CHAPTER 1

A Framework for Saving and Investing

This book is not primarily about the "why" of investing, but about the "how." Our principal topic is the process of putting your savings and investment flow to work to earn the best return possible at an acceptable level of risk. In that context, this chapter and Chapter 2 are big picture chapters. In these two chapters, I am concerned not just with the risks of losing money on a specific investment, but with the risks of failing to meet a specific **investment objective**—the risk of being unable to cover a specific future need or obligation. More generally, I am concerned with investment choice—the task of selecting effectively and efficiently from a large menu of investment offerings to implement an investment plan. To understand the significance and interaction of risks and investment choices adequately, it is useful to look broadly at risks and investment returns—and at the reasons for saving and investing. Joe, the astute investor mentioned in the Introduction, found these chapters helpful in developing a perspective on his investment program and the motivation to create a plan.

The founders of political economy—the eighteenth- and nineteenth-century name for economics—felt they needed to explain the motivations behind saving and investment. Some of their explanations were relatively complex and, even by today's standards, sophisticated. An important element in nearly all of their explanations for saving was the idea of putting something aside today to finance future consumption.

We save and invest to cover our future needs and obligations. Most savers and investors have relatively clear objectives. These are often formal and specific: to accumulate enough money to buy a new car without borrowing, to pay for children's education, or to provide for a variety of

lifestyle choices when the saver/investors reduce their participation in the workforce.

In this chapter, I offer an eclectic personal perspective on some of the financial planning and investment implementation issues that every investor must deal with. My perspective reflects my perception that many investors embark upon investment choices without understanding what is possible and what is not, and without understanding the magnitude and nature of some kinds of risk. Of course, the essence of risk is that it makes outcomes uncertain.

Most investors who buy a book about selecting mutual funds and exchange-traded funds have very specific expectations. I intend to meet those expectations fully. However, to put the fund selection objective in focus, I will devote a few pages to discussing some aspects of wealth management—investment planning, risk evaluation, and risk management—that are often overlooked. One purpose of what may seem a digression to some readers is to amplify the Introduction's demonstration of the importance of improving an investor's fund selection by even a small margin. If your plan is clear and you appreciate the importance of small performance improvements, do not hesitate to scan the section headings and exhibits in the balance of this chapter and in Chapter 2. If nothing in between grabs your attention, go on to Chapter 3.

A Life-Cycle Approach to Investment Planning

Many of the people and organizations that offer investment advice to individual investors emphasize the importance of taking a long-term—even a life-cycle—approach to financial planning and investing. These recommendations are certainly appropriate, but the way they are often stated fails to consider some important realities that affect an investor's ability to implement the advice.

A young family unit typically has relatively few liquid assets to invest. The principals are paying off student loans, incurring mortgage debt, and spending most of their income (which does not yet reflect their peak earning capabilities) on goods and services. Any inheritances from their parents' generation usually lie in the future, and retirement and college tuition bills for their children seem years off, relative to the resources the young family can commit immediately to a saving and investment program. The adults in such families should certainly begin to learn about financial planning and investments. But it is not realistic to expect a young family to cut back sharply on current consumption to increase their savings rate or to adopt a sophisticated portfolio management process to handle a small portfolio. Subject to some minor qualifications, young adults should invest as much as they can in various tax-sheltered retirement funds, such as

401(k)s, 403(b)s, and individual retirement accounts (IRAs). Their initial portfolios should probably be relatively aggressive. Their human capital will be largely converted to financial assets in their remaining years in the workforce. Most investors do not have enough financial assets before age 45 to worry excessively about **asset allocation** or aggregate portfolio risk. Nonetheless, the example of Joe and Pete in the Introduction demonstrates the importance of starting early and earning a good return to take advantage of the power of compounding returns.

By the time the earning members of the household reach their high earning and asset accumulation years—typically mid-forties through mid-sixties—financial planning should become a high priority. Commitments and requirements for family education expenses, lifestyle choices, and retirement objectives should become clearer during that period.

One of the secondary objectives of this book is to help readers reach appropriate "make-or-buy" decisions at various stages in the financial planning and implementation process. In this case, "make-or-buy" means—at the extremes—do-it-yourself or pay one or more advisers to do the work for you. Most individuals who like the idea of understanding and controlling every aspect of their financial lives can certainly learn enough to do an adequate job of basic personal financial planning and they can implement the plan in an intelligent way. However, a full understanding of all possibilities and pitfalls is beyond the scope of most do-it-yourself efforts. The greatest mistake most investors make is failing to obtain necessary information and advice from professional advisers. The second greatest mistake is to accept bad advice. You cannot count on avoiding either of these mistakes if you do not have some personal understanding of investment and financial planning principles.

