Charles P. Jones

INVESTMENTS
Principles and Concepts

TWELFTH EDITION

International Student Version

TWELFTH EDITION

INVESTMENTS

Principles and Concepts

International Student Version

Charles P. Jones, Ph.D., CFA

WILEY

To Kay and Kathryn
For making every year special
and to
Georgie,
Who continues to be there during working hours

Cover image from ©ImpaKPro/iStockphoto

Contributing Subject Matter Expert: Lina Zhou, Augustana College

Founded in 1807, John Wiley & Sons, Inc. has been a valued source of knowledge and understanding for more than 200 years, helping people around the world meet their needs and fulfill their aspirations. Our company is built on a foundation of principles that include responsibility to the communities we serve and where we live and work. In 2008, we launched a Corporate Citizenship Initiative, a global effort to address the environmental, social, economic, and ethical challenges we face in our business. Among the issues we are addressing are carbon impact, paper specifications and procurement, ethical conduct within our business and among our vendors, and community and charitable support. For more information, please visit our website: www.wiley.com/go/citizenship.

ISBN: 978-1-118-39172-3

Printed in Asia

10 9 8 7 6 5 4 3 2 1

Brief Contents

Contents

PART SIX DERIVATIVE SECURITIES

PART SEVEN INVESTMENT MANAGEMENT

Preface

This book is designed to provide a good understanding of the field of investments while stimulating interest in the subject. This understanding is valuable because each of us must make various investment decisions during our lifetimes—definitely as individuals, and possibly in our chosen careers. If we try to avoid making these decisions, they will likely be made for us, and often to our detriment.

My goal in this text is to help readers gain an appreciation of what is involved in (1) understanding what is involved when it comes to investing, (2) making good investment decisions, and (3) recognizing where investment problems and controversies arise and knowing how to deal with them.

This book is designed as an appropriate guide to investments for everyone wanting to learn, being neither too basic nor too advanced. Descriptive material must be—and is—thoroughly covered. Equally important, however, the analytics of investments are presented throughout the discussion to help students reason out investment issues for themselves and thus be better prepared when making real-world investment decisions. Terminology and trading mechanisms may change, but learning to carefully analyze and evaluate investment opportunities will pay off under any circumstances.

The book is written for the first course in investments, generally taught at the junior/senior level. Standard prerequisites include basic accounting, economics, and financial management. A course in statistics is very useful but not absolutely essential. I have sought to minimize formulas and to simplify difficult material, consistent with a presentation of the subject that takes into account current ideas and practices. Relevant, state-of-the-art material has been simplified and structured specifically for the benefit of the beginning student. The emphasis in this text is on readability—making *Investments*' material readily accessible, as well as interesting and entertaining, so that the reader who has modest prerequisites can follow the entire discussion and hopefully be motivated to delve further into the subject.

Organization Of The Text

The text is divided into seven parts for organizational purposes—organized around background, returns and basic portfolio theory, the analysis of different types of securities (four parts), and portfolio management.

Part 1 provides the needed background for students before encountering the specifics of security analysis and portfolio management. The goal of this introductory set of chapters is to acquaint beginners with an overview of what investing is all about. After a general discussion of the subject in Chapter 1, the next four chapters describe the variety of securities available when investing directly, investing indirectly (investment companies), the markets in which they are traded, and the mechanics of securities trading.

Part 2 is concerned with an analysis of returns and risk, along with the basics of portfolio theory and capital market theory. Chapter 6 contains a careful analysis of the important concepts of risk and return that dominate any discussion of investments. Chapter 7 contains a complete discussion of expected return and risk for both individual securities and portfolios. The primary emphasis is on the essentials of Markowitz portfolio theory. Chapter 8 completes portfolio theory and then covers asset allocation, one of the most important decisions that any investor makes. Beta and the CAPM are introduced in Chapter 9 so these important concepts can be used throughout the course. This illustrates one of the primary characteristics of this text—introducing material only at the point it is needed, and only in the detail needed by beginning students. I believe this improves the flow of the material greatly, and keeps students from becoming mired in needless, and often tedious, details.

Parts 3 and 4 focus on the basics of the valuation and management of stocks by analyzing "how-to" tools and techniques for understanding stocks as well as issues and techniques in their management.

Part 3 examines the analysis, valuation, and management of stocks, a logical starting point in learning how to value securities. It emphasizes the analysis, valuation, and management of common stocks. Chapter 12 explains the efficient market hypothesis and provides some insights into the controversy surrounding this topic.

Part 4 is devoted to security analysis, a reasonable allocation given investor interest in common stocks. It also covers fundamental analysis, the heart of security analysis, as well as technical analysis. Because of its scope and complexity, three chapters are required to adequately cover the fundamental approach. The sequencing of these chapters—market, industry, and company—reflects the author's belief that the top-down approach to fundamental analysis is the preferable one for students to learn, although the bottom-up approach is also discussed. Part 4 also discusses technical analysis, a well-known technique for analyzing stocks which goes back many years. It is not unusual for beginners to have heard of one or more technical analysis tools.

