Suppose you are fortunate enough to receive an inheritance of $1 million from a relative. She specifies 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 do not 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 terms mean. You have heard some people talk about making a “killing in the market,” but common sense tells you it cannot 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 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 it 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. Is this smart?

About two-thirds of all affluent Americans use financial advisers, a percentage that has been increasing. Will you need one?

For a recent 10-year period, only 24 percent 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 so that you can intelligently answer questions such as the preceding and make sound investment decisions that will enhance your economic welfare and standard of living. It also provides an introduction for those considering careers in this rewarding field. To accomplish this objective, key concepts are presented along with many real-world examples to provide an appreciation of both the theory and practice of investments.

Both descriptive and quantitative materials on investing are readily available. In fact, one of the problems today is information overload with investment material. Some investment 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 with your added knowledge, 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 investment results—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 Securities and Exchange Commission (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.
The lasting legacy of the Madoff scandal is that many investors are now focused on safety (return of capital) instead of portfolio growth (return on capital).

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 are available 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 and contribute substantially to an individual's quality of life.

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 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, whereas real assets are tangible, physical assets such as gold, silver, diamonds, art, and real estate. Marketable securities are financial assets that are easily and inexpensively 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 (ETFs) 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 demonstrated 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. Do not underestimate the amount of money many individuals can accumulate. A 2013 survey found that nearly 10 million U.S. households had a net worth of more than $1 million (excluding their primary residence). That represented a 43 percent increase from 2008 alone and amounted to nearly 8 percent of all U.S. households. Much of this success was attributed to ownership of stocks and bonds. Of course, things can quickly change. For example, Americans’ net worth declined a record 18 percent in 2008, largely as a result of the decline in the stock market.

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 all of the assets held by 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.

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 current and future value of their services in the marketplace (often referred to as human capital). Most individuals must make investment decisions sometime in their lives. For example, many employees today must decide the appropriate combination of stocks, bonds, and other assets to hold in their retirement accounts. And many people try to build wealth during their working years by investing.

Retirement Decisions The lack of retirement savings is a looming crisis of epic proportions. According to a study by the Employee Benefits Research Institute (EBRI), 43 percent of Baby Boomers and Generation Xers are at risk of running out of money in retirement. Among the poorest 25 percent, EBRI estimates that 83 percent are at risk of falling short.

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. How much you have available for retirement depends upon how much you save each month as well as the performance of the investments you select.

✓ In 1979, more than 40 percent of workers in the private sector were active participants in defined benefit pension plans in which the employer took primary responsibility for directing retirement dollars. By 2013, that number had fallen to only 18 percent, thus,
putting much more reliance on defined contribution plans, which put the onus on the employee. The ultimate success of these plans is dependent upon the choices made by the employee.

Your choices are many, and your success—or lack thereof—will directly affect your quality of life in retirement and may dictate whether you are even able to retire. Therefore, while employees in the past typically did not have to concern themselves much with investing decisions relative to their company’s retirement plan, employees now must 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 2012, these and similar other tax-advantaged plans held approximately $5.1 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 an important method that Americans use to provide for their retirement. IRA assets totaled approximately $5.4 trillion by year-end 2012, which was roughly 28 percent of the total U.S. retirement market.

The annual maximum IRA contribution was $5,500 in 2014 ($6,500 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. In contrast, at an earnings rate of 10 percent the payoff is $2.21 million, which is a great outcome 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, which lead to higher returns can make a tremendous difference in the wealth that you accumulate. None other than Albert Einstein is rumored to have said “compound interest is the most powerful force in the universe.”²

<table>
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<th>Amount Invested per Year</th>
<th>Number of Years</th>
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<th>10%</th>
<th>15%</th>
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<td>40</td>
<td>603,999</td>
<td>2,212,963</td>
<td>8,895,452</td>
</tr>
</tbody>
</table>

¹The maximum 401(k) contribution for 2012 was $16,500.
²Whether he said it or not is irrelevant. It is still a good motto to live by.
CHAPTER 1  UNDERSTANDING INVESTMENTS

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. In 2012, approximately 54 million households in the United States owned mutual funds that invested in stocks.

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 creating wealth and 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 on the internet, 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 versus 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 versus passive investing

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

INVESTMENTS AS A PROFESSION

In addition to the above-mentioned 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 mutual funds, brokerage firms, and investment banks as well as banks and insurance companies, need the services of security analysts (also called investment analysts). Security
analysts are routinely separated into buy-side and sell-side analysts. Sell-side analysts issue recommendations such as “strong buy” that are published and made available to many investors, while buy-side analysts prepare research solely to benefit the firm for whom the research was prepared.