A financially sophisticated individual can certainly take on most aspects of a financial plan and its implementation. In general, the quality of the result the individual achieves will be, at least in part, a function of the time and effort committed to the process. Not every intelligent and financially sophisticated person will be prepared to make the commitment necessary for a total do-it-yourself approach. In fact, the more sophisticated do-it-yourselfers are, the more likely they will recognize what they do not know. A discussion with a tax planner or investment manager who has a complementary skill set to your own will help ensure that major issues have not been overlooked.

At several points in later chapters, the need to monitor your investment portfolio will become apparent. Hiring a planner or other adviser is not a substitute for watching your own nest egg. For most family breadwinners who have reached the age of 60, their investment portfolio and vested benefits will affect their living standard for the remainder of their lives far more than current or future employment income. The time they devote to their portfolio rarely reflects this fact.

The Trade-Off between Risk and Reward Works Only within Limits

One of the axioms of a beginning course in finance is quickly understood by virtually every student: Within the range of investment choices where most investors operate, an investor can usually expect a higher return for a given period in exchange for willingness to accept a somewhat greater risk. This relationship and the range of probable return variations are illustrated in Exhibit 1.1.

Historic data on performance of various categories of investments can give an indication of the nature of the risk/return trade-off, but it is the essence of risk that future returns cannot be known in advance. For a specific period or for a sequence of periods, the effect of accepting greater risk will be greater dispersion in returns. The cumulative return for a risky investment policy over a long period may be higher or lower than the return from a lower-risk investment.

The fact that a specific outcome is not favorable does not invalidate the general association of higher risks with higher returns. An unfavorable outcome does highlight several important effects of risk on long-term results. First, the result of a sequence of risk/return choices may give results that are substantially better or worse than the investor anticipated at the time each of the choices was made. Second, a principal characteristic of risk is that it increases the range of possible returns on both the upside and the downside. The range of return variations over a 5th to 95th percentile range illustrated in Exhibit 1.1 is wide even for a single period as risk increases. A single high-risk investment, particularly if taken on a

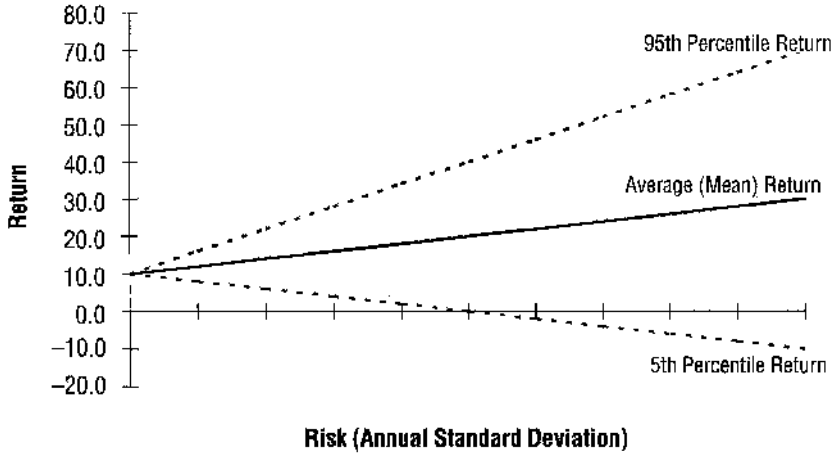

EXHIBIT 1.1 Expected Return Increases with the Acceptance of Greater Risk

leveraged basis, can wipe out an investor's financial assets. It may be impossible to play again in a subsequent period. The dramatic effect of high-risk investment on cumulative returns is best illustrated by the effect of risk (volatility of return) on the compound return expected from a portfolio in Exhibit 1.2.

The graph of results expected from compounding 12 percent and 20 percent arithmetic or simple returns at various standard deviation (risk or volatility) levels illustrates the possible effect of return volatility on long-term investment results.

Annual volatility in the range of 30 to 50 percent has been common in recent years for some undiversified equity investments. When volatility gets this high, the risk increases that substantial losses cannot be recouped even in the long run. As the right-hand side of the graph shows, the compound expected return at high levels of volatility drops sharply. The 20 percent average return provides a compound expected return of about 12 percent at a 50 percent volatility level and the 12 percent average return gives a compound expected return of less than 3 percent at a 50 percent volatility level. Volatilities of individual stocks and portfolios of stocks with similar risk characteristics often measure over 50 percent. The technology-stock-heavy Nasdaq-100 index and the QQQQ exchange-traded fund (ETF) based on it traded at 50 percent volatility levels for long stretches around the turn of the millennium. At a given average return, this high risk