Part 5 is devoted to bonds. Chapter 17 covers the basics of bonds as far as prices and yields are concerned. It includes such topics as the term structure of interest rates and yield spreads. All important calculations regarding prices and yields are explained and illustrated. Other issues include bond price changes in response to interest rate changes. Chapter 18 focuses on the management of bonds, and covers topics such as duration and immunization. As always, the emphasis is on the basics—the important topics that students need to know to understand the world of fixed income investing.

Part 6 discusses the other major securities available to investors, derivative securities. Chapter 19 analyzes options (puts and calls), a popular investment alternative in recent years. Stock index options are also covered. Chapter 20 is devoted to financial futures, an important topic for investors when it comes to hedging their positions and reducing the risk of investing.

Finally, Part 7 concludes the text with a discussion of financial planning in general and portfolio management in particular, and the issue of evaluating portfolio performance. Chapter 21 is structured around an individual investor's approach to financial planning and managing a portfolio. Chapter 22 is a logical conclusion to the entire book because all investors are keenly interested in how well their investments have performed. Mutual funds are used as examples of how to apply these portfolio performance measures and how to interpret the results.

The 12th edition contains exactly the same set of chapters, in the same order, as the 11th edition. Therefore, the transition to this new edition should be painless.

Special Features

This text offers several important features.

1. *The sequence of chapters has been carefully structured and streamlined* in each edition, reflecting considerable experimentation over the years and a continuing search for the most effective organizational structure. I believe that this arrangement is very satisfactory

for many students in a beginning investments course. However, those who prefer a different order—such as covering portfolio theory and capital market theory later in the course—can do so with no loss of continuity at all.

2. I have diligently sought to ensure that *the text length is reasonably manageable* in the standard undergraduate investments course. Although it requires a very tight schedule, the entire text could be covered in a typical three-hour course. However, many instructors choose to omit chapters, depending on preferences and constraints; doing so will cause no problems in terms of teaching a satisfactory investments course. For example, the chapters on fundamental analysis and technical analysis (Part 4) could be omitted, because the valuation and management of common stocks is fully covered in Part 3. Alternatively, the chapters on options and futures could be omitted if necessary. Another alternative is assigning some chapters, or parts of chapters, to be read by students with little or no class discussion (for example, Part 4).
3. *The pedagogy is specifically designed for the student's benefit*.
   - Each chapter begins with a set of specific *learning objectives*, which will aid the reader in determining what is to be accomplished in a particular chapter.
   - Each chapter contains *key words* in boldface, carefully defined as marginal definitions; they also are included in the glossary. Other important words are italicized.
   - Each chapter contains a *detailed summary* of bulleted points for quick and precise reading.
   - Each chapter contains an *extensive set of numbered examples*, designed to clearly illustrate important concepts.
   - Most chapters contain a designated feature called *Concepts in Action* which illustrates the use of one or more of the important items in that chapter.
   - Throughout the text, as appropriate, *Investments Intuition* sections are set off from the regular text for easy identification. These discussions are designed to help the reader quickly grasp the intuitive logic of, and therefore better understand, particular investing issues.
   - Each chapter has a set of questions titled "Checking Your Understanding" spaced throughout the chapter, as appropriate. These questions, with answers at the end of chapters, give students a chance to see if they understand critical issues as they progress through the text.
   - Throughout the text, as appropriate, *Some Practical Advice* is given in a clearly designated format.
   - Each chapter contains an *extensive set of questions* keyed specifically to the chapter material and designed to thoroughly review the concepts in each chapter.
   - Many chapters have a *separate set of problems* designed to illustrate the quantitative material in the chapters. Some of these problems can be solved in the normal manner, and some are best solved with available software. Included as part of some problem sets are demonstration problems that show the reader how to solve the most important types of problems.
   - Where appropriate, chapters have *spreadsheet exercises* and *computational problems* which are more complex.
   - Many chapters contain *multiple questions and problems* taken from the chartered financial analyst examinations. This allows students to see that the concepts and problem-solving processes they are studying in class are exactly the same as those asked on professional examinations for people in the money-management business.
   - A few *boxed inserts* continue to be included in the text. These inserts provide timely and interesting material from the popular press, enabling the student to see the real-world side of issues and concepts discussed in the text. Space limitations and difficulties with permissions have necessitated a reduction in this material.

Changes In The Twelfth Edition

The 12th edition has been thoroughly updated using the latest information and numbers available. Most of the data are through year-end 2011 and some extend into 2012.