Brokerage houses employ sell-side analysts to support their registered representatives who in turn serve the public—for example, preparing the research reports provided to customers. Investment bankers employ buy-side analysts to assist in the sale of new securities and in the valuation of firms as possible merger or acquisition candidates. Other firms that employ buy-side analysts include banks and insurance companies who own portfolios of securities that must be evaluated in order to be managed, and mutual funds that need analysts to evaluate securities for possible purchase or sale.

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 depend on their performance measured relative to other managed portfolios and to market averages.

Stockbrokers and Financial Advisers What about the registered representatives (stockbrokers) employed in cities across the country? A few superbrokers earn more than $1 million 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 advisers 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 grow by 27 percent from 2012 to 2022—much faster than the average for all occupations. As the U.S. population ages and life expectancies increase, the demand for financial planning services should increase. Over 60 percent of affluent Americans with a net worth between $100,000 and $1 million now use a financial advisor. For a $1 million portfolio, a typical financial adviser will charge $10,000 a year. Some charge by the hour, with the hourly rate in the $115 to $300 range.

Standard credentials do not exist for financial advisers. Internet advisers who manage $100 million or more must register with the Securities and Exchange Commission as a Registered Investment Advisor (RIA). Those managing less than $100 million must register with the state securities agency in the state where they have their principal place of business. According to the Bureau of Labor Statistics, the average financial adviser earned approximately $90,000 per year in 2012, primarily from commissions for selling products and from managing clients’ assets for a percentage of the assets under management (AUM).

Exhibit 1–1 lists three designations that financial advisers 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.

The CFA Designation Individuals interested in careers in the investments field, as opposed to financial planning, should consider earning the Chartered Financial Analyst (CFA) designation. This is a highly respected, global professional designation for people in the investments area. It serves as an indication that areas of knowledge relevant to investing have been studied and that

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3In order to sell securities, financial planners and advisers may need to pass what are called Series 66 and Series 7 exams.
Understand 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 than savings accounts or bonds. Therefore, should not all investors invest heavily in common stocks and realize these larger returns? The answer to this question is “To pursue higher returns, investors must assume larger risks, which is not always prudent.” Underlying all investment decisions is the tradeoff between risk and expected return.

EXHIBIT 1-1

Professional Designations Held by Financial Advisers 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 advisers 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.

Understanding the Investment Decision Process

The stock market suffered sharp declines during 2000–2002 because of the collapse of technology stocks. In fact, at the time of the writing of this book, 15 years later, the technology—heavy NASDAQ stock index still had not reached the level that it had before the Dot com crash. 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 the 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 occurred in the early 1980s) bringing a relatively rapid decline in purchasing power.
Understanding the Investment Decision Process

Expected Return versus Realized Return  In investments, it is critical to distinguish between an expected return (the anticipated return for some future period) and a 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. 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. Furthermore, during the next five years 2000–2004, the stock market actually declined. As this example shows, the investment decision must always be considered in terms of both risk and return. The two are inseparable.

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

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

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, which provides a guaranteed minimum return? The answer is that they are trying to earn returns larger than those available from 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.

Investments Intuition

Investors enjoy 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. This great performance came to an end with negative returns experienced in 2000, 2001, and 2002. Such is the nature of stock market returns and risk!

Or consider an individual company and its risk to investors. In early 2000, Cisco, the Internet products company, had a market cap of $550 billion and was the world's most valuable company. In the prior five years, Cisco's stock price climbed 35-fold to over $80/share, and its revenues advanced by 40 percent per year. Then, the Internet crash occurred. From 2000 to 2002, Cisco's stock price declined by 90 percent, reaching a low of less than $10/share. By 2003 Cisco’s net income had recovered to $3.6 billion, which exceeded its income during the tech bubble. Cisco's stock price, however, had recovered to only $22; such is the nature of stock risk!

*Although risk is the most important constraint on investors, other restrictions 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.
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 do so on the basis of an expected return, but there is a risk that the outcome when we terminate the investment—the actual (realized) return—will differ from what we expected when we made the investment.

Defining 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 when they mature. In contrast, 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 substantial risk of not realizing the expected return on any particular common stock over some future holding period, such as one year, one month, or even one day.