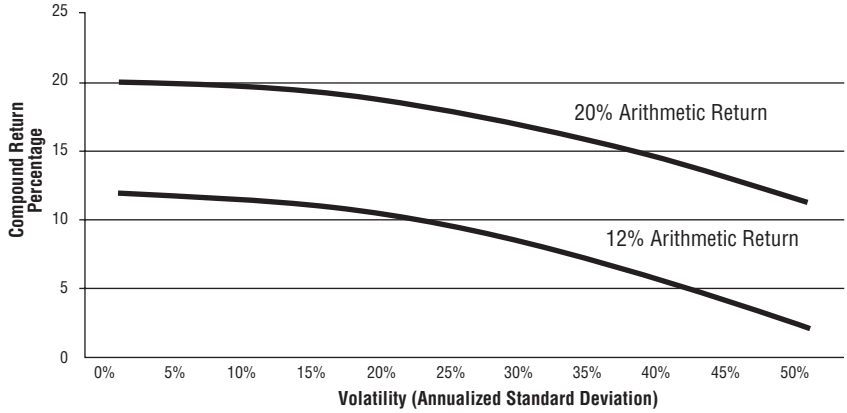

EXHIBIT 1.2 Effect of Volatility (Greater Risk) on the Compound Return of a Portfolio
Assumption: Arithmetic or simple return is compounded annually for 40 years. Results are not very sensitive to use of a shorter period or a higher compounding frequency.
Source: Richard Michaud.

level reduces longer-term expected returns. The risk is greatest with single stocks or baskets of highly correlated stocks like the portfolio of the QQQQs. A catastrophic loss can nearly eliminate the chance to recover in the long run.

The point of this graph is that at a reasonable *average* return, leverage and volatility can *reduce* the compound return to the vanishing point. This graph is based on the return pattern of an equity portfolio. Single stocks, like some of the dot-coms, had recorded volatilities off the right side of the graph in the run-up to the peak of the technology bubble in 2000—and in the subsequent run-down. The prices of some of these stocks dropped so far that recovery was/is hard to imagine. Simple tools to measure diversification—and, hence, the concentration of risk—can improve long-term return expectations and reduce risk.[1]

Most of the risks reflected in the risk/return trade-offs illustrated in Exhibits 1.1 and 1.2 and the most common types of risks examined and evaluated by investors are market risks. There are, however, a number of risks that are best examined and evaluated outside the relatively simple framework of securities market risks.

Thinking About the Big Risks

In the early years of the twenty-first century, most American investors take comfort in the relative stability that the U.S. economic system has enjoyed since the Great Depression of the 1930s. The United States has been an example of a stable social environment for an even longer period, dating back at least to the end of the Civil War in the 1860s. The absence of foreign armies in the settled portions of the United States since Revolutionary War times supports the belief that direct involvement in armed conflict is improbable for most U.S. citizens. Events since September 11, 2001, have shaken public confidence, but most Americans view risk in a very different way from investors who live in many other countries.

Citizens of Western Europe have seen their immediate environment in turmoil as recently as World War II. Citizens of the Middle East, Eastern Europe, Asia, and many parts of Africa have witnessed great social, political, and economic changes and military activity even more recently. On a global basis, the American experience of long-term political and economic stability is almost unique. Only in Britain and the United States have securities markets operated relatively continuously since the end of the eighteenth century, and even the London and New York markets closed for several months during World War I (Brown, Goetzmann, and Ross 1995).

Addressing the global fragility of social stability and financial continuity is not to suggest that buying a mountain cabin and stocking it with several years' supply of freeze-dried food and some heavy weaponry is an appropriate part of any American's retirement strategy. However, anyone making a financial plan should consider the possibility of major structural change in the social and economic environment that will affect the value of investments and the range of lifestyle choices available. On a historical, global basis, these changes have been more frequent and more profound than the North American experience implies.

Most financial plans do not look beyond normal market risk—a level of return volatility substantially less than that experienced in the United States in the 1930s or around the turn of the millennium. Little or no attention is paid to hard-to-anticipate systemic risks—risks that the economic system could have a very different appearance and function in the time period that is relevant to an adult with a remaining life of 50 years or more.

During the cold war, military planners had a phrase for such hard-to-anticipate risks. They called them "unk unk" risks, short for unknown unknown risks. It is impossible to know what you do not know that should worry you, especially over a long time horizon. There are, of course, some major known risks that can be appraised. Looking at known risks will sometimes provide a degree of perspective on systemic risks and unk unk risks. Among the known risks are the risks of inflation and of extreme longevity and the peculiar risk of relying on what is sometimes called "time diversification" to help a risky investment policy meet retirement savings objectives. So-called fat-tailed risks even challenge the analytical framework typically used to evaluate risk.

Inflation

Exhibit 1.3 shows the average annual rate of inflation by decade in the United States from World War I through the more recent period of relatively modest inflation.

Overall, the United States has a good record of controlling inflation. By way of contrast, Exhibit 1.4 and Exhibit 1.5 show two examples of hyperinflation from the twentieth century.

