CHAPTER 1

The Realities of Financial Planning

Confidence is the feeling you have before you really understand the problem.*

Very few people even know what a financial plan is, much less actually have such a thing. Before they retire, most people just try to save a reasonable amount of money, without any real understanding of whether it will be enough for retirement. After retirement, most people expect to live on Social Security, pension payments (if they get them), and the interest and dividends from their investments. Sadly, they may quickly discover that these funds are inadequate for their needs and all-too-easily demolished by a fluctuating market and unforeseen expenses. The problems are exacerbated for early retirees, who have more time to spend money but begin retirement with less of every financial resource: less Social Security, smaller pensions, and fewer savings. A long-delayed visit to a financial planner to get some help is inevitably followed by the question, "Why didn't I plan for this long ago?"

Everybody Needs a Plan

Most people need to do some planning if they expect their money to support their desired retirement lifestyle and last until they die. It's at least as important as an annual dental appointment or periodic physical examination. On reaching his 100th birthday, comedian George Burns said, "If I knew I was going to live so long, I would have taken better care of myself." He didn't have to add the word *financially* to that quote, but the vast majority of people would.

People who have not yet retired need a preretirement plan. That's a plan that

*Ogden Nash.

tells them where and how much to save to meet a retirement income goal. People who have already retired need a postretirement plan. That's a plan that tells them how to control their financial matters so that their investments will support them until they die. This book provides answers for both groups. Further, it shows how you can better grow your investments in either situation.

Although few people actually take the time to use them, there are an incredible number of planning methods available. They can be found in newspapers, magazines, books, and mutual fund publications, as software programs, and on the Internet. I hate to say it, but it's probably better to use even the worst of these than to have no plan at all. But what I've found is that even the best of them can lead you to a false sense of security about your future.

For several years I compared a large number of the most popular retirement planning programs using representative data for an imaginary preretiree. The results were awful. Some of the programs said that this person already had saved enough to retire comfortably, even though retirement was 20 years away. Others said he would have to save over a quarter of his income every year to meet his retirement goals. Different retirement planning programs produced the opposite results, even though they were using exactly the same data! My findings were incorporated into an article written by Vanessa O'Connell and published in *The Wall Street Journal,* December 27, 1996. You can check it out in the library and see how your favorite financial planning system measures up. I updated that work for another article published in *The Wall Street Journal,* November 30, 1998, which was written by Tom Herman. You can also find the details of these studies on my web site, www.analyzenow.com.

The sample cases I used to test the various financial planning programs were actually pretty simple compared to real-world conditions, since they tested only the math involved in the various programs and assumed that investment growth and inflation were the same values each year. More recently I have been doing work with real-world models, where the changes in security values and inflation come from actual historical profiles. My work led me to make some startling discoveries that were, for me, a real epiphany. One is a concept I call *reverse dollar cost averaging,* a technique that brings a vital element of reality to your financial planning. Another is a technique I call the *retirement autopilot method,* which works to smooth out the bumps in the financial planning world in the same way an autopilot works to counter turbulence on an airplane. Although we'll cover these items in detail later in the book, let's look briefly at the concepts now.

Perhaps you have heard of dollar cost averaging. That's a phenomenon that benefits savers who make regular savings deposits. Deposits made when the market is low generate more growth than an equal number of deposits made when the market is high. The net result is a larger overall growth rate than would be predicted using steady market conditions. Unfortunately, I found that the opposite happens when retirees take money out of their accounts on a reg-

ular basis, which is, of course, exactly what they need to do. Retirees effectively receive a lower interest rate in a fluctuating market. Hence the term *reverse dollar cost averaging.* This is *really* bad news when it comes to retirement planning projections. Unfortunately, all available long-term return data are based on the compound growth you would see in a preretirement situation and not the compound reduction you will experience in a postretirement situation. This means that you should really use a much lower rate of return in your postretirement calculations than traditional planning publications recommend. We'll look at this in detail in Chapter 4.

The second part of my retirement planning epiphany was the discovery that I could apply some airplane control technology to financial planning using a "retirement autopilot." Again, this is something that we'll review in more detail later, but consider this analogy. The autopilot in an airplane makes constant course corrections, automatically updating the plane's sense of direction and smoothing out the bumps during gusty conditions. Without the autopilot to compensate for various outside factors, the plane would behave more like a loose balloon on a windy day. Similarly, without the retirement autopilot, retirement plans soon go awry in fluctuating market conditions. When you finally get around to checking on your progress, you find that you must make changes so large your resulting recommended saving and spending levels bounce around just like the loose balloon. The retirement autopilot uses compensating equations to provide some stability and absorb some of the shocks that the outside world will inevitably deal you.

Real-World Planning Problems

In general, the biggest problems with most retirement planning methods are oversimplification and optimistic assumptions. The quickie plans you'll find on the Internet are often the worst, but those gleaned from many financial magazines run a close second. Let's take a look at the most common mistakes.

Mistake 1. Adding Apples and Oranges

For some reason beyond my ken, the authors of many retirement planning texts and computer programs believe that all pensions include cost of living adjustments (COLAs). Of course, that's just not true—only a few people are lucky enough to get a pension increase every time the cost of living goes up, and even then the increases are often capped at perhaps 2 or 3% per year. Still, many analysts persist in perpetuating this error in their calculations by claiming that you can determine the amount of income you'll need by doing a gap analysis. The gap to which this refers is the difference between the income you'll need during retirement and the sum of your Social Security and pension payments. The problem is sticky because in one sense the planners are right—it's not bad to do a gap analysis, but it needs to be done correctly. Theoretically, the gap would

then be funded or closed by smart investing. But any explanation of a gap analysis must go farther because it can lead to dangerous misunderstandings about our money.

To explain means going back to grade school math. At that time you probably heard a teacher say, "You can't add apples and oranges." Likewise, Social Security and a fixed pension are two entirely different fruits. Social Security has a COLA. Fixed pensions do not. Therefore, they don't belong together in any kind of arithmetic, not to mention a calculation for retirement planning.

The real purchasing power of the lucky few who do have a COLA pension compared to those with fixed pensions is shown in Figure 1.1 for two arbitrary starting years: 1950 and 1960. The details will be different for any particular starting year, but the overall results will be the same. What needs to be understood is that a fixed pension is worth only a fraction of a COLA pension or Social Security after considering inflation. Therefore, you can add only a fraction of a fixed pension to your Social Security income in an accurate gap analysis.

Mistake 2. Assuming the Real World Is Smooth

To illustrate this mistake, let's consider an example that happens all too often. Mary is age 55. Her husband just died leaving her with savings and an insurance payment that we'll say totals a handsome $1 million. She goes to her accountant who is helping her settle the estate and asks for financial help. He asks her some questions and then recommends that she put 50% of her investments in a stock mutual fund and 50% in a long-term corporate bond fund.

Then Mary asks her accountant how much she can spend each year from her

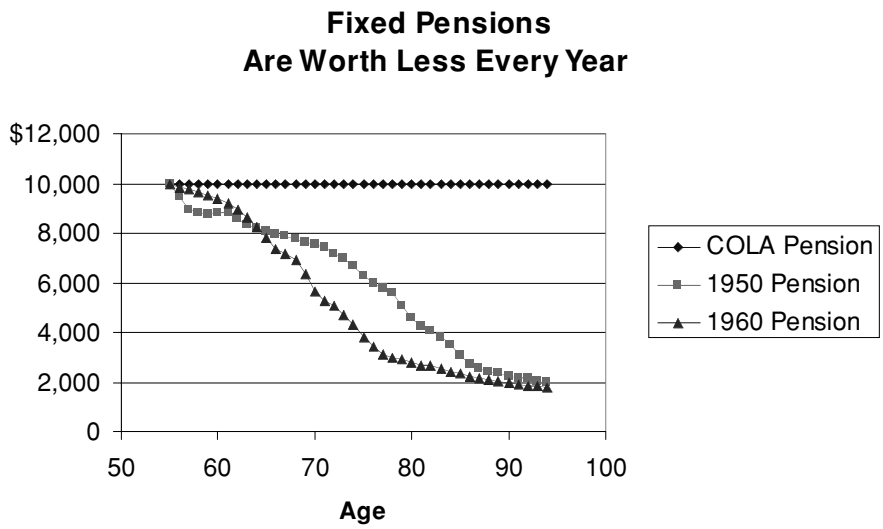

FIGURE 1.1 The actual value of a COLA pension compared to the real value of fixed pensions starting in two different years, after inflation has taken its toll.

investments. The accountant turns on his computer and brings up his latest version of a retirement planning program. He inputs Mary's age and the financial information. He asks Mary how long she thinks she will live, and together they decide to enter age 85 to represent her life expectancy. The program will let him enter his own assumptions about how the investments will perform, but suggests a certain return based on long-term averages of corporate long-term bonds and the most popular index for stocks, the S&P 500. (This is the Standard and Poor's index for the 500 largest companies in the United States, which included only 90 companies until 1957.) The accountant inputs the suggested composite return for this mix of bonds and stocks. The program also suggests a long-term inflation rate that the accountant also accepts.