As we shall see in Chapter 7, Harry Markowitz changed the study of investments in a significant manner by quantifying portfolio risk as a statistical measure, the variance or standard deviation. His insight allows us to assess the risk that a purchased asset will add to an investor's portfolio.

**Investors Are Risk-Averse!** It is easy to say that investors dislike risk, but more precisely, we should say that investors are risk-averse. A **risk-averse investor** is one who will not assume risk simply for its own sake and will not incur any given level of risk unless there is an expectation of adequate compensation for having done so.

✓ Note carefully that it is not irrational to assume risk, even very large risk, as long as we expect to be compensated for it.

Investors cannot reasonably expect to earn larger returns without assuming larger risks. Furthermore, it is possible that some investors, perhaps unwittingly, act in a manner that is too risk-averse, thereby severely diminishing their final accumulated wealth. There is an old investment adage that says “You can eat well or you can sleep well.” Investing in high-risk and high-reward securities will offer the potential for you to eat well, but the risky nature of these securities might prevent you from sleeping at night. However, if you invest in low-risk securities you may sleep at night but find that your low returns do not provide for your needs.

**Investor's Risk Tolerance** Investors deal with risk by choosing (implicitly or explicitly) the amount of risk they are willing to incur—that is, they decide their **risk tolerance**. Some investors choose to incur high levels of risk with the expectation of high levels of return. Other investors assume much less risk and should not expect to earn large returns.

Can we say that investors, in general, will choose to minimize their risks? No! The reason is that there are costs to minimizing the risk, specifically a lower expected return. Taken to its logical conclusion, the minimization of risk would result in everyone holding risk-free assets such as savings accounts and Treasury bills. The intelligent way to think about return and risk is this:

✓ Investors decide on their risk tolerance—how much risk they are willing to assume when investing. They then seek to maximize their returns subject to this risk tolerance constraint and any other constraints that might apply (for example, taxes).

Of course, investors’ risk tolerance changes as conditions (real or perceived) change. In today’s world, with all the instant communications available, this can and does happen quickly. Too often, individual investors change their risk tolerance at precisely the wrong time. They become more risk-averse after market declines and less risk-averse after market advances. This is the opposite of the advice given by famed investor Warren Buffett who advises investors to “be fearful when others are greedy and greedy when others are fearful.”
To put these two criteria for making investment decisions together, we need to think in terms of the risk-expected return tradeoff that results from the direct relationship between the risk and the expected return of an investment. We do this in the following section.

**Example 1-2**

A 2012 study of 401(k) retirement plan participants found that participants under age 30 had 33 percent of their assets in stocks, while people in their 30s and 40s had much larger allocations to stocks—44 and 46 percent, respectively. Given that stocks have almost always outperformed other asset classes over long periods, is this a case of young people being too risk-averse?

**Example 1-3**

During 2011, investors became more risk-averse as they reacted to a variety of events in both the United States and abroad. The European sovereign debt crisis (Greece, etc.) and banking crisis, and the confrontation over raising the U.S. debt limit, along with the downgrade in the rating of U.S. debt, led to significant shifts in risk tolerance as many investors lost their appetite for stocks. The equity markets, however, rebounded and posted large gains in 2012 and 2013. At this point, many investors were on the sidelines and only later realized that they had indeed overreacted to the earlier events.

To put these two criteria for making investment decisions together, we need to think in terms of the risk-expected return tradeoff that results from the direct relationship between the risk and the expected return of an investment. We do this in the following section.

**Some Practical Advice**

You can find a number of websites with a set of questions designed to help you assess your risk tolerance. One such site is http://njaes.rutgers.edu/money/riskquiz/. Also see http://www.morningstar.co.uk/uk/655/articles/98540/a-guide-to-assessing-your-risk-tolerance.aspx.

**The Risk-Expected Return Tradeoff**

Within the realm of financial assets, investors can achieve virtually any position on an expected return-risk spectrum such as that depicted in Figure 1-1. The line RF to B is the assumed tradeoff between expected return and risk that exists for all investors interested in financial assets. This tradeoff always slopes upward because the vertical axis is expected return, and rational investors will not assume more risk unless they expect to be compensated. The expected return should be large enough to compensate for assuming the additional risk; however, there is no guarantee that the additional returns will be realized.

RF in Figure 1-1 is the return on a risk-free asset such as Treasury securities, which have no default risk. This risk-free rate of return, which is available to all investors, is designated as RF throughout the text.