Important features in the 12th edition include the following:

- Pedagogy has been enhanced. For example, some chapters have lead-in questions or problems to illustrate an important issue that will be discussed in that chapter. In other chapters, this may be done later in the chapter.
- Features such as "Concepts in Action" and "Investments Intuition" have been increased in number to illustrate important issues with interesting, real-world, current examples.
- Computational problems and spreadsheet exercises have been significantly increased relative to the 11th edition.
- Part 1 contains the latest information available on newer concepts such as ETFs (exchange-traded funds) and ECNs (electronic communications networks) and the most current information on important trends such as discount/Internet brokers. Also included are items like BATS, algorithmic trading, and high-frequency trading. The section on market indexes has been expanded and improved.
- Chapter 6 is continually being improved to facilitate the understanding of important calculations like the geometric mean. These calculations are important in finance, and in general, and the more examples and practice available to students, the better.
- Chapter 10, on the valuation of common stocks, places somewhat less emphasis on the dividend discount model and more on relative valuation techniques and other discounted cash flow approaches. The uses of the P/E ratio model are better explained and illustrated.
- Chapter 8 contains a more extended discussion of asset allocation.
- Some of the material in Chapters 17 and 18 has been reoriented to improve the flow. Chapter 17 contains the discussion of the term structure of interest rates and yield spreads as well as discussion of bond yields and prices. Concepts such as duration and immunization are in Chapter 18.
- Chapter 21 has been reoriented to have a personal financial planning flavor while still considering portfolio management and strategy issues.
- Chapter 22 has more real-world connections, pointing out what others have to say about this issue.
- Appendices have been removed from the text itself and are available on the website to students and users of the text. These appendices can be easily accessed as necessary.

Supplements

The 12th edition includes a complete set of supplements for instructors and students. Resources can be found on the book's companion site, www.wiley.com/college/jones.

- **Instructor's manual.** For each chapter, chapter objectives, lecture notes, a listing of tables and figures, and additional material relevant to the particular chapter are included. Answers to all questions and problems in the text are provided. The instructor's manual was carefully prepared by the author.
- **Test bank.** The test bank includes numerous multiple choice and true-false questions for each chapter as well as short discussion questions and problems. These are carefully

checked; most have also been class-tested. The test bank is also available in a computerized format.

- **PowerPoint files.** PowerPoint presentation materials are available. A presentation file for each chapter includes outline material as well as all figures and tables from the text.
- **List of equations.** A comprehensive list of all equations found in the text.
- **Appendices.** As noted above, appendices containing additional material in select chapters can be found on the companion site.
- **Excel templates.** This online collection of Excel templates allow students to complete select end-of-chapter questions and problems identified by a spreadsheet icon in the textbook. Solution files are available to instructors.
- **Student practice quizzes** contain at least 10–15 multiple choice questions per chapter. With instant feedback, questions of varying difficulty help students evaluate individual progress through a chapter.

Acknowledgments

A number of individuals have contributed to this project. I am particularly indebted to the late Jack W. Wilson, North Carolina State University, a highly valued friend and colleague who offered many useful comments, provided material for some of the tables, figures and appendices, and worked out many of the problems (including the extended problems) for the text. Over the years he supplied data, graphs, suggestions, and insights. Some of the material used in this book and the accompanying supplements is based on Jack's groundbreaking work in the area of asset returns. Jack was always most generous with his time and efforts for this project. He is greatly missed.

A text does not achieve multiple editions unless it has met the needs of a large number of instructors who find it to be a useful tool in assisting their teaching. The earlier editions of this text benefited substantially from the reviews of many instructors whose suggestions for improvements are found on many pages of this text. I owe a debt of gratitude to those teachers and colleagues who, after 12 editions, are too numerous to name here. Their criticisms and suggestions have substantially affected the evolution of this text and made it a better book. Most recently, I received valuable feedback for the 12th edition from Jay T. Brandi, University of Louisville; Laura Seery Cole, University of Tennessee, Knoxville; William P. Dukes, Texas Tech University; Rodrigo Hernandez, Radford University; Nancy Jay, Mercer University; Iqbal Mansur, Widener University; Kerri D. McMillan, Clemson University; and Tanja Steigner, Emporia State University.

I would also like to thank a number of my former editors at Wiley: Rich Esposito, Joe Dougherty, and John Woods. John Woods worked hard to enhance the supplementary material to the 3rd edition of the text and to provide the overall support necessary to substantially revise the material and improve the book in numerous ways. Whitney Blake was most helpful in developing a top-of-the-line 4th and 5th editions, always displaying a "can-do" attitude. Melissa Ryan significantly aided in developing the 7th edition. Cindy Rhoads was a large part of the 8th and 9th editions, as was Leslie Kraham. For the 10th and 11th editions, I thank Judy Joseph, Emily Horowitz, and Emily McGee. Brian Kamins also played a valuable role for the 10th edition. Sarah Vernon was a major asset in helping to bring about the 11th edition. For the 12th edition, I'd like to thank my editorial team, Joel Hollenbeck, Jennifer Manias, Courtney Luzzi, and Erica Horowitz, as well as my production team, especially Elaine Chew, and Greg Chaput.

