CHAPTER 1

Gathering Intelligence

A good general gathers intelligence about the enemy prior to forming a strategy. A good investor gathers information about his friend, the market, before he forms his investment strategies. Fortunately for investors, gigabytes of useful market data are readily available for analysis.

The original process of gathering this data was a Herculean task. The laborers have never been properly recognized. We are all deeply in debt to researchers like Ibbotson and Sinqfield, organizations like the Center for Research in Securities Prices (CRISP), and hundreds of other individuals who worked in obscurity. The data they assembled is enormously valuable to us. With it we can begin to see clearly what is going on. With a "clean" database and a modern computer, researchers can sift and sort, analyze, and test their hypotheses. The forest, previously hidden by all those pesky leaves and trees, becomes visible.