During the Weimar Republic hyperinflation in Germany (1920–1923), the value of the reichsmark declined by a factor of 100 billion to 1 relative to the British pound. By the end of this episode, the money needed to buy a sausage weighed more than a dozen hogs. More recently, Brazil experienced inflation rates averaging more than 25 percent per month from 1988 through 1994.

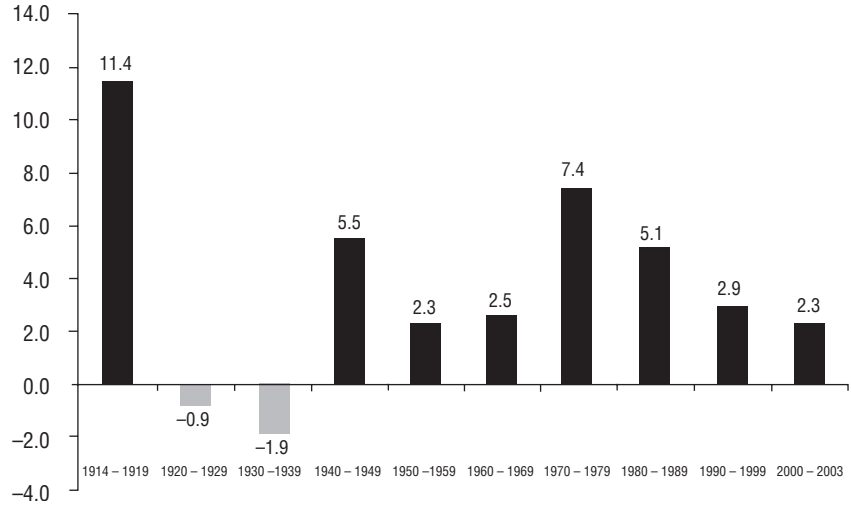

EXHIBIT 1.3 Average Annual U.S. Inflation by Decade
Source: U.S. Department of Labor, Bureau of Labor Statistics.

Any investor dependent on a long-term fixed flow of income—whether from a long-term bond or from a fixed annuity—is subject to significant inflation risk. Social Security payments are theoretically indexed for inflation, but this protection is not an absolute. There is a high probability of change in the inflation protection now built into Social Security. The age at which an individual can begin to receive Social Security payments has changed and will surely change again. More subtly, the way Social Security distributions to retirees might be taxed, particularly if the retiree has other sources of income, may erode the value of the inflation protection in Social Security payments.

In the long run, the only thing that seems relatively certain, assuming reasonable political and economic stability, is that low-income retirees will continue to receive Social Security payments and that there will be a degree of inflation protection embedded in those payments. Anyone who expects to enjoy retirement living above a subsistence level will have to obtain some protection from inflation independent of Social Security cost-of-living adjustments. With the exception of the popular Treasury inflation-protected securities (TIPS) issued by the U.S. Treasury, most inflation protection available to investors lacks an irrevocable guarantee. Even the TIPS version of inflation protection may become subject to punitive taxation.

EXHIBIT 1.4 The Rising Circulation of Reichsbank Notes Issued and Their Equivalent Sterling Values

Date	Paper Marks (Billions)	Rate of Exchange (Marks for Pounds)	Sterling Value of Notes in Circulation (Millions of Pounds)
Dec. 31, 1919	35.7	184.8	193.2
Dec. 31, 1920	68.8	258.0	255.5
Dec. 31, 1921	113.6	771.0	147.3
Dec. 31, 1922	1,280.1	34,000.0	34.4
Jan. 31, 1922	1,984.5	227,500.0	8.7
Feb. 28, 1923	3,512.8	106,750.0	33.0
Mar. 29, 1923	5,517.9	98,500.0	56.0
May 29, 1923	8,563.7	320,000.0	26.8
June 30, 1923	17,291.1	710,000.0	24.3
July 7, 1923	20,341.8	800,000.0	25.4
July 14, 1923	25,491.7	900,000.0	28.3
July 23, 1923	31,824.8	1,600,000.0	20.0
July 31, 1923	43,594.7	5,000,000.0	8.7
Aug. 7, 1923	62,326.7	15,000,000.0	4.1
Aug. 15, 1923	116,402.5	12,400,000.0	8.9
Aug. 23, 1923	273,905.4	23,000,000.0	11.9
Sept. 15, 1923	3,183,681.2	410,000,000.0	7.8
Oct. 15, 1923	123,349,786.7	18,500,000,000.0	6.8
Nov. 15, 1923	82,844,720,743.0	11,000,000,000,000.0	8.4
Nov. 20, 1923	180,000,000,000.0	18,000,000,000,000.0	10.0

Source: www.gold-eagle.com/editorials_02/phillips121302pv.html.