Finally, I continue to thank my family, who have always put up with the interruptions caused by writing a book. Without their support, a project such as this is difficult at best. I thank in particular my wife, Kay, who has helped me tremendously in the preparation of various editions of this text. She did much additional work for the 12th edition, involving the difficult jobs of coordinating and checking the numerous details involved in a project such as this. Kay and Kathryn make a difficult job bearable, and worth doing. For this edition they provided strong support and encouragement when I needed it most.

Charles P. Jones
North Carolina State University
August 2012

chapter 1

Investing is an Important Activity Worldwide

Suppose you are fortunate enough to receive an inheritance of $1 million from a relative. She specifies only that you must invest this money intelligently in financial assets within the next six months, and not spend it on consumption, and that you must be answerable to a trustee who has the final say if you fail to make reasonable decisions. You now face an enviable task—building a portfolio of stocks, bonds, and so forth—and you quickly realize that not only do you not know all the answers, you don't even know some of the questions.

Having had a finance course in college, you learned about return and risk, but now you must really understand what these variables mean. You have heard some people talk about making a "killing in the market," but common sense tells you it can't be all that easy. Like the prospective investor asked the broker when the latter was showing him the yachts belonging to other brokers, "Where are the customers' yachts?" Also, you have on several occasions read about fraudulent investment schemes leaving people broke, but wiser. And so you realize you have your work cut out for you. You need to identify the important issues, ask the right questions, and learn the basics about successful investing.

You can, in fact, construct and manage your portfolio, as the following chapters will show. With a little tenacity, you can be on your way to an intelligent investing program, because basic knowledge can go a long way. Let's get started.

Chapter 1 provides the foundation for the study of Investments by analyzing what investing is all about. The critically important tradeoff between expected return and risk is explained, and the major issues that every investor must deal with in making investment decisions are analyzed. An organizational structure for the entire text is provided.

AFTER READING THIS CHAPTER YOU WILL BE ABLE TO:

- Understand why return and risk are the two critical components of all investing decisions.
- Appreciate the scope of investment decisions and the operating environment in which they are made.
- Follow the organization of the investment decision process as we progress through the text.

An Overall Perspective on Investing

- In less than two years, from its peak in March 2000, the S&P 500 Index, a measure of large stocks, subsequently lost about 50 percent of its value, while the NASDAQ Stock Market lost about 75 percent of its value. In less than two years during 2000–2002, investors lost $5 trillion, or 30 percent of their wealth in stocks. In 2008–2009 stock market volatility was even greater. In only two months in 2011, $3 trillion in stock market wealth disappeared in the United States, and $8 trillion globally. With volatility like this, should most investors avoid stocks, particularly for their retirement plans?
- Following the financial crisis of 2008, interest rates on U.S. Treasury securities dropped to record lows, in some cases close to zero. In early 2012, Germany sold six-month Treasury securities with a negative yield. Why would investors continue to invest in these debt securities, sometimes stampeding to invest in them?
- Almost everyone says stocks have always outperformed Treasury bonds over long periods of time, such as 30 years. Is this an accurate statement?
- Many company employees with self-directed retirement plans have none of their funds invested in stocks, although over the years stocks have significantly outperformed the alternative assets they did hold. Is this smart?
- About two-thirds of all affluent Americans use financial advisors, a percentage that has been increasing? Will you need one?
- For a recent 10-year period, only one-fourth of professionally managed stock portfolios were able to outperform the overall stock market. Why?
- How can futures contracts, with a reputation for being extremely risky, be used to reduce an investor's risk?
- What is the historical average annual rate of return on common stocks and bonds? What can an investor reasonably expect to earn from stocks in the future?

The objective of this text is to help you understand the investments field as it is currently understood, discussed, and practiced so that you can intelligently answer questions such as the preceding and make sound investment decisions that will enhance your economic welfare. To accomplish this objective, key concepts are presented to provide an appreciation of the theory and practice of investments.

Both descriptive and quantitative materials on investing are readily available. Some of this material is very enlightening; much of it is entertaining but debatable because of the many controversies in investments; and some of it is worthless. This text seeks to cover what is particularly useful and relevant for today's investment climate. It offers some ideas about what you can reasonably expect to accomplish by using what you learn, and therefore what you can realistically expect to achieve as an investor in today's investment world. Many investors have unrealistic expectations, and this will ultimately lead to disappointments in results achieved from investing—or, worse, the loss of all of their funds in a fraud or scam.

Just Say NO! Prepare yourself to say NO! Learning how to avoid the many pitfalls awaiting you as an investor—in particular, investing scams and frauds—by clearly understanding what you can reasonably expect from investing your money may be the single most important benefit to be derived from this text. For example, would you entrust your money to someone offering 36 percent annual return on riskless Treasury securities? Some 600 investors did, and lost some $10 million to a former Sunday school teacher.