![Figure 1-1: The Risk-Expected Return Tradeoff Available to Investors](image-url)
Figure 1-1 shows approximate relative positions for some of the financial assets that are discussed in Chapter 2. As we move from risk-free Treasury securities to more risky corporate bonds, equities, and so forth, we assume more risk in the expectation of earning a larger return. The common stock of large, blue chip companies is risky, in relation to bonds, but these securities are not as risky as a purchase of the common stock of small, speculative firms.

Obviously, Figure 1-1 depicts broad categories. Within a particular category, such as large firm common stocks, a wide range of expected return and risk opportunities exist at any time.

The important point in Figure 1-1 is the tradeoff between risk and expected return that should prevail in a rational environment. Investors unwilling to assume risk must be satisfied with the risk-free rate of return, RF. If they wish to try to earn a larger rate of return, they must be willing to assume a larger risk as represented by moving up the risk-expected return tradeoff into more speculative assets. In effect, investors have different risk tolerances, and, therefore, they should have differing return expectations.\(^5\)

**Ex Post versus Ex Ante** Always remember that the risk-return tradeoff depicted in Figure 1-1 is ex ante, meaning "before the fact." That is, before the investment is actually made, the investor expects higher returns from assets that have a higher risk. This is the only sensible expectation for risk-averse investors, who are assumed to constitute the majority of all investors.

Ex post means "after the fact" or when it is known what has occurred. For a given period of time, such as a month, a year, or even several years, the tradeoff may turn out to be flat or even negative. Such is the nature of risky investments!

### Checking Your Understanding

1. Historically, stocks, on average, have outperformed other asset classes such as bonds. Should all intelligent investors overweight stocks?
2. Rational investors attempt to minimize their risks. Agree or disagree, and explain your reasoning.
3. Investors should seek to maximize their returns from investing. Agree or disagree.
4. The following is a correct statement: “The tradeoff between return and risk can be, and has been, both upward-sloping and downward-sloping.” How is this possible?

### Structuring the Decision Process

Traditionally, investors have analyzed and managed securities using a broad two-step process: security analysis and portfolio management.

**Security Analysis** The first part of the investment decision process, involving the valuation and analysis of individual securities, which is referred to as **security analysis**. The valuation of securities is a time-consuming and difficult job. First, it is necessary to understand the characteristics of the various securities and the factors that affect them. Second, a valuation model is applied to these securities to estimate their value. Value is a function of the expected future returns on a security and the risk inherent in the security. Both of these parameters must be estimated and then brought together in a model.

\(^5\)In economic terms, the explanation for differences in risk preferences is that rational investors strive to maximize their utility. Utility theory is a complex subject, but for our purposes we can equate maximization of utility with maximization of welfare. Welfare is a function of present and future wealth, and wealth in turn is a function of current and future income discounted (reduced) for the amount of risk involved. Thus, investors maximize their welfare by optimizing their risk-expected return tradeoff. In the final analysis, expected return and risk constitute the foundation of all investment decisions.
“Value is what we estimate the security to be worth. Price is what it is selling for in the market. We want to identify securities whose value exceeds their price.”

Despite the difficulties, some type of security analysis is performed by most investors serious about their portfolios. Unless this is done, one has to rely on personal hunches, suggestions from friends, and recommendations from brokers—all of which can be dangerous to one’s financial health.

Example 1-4
The years 2000–2002 each showed negative returns for the major stock indexes, as did 2008. For large company stocks, those were the only negative return years since 1990. While investors expected the returns for those years to be positive at the outset, they turned out to be years with negative returns.

Portfolio Management
The second major component of the decision process is portfolio management. After securities have been evaluated, a portfolio should be constructed. Concepts on why and how to build a portfolio are well established. Much of the work in this area is in the form of mathematical and statistical models, which have revolutionized both the practice and study of investments over the past 50 years.

Having built a portfolio, the astute investor must consider how and when to revise it. And, of course, portfolios must be managed on a continuing basis.

Finally, all investors are interested in how well their portfolio performs. This is the bottom line of the investment process. Measuring portfolio performance is an inexact procedure, even today, and needs to be carefully considered.

Important Considerations in the Investment Decision-Making Process
Savvy investors should be aware that the investment decision process can be lengthy and involved. Regardless of individual actions, however, certain factors in the investment environment affect all investors. These factors are relevant to investors as they work through the investment decision-making process.