The accountant hits the Enter key; the computer goes through the analysis in a fraction of a second, and shows two results on the screen. The first is how much Mary can spend this year as well as in the years that follow, assuming that Mary increases her spending each year by the amount of inflation. The second result is a plot showing what will happen to the total balance of Mary's investments each year. Then the program asks whether the accountant wants to see the results in terms of future dollars (which are worth less each year because of the inflation assumption) or with an inflation adjustment that shows results in the form of today's dollars. Knowing that Mary will get a better perspective of the future, he chooses the latter, and then prints the investment history on the screen. That's represented by the "Theory" line in Figure 1.2. At this point we're going to keep the example simple by not including Social Security and taxes.

The theoretical inflation-adjusted investment line from the retirement program is nice and smooth, just like the imaginary world represented by the com-

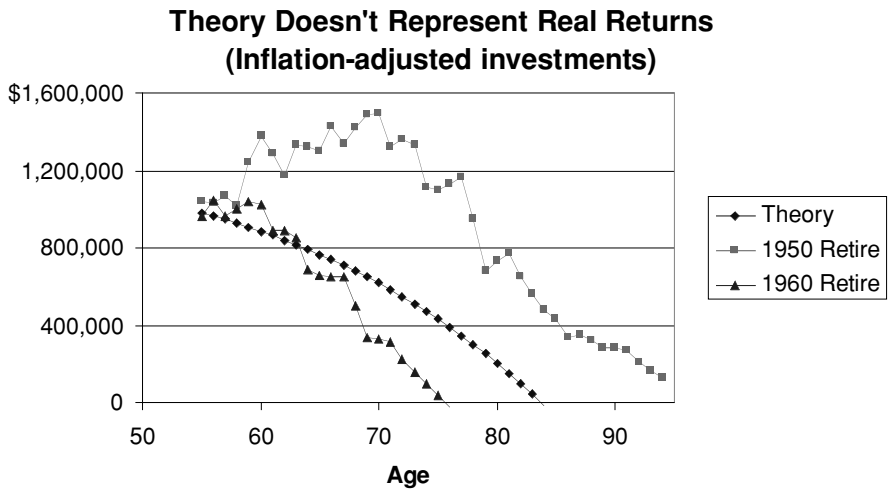

FIGURE 1.2 Inflation-adjusted investments are substantially different when comparing theory to real annual returns for retirement beginning in 1950 or 1960.

puter model where inflation and the return are the same year after year. The money runs out in 30 years, that is, on Mary's 85th birthday. Now the people who developed this computer program know that the returns represent an average of all the returns from 1926 to the present, and that about half the time the returns will be higher and half the time the returns will be lower. So the program includes some small print noting that these returns may not represent what may happen in the future.

In fact, there is a substantial difference in what would have happened in the real world if Mary retired in different periods of history. Figure 1.2 shows the performance of those same investments if Mary would have started her retirement in either 1950 or 1960. In the former case, she would have run out of money about 10 years earlier, far short of the time she wanted her money to last. In the latter case, she could probably leave some money to her children.

These real-world cases are based on my *The Real World* planning program (available from my web site at www.analyzenow.com), which uses copyrighted historical security data from Global Financial Data (find them at www.globalfindata.com). We'll use this program and the security data throughout the book to illustrate examples.

The smooth line data from the accountant's computer program are far different from those in *The Real World,* and they'll get even farther away after we consider some of the other problems that the real world presents. The problem illustrated here is that using average returns is just too misleading. It's like the man who drowned in a river that averaged only 1 foot deep. He still drowned, no matter how shallow most of the river was and how favorable a time it was to be in the water. At the same time, it makes a tremendous amount of difference to consider, as you estimate your retirement finances, the kind of economic environment you are wading through; there are deep spots in the river in any season, but there will be many more when the real storms come.

If Mary retired in 1950, she would have had three smashing years where investments increased by 52, 30, and 40%, even after adjusting for inflation and 1% investment costs. Less fortunate people who retired in the late 1960s were pummeled by market losses of 15, 23, 36, and 14% and another 14% after the same inflation and cost adjustments. Holders of small company stocks were hurt more. And bonds, supposedly the safe and solid investment, had loss years during the 1960s, nearly 50% of the time after considering inflation's toll.

It gets worse—especially if you are the owner of only a small number of stocks rather than the many stocks held in a mutual fund. If you have only one stock, be prepared for a wild ride. By spending just half an hour watching CNBC some morning, you'll see the sometimes painful gyrations of a free market swirling in volatile peaks and valleys—some deeper than is congruent with anyone's sense of well-being. Yet conventional planning methods, as shown in the Theory line of Figure 1.2, show the future as smooth as a baby's bottom.

There is one other point I want to make about Figure 1.2 before leaving it. At

age 81, in the 1950 scenario, Mary's investment balance was almost $800,000 in inflation-adjusted dollars. If the dollars were not adjusted for inflation, Mary would have seen a chart showing about a $3 million balance. She could have been easily misled, but her accountant helped her avoid that trap. Nevertheless, investment firms, when showing investment performance, persist in showing the performance of their securities as if Mary's balance was really going to be worth $3 million.

That same kind of exaggeration applies to investment returns. Say you get a 6% return on your investment. Now let's say this year's inflation is 4%. You are really only netting 2%. In addition, all mutual funds, even no-load funds, have investment costs, which together with taxes and inflation can wipe out any real growth.

Mistake 3. Ignoring Investment Costs

Indexes used to measure stock and bond prices are based on a size-weighted average of the prices of the particular group of stocks or bonds represented by an index such as the Dow Jones Industrial Average of 30 very large companies, the S&P 500 for 500 large companies, or the Russell 2000 for 2,000 small companies. Since these are averages, you'd think that at least half of the mutual funds would be above the average and the other half would be below. In fact, because funds have large research departments that try to sort the bad investments from the good, you would think the average fund would do considerably better than the indexes' averages. Wrong! More than three-fourths of the stock funds fail to reach the average of the S&P 500, even though they can pick from over 5,000 stocks. Why? Because they must pay big wages to many people, do research, provide significant administrative support to their clients, pay for their impressive buildings, and so on. So the mutual funds either charge the costs directly in terms of a "load" when you purchase or when you sell, or take a little bit out all of the time, as do so-called no-load funds. We call those "costs" in this book. You cannot buy or sell an investment without paying someone to assist you, even if it's not in a mutual fund. And, on top of the cost of obtaining or disposing of the investment, you may pay an agent, advisor, or money manager a certain percent of your investment value each year. This adds to the cost.

Since very few funds were actually beating the averages, a number of mutual fund companies started marketing bundles of stocks or bonds that are contained in a particular index. That eliminated the research costs and the need for a highly paid guru to make the final buy and sell decisions. These index funds generally outperform the average funds but still don't quite reach the average, because there still are costs. Index funds' costs are most often under 1% of the fund's value. A small number are under 0.25%, but some mutual funds have costs in excess of 5%.

Yet people representing financial firms really try not to talk about the costs. Unfortunately, that's often true of planners and planning programs as well. I've

attended numerous seminars given by planners, financial firms, and money managers who are seeking additional business. They will highlight examples showing how their client's money would grow under their auspices by using examples from stock and bond indexes. They make no mention of the costs in the mutual funds they recommend, nor their own costs. I've witnessed presentations by firms charging thousands of dollars just to recommend some investments who then invest the client's money in high-cost mutual funds with large commissions, and then charge an annual fee of 1 to 2% on top of that. The poor client will be lucky to get much more than from a bank.