In February 2009, the SEC filed a complaint alleging that R. Allen Stanford and James Davis operated a massive Ponzi scheme, misappropriating billions of dollars of investors' money. According to the complaint, the $8 billion fraud involved certificates of deposit promising overly high rates of return. The size of this alleged fraud pales in comparison to the

Madoff scandal reported in December 2008, involving a very large Ponzi scheme. According to a criminal complaint, Bernard Madoff admitted that his investment advisor business was a fraud and had been insolvent for years. Supposedly, returns were being paid to certain investors out of the principal received from other investors.

Intelligent investors quickly learn to say no, thereby avoiding many of the pitfalls that await investors daily. At the very least, you must be prepared to carefully investigate the investment alternatives that will be offered to you.

✓ Remember, there are many financial scams and frauds awaiting the unwary. However, you can easily learn to avoid them.

Establishing a Framework for Investing

SOME DEFINITIONS

The term *investing* can cover a wide range of activities. It often refers to investing money in certificates of deposit, bonds, common stocks, or mutual funds. More knowledgeable investors would include other "paper" assets, such as warrants, puts and calls, futures contracts, and convertible securities, as well as tangible assets, such as gold, real estate, and collectibles. Investing encompasses very conservative positions as well as aggressive speculation. Whether your perspective is that of a college graduate starting out in the workplace or that of a senior citizen concerned with finances after retirement, investing decisions are critically important to most people sometime in their life.

Investment The commitment of funds to one or more assets that will be held over some future period

Investments The study of the investment process

An **investment** can be defined as the commitment of funds to one or more assets that will be held over some future time period. **Investments** is concerned with the management of an investor's wealth, which is the sum of current income and the present value of all future income. (This is why present value and compound interest concepts have an important role in the investment process.) Although the field of investments encompasses many aspects, it can be thought of in terms of two primary functions: analysis and management—hence the title of this text.

Financial Assets Pieces of paper evidencing a claim on some issuer

Marketable Securities Financial assets that are easily and cheaply traded in organized markets

Financial Assets and Marketable Securities In this text, the term investments refers in general to financial assets and in particular to marketable securities. **Financial assets** are paper (or electronic) claims on some issuer, such as the federal government or a corporation; on the other hand, real assets are tangible, physical assets such as gold, silver, diamonds, art, and real estate. **Marketable securities** are financial assets that are easily and cheaply tradable in organized markets. Technically, the word investments includes both financial and real assets, and both marketable and nonmarketable assets. Because of the vast scope of investment opportunities available to investors, our primary emphasis is on marketable securities; however, the basic principles and techniques discussed in this text are applicable to real assets.

Even when we limit our discussion primarily to financial assets, it is difficult to keep up with the proliferation of new products. Two such assets that did not exist a few years ago are the many new Exchange Traded Funds and Direct Access Notes (corporate bonds designed for the average investor), both of which are discussed in a later chapter.

A Perspective on Investing

WHY DO WE INVEST?

We invest to make money! Although everyone would agree with this statement, we need to be more precise. (After all, this is a college textbook and anyone helping to pay for your education expects more.) We invest to improve our welfare, which for our purposes can be defined as monetary wealth, both current and future. We assume that investors are interested only in the monetary benefits to be obtained from investing, as opposed to such factors as the psychic income to be derived from impressing one's friends with one's financial prowess.

Funds to be invested come from assets already owned, borrowed money, and savings or foregone consumption. By foregoing consumption today and investing the savings, investors expect to enhance their future consumption possibilities by increasing their wealth. Don't underestimate the amount of money many individuals can accumulate. A 2004 survey found that more than 8 million U.S. households had a net worth of more than $1 million (excluding their primary residence). That represented a one-third increase over 2003 alone, and amounted to 7 percent of all U.S. households. Much of this success was attributed to ownership of stocks and bonds. Of course, things can change. Americans' net worth declined a record 18 percent in 2008.

Investors also seek to manage their wealth effectively, obtaining the most from it while protecting it from inflation, taxes, and other factors. To accomplish both objectives, people invest.

TAKE A PORTFOLIO PERSPECTIVE

This text assumes that investors have established their overall financial plan and are now interested in managing and enhancing their wealth by investing in an optimal combination of financial assets. The idea of an "optimal combination" is important because our wealth, which we hold in the form of various assets, should be evaluated and managed as a unified whole. Wealth should be evaluated and managed within the context of a **portfolio**, which consists of the asset holdings of an investor. For example, if you own four stocks and three mutual funds, that is your portfolio. If your parents own 23 stocks, some municipal bonds, and some CDs, that is their portfolio of financial assets.