THE GREAT UNKNOWN
When describing the investment decision-making process, the late esteemed economist Peter Bernstein stated, “You have to understand that being wrong is part of the process.” The first, and paramount, factor that all investors must come to grips with is uncertainty. Investors buy financial assets with a formulated return expectation over some future holding period. These returns are seldom realized.

The simple fact that dominates investing, although many investors do not appreciate it fully, is that the realized return on a risky asset often differs from what was expected—sometimes quite dramatically.

At best, estimates are imprecise; at worst, they are completely wrong. The best one can do is make the most informed return and risk estimates possible, act on them, and be prepared for shifting circumstances. Regardless of how careful and informed investors are, the future is uncertain, and mistakes will be made.
All investors, individuals as well as professionals, make investing mistakes.

Anyone can tell you what you should have bought or sold in the past. No one, however, can guarantee you a successful portfolio for a future period of time because no one can consistently forecast what will happen in the financial markets, including those professionals who are paid to make recommendations. Consider the following quote on the Morningstar website in October 2011:

*Uncertainty Causes Investors to Bid Up Safe Stocks*

Apparently uncertainty has carried over to investors, who are now bidding up the more defensive portion of our stock investing universe and seeking stocks that provide income in addition to capital gains.

Although the future is uncertain, it is manageable, and a thorough understanding of the basic principles of investing will allow investors to cope intelligently.

**A GLOBAL PERSPECTIVE**

Now more than ever, investors must think of investments in a global context. The investing environment has changed dramatically as the world's economies have become more integrated. The United States no longer accounts for a majority of stock market capitalization globally, as it did in the past.

U.S. stocks now account for only about one-third of the world's total stock market capitalization.

A global marketplace of round-the-clock investing opportunities is emerging. Despite having a large home country bias, U.S. investors are becoming increasingly comfortable owning the securities of non-U.S. companies.

Why should today's investors be actively interested in international investing? The relative valuation levels of many foreign markets are often more attractive than the U.S. market. For example, as of January 2014, the major U.S. index, the S&P 500 sold at a P/E ratio (P/E ratios are explained in Chapter 2) of 17.4. Major indices in Hong Kong, China, Singapore, Germany, and the U.K. sold at P/E ratios of 10.6, 11.1, 13.5, 16.2, and 16.6, respectively. This indicates that shares of many foreign stocks were discounted relative to their U.S. counterparts.

Many U.S. companies now derive a very large percentage of their revenues from abroad. Consider some of the 100 largest multinational corporations headquartered in the United States. In 2013, ExxonMobil and Hewlett Packard each earned about 65 percent of its revenues from abroad, while some 58 percent of Coca-Cola’s revenues came from abroad. Google was getting about 45 percent of its revenues outside the United States. Thus, U.S. investors holding what traditionally are thought of as classic American companies are vitally affected by what happens abroad. Of course, not all large corporations are affected to this extent. Retailing behemoth Walmart receives only about 29 percent of its revenues from abroad.

From an investing standpoint, the real importance of adding foreign securities is that investors can achieve beneficial risk reduction if some foreign markets move differently than

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do U.S. markets. For example, when U.S. stocks are performing poorly, some foreign stocks may be doing well, which would help offset the poor U.S. performance. This reduction in portfolio risk is a result of diversification, a very important concept in investing, which we analyze in Chapter 7. Many past studies have shown that portfolios consisting of a major U.S. stock index and a major foreign stock index would have provided performance comparable to either index as a single investment, and done so with less risk.

When making investment decisions, we should consider foreign markets as well as the U.S. financial environment. We will do so throughout this text as an integral part of the discussion, rather than as a separate chapter. Although the technical details may vary, the principles of investing are applicable to financial assets and financial markets wherever they exist.

While it may be a smart play, foreign investing does not ensure success because of the first issue we discussed—the great unknown. As in any other area of investing, the experts are often wrong. Furthermore, as economies around the world become more integrated, markets become more similar than dissimilar.

**THE IMPORTANCE OF THE INTERNET**

Any discussion of the investment decision process must focus on the role of the Internet, which in a short time has significantly changed the investments environment. Now, all investors can access a wealth of information about investing, trade inexpensively and quickly in their brokerage accounts, obtain real-time quotes throughout the day, and track their portfolios.

This is a true revolution—the Internet has democratized the flow of investment information. Any investor, at home, at work, or on vacation, can download an incredible array of information, share comments with other investors, perform security analysis, manage portfolios, check company required filings, and carry out numerous other activities not thought possible for an individual investor only a few years ago. While some of these information sources and/or services carry a fee, most of it is free.