So how does this affect Mary? She went to an accountant who charged a small one-time fee. He recommended she get a balanced fund with half stocks and half bonds. The fund she selected had a fee of 1.5%, which is a little high for someone who would shop around a bit, but typical of a large number of investors. It's also typical of money managers, who often charge an annual 1% fee and select funds with costs of 0.5%, which is decidedly below the average cost of mutual funds. Suppose that fund had exactly the same underlying investments as the one in Figure 1.2. Let's see what happens in Figure 1.3 as we include costs to add some more reality. Remember that the 1.5% cost really represents a 1.5% reduction in the investment's earnings each year.

Figure 1.3 has some valuable lessons. The accountant used the computer program's recommended return for the investment mix he selected. But that return was based on a long-term index for stocks and another for bonds. The accountant failed to reduce the return for his theoretical case by 1.5%. What happened to the real performance? It plummeted. If Mary had retired in 1960, the spending levels recommended by the computer would have exhausted her

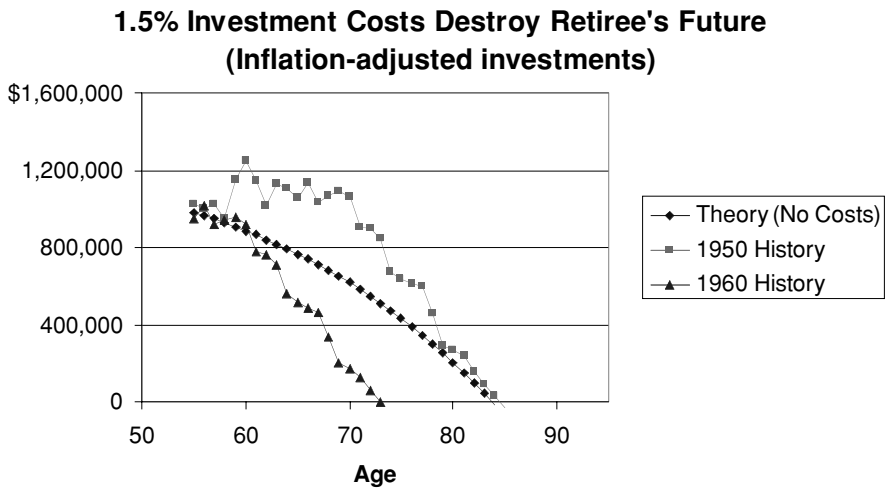

FIGURE 1.3 Inflation-adjusted investment balances, after accounting for investment costs, decline quickly.

funds at age 73! Mary's investments only would last her desired 30 years if she had been lucky enough to retire in a year like 1950.

Mistake 4. Not Defining Your Terms

It's important to know when to use before-tax returns and when to use after-tax returns. Returns are the annual growth of your investments, assuming all interest and dividends are reinvested. A fixed bond that pays interest generally has a return about equal to the interest rate. Stocks have a return about equal to their annual dividends plus any annual growth in the per-share price. A stock fund with reinvested dividends that began the year at $100 and ended the year at $110 would have a return of 10%. Before-tax returns represent the growth of investments without any tax considerations. You get before-tax returns from tax-exempt municipal bonds and the growth in a Roth individual retirement arrangement (IRA), assuming there are no state taxes. (Although most of us refer to IRAs as individual retirement *accounts,* the IRS uses the word *arrangement* in its definition.) You also receive before-tax returns from a deferred tax account such as a 401(k) or IRA, although you will later pay ordinary income tax on the withdrawals. Investments other than tax-exempt and deferred tax investments are taxed as soon as dividends, interest, and capital gains are realized. Such taxable investments grow at the slower after-tax rate, but the taxes may be at less than ordinary income rates when long-term capital gains are involved.

Most planning methods that try to separate IRAs and 401(k)s from taxable accounts make a mistake in preretirement planning because their definition of savings is incompatible with the conventional wisdom that deferred tax accounts grow at a before-tax rate and taxable accounts at an after-tax rate. They define savings as only that part of wages (including employer contributions) that go into your investments. They fail to ask if you are paying taxes on your investments from your wages. Except for unusual circumstances, most of us pay taxes from wages, not investments, because we don't want to make quarterly payments or face large year-end tax bills. Some people even overwithhold so that they get some money back at the end of the year. Since the taxes on the taxable investments are not deducted from investments but are paid from wages, even the taxable investments grow at a before-tax rate.

Therefore, preretirement planning programs that are mechanized to use after-tax returns for taxable accounts should define savings differently—and I've only seen one that does this correctly. In such a case, the correct definition of savings includes both the deposits from wages and that part of your income tax that was due on investment returns but was actually paid from wages, not investments. How many of us, for example, know how much of our income tax is actually due to the income from investments? You could do a separate tax calculation without including taxable interest, dividends, and capital gains and then subtract that income tax from the full taxes you owe. But how meaningful is that

when the investment income changes your tax bracket? Albert Einstein was fond of saying that the most complex math in the world was on your tax return.

Very elaborate retirement planning programs, however, have been built around after-tax returns. I've written one of my own that got an extensive and favorable report by Ellen Jovin in the June 1999 issue of *Financial Planning,* a magazine for professional planners. The program is available from www.analyzenow.com. It's useful for people trying to make strategic decisions such as how to select IRA distributions or whether to get a reverse mortgage or buy long-term health care insurance. It requires very detailed tax and other information, including depreciation on investment real estate. Hundreds of professionals use the program, as do many laypeople, but the detail only helps to make better strategic decisions when comparing one alternative with another. With the possible exception of those with large real estate investments, it does not give a more accurate projection of how much you should save before retirement or how much you can spend after retirement than the very simple methods in this book. Nor does it offer the historical perspective we are introducing throughout this book.

There is also confusion in most retirement planning methods with regard to the analysis of debt payments and the associated definition of postretirement expenses. Most methods prefer to leave this as a fuzzy area and avoid bringing up the subject, but when mortgage or other loan payments are a significant part of your budget, you better use a method that competently addresses the subject. We are very specific in this book, so you won't have to puzzle over these issues.

For those few readers interested in delving into this subject, here's some more thought-provoking information: Most postretirement planning methods give you an annual budget that represents how much you will be able to spend each year in retirement. If the method asks you to subtract debt from investments, the budget does not include debt payments. If the method does not mention debt, the budget includes debt payments. In most preretirement planning methods any part of your debt payments that goes to paying off principal should be defined as savings, but I don't recall ever seeing that mentioned. In those preretirement programs in which you subtract debts from investments to determine a net investment value, at least part, if not all, of your interest payments should be considered savings. Net investment analysis assumes that debt is a negative investment. Therefore, debt interest reduces your returns. If you pay the interest to a creditor from your wages instead of from investments, the interest did not reduce your return.

Mistake 5. Using Calculations without Shock Absorption

The market goes up. The market goes down. Retirement planning gets whiplash. Lately, though, we've had so many successive good years that instead of whiplash we get complacency. People forget that a sudden drop in investment values plays havoc with their plans for the future. At some point it is inevitable that your plans will hit a brick wall, and then it's whiplash time again.

I don't know which is worse. Complacency leads to saving too little before retirement and spending too much after retirement. Preretirement whiplash abruptly changes both your future outlook and your projected savings needs before retirement. Whiplash after retirement does permanent damage to your future lifestyle.

I've been doing both before- and after-retirement planning for myself for many years now. One thing that always bothered me was the large change in my preretirement planning results from one year to the next when I compared how much I should save in the forthcoming year with the calculation made for last year. This is because when you near retirement, and your investments become significant, an increase in market value will obscure any need for additional savings. However, the reverse is also true. A significant market drop may make it impossible for you to reach your retirement goal with realistic annual saving.

I've found a comparable problem with postretirement planning, where the goal of the calculations is to find out how much you can afford to spend and still have enough investments to last until you die. Obviously there is no way to know what will happen to your investments in the future, but by looking back in history and plugging in what would have been my annual budget calculations during various periods, I found changes that would be very difficult to accommodate. One year my budget would be one amount, and the next it would be radically different.