EXHIBIT 1.5 Brazil—Inflation Measures 1987–1995 (Percentage Change over a 12-Month Period)

Year	Consumer Price Index[a]	Wholesale Price Index[b]
1987	367.1%	400.7%
1988	891.7	1,055.4
1989	1,635.9	1,732.4
1990	1,639.1	1,425.3
1991	458.6	471.9
1992	1,129.5	1,160.9
1993	2,491.0	2,635.7
1994	941.3	1,031.4
1995	23.2	6.6

Source: Boletim do Banco Central do Brasil (BCB) 32, no. 3 (March 1996).

[a]IPC-Fipe.

[b]Total wholesale price index.

Longevity

Exhibit 1.6 shows the increase in female life expectancy. Starting about 160 years ago, female life expectancy began to increase by one-quarter of a year for each year that passed. Men have not done quite as well. The researchers who assembled these life expectancy data characterize them as the "most remarkable regularity of mass endeavor ever observed," and "an extraordinary constancy of human achievement" (Oeppen and Vaupel 2002). Even if the increase in life expectancy slows or stops, most of today's retirees are financially unprepared for 30 years or more in retirement. This increase in life expectancy has changed the work and retirement dynamic throughout the world.

Improvements in nutrition and medical treatment have extended the period the average individual can expect to enjoy good health and the ability to cope physically with a diverse environment. Neither extrapolating the trend reflected in Exhibit 1.6 to greater longevity nor predicting an abrupt end to the trend is necessarily the appropriate way to plan for longevity. The growth in the number of retirees already has been so great that the active workforce will not be large enough to provide goods and services to maintain current lifestyles.

A generation or two ago, in an environment where life expectancy for an adult was not many years beyond the normal retirement age and the number of healthy centenarians was small, the extreme longevity of a few

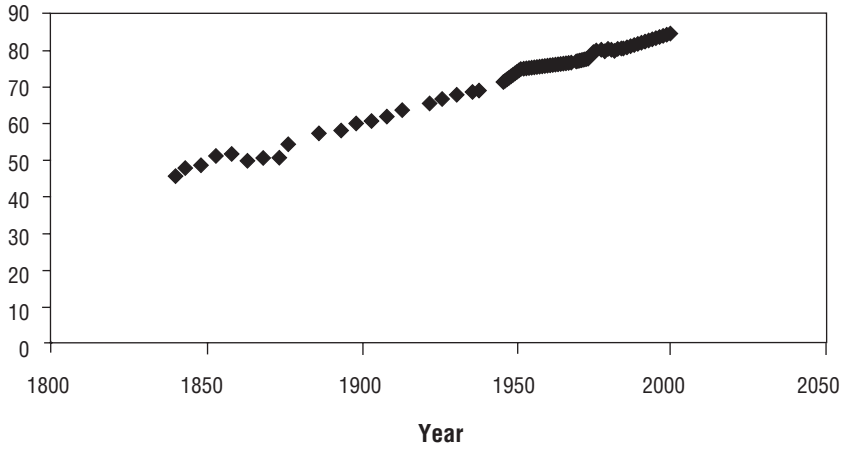

EXHIBIT 1.6 Female Life Expectancy Has Been Increasing by One Quarter of a Year per Year for 160 Years

Data source: Jim Oeppen and James W. Vaupel, "Broken Limits to Life Expectancy," *Science* 296, issue 5570 (May 10): 1029–1031.

retirees placed little or no strain on the retirement savings and investment system. Trustees of defined benefit pension funds now find the growth in plan liabilities overwhelming the growth in assets. The architects of these plans did not anticipate the dramatic increase in the lifespan of retirees receiving payments from the funds. Planning for a possible retirement period of as long as 50 years for a significant number of retirement plan beneficiaries is a great deal more complex and much more risky than planning for a retirement period that was unlikely to extend beyond 15 years for more than a small number of plan beneficiaries. It is no accident that only 17 percent of the private sector workforce is covered by defined benefit plans today, down from 44 percent just 30 years ago (Clowes 2004).

The Pension Benefit Guaranty Corporation (PBGC) pays only a fraction of the benefits the employer promised to the higher-income beneficiaries of failed pension plans turned over to the PBGC. In spite of its ability to reduce the benefit obligation, the PBGC is sinking under its burden. A few government officials are beginning to address the growing public employee pension liability that affects taxpayers from the federal level down to some small school districts with inadequate tax bases.[2] The problem for society is compounded when the lengthening expected retirement period coincides with growth in the population approaching retirement.

Exhibit 1.7 shows **median** and **mean** pretax income and net worth by age range for heads of households in the United States. Although the Forbes 400 have been systematically removed from the data set, the mean net worth after age 65, let alone the median net worth, is not great enough to finance a long retirement in the style most of us would choose.