While more information is available, much of it is misleading at best and outright fraudulent at worst. One of the goals of this book is to help you discern which sources are reliable and which sources should be avoided.
INDIVIDUAL INVESTORS VERSUS INSTITUTIONAL INVESTORS

There are two broad categories of investors: individual investors and institutional investors. The latter group, consisting of bank trust departments, pension funds, mutual funds, insurance companies, and so forth, includes the professional money managers, who are often publicized in the popular press. Institutional investors in the United States hold trillions in assets.

Institutional investors have a dual relationship with individual investors. On the one hand, individuals are the indirect beneficiaries of institutional investor actions because they own or benefit from these institutions’ portfolios. On a daily basis, however, they are “competing” with these institutions in the sense that both are managing portfolios of securities and attempting to do well financially by buying and selling securities.

Institutional investors are indeed the “professional” investors, with vast resources at their command. In the past, they were often treated differently from individual investors because companies often disclosed important information selectively to some institutional investors. However, this situation changed significantly in October 2000 when Regulation FD (Full Disclosure) took place.

Regulation FD, which applies to almost all public companies, regulates communications between public companies and investment professionals. Companies are now prohibited from (intentionally) disclosing material, nonpublic information to specific types of investment professionals unless the company simultaneously publicly discloses the information.

If a nonintentional disclosure is made of such information, the company must publicly disclose the information promptly.

Some individual investors consistently beat institutional investors due to either superior skill and insight, or luck. Furthermore, some opportunities can be exploited more easily by individual investors than by institutional investors. As an example, for a multibillion dollar fund to benefit from identifying an undervalued stock, it must purchase many thousands of company shares. As it purchases the shares, the stock price is driven up, and the firm has to pay higher and higher prices for the stock. Individual investors, on the contrary, take much smaller positions, and their trades do not move the market price.

Individual investors are now on a more competitive basis with institutional investors, given the information they can access from the Internet. We should expect the market to be more efficient today relative to the past because information is even more quickly and freely available. However, given the level of stock market volatility realized in the past few years, it may be that investors are misinterpreting and/or overreacting to aspects of this information flow.

The question of how well individual investors perform relative to institutional investors raises the issue of market efficiency, which we consider in Chapter 12. All intelligent investors who seek to do well when investing must ultimately come to grips with the issue of market efficiency.

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ETHICS IN INVESTING

Today, perhaps more than ever, investors need to stop and think about ethical issues as they apply to investing. Corporate scandals involving Enron, WorldCom, HealthSouth, and so forth were prominently in the news as executives from these firms went on trial and were charged with fraud in connection with the companies’ financial activities. Insider trading cases have been a dominant focus of regulators and cases involving employees of SAC Capital and the Galleon Group have dominated the headlines. Other recent negative headlines involving ethical issues include the conflicts of interest with security analysts and the role of high-frequency trading in providing a few investors with unfair trading advantages.

Financial markets depend on integrity in the process, whether it be from CEOs, brokers, stock exchange employees, security analysts, managers of mutual funds, or so forth. If investors lose confidence in the overall fairness of the investing environment, financial markets could be severely damaged, and this in turn could adversely impact the capital formation process that is so vital to the success of the U.S. economy.

Because of the overall importance of ethics in the investing process, we examine ethical issues in several chapters. In some cases, as in the next example, we do not provide a clear answer to the issue raised. In other examples, we offer some guidance on the issue. This is consistent with the real-life nature of ethical issues, where it is not always easy to identify the correct course of action.

Example 1-6

Individual investors can exploit a spin-off (defined as a division of a company that is turned into a separate publicly held company), better than institutional investors in some cases. Some institutional investors will not purchase the new companies because they often pay no dividends immediately after spin-off, and they may be too small to be held by some institutions. Furthermore, unless the spin-off is unusually large, it is often ignored by security analysts.

These companies often look unattractive at the time of spin-off because they had problems as a division. However, these problems tend to be solved by a new, proactive management, and these companies become attractive as take-over candidates.

One way to track the performance of spin-off companies is through ETFs that invest solely in spun-off companies. One example is the Guggenheim Spin-Off ETF (Symbol: CSD). From the market bottom of March 2009 through mid-April 2014, the S&P 500 had returned 201 percent. The Guggenheim Spin-Off ETF had provided investors with nearly double that return—an outstanding 379 percent over that same time period.8

Investors are advised to defer purchases of spin-offs until they have been trading for a few weeks because some institutions sell the shares they receive in a spin-off, and prices are often lower weeks later than at the time trading begins in the new companies. With a newly energized management team who have stock options, these companies often do very well.