It was then that I thought about the similarity of investment volatility to an airplane flying in gusty conditions. I used this idea to create the autopilot concept, and found that it worked very well in historical scenarios to provide a shock absorber and give some stability both to pre- and postretirement plans. Now I'm convinced that all financial plans need an autopilot, so it's built right into this book's methods.

You should not confuse the retirement autopilot with the work of statisticians in the financial industry who investigate the behavior of individual types of securities. This too involves a historical perspective, but its purpose is to characterize risk so that people can make better investment and allocation choices that suit their tolerance for market ups and downs. In contrast, the autopilot works with whatever mix of securities you choose and tries to give you the smoothest ride possible through the inevitable turbulence.

Mistake 6. Ignoring the Effect of Reverse Dollar Cost Averaging

Most people have heard of dollar cost averaging. If you methodically put the same amount of money into a volatile market on a regular basis, your investments will grow faster than the same deposits in a steady market that has the same long-term return. Reverse dollar cost averaging is just the opposite. When you take money out of an account on a regular basis instead of making deposits, more often than not you will achieve a lower effective return. We will demonstrate this in Figure 1.4, where $10 is withdrawn each year.

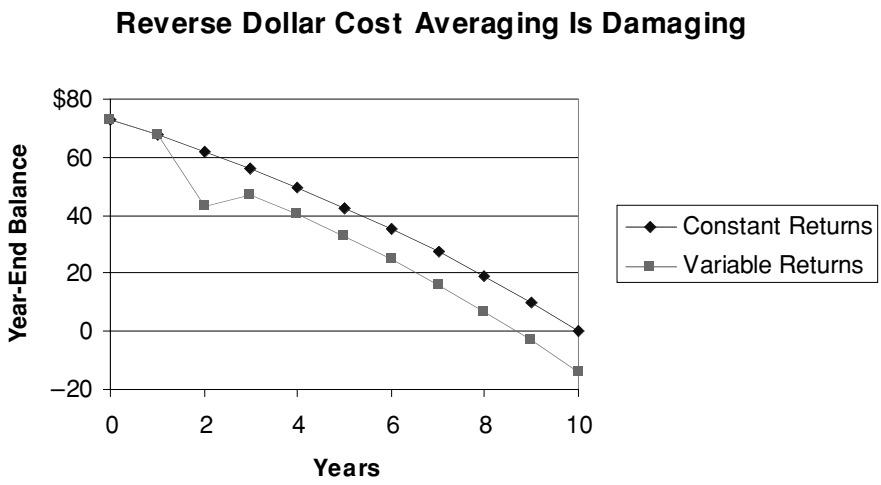

FIGURE 1.4 Reverse dollar cost averaging in action. When investments go down in a volatile market and you are withdrawing principal, you seldom bounce back.

Figure 1.4 has two lines. The upper one is labeled Constant Returns because the returns are the same every year. The bottom line is labeled Variable Returns because in two of the years the returns are different values. The average return in both cases is 7% over the 10-year period. However, in the case of the variable returns, the 23% loss we encountered in the second year is not fully compensated by the 37% gain in the third year, even though the average of –23% and +37% is still 7%. The net result is that the money runs out sooner with variable returns than it does when we assume constant returns. Since almost all planning methods assume constant returns, they optimistically predict that any investments will last longer than they will in the real world of varying market prices.

As a historical average, retirees effectively receive a return on their investments that is about 0.5% lower than that for preretirement savers. However small this 0.5% difference in return may seem on the average, this is another illustration of the man who drowned in a river that averaged only 1 foot in depth—because he happened to step in a big hole in the river bottom. Only in this case the "holes" are those many historical circumstances where there was a sudden drop in security values. It's one more instance where conventional retirement planning methods show a lack of concern for conservative, realistic planning. Neglecting the ups and downs in the market is just too cavalier for an analysis this important.

The Hazards of Postretirement Projections

It's not possible to do preretirement planning without first knowing how much money you will need after you have retired—it's the figure from which all the

calculations start. So we're going to review the major postretirement planning methods before we look at the preretirement ones. There are a variety of methods you can use to make your postretirement projections. We'll start with the worst of them, and end with the best.

Spend-All

The spend-all approach basically assumes that after retirement you will be able to live comfortably on your after-tax income, as long as you don't spend your principal. It is the oldest approach to postretirement planning; in fact, it was featured in the majority of the references I encountered when I first started doing my research in the 1980s. It was probably most applicable during the years after the depression, when inflation was very low and you could count on the stability of such things as preferred and utility stocks. In more recent times, the spend-all method is nonsensical if you have investments with a fixed rate of return, such as fixed pensions, bonds, or certificates of deposit (CDs) because they effectively go down in value every year due to inflation. It is also nonsensical when considering stocks or stock funds because dividends are a lot smaller than they were in the past, and funds distribute capital gains that, although income, vary appreciably from year to year and invade the basic principal.

As old as the spend-all method is, it did wisely advise shifting to more conservative investments such as bonds instead of stocks as you grow older. When life expectancies are short and savings are relatively small, a shift to bonds or CDs makes sense.

Inflation-Adjusted Spending

During the 1990s, planning methods based on financial planning equations, long used by professional planners, started showing up more widely in magazines, books, and, of course, computer programs. The equations account for returns, inflation, life expectancy, and the present value of your investments. The computer programs had the virtue of simplifying the math needed to make various calculations and eliminated the need to use multiple tables to manipulate data. Unfortunately, the initial software was pretty bad—most, for example, did not account for the difference between fixed pensions and COLA pensions. With time, the computer programs advanced, while the written literature seemed to stand still. Quicken, Vanguard, Fidelity, and others upgraded earlier flawed programs with so many versions that it was hard to keep track of them. Then came the enhancements that made provisions for irregular expenses or one-time receipts, such as cash from the sale of real estate. A few programs started to include provisions for a choice of allowable methods to meet the Internal Revenue Service (IRS)-mandated required minimum distributions (RMDs) from an IRA after age 70½. The Financial Engines web site examined the security investment situation statistically to show what your past (or purported future) chance

of success would be by using some dramatic scenarios representing your own combination of mutual funds.

None of these wonderful programs can predict the future accurately, and the level of detail in a method does not necessarily ensure a more precise outcome. No one is able to predict what inflation or the stock market will be in 10 or 20 years, for example. The detail offers the ability to compare what might happen if you make one set of choices with the results for another set of choices where both cases otherwise have the same assumptions. Such data may help you decide whether you should buy a long-term-care insurance policy or when it's better to sell some real estate or whether to get a reverse mortgage. You must make a number of assumptions in such detailed investigations, and those assumptions are unlikely to be exactly right. Nevertheless, you'll get some quantitative idea about your retirement prospects in different situations. One of the most popular features of the current retirement programs is their ability to use financial payment equations to determine how much someone can spend this year and still leave sufficient savings to provide for the future. These equations are also built into the financial calculators sold in office supply stores and most spreadsheet programs, such as Microsoft's Excel. You input your estimate of future returns less inflation, life expectancy, and the current balance of your retirement savings. The output is the amount of money you can withdraw from savings this year. Of course, in the computer solution, the money eventually runs out precisely at the end of your life expectancy, because the math is designed to work that way. This is the ideal world of the planner. In the real world, the money will probably run out much sooner because your real returns will not remain constant from year to year. Unless your real returns turn out to be substantially higher than you assumed in your initial calculations, you are in for a nasty surprise down the line. This is reverse dollar cost averaging at work.

An even more important flaw in the inflation-adjusted spending method becomes evident when people do such an analysis only one time and then actually increase their annual spending by the amount of inflation in each year, which is, of course, the basis of the theory. I've seen texts written by professional planners that make this recommendation and even some computer programs. This is always a disastrous thing to do, especially if the calculation happens to be made just before investments take a nosedive. But even when a drop in the market is not imminent, without annual adjustments to your data to allow for changing conditions, your savings are highly unlikely to last the rest of your life.