Portfolio The securities held by an investor taken as a unit

The Importance of Studying Investments

THE PERSONAL ASPECTS

It is important to remember that all individuals have wealth of some kind; if nothing else, this wealth may consist of the value of their services in the marketplace. Most individuals must make investment decisions sometime in their lives. For example, many employees today must decide whether their retirement funds are to be invested in stocks or bonds or some other alternative. And many people try to build some wealth during their working years by investing.

Retirement Decisions Estimates suggest that more than 40 percent of households headed by someone between 47 and 62 will be unable to replace half their pre-retirement income when they cease working. Even more worrisome, many will have retirement income below the poverty line.

A major revolution in personal finance is to provide employees with self-directed retirement plans (defined contribution plans rather than defined benefit plans). Whereas traditional defined-benefit retirement plans guarantee retirees an amount of money each month, the new emphasis on self-directed retirement plans means that you will have to choose among stock funds, bond funds, guaranteed investment contracts, and other alternatives.

✓ In 1979, more than 85 percent of workers in the private sector were covered with a pension; by 2012, less than 20 percent.

Your choices are many, and your success—or lack thereof—will directly affect your retirement benefits. Therefore, while employees in the past typically did not have to concern themselves much with investing decisions relative to their company's retirement plan, future employees will have to do so. This is a very important personal reason for studying the subject of investments!

A good example of this revolution in retirement programs is a 401(k) plan offered by many employers, whereby employees contribute a percentage of salary to a tax-deferred plan, and the employer often matches part of the contribution. Tens of millions of American workers contribute to 401(k) plans. At the end of 2011, these plans held approximately $3 trillion in assets. The bulk of 401(k) assets are invested in stocks; therefore, it is important to know something about stocks.[1]

To illustrate the critical importance of making good investment decisions, consider yet another self-directed retirement vehicle, the Individual Retirement Account (IRA). IRAs are a primary method that Americans use to provide for their retirement. IRA assets totaled approximately $5 trillion by 2011, which was roughly 30 percent of the total U.S. retirement market.

The annual maximum IRA contribution was $5,000 in 2012 ($6,000 for those age 50 and above). IRA funds can be invested in a wide range of assets, from the very safe to the quite speculative. IRA owners are allowed to have self-directed brokerage accounts, which offer a wide array of investment opportunities. Since these funds may be invested for as long as 40 or more years, good investment decisions are critical, as shown in Example 1-1.

Example 1-1

Consider the amount of retirement wealth that can be accumulated by one individual contributing $5,000 annually to a tax sheltered account if returns are compounded annually. Over many years of investing, the differences in results that investors realize, owing solely to the investment returns earned, can be staggering. Note that in the case of a $5,000 annual contribution for 40 years, the payoff at a compound earnings rate of 15 percent is almost $9 million, whereas at an earnings rate of 10 percent the payoff is $2.21 million, a great retirement fund but significantly less than almost $9 million. Similarly, if a 10 percent rate of return can be obtained instead of a 5 percent rate of return, over a period of 40 years the difference approaches a fourfold multiple. Clearly, good investment decisions leading to higher returns can make a tremendous difference in the wealth that you can accumulate.

		Final Dollar Wealth if Funds Are Compounded at		
Amount Invested per Year	**Number of Years**	**5%**	**10%**	**15%**
$5000	20	165,330	286,375	512,218
$5000	30	332,194	822,470	2,173,726
$5000	40	603,999	2,212,963	8,895,452

Building Wealth Over Your Lifetime Beyond the retirement issue, the study of investments is more important than ever in the 21st century. After being net sellers of stocks for many years, individual investors swarmed into the financial markets, either by force (becoming part of a self-directed retirement plan) or by choice (seeking higher returns than those available from financial institutions). In the late 1990s individuals increased their direct ownership of stocks, reversing the earlier trend. Approximately 52 million households in the United States own mutual funds.

[1] The maximum 401(k) contribution for 2012 was $16,500.

Individual investor interest in the stock market is best expressed by the power of mutual funds (explained in Chapter 3), a favorite investment vehicle of small investors. Mutual funds are a driving force in the stock market. With so much individual investor money flowing into mutual funds, and with individual investors owning a large percentage of all stocks outstanding, the study of investments is as important as ever, or more so.

In the final analysis, we study investments in the hope of earning better returns in relation to the risk we assume when we invest. A careful study of investment analysis and portfolio management principles can provide a sound framework for both managing and increasing wealth. Furthermore, a sound study of this subject matter will allow you to obtain maximum value from the many articles on investing that appear daily in newspapers and magazines, which in turn will increase your chances of reaching your financial goals. Popular press articles cover many important topics, such as the following examples:

1. Financial assets available to investors
2. Should a mutual fund investor use a financial advisor?
3. Compounding effects and terminal wealth
4. Realized returns vs. expected returns
5. How to compare taxable bonds to municipal (tax-exempt) bonds
6. Index funds and ETFs
7. How diversification works to reduce risk
8. The asset allocation decision
9. Active vs. passive investing

All of these issues are covered in the text, and learning about them will make you a much smarter investor.

