital gain ($1,000)

$$0.15 \times \$1{,}000 = \$150$$

Total tax

$$\$12{,}439.50 + \$150 = \$12{,}589.50$$

James's total tax would be $12,589.50. Had his other taxable income been below $38,600, James would have owed no tax on the capital gain. Had James held the asset for fewer than 12 months, his $1,000 capital gain would have been taxed as ordinary income, which in James's case would result in a 22% rate.

Capital gains are appealing because investors do not pay taxes on those gains until they are realized. For example, if an investor purchased stock for $50 that at the end of the tax year has a market price of $60, the investor has a "paper gain" of $10. This paper (unrealized) gain is not taxable because the investor still owns the stock. Only realized gains are taxed. If the investor sold the stock for $60 per share during the tax year, he would have a realized—and therefore taxable—gain of $10 per share.

A **capital loss** results when a capital asset is worth less than its original purchase price. Like gains, capital losses may be realized or unrealized, but only realized losses have tax consequences. Before calculating taxes, investors net out all capital gains and losses.