Fixed-Percent Withdrawals

Another popular postretirement planning method recommended by some planners is to withdraw annually some percentage, most often 6%, of the previous year-end investment balance to pay for the forthcoming year's expenses and taxes. For example, if your retirement savings totaled $100,000 at the end of the year, you would be able to spend $6,000 of your savings this year. The exact per-

centage is often argued by these planners and is also dependent on how your investments are allocated. Even if your portfolio has more stocks than bonds, conservative planners say you should withdraw only 4% to allow for some significant ups and downs in security values. Other planners, whom I consider to be optimists, say 8%. We'll use the more common 6% figure in our examples to illustrate the principle. Keep in mind that the size of this withdrawal should not be confused with the mandatory required minimum distributions after age 70½ for an IRA or 401(k). When the RMD exceeds 6% (or whatever percentage is being used for your budgeting purposes), the excess should be reinvested in some other account. We'll take a look at how this method compares to the others later in the chapter. You'll see that it can quickly lead to disaster unless you have a portfolio made up predominantly of stocks and a bull market most of your retired life.

Successive Annual Calculations

The financial planning method known as successive annual calculations requires you to establish an annual budget based on a new analysis each year using long-term market returns, long-term inflation, and a new life expectancy each year. The potential problem with this method is in the data you are putting in—remember, garbage in, garbage out. Sometimes the equations get fouled by overly optimistic returns and inflation assumptions when compared to historical records. I've seen cases where the returns came from one period and inflation from another to make the numbers look better.

The better applications of successive annual calculations account for the fact that the longer a person lives, the more likely it is that he or she will die at a still older age. In spite of added sophistication, computer programs using this method seldom account for the actual mutual fund costs, management fees, or broker charges of owning securities. Instead they use the market indexes directly, which, as we've seen, are seldom actually matched in real life because they do not include the costs that investors pay, either directly or indirectly.

Retirement Autopilot Method

This is the method used in this book, and there are several aspects that make this retirement planning method the one I believe to be the best available at this time. First, it uses new technology incorporating methods long used by engineers in dynamic systems. (We'll explain this in a moment.) Second, unlike most methods, it factors in that returns in retirement most often lose the battle to reverse dollar cost averaging and investment costs, and finally, it accounts for the fact that your savings must be used for things other than retirement. To the best of my knowledge, there are no other methods that use the autopilot, only a small number of very complex computer programs account for real-world returns in historical retirement scenarios, and only the more sophisticated computer programs account for the purchase of high-value items before or during retirement.

Let's take a look at how it works. In an airplane, an autopilot is an electronic device that can either control the airplane without the pilot's assistance or provide better performance even with the pilot in control. In a missile or space vehicle, it provides control at all times without any human intervention. An autopilot is mechanized so that it provides the smoothest ride possible as it guides the vehicle to its intended destination. Our retirement autopilot has the same goal, controlling your finances so that you save and spend at levels that are intended to get you through retirement smoothly and successfully.

An airplane is continually buffeted by wind gusts. Its autopilot cannot foresee the turbulence ahead, so it must continually compensate by adjusting the airplane's flaps, ailerons, elevator, rudder, and throttle. In the same way, your retirement autopilot cannot foresee future security prices and inflation, but it can make continuous small adjustments based on the ever changing economic climate. It can then adjust your saving and spending accordingly to provide as smooth a ride as possible, and to ensure that you don't run out of fuel (money) before you die.

If an engineer for your home heating system would have developed this type of retirement planning system, the engineer might have called this same system a retirement thermostat, because a thermostat does something similar, though much simpler. The thermostat controls the furnace to adjust for temperature changes outside the building. It doesn't know what the future outside temperature will be, but it still provides a comfortable and a relatively steady temperature inside the building. Besides facing an uncertain external environment, airplane electronics, building thermostats, and the retirement autopilot method all have something else in common: They rely on a concept called *feedback* by an engineer. The concept in all cases is to measure something that is happening and use that measurement to adjust the controls. So we "feed back" the information to the system. In the case of a thermostat, we feed back the internal temperature and compare it to the control temperature. If the internal temperature is too low, the system turns on the furnace until reaching the desired temperature. For an airplane we feed back the current heading (direction), pitch (nose up or down), or yaw (nose right or left) and compare it with the desired position. The system then adjusts the flight controls to bring the vehicle back into the correct position. With the retirement autopilot, we feed back the year-end balances of your investment account and last year's inflation and compare the new projection with an inflation-adjusted projection from last year. Like an airplane autopilot or thermostat, the retirement autopilot acts as a shock absorber to reduce the disturbances to your planned savings and/or spending levels that would otherwise result from turbulent external conditions.

Comparing the Different Methods

Now let's consider how the various postretirement plans work in the real world. To do that, we'll look at how a hypothetical retiree might have done using the

different methods if he or she retired during two different historical periods, beginning in 1955 and 1965. For simplicity's sake, we will assume the funds are in deferred tax accounts such as IRAs or 401(k)s. The amounts withdrawn are taxable, so the withdrawals always cover both living expenses and taxes. (Things in the real world get a little more complex, of course, and when it comes time to do your own plan we will also account for taxable investments, debts, and unusual expenses that do not repeat year after year, such as the purchase of new automobiles, a vacation house, and so on.)

Our imaginary retiree is retiring at 60 years of age with $1 million in investments for retirement. (We could have started with some other number, but a million is a nice round figure, and not a bad objective for many people. You could use a number with more or less zeros, but the results will be proportionately the same.)

Fifty percent of the investments are in a S&P 500 index fund. Each year the portfolio is rebalanced so that the amount of stock is 1% less than it was the year before, so 49% would be in stock the second year, 48% the third year, and so on. Ten percent of the investments are always in short-term Treasury bills or money markets (which have a similar interest rate). The remainder of the investments are in long-term corporate bonds. Each part of the portfolio has its own return. We will also subtract 1% from the market indexes for the costs of funds, brokers, agents, advisors, services, and bad timing. A few index funds and those using discount brokers sometimes fare better than 1%, but there are people who have costs in excess of 5%. (The planning chapters will let you pick your own security allocations and costs.) Let's examine what would happen under real-world conditions over a 30-year period as we let the different postretirement scenarios play out.

First, look at Figure 1.5. Each point on each line represents the amount of money the retirement plan calculations say can be withdrawn. In this deferred tax case, that is equivalent to a budget for living expenses and the taxes due on the withdrawals.

You can see that life would have been difficult for those who retired in 1955 and used the fixed-percent withdrawal method to take out 6% of their remaining investment assets each year. Shortly after committing to a budget of about $60,000, the budget starts a steep decline that finally levels off to roughly $13,000 in 1980. Thus, the one-time millionaire who initially spent $60,000 for living expenses and taxes will ultimately struggle at what would have looked like poverty level back when he or she started making those fixed-percent withdrawals.

The inflation-adjusted budget, on the other hand, nicely supports the retiree's original lifestyle for much of his or her life, albeit at a somewhat reduced budget compared with the fixed-percent withdrawal's initial $60,000. Even so, by 1980 the budget is down to zero! At that point, support would have to come from welfare or, with luck, some affluent and generous adult children.

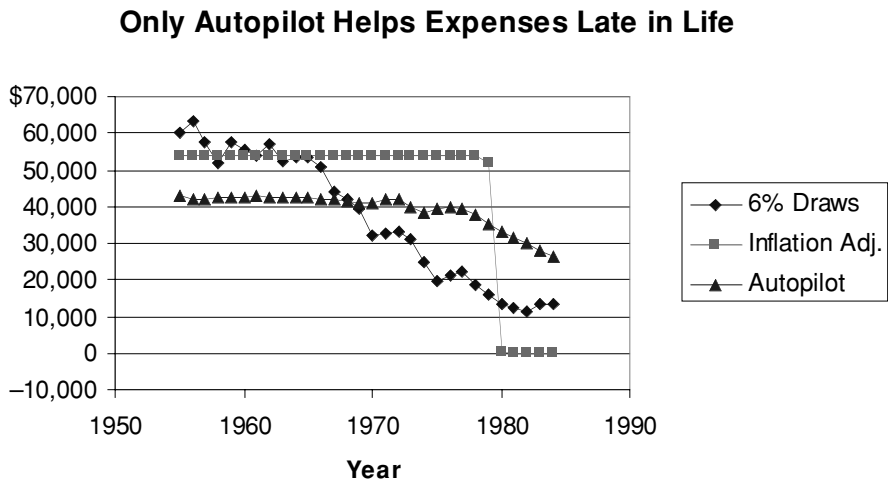

FIGURE 1.5 Annual withdrawals (adjusted for inflation) for three different retirement methods starting in 1955.