INVESTMENTS AS A PROFESSION

In addition to the above reasons for the importance of studying investments, the world of investments offers several rewarding careers, both professionally and financially. A study of investments is an essential part of becoming a professional in this field.

Investment Bankers and Traders Investment bankers, who arrange the sale of new securities as well as assist in mergers and acquisitions, enjoyed phenomenal financial rewards in the booming 1980s and 1990s. Given the turmoil of 2000–2002, investment banking business dropped off sharply, and by mid-2002 was the slowest part of Wall Street's business. In 2008 the financial crisis saw the demise of Bear Stearns and Lehman Brothers, and the merger of Merrill Lynch with Bank of America. Furthermore, signaling the end of an era on Wall Street, Goldman Sachs and Morgan Stanley, the last two major investment banks at the time, became bank holding companies in order to stay in business.

Security Analysts and Portfolio Managers A range of financial institutions, including brokerage firms and investment bankers as well as banks and insurance companies, need the services of **security analysts** (also called investment analysts). Brokerage houses need them to support their registered representatives who in turn serve the public—for example, preparing the research reports provided to customers. Investment bankers need analysts to assist in the sale of new securities and in the valuation of firms as possible merger or acquisition candidates. Banks and insurance companies own portfolios of securities that must be evaluated in order to be managed. Mutual funds need analysts to evaluate securities for possible purchase or sale.

Security Analysts Market professionals whose job it is to study, evaluate and recommend stocks to investors, either institutions or individuals

Financial firms need portfolio managers to manage the portfolios of securities handled by these organizations. Portfolio managers are responsible for making the actual portfolio buy and sell decisions—what to buy and sell, when to buy and sell, and so forth. Portfolio performance is calculated for these managers, and their jobs may depend on their performance relative to other managed portfolios and to market averages.

Stockbrokers and Financial Advisors What about the registered representatives (stockbrokers) employed in cities across the country? A few superbrokers earn $1 million or more per year. Of course, the average broker earns much less, but still the compensation can be quite rewarding. More will be said about brokers in Chapter 5.

The employment and pay for the various job types associated with Wall Street tend to be cyclical. While the late 1990s were great years for investors and investment firms and employees, the market declines of 2000–2002 brought a new reality, as did the financial crisis of 2008. Given the tremendous turmoil in the financial markets in 2008, we have entered a new era of banking, financial institutions, and trading practices, and the exact structure will take time to unfold.

Finally, the number of financial advisors continues to grow. This area has employment opportunities for people interested in the Investments field. The Bureau of Labor Statistics expects this job category to expand significantly out to 2016. Roughly two-thirds of all affluent Americans now use one. For a typical $1 million portfolio, a financial advisor will charge $10,000 a year. Some charge by the hour, with the hourly rate in the $115 to $150 range.

Standard credentials do not exist for financial advisors. Most advisors must register with their local state securities commission and with the Securities and Exchange Commission as a Registered Investment Advisor (RIA) when they manage more than $25 million. Otherwise, financial advisors are bound only by the job requirements of professional organizations to which they belong.[2] According to one survey, planners gross a little over $100,000 per year, primarily from selling products for commissions and from managing clients' assets for a percentage of the assets under management.

Exhibit 1-1 lists three designations that financial advisors and planners may hold and indicates how they are compensated. Those interested in this field as a career should seriously consider obtaining one (or more) of these professional designations.

EXHIBIT 1-1

Professional Designations Held by Financial Advisors and Planners

- Certified Financial Planner (CFP), awarded by the Certified Financial Planning Board of Standards, an industry group, requires course work and an examination on financial planning. Holders of the CFP must have three years experience and adhere to a code of ethics.
- Chartered Financial Consultant (ChFC) requires a comprehensive examination and often involves those with an insurance background;
- Personal Financial Specialist (PFS), awarded by the American Institute of Certified Public Accountants to CPAs only, requires experience in personal financial planning and a comprehensive examination.

Financial advisors are compensated by four methods:

- Fee-based—may involve a comprehensive financial plan, or specific issues.
- Commission-based—plan and recommendations are provided at no charge, with compensation derived from commissions earned from products sold to implement the plan.
- Fee-and-commission based—commissions are often greater than the fees.
- Salaried—banks, credit unions, and so forth often offer planning services by salaried financial planners.

[2] In order to sell securities, financial planners and advisors may need to pass what are called Series 66 and Series 7 exams.

Chartered Financial Analyst (CFA) A professional designation for people in the investments field

The CFA Designation Individuals interested in careers in the investments field, as opposed to financial planning, should consider studying to receive the **Chartered Financial Analyst (CFA)** designation. This is a professional designation for people in the investments area, not unlike the CPA designation for accountants. The CFA designation is widely recognized in the investments industry today. It serves as an indication that areas of knowledge relevant to investing have been studied and that high ethical and professional standards have been recognized and accepted. Details of the CFA program are included in Appendix 1-A. Throughout this text, we will use some questions and problems from previous CFA exams.