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CHAPTER 1
UNDERSTANDING INVESTMENTS

Checking Your Understanding

5. Individual investors make investing decisions under conditions of uncertainty, while professional investors make such decisions under conditions of controlled risk taking, thereby eliminating the uncertainty. Agree or disagree and explain your reasoning.

6. A chance for larger returns than those available domestically is the primary reason U.S. investors should hold foreign securities. Agree or disagree and explain your reasoning.

Organizing the Text

Four chapters of background material follow this introductory chapter to form Part I. The financial assets available to investors—both from direct investing and indirect investing—are examined in separate chapters, followed by a discussion of the securities markets in which they trade. This, in turn, is followed by an analysis of how securities are actually traded.

Part II deals with the important issues of return and risk, which underlie all investment decisions. Chapter 6 covers returns that investors have earned in the financial markets in the past, along with the risk involved, because investors must have an understanding of the results of investing in major assets, such as stocks and bonds, if they are to make intelligent estimates of the future. Chapter 7 deals with the estimation of risk and return, and discusses the important principles of Markowitz portfolio theory that all investors should understand as they form their portfolios. Chapter 8 continues the discussion of portfolio theory, explaining how an efficient portfolio is selected. Chapter 9 discusses capital market theory.

Nine chapters of the text, involving Parts III, IV, and V, are devoted to evaluating the primary financial assets, stocks, and bonds, and explaining the basics of asset valuation. Common stocks are analyzed in Part III, which includes two chapters. Valuation techniques are discussed in the first of the two chapters, and analysis and management in the second. A chapter on market efficiency is included because this important concept affects the strategies followed in selecting and managing a portfolio.

Because of the complexity of common stocks, four additional chapters are needed to describe the basics of security analysis. Part IV is purposefully sequenced from market to industry to company analysis, followed by a discussion of technical analysis.

Ethics in Investing

The Case of Martha Stewart

The SEC filed securities fraud charges against Martha Stewart and her stockbroker in 2003. Stewart became entangled in this matter as a result of selling her stock in ImClone Systems after allegedly receiving an unlawful tip from her broker. The SEC also alleged that Stewart and her broker created an alibi for Stewart’s sales and concealed important facts during the investigation into the matter. An SEC official stated that “[t]he Commission simply cannot allow corporate executives or industry professionals to profit illegally from their access to nonpublic information. The coordinated action announced today by the U.S. Attorney’s Office shows that the consequences for those individuals will be even greater if we uncover evidence that they obstructed our investigation.”

Stewart was forced to resign as an officer and director of her company, and was sentenced to five months in prison and two years’ probation, in addition to a fine of $30,000. Contrary to popular belief, Stewart was not charged with insider trading, but rather with obstruction of justice.

Although many people seem to believe otherwise, she maintained throughout the proceedings that she had done nothing wrong. In this situation, when many believed her guilty while she maintained her innocence, would it have been appropriate for her to admit guilt in exchange for a reduced sentence?
Part V covers bonds, using the same format as Part III. Chapter 17 covers the principles of bond valuation, and Chapter 18 covers the analysis and management of bonds.

Part VI contains a complete basic analysis of alternative investment opportunities involving derivative securities. Separate chapters cover options and futures.

Part VII contains two chapters covering the portfolio management process. Chapter 21 describes some of the issues that investors face in their financial planning and how they can proceed to manage their financial assets. The text concludes with the logical capstone to a study of investments, the measurement of portfolio performance, in Chapter 22.