The autopilot budget starts a little lower but provides funds throughout what would reasonably be considered a practical life span—in this case, the person who left work at age 60 in 1955 would be 90 years old in 1985 and still would have a little money in the bank. In spite of security fluctuations, the autopilot calculations are relatively stable, making it possible to maintain a good lifestyle for many years without continual worry about what will happen in the market.

Retirees who used the inflation-adjusted spending method to calculate a budget would be able to maintain a very stable lifestyle—until 1980 when they flat ran out of money! That's age 85 for a person who was age 60 in 1955. We'll see next that a retiree who was 60 in 1965 would have run out of money at only age 75. That wouldn't be very comforting to all of the people over 80 years old we have in our community.

So, what would have happened to you if your retirement had started in 1965? As you can see in Figure 1.6, there would have been a rough time ahead no matter what method you used. Especially hard hit were those who tried to maintain their initial lifestyle by using the inflation-adjusted method, and went belly up at age 75. My father, who lived to be 96, started retirement quite comfortably, readjusted his budget numerous times in his life to severely reduce costs, and ultimately, no matter his frugality, had to depend on his children for support.

The autopilot budget was about $10,000 lower initially, but, compared to the person using the 6% withdrawal method, ultimately provided $5000 to $10,000 more each year for the person who retired in 1965—especially during the important middle years of retirement. The fixed-percent withdrawal method's budget left our millionaire at poverty level early in retirement. The inflation-

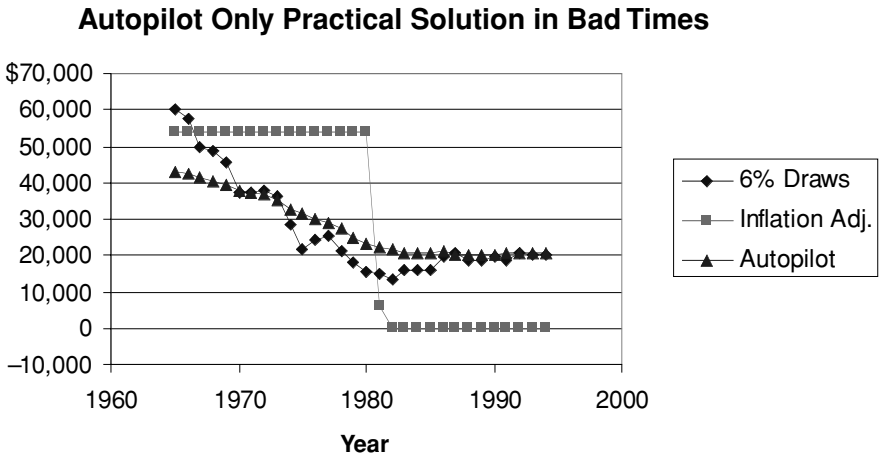

FIGURE 1.6 Annual withdrawals (adjusted for inflation) for three different retirement methods starting in 1965.

adjusted method would leave the millionaire in poverty for almost half of his or her retired life.

Unfortunately, one of the lessons we can draw from these examples is that there is no perfect way to overcome really bad economic times. The particular controls used by the autopilot system, however, were chosen so that, in most scenarios from past history, they would have provided the best possible results. If the future is anything like the past, the autopilot method will do so in the future as well. You can see that it's important to use a good planning method and, just in case, preserve some reserves for the unforeseen. Those who do this will be the eventual winners.

The Hazards of Preretirement Planning

Preretirement planning is not as demanding as postretirement planning, though it's important to do an analysis periodically. There is more tolerance for errors when you still have some time left before retirement, and people who are still putting money into their accounts benefit from dollar cost averaging as opposed to the retiree's reverse dollar cost averaging. In addition, you might have the option of retiring a little later if your savings aren't yet what they should be. Working longer offers a number of benefits. Existing investments have more time to grow, and there can be additional savings contributions. Social Security benefits will increase. If the employer has a pension plan, its value can grow immensely in the last few years. That's because the pension formulas are based on the number of years of service multiplied by the wage rate near retirement. In fact, a few pension plans allow "spiking" in the last year of work, which means some people will greatly increase the income from which

their pension will be calculated by doing such things as working unnecessary overtime and taking pay in lieu of vacation and sick leave.

The person who is still working also has the ability to take more risk, especially at quite young ages. A younger person can invest in a portfolio composed largely of stocks or stock mutual funds. As an example, over a 20-year span, a person with a portfolio heavily weighted with stocks could well retire with twice as much as a person with a portfolio weighted heavily with bonds. Over a 30-year span, instead of doubling, your retirement savings could triple. (We'll see this in action in Chapter 3, when we look at asset allocation.)

No one needs to be told that the difficult part of preretirement planning is saving enough money early enough to do you the most good. However large the benefits from the incredible power of compounding may be, there are many impediments that prevent young people from saving. There is the down payment on a new house, furnishings to purchase, cars to finance, and the next thing you know it's time to start saving for their children's college expenses. The autopilot method that we'll describe in Chapter 5 will show you how to account for these things, but here we are going to look at some simplified examples so that we can look at the difference in the various planning methods you will encounter. Keep in mind, though, that if the planning method you use does not look at your overall savings to achieve the unique requirements of your preretirement years, be wary. You cannot have one plan to save for things like college that is independent of a plan to save for retirement. You must save for both at the same time, or one or the other will suffer accordingly. What this means for practical purposes is that, most likely, your greatest retirement savings will come as you near retirement.

It really helps to develop the mind-set that you are going to save a certain percentage of your income no matter what. Essentially, you live on an income that's a little smaller than you actually could afford. Perhaps you can start by saving all of your next few raises. As you get nearer retirement, you may have to really save quickly if your annual savings were low or the markets were unkind to your investments.

What are the current planning methods for preretirement? We'll look at the major ones in a minute. Then we will test them in a real-world scenario, just like we did for the postretirement plans. And let me just say up front that the results aren't pretty. Why? Because the real world isn't smooth. The simulations we will look at illustrate the problem I confronted when I tried to forecast my own retirement needs in the 1980s. If you do a new calculation each year to check on how you are doing, you will find that the closer you get to retirement, the more variation you will see in your needed annual savings. The reason is that your calculation is largely dependent on the value of your investments at the time, and these values go up and down, particularly investments in stocks or stock mutual funds. The autopilot can help smooth things out some, but don't

forget that you have to come up with the money to begin retirement, whether that means saving more sooner or working a few years longer.

Open-Loop Shortcut

The first preretirement method we'll look at is the open-loop shortcut. This is the method used by people who have taken one step above the worst method, which is to do nothing. We call it open-loop planning because there are no annual corrections. The term *open loop* is engineering jargon. In an engineer's mind, if you took your hands off the steering wheel of your automobile, it would be in an open-loop mode. On the other hand, when you continually steer the car, you are "closing the loop." Open loop implies it's out of control. At the same time, this method is a shortcut because you bypass more competent methods that take more time. You can find various versions of the open-loop shortcut for free on the Internet, in magazines, or in brochures from banks, brokers, mutual fund salespeople, or insurance agents. They all like it because it shows optimistic results for their products. The reason is that returns are artificially high, either because they are averages (as opposed to compounded) or they come from a favorable historic period. To make things worse, they almost universally ignore investment costs. Better versions of open-loop planning calculate the percent of wages you should save each year, and this in itself should boost your annual savings as your wages grow. The worst of these shortcuts calculates an annual savings value without any recommended increase in the future. It's disastrous to keep your annual deposits at the same dollar amount because inflation reduces the value each year. Yet that's what the government does with IRAs when it limits maximum savings without an annual adjustment.

The good thing about the shortcut is that it is simple and better than no plan at all. In terms of numbers, a plan of this kind generally will lead you to input figures of 3% inflation, 8% return on investment before retirement, and 7% return on investment after retirement. These translate to a 5% real return before retirement and a 4% real return after retirement. To illustrate, let's use numbers that are all inflation adjusted. For example, consider a 50-year-old person wanting to retire at age 60 with a $40,000 annual before-tax budget that would last 30 years. This means she'll need about $692,000 in investments (based on 4% real return) at retirement. Let's say she is starting with current investments of $350,000. To reach her goal from there, she has to save about $9,700 per year, and that figure has to be increased each year by the amount of inflation.