Understanding the Investment Decision Process

An organized view of the investment process involves analyzing the basic nature of investment decisions and organizing the activities in the decision process.

Common stocks have produced, on average, significantly larger returns over the years than savings accounts or bonds. Should not all investors invest in common stocks and realize these larger returns? The answer to this question is: To pursue higher returns, investors must assume larger risks. Underlying all investment decisions is the tradeoff between expected return and risk.

Investments Intuition

The stock market suffered sharp declines during 2000–2002 because of the collapse of technology stocks. However, if investors had bought Apple and Amazon during that time, they would have done extremely well over the next decade. Why didn't more investors buy these stocks? The reason is that at the time the risk was thought to be too great, not only for these stocks, but for stocks in general. And therein lies the story of investing. There are great opportunities, but there are also large risks.

THE BASIS OF INVESTMENT DECISIONS—RETURN AND RISK

Return Why invest? Stated in simplest terms, investors wish to earn a return on their money. Cash has an opportunity cost: By holding cash, you forego the opportunity to earn a return on that cash. Furthermore, in an inflationary environment, the purchasing power of cash diminishes, with high rates of inflation (such as that in the early 1980s) bringing a relatively rapid decline in purchasing power.

Investments Intuition

Investors buy, hold, and sell financial assets to earn returns on them. Within the spectrum of financial assets, why do some people buy common stocks instead of safely depositing their money in an insured savings account or a U.S. savings bond with a guaranteed minimum return? The answer is that they are trying to earn returns larger than those available from such safer (and lower-yielding) assets. They know they are taking a greater risk of losing some of their money by buying common stocks, but they expect to earn a greater return.

Expected Return The ex ante return expected by investors over some future holding period

Expected Return vs. Realized Return In investments it is critical to distinguish between an **expected return** (the anticipated return for some future period) and a

Realized Return Actual return on an investment for some previous period of time

realized return (the actual return over some past period). Investors invest for the future—for the returns they expect to earn—but when the investing period is over, they are left with their realized returns. What investors actually earn from their holdings may turn out to be more or less than what they expected to earn when they initiated the investment. This point is the essence of the investments process: Investors should always consider the risk involved in investing.

Properly stated, investors seek to maximize their returns from investing, subject to the risk they are willing to incur. Therefore, we must consider the other side of the coin from return, which is risk.

Risk Investors would like their returns to be as large as possible; however, this objective is subject to constraints, primarily risk.[3] The stock market enjoyed the five greatest consecutive years of returns in its history during 1995–1999, with total returns each year in excess of 21 percent on a broad cross-section of common stocks. Nevertheless, several professionally managed funds performed poorly relative to the market, and some managed to lose money in one or more of those years. As this example shows, marketable securities offering variable returns across time are risky. The investment decision, therefore, must always be considered in terms of both risk and return. The two are inseparable.

Risk The chance that the actual return on an investment will be different from the expected return

There are different types, and therefore different definitions, of risk. **Risk** is defined here as the uncertainty about the actual return that will be earned on an investment. When we invest, we may do so on the basis of an expected return, but there is a risk that what we in fact end up with when we terminate the investment—the actual (realized) return—will be different.

Using the term risk in this manner, we find that the nominal (current dollar) return on a Treasury bill has no practical risk, because there is little chance that the U.S. government will fail to redeem these obligations as they mature in 13 or 26 weeks. On the other hand, there is some risk, however small, that General Electric, a company in business for more than 100 years, will be unable to redeem an issue of 30-year bonds when they mature. And there is a very substantial risk of not realizing the expected return on any particular common stock over some future holding period, such as one year, six months, one month, or even one day.

Concepts in Action

Returns and Risk

Investors enjoyed the best five consecutive years in stock market history over the period 1995–1999. They thought they were truly in the golden age of money making, and in fact they were—during that period. This great performance came to an end with negative returns in 2000, and 2001 and 2002 also showed negative returns. Such is the nature of stock market returns and risk!

Or consider an individual company and its risk to investors. Cisco, the router company, was the world's most valuable company during some part of 2000. It had a market cap of $550 billion. It's stock price climbed 35-fold in five years (more than $80/share) as annual sales growth averaged 40 percent. Then the Internet crash occurred. Revenues declined 18 percent, while stock price declined 90 percent, an incredible loss for such a company. By mid-2004 annual sales were $22 billion, and net income was $3.6 billion in 2003 (higher than in the bubble). Stock price, however, had recovered to only $25 or so. Such is the nature of stock risk!

[3] Although risk is the most important constraint on investors, other risks clearly exist. Taxes and transaction costs are often viewed as constraints. Some institutional investors may face legal constraints on the types of securities they can purchase or the amount they can hold.