Summary

▶ An investment is the commitment of funds to one or more assets that will be held over some future period. The field of investments involves the study of the investment process.
▶ The investment opportunities considered in this text consist of a wide array of financial assets (primarily marketable securities), which are financial claims on some issuer.
▶ The basic element of all investment decisions is the tradeoff between expected return and risk. Financial assets are arrayed along an upward-sloping expected return-risk tradeoff, with the risk-free rate of return as the vertical axis intercept.
▶ Expected return and risk are directly related; the greater (smaller) the expected return, the greater (smaller) the risk.
▶ Investors seek to maximize expected returns subject to constraints, primarily risk.
▶ Risk is defined as the chance that the actual return on an investment will differ from its expected return.
▶ Rational investors are risk-averse, meaning that they are unwilling to assume risk unless they expect to be adequately compensated. The study of investments is based on the premise that investors act rationally.
▶ Investors deal with risk by choosing (implicitly or explicitly) the amount of risk they are willing to incur—that is, they decide their risk tolerance.
▶ For organizational purposes, the investment decision process has traditionally been divided into two broad steps: security analysis and portfolio management.
▶ Security analysis is concerned with the valuation of securities. Valuation, in turn, is a function of expected return and risk.
▶ Portfolio management encompasses building an optimal portfolio for an investor. Considerations include initial portfolio construction, revision, and the evaluation of portfolio performance.
▶ Major factors affecting the decision process include uncertainty in investment decisions, the global nature of investing, the increasing importance of the Internet, the role of institutional investors in the marketplace, and ethical issues in investing. As they study investments, evaluate information and claims, and make decisions, investors should consider these factors carefully.

Questions

1-1 Define the term “investments.”
1-2 Describe the broad two-step process involved in making investment decisions.
1-3 Is the study of investments important to most individuals?
1-4 Distinguish between a financial asset and a real asset.
1-5 Carefully describe the risk–return tradeoff faced by all investors.
1-6 In terms of Figure 1-1, when would an investor expect to earn the risk-free rate of return?
1-7 “A risk-averse investor will not assume risk.” Agree or disagree with this statement, and explain your reasoning.
1-8 Summarize the basic nature of the investment decision in one sentence.

1-9 Distinguish between expected return and realized return.

1-10 Define risk. How many specific types can you think of?

1-11 What other constraints besides risk do investors face?

1-12 Are all rational investors risk-averse? Do they all have the same degree of risk-aversion?

1-13 What is meant by an investor's risk tolerance? What role does this concept play in investor decision making?

1-14 What external factors affect the decision process? Which do you think is the most important?

1-15 What are institutional investors? How are individual investors likely to be affected by institutional investors?

1-16 Why should the rate of return demanded by investors be different for a corporate bond and a Treasury bond?

1-17 Discuss three reasons why U.S. investors should consider international investing. Do you think the exchange rate value of the dollar will have a significant effect on the decision to invest internationally?

1-18 What should the long-run ex ante tradeoff between expected return and risk look like in a graph? What about the long-run ex post tradeoff?

1-19 Rational investors always attempt to minimize their risks! Agree or disagree, and explain your reasoning.

1-20 Investors should always seek to maximize their returns from investing. Agree or disagree.

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Spreadsheet Exercises

1-1 Assume that when you are 25 years old you plan to aggressively save for your retirement by contributing $5,000 a year to a tax-sheltered account. A relative of yours tells you to forget about earning 10 percent or more a year because that is very unlikely to happen (which is true). He also tells you that you should not worry too much about whether you earn, for example, 6 or 7 percent, because it will not make a lot of difference in your final wealth. You decide to see for yourself the various results that could occur by doing some calculations.

a. Fill in the following spreadsheet with the combinations indicated. Determine the difference in outcomes between 9 percent for 40 years and 10 percent for 40 years.

b. Calculate the difference between earning 6 percent and earning 7 percent for 20, 30 and 40 years. How would you respond to your relative?

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Checking Your Understanding

1-1 Investors should select assets consistent with their risk tolerance. Some investors may not be able to deal with the risk of common stocks. Therefore, it is not correct to argue that all intelligent investors should own common stocks.

1-2 Disagree. If rational investors always minimized their investing risk, they would likely own nothing but Treasury bills. The correct statement is that rational investors assume risk if they expect to be compensated adequately for doing so.

1-3 Disagree. In this case, investors would seek the assets expected to return the most regardless of their risk. The correct statement is that investors should seek to maximize their returns for a given level of risk.

1-4 “The tradeoff between return and risk can be, and has been, both upward-sloping and downward-sloping.” This is possible because the tradeoff is always upward-sloping for rational investors before one invests—that is, ex ante. However, for various periods that have occurred, the tradeoff has been downward-sloping because the returns on the risk-free asset were positive while the returns on stocks were lower, or even negative. A vivid example is 2008 when stocks dropped sharply, and most investors holding stocks lost money—in many cases, a lot of money.

1-5 Uncertainty cannot be eliminated, only reduced. For example, no one, whether professional investor or not, can know what the stock market will do with certainty next year, next month, or even tomorrow.

1-6 The primary reason for holding foreign securities is to diversify one’s portfolio. Diversification is a major tenet of portfolio management.