We'll further assume that this is a moderate investor who, at age 50, has 55% large company stocks, 35% long-term corporate bonds, and 10% in a short-term Treasury bill money market fund. The overall investment costs are 1% (which is lower than average). Each year, this person reduces the stocks by 1% and replaces those with bonds. That means that at age 60, there will be 45% stocks, 45% bonds, and 10% in a money market.

Now let's take a look at what happens when we plug these data into the open-loop shortcut using three different periods in history. Figure 1.7 details what would have happened if we started saving in 1950, 1955, and 1960 and retired 10 years later. Each case assumes 10 years of inflation-adjusted savings of $9,700 before retirement followed by retirement spending of $40,000 each year after retirement at age 60. (Note that the charts begin their calculations with data from the *end* of the first year, which accounts for the varying starting points in the graph.) You'll see, as in the postretirement examples, that it makes a huge difference which piece of history you use as a point of referral.

In our examples, the person who started using the open-loop shortcut method in 1950 went broke at age 82. The person who started using this method in 1955 went broke at age 75, and the person who started in 1960 went broke at age 71, just 11 years after retiring. How can this happen? Well, the real world got in the way. The open-loop shortcut method didn't take into account investment costs and reverse dollar cost averaging. It also used a return that was an average kind of value that made no provision for those years when the returns will be less than average.

You'd think it couldn't get much worse, but many people using the open-loop shortcut retirement assumptions can fall prey to even more dramatic overspending. Consider a case in which someone uses the open-loop shortcut method just before retirement to make a new estimate of how much he or she can spend using his or her current investment balances. In the 1950 scenario, the investments during the 10 years of savings did better than expected, exceeding $800,000, so the method would now say that the retiree could spend $54,600 per year instead of $40,000. Figure 1.8 shows the results.

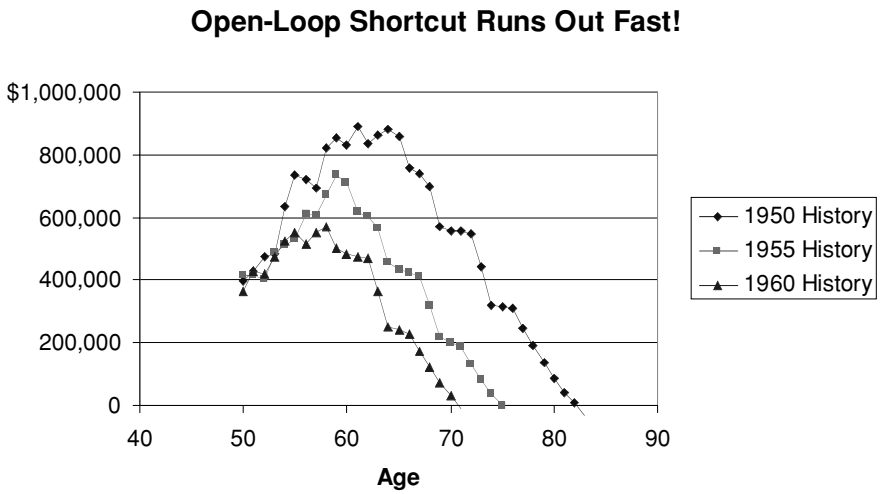

FIGURE 1.7 Inflation-adjusted balances using the open-loop shortcut for scenarios starting in 1950, 1955, and 1960.

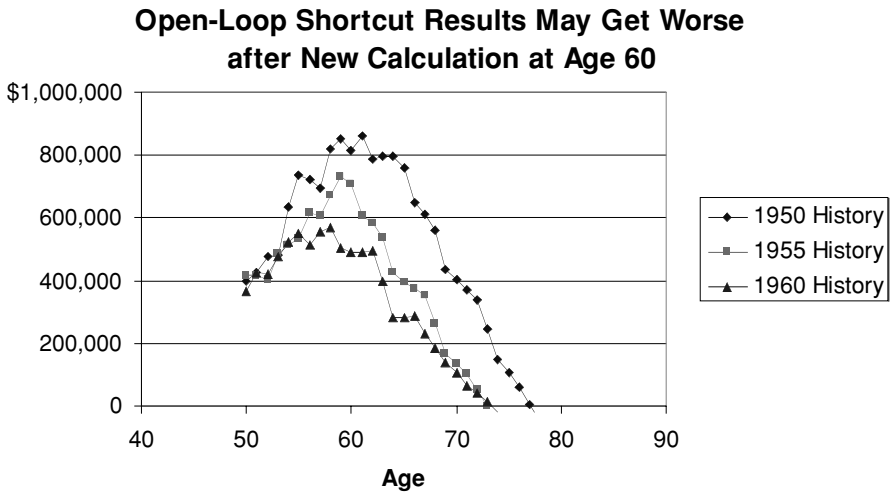

FIGURE 1.8 Making a new estimate with the open-loop shortcut just before retirement does not always improve results, as in the 1950 scenario.

Spending at this new higher level in the 1950 case turns into trouble. While the investments will last till age 82 with spending at $40,000 a year, as we saw in Figure 1.7, spending at $54,600 per year depletes the investments at age 77. The 1955 scenario has the same kind of effect, though not as dramatic, and investments actually last a little longer in the 1960 scenario because the age 60 calculation recommended spending only $32,200 per year instead of $40,000.

If there is a lesson here, it's to be very cautious with the retirement planning advice you receive. You also need to get a firm handle on the kind of return you can expect from your investments—something we'll talk more about as we go on.

Quick and Dirty

Quick and dirty planning offers a touch of realism compared to the open-loop shortcut. I developed it for people who were willing to take only a few minutes to look at their future finances as contrasted with a more comprehensive method that I recommend. (Both methods are discussed in Chapter 5.) Quick and dirty lets you calculate your results for three different kinds of investment allocations: one for the conservative person investing mostly in bonds, another for the moderate person with about half his or her investments in stocks, and a third for someone who invests aggressively in stocks with only a few bonds. Costs are assumed to be 1%, which is a little lower than average because we hope you will learn something from Chapter 3 on investments. The quick and dirty tables in Chapter 5 provide some conservatism relative to returns, especially in retirement, and it's easy to do a new analysis periodically. We don't encourage the use of this method for a number of reasons, including that it is

not very detailed and doesn't allow for people's need to save for things other than retirement while they are saving for retirement. Still, if you don't have much time, the results are more likely to be practical than the shortcut methods you find in magazines or on the Internet.

Figure 1.9 shows how someone would fare with quick and dirty. Here the savings last much longer than they did with the shortcut method in Figure 1.8. That's because, to reach the goal of a $40,000 annual retirement income, the annual savings in this method would have to be substantially higher, as a consequence of using more realistic returns. As you'll see in Chapter 5, quick and dirty does have the advantage of making it easy to strike a balance between saving before retirement and spending in retirement.

Recalculation Methods

Most professional planners recommend that their clients reassess their retirement plans about once a year by recalculating their results. (This should not be confused with the *recalculation method* used to determine required minimum distributions from an IRA.) I've found that this really is as important as an annual dental or physical exam, and a lot more important timewise than an hour or so in front of a TV. The principal benefit of recalculation is that you will get an annual reminder of the importance of making sacrifices now in order to achieve the income benefits you expect in retirement. If you haven't gone through this process at least several times before retirement, you are very likely to be in for the shock of your life. People are generally astonished at the low

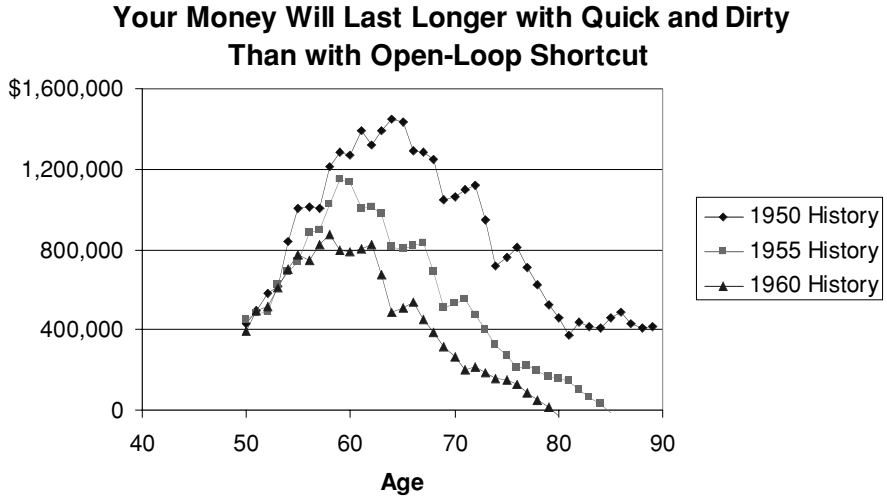

FIGURE 1.9 The quick and dirty method shown here uses more conservative returns than the open-loop shortcut in Figure 1.8 and so demands more saving before retirement and lower spending after retirement.

level of income they will get from investments during retirement because they had no idea of the quantitative relation between their savings before retirement and their spending after retirement.