EXHIBIT 1.7 Pretax Income and Net Worth Median and Mean by Age Groups (2001) ($ Thousands)

	Annual Pretax Income		Net Worth	
Age of Family Head	Median	Mean	Median	Mean
Less than 35	$33.4	$44.2	$ 11.6	$ 90.7
35 to 44	51.4	77.1	77.6	259.5
45 to 54	54.5	93.2	132.0	485.6
55 to 64	45.2	86.9	181.5	727.0
65 to 74	27.8	58.1	176.3	673.8
75 or more	22.4	36.7	151.4	465.9
All families	$39.9	$68.0	$ 86.1	$395.5

Note: Excludes the present values of defined benefit pension and Social Security entitlements and unpaid capital gains taxes.

Source: Federal Reserve Bulletin, January 2003.

Time Diversification Is a Fallacy—The Risk of Speed Bumps

In an environment where longevity has significantly increased and shows no sign of abating, the possibility of outliving one's assets cannot be ignored. As a practical matter, no institution—not even a sovereign government—can provide absolute protection for retirement assets and guarantee adequate returns on those assets for the expected lifetime of many individuals alive today. The popular notion that risk declines over time because good years and bad years tend to cancel out and the long-term return will become increasingly stable over time is misleading. In fact, the *accumulated return* on any investment becomes *more* uncertain over time. The effect of high risk on expected return was illustrated in Exhibit 1.2. A retiree must also consider that, in contrast to the accumulation phase of the investment process, retirement will require drawing down assets over time to meet living expenses.

If the risk of investing for the long run did decline because of some combination of time diversification and return compounding, then we should be able to buy insurance against a shortfall in a savings/investment program. If risk declines over time, that insurance should cost *less* the longer we live. In fact, that insurance, a put option on the forward value of a portfolio, actually costs *more* as the term of the insurance increases.

A clear picture of the uncertainty in the long-term value of one's retirement portfolio can be gleaned with retirement planning software provided by Financial Engines and by Advisor Software, Inc., among others.[3] This software helps investors gauge the amount of annual retirement income they can count on over their remaining life expectancy with, say, 95 percent confidence that they can withdraw a target amount each year. The analysis from the software is based on actuarial tables for life expectancy. Of course, the date of everyone's expected death recedes by a significant fraction of a year for each year of life that passes, just as one's remaining assets will decline if drawdowns to meet living expenses exceed annual dollar returns. The 95 percent confidence level for covering a specified minimum distribution will also change after a period of adverse market performance.

Software tools for planning a living standard in retirement are very useful and are a marked improvement over anything available to individual investors even a few years ago—but investors who want to understand the risk of outliving their assets must understand the limitations of such software. No savings or investment program and no planning software can offer 100 percent assurance that you will not outlive your assets.

Then there is the problem of fat tails.

Fat-Tailed Risks

The normal distribution in Exhibit 1.8 is one of the wonders of statistical analysis. The normal distribution illustrates the behavior of a wide range of natural phenomena. Whether someone is flipping coins, counting the average number of kernels on ears of corn, or measuring the distribution of investment returns, the normal distribution illustrates a pattern found in a broad range of natural and human-influenced phenomena: namely, that a large percentage of observations are concentrated near the mean of the distribution and the number of observations declines more or less in the manner illustrated in Exhibit 1.8 as one moves to either higher or lower levels.

The normal distribution curve never really touches the baseline. There is always some probability of an observation beyond, say, five or six standard deviations above or below the mean, but such extreme observations are rare in a truly normal distribution. For example, only 0.13 percent or 13 events out of 10,000 occur beyond three standard deviations away from the mean in each direction. Yet a wide range of phenomena display a larger number of observations in the tails of the distribution than the mathematics of the normal distribution predict. Many actual distributions have what are called "fat tails." This phenomenon is particularly well documented in the behavior of securities markets and, of course, for a potential retiree it is particularly dangerous when the market return's fat tail occurs