Recalculation uses the same kinds of methods we looked at earlier. The quick and dirty methods will show better results than open-loop shortcuts. Using some of the best computer programs will, of course, give even better results. Recalculation with the retirement autopilot is a step better yet. We've already seen the benefits of recalculation using the retirement autopilot method in the retirement part of the scenario in Figures 1.5 and 1.6.

I do want to alert you to a potential problem as you approach retirement and the stock market goes through one of its typical up-and-down cycles. As you do your annual recalculation you may well run into the same effect that confounded me: One year you are told you can save a lot less and the next you are told you must save a lot more. By using the autopilot method, it's unlikely you will have to relive my own levels of frustration with these calculations.

As an illustration, Figure 1.10 shows how investments would increase during preretirement if you recalculate each year using three separate methods. The goal of each method was to achieve $1 million before retirement. The first method is the open-loop shortcut we investigated before, but it is now used in annual recalculations. The second method uses a computer program that could be any high-quality commercial program where we inserted realistic returns less investment costs. The third method is the preretirement autopilot that you can find in Chapter 5.

These simulations assume that 70% of the investments are in large company

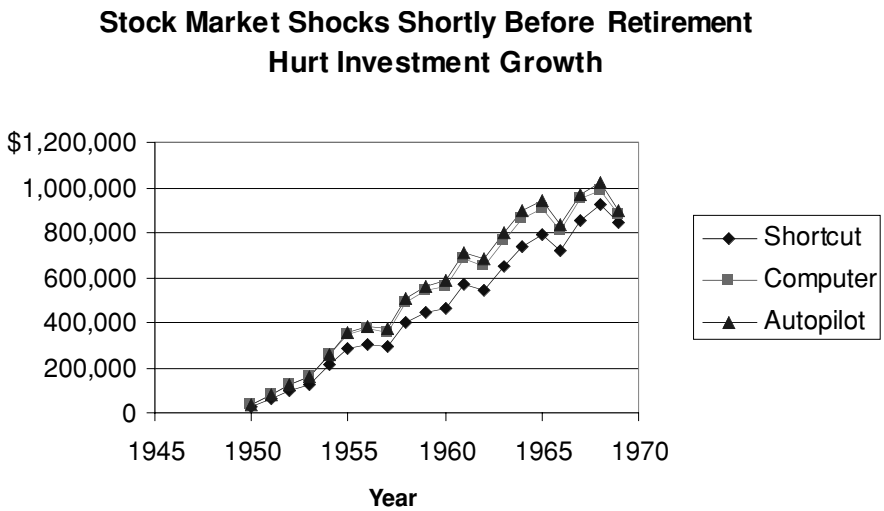

FIGURE 1.10 **No planning method gives happy results when the stock market takes a plunge after a sustained bull market, but the autopilot method produces the least trauma.**

stocks, 20% in long-term corporate bonds, and 10% in short-term Treasury bills. Investment costs are 2%. When people are close to retirement, a drop in the market may dramatically increase the calculated demand for new savings, as we will see in these scenarios, so much so that it may be impossible to ever meet their retirement goal. As a practical matter, people then compromise their expectations. In the cases here, we'll reflect that reality by arbitrarily limiting the actual maximum savings amount to twice their recent annual savings even though the demand is greater, because that is about as far as most people can go. This is equivalent to saying that if our normal savings were 15% of wages per year, we would never be able to save more than 30% per year, even if our goal demanded more (as it does several times in Figure 1.11).

As you can see in Figure 1.10, both the autopilot and the computer program did better than the shortcut. The principal reason is that the shortcut, being optimistic, always thought that the future was going to be brighter than what actually materialized. However, that's not the point I want to make. The point is that this particular bit of history had some serious stock market problems that cropped up just before retirement. Which recalculation method did the best job of coping with the market dips?

This question is answered in Figure 1.11. All of the methods get lulled into a false sense of security by 1965 because of the previously great market conditions. The demand for annual savings diminishes. (Incidentally, the same situation unfolded in the year 2000. National savings rates were almost zero, at least in part because investment values went up so much.) But then the investment values fall abruptly in 1966, which signals all of the planning methods to tell you to increase your annual savings. But the market rebounds, so the plans call for

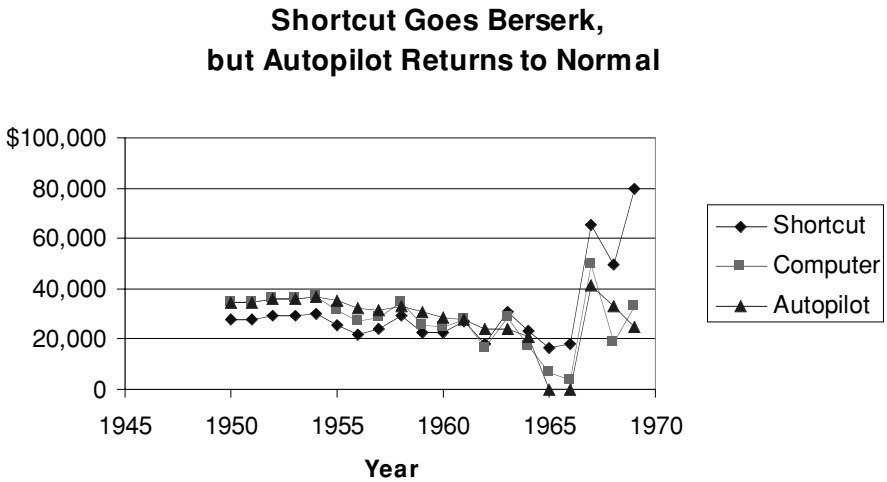

FIGURE 1.11 **All of the planning methods try to cope with adverse market conditions near retirement. The shortcut calls for unreasonable savings in the last year.**

more moderate savings. Then the market hits another hole, and both the shortcut and the computer programs call for another savings increase. The autopilot just returns to a more normal level. The shortcut method goes berserk.

If you review the details of Figure 1.11, you'll see that the autopilot provided the most reasonable response through the years. But there is no question which turned out to be the worst. That's the shortcut. It's highly unlikely that anyone who was used to saving $20,000 to $30,000 a year would be able to come up with $80,000 to meet his or her goal. If you want the shortcut to give more reasonable results using recalculation, you must use a more conservative return on investment than the long-term average return for the types of securities in your portfolio.

Now that we've reviewed some of the most important planning methods, we can see that doing a recalculation each year is one of the most important things you can do to ensure a comfortable retirement. And the autopilot method, which requires recalculation, provides much more practical savings conditions before retirement and spending conditions after retirement than the other methods we discussed. Even with the autopilot, however, it may be impossible to reach your retirement investment goal when the market plummets just prior to retirement. At that point, you'll either have to compromise by taking a lower retirement income or work longer.

One of the keys to successful retirement planning is to avoid optimistic theoretical assumptions about future investment performance that are likely to lead to disappointing real-life retirement benefits no matter what method you select. It is also essential to have realistic data that reflects all of the outside forces that will come into play during your retirement. In the next chapter we're going to look at some of the fundamental forces the real world will add to the mix: death, inflation, and taxes.