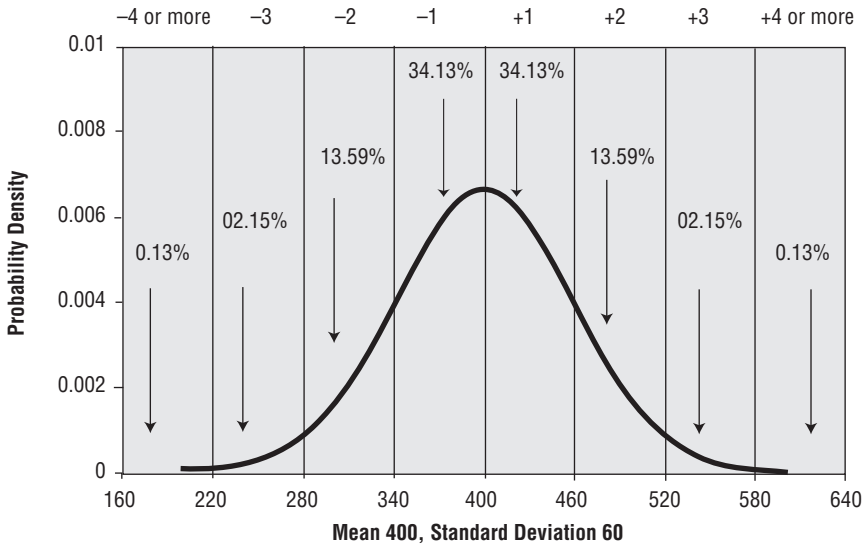

EXHIBIT 1.8 Generalized Normal Distribution

on the left-hand side of a portfolio return distribution. Exhibit 1.9 overlays a **fat-tailed distribution** on the normal distribution to illustrate the increased frequency of extreme outcomes under some circumstances.

The 1987 market crash is often described as a seven-standard-deviation event. By the scale of the normal distribution in Exhibit 1.8, this means that we should expect to see such an event less than once in the entire span of human history. In fact, however, extreme events are much more common than the normal distribution predicts. The problem of fat tails is not with statistics. The problem is simply that many real-world distributions—market returns being one of them—are influenced by a wide range of forces. Among the factors affecting a securities market return distribution are events that could wipe out the value of the entire market, such as a war, an extreme natural calamity, or a political change leading to confiscation of privately held assets and/or the abrogation of government promises. The best retirement planning software in the world cannot anticipate the impact of a specific fat-tailed event on the value of your retirement portfolio, and, of course, insurance against many types of fat-tailed events is simply not available. If it were available, there is no chance that the guarantee of the entity offering the insurance would survive *every* possible fat-tailed event.

This discussion is not meant to be disconcerting; it simply reflects the limits on the range of certainty in any financial planning.

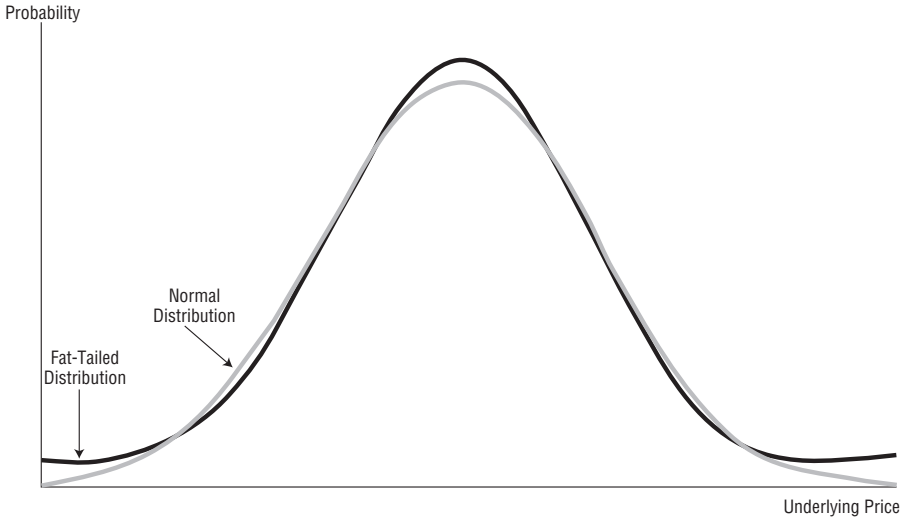

EXHIBIT 1.9 Comparison of Normal and Fat-Tailed Distributions
Source: Gary L. Gastineau and Mark P. Kritzman, *Dictionary of Financial Risk Management*, John Wiley & Sons, 1999.

What Is an Appropriate Expectation from an Investment Program and from Financial Planning?

Software programs can provide an estimate of the probability that investors will achieve their retirement income objectives under certain scenarios. Such an estimate is just that: an estimate of the probability that they will meet their objectives *if the investment environment in the future is broadly similar to the investment environment in the period on which the assumptions of the software are based.*

This software can be extraordinarily useful and extremely revealing to the investor who takes all of its lessons and implications to heart—and understands the risk of fat tails. First, the software reveals that the further out in time one looks at the results of a realistic long-term saving and investment program, the more diverse the possible outcomes are. As the extreme high gets higher at a more distant horizon, the extreme low gets lower at that same horizon. More importantly, the risk of a catastrophic outcome resulting from a market crash or some combination of adverse economic developments *never completely disappears.* The point of this discussion of the characteristics of long-term investment results is not just that there is no totally safe harbor, but that continuing diligence is essential.

A financial planner can help an investor understand and deal with the uncertainty that is an inevitable part of the future. From a plan implementation perspective, the principal effect of growing longevity is that a family must maintain and extend the usefulness of its human capital. Older members of the household should expect to continue to work to earn a significant part of the family's income after they reach what was considered a normal retirement age for their parents.

The expected term of a family's income needs in retirement planning is far longer than it was a few years ago. Yet investments that can provide adequate protection from inflation, from changing asset values, and from greater longevity are less available and less reliable today. The U.S. government may reopen the issuance of 30-year Treasury bonds, but the longest new issue Treasury security is now the 10-year bond. Insurance companies offer fixed-rate annuities for the balance of your lifetime, but they have to invest the amount you are paying for the annuity somewhere, and their investment opportunity set is only modestly broader than what is available to you as an individual. If their reinvestment risk is higher because they cannot buy 30-year or longer investment-grade bonds, your risk that they may not be able to meet their commitment to you is also higher.

Employers are increasingly declining to offer **defined benefit pension plans** to new employees, and new companies are not offering these plans at all. General Motors has been described as a pension plan with an

automobile company attached. When and if a corporation turns its pension liabilities over to the PBGC, the maximum amount pensioners dependent on the PBGC can receive is often a fraction of the amount originally promised to them by their employer. In general, companies with defined benefit pension plans are old economy companies with older workforces and lower rates of sales and earnings growth. More of their pension plans will be turned over to the PBGC as time goes by.

Do Not Despair

The message of this chapter is not a cause for despair. There are a number of things that an investor can do to increase the probability of good investment results and increase the likelihood of attaining the investment objectives necessary for a comfortable lifestyle into the indefinite future. While I will offer a number of suggestions, the topic I stress is picking the best funds. By the best funds, I mean those with the highest probability of delivering good results without adding to the other risks that are an inevitable part of the world we live in. The basic idea is to find funds with lower costs and/or higher gross (pre-expense) returns. These funds should permit investors to maximize their returns relative to risk. A 2 percent a year return improvement from careful fund selection is a realistic expectation for most investors. An improvement of this magnitude can lead to a very satisfying improvement in long-term performance, as the comparison of financial outlooks for Joe and Pete in the Introduction illustrated.

The relatively simple comparison illustrated in Exhibits I.1, I.2, and I.3 shows the value of a slightly better return. Most investors can achieve the same return improvement as Joe simply by reducing expenses such as:

- Operating expenses.
- Sales expenses or fees.
- Transaction costs embedded in a fund's management process.
- Taxes.

In contrast to many of the exhibits in this chapter, Joe's example shows substantial reason for optimism and illustrates the importance of improving returns by small amounts.

The next several chapters cover some of the basic issues of financial planning in the context of the material discussed in this introductory chapter:

- The relative attractiveness of separate investments versus pooled or collective investments like funds.
- Basic information about funds.

- Structuring an investment program to minimize tax expense.
- The range of choices available.
- What choices seem likely to provide the best results.

Later chapters offer a fairly extensive critique of the products currently offered by all segments of the fund industry and even some suggestions on how funds might be improved to provide better results for investors. I show how investors should go about finding funds likely to deliver the best possible results at whatever level of market risk they choose.

I examine the relative merits of active and passive investments as reflected in actively managed mutual funds and index funds. Passive investment in a well-designed and well-executed index fund can be an extremely attractive investment strategy. In contrast to most commentaries on fund choices, my viewpoint is that most of today's index funds are poorly designed. The best index funds available are far superior to the average index fund. Furthermore, I believe there can be a role for active management of some portfolio segments, but active managers likely to deliver superior results are hard to find.

Summary

The purpose of this chapter and Chapter 2 is to set the stage for a nontraditional approach to the selection of mutual funds and ETFs. No fund selection decision takes place in a vacuum. It is part of a complex investment process that begins with basic financial planning. Many of the choices that investors make—especially the amount of risk that they accept—will be determined by a very personal decision-making process. This chapter and Chapter 2 describe the earlier stages of that process—before specific fund decisions are part of the picture. The macroeconomic and demographic issues discussed in this chapter should be part of any individual's thinking about the future.

Supplementary Information

The popular press and many specialized publications have done a good job of highlighting some of the long-term issues that stem from increased longevity. Shoring up Social Security and corporate and government employee pension plans is a topic that should be of concern to everyone—as retirement plan beneficiaries and as taxpayers. Longevity also has serious implications for inflation and for the value of investment portfolios. While the issues are long-range issues, the focus of policy changes

and the debate should be monitored by every investor. Two particularly thoughtful books are:

Kotlikoff, Laurence J., and Scott Burns, *The Coming Generational Storm: What You Need to Know about America's Economic Future*, Cambridge, MA: MIT Press, 2004.

Peterson, Peter G., *Running on Empty: How the Democratic and Republican Parties Are Bankrupting Our Future and What Americans Can Do about It*, New York: Farrar, Straus & Giroux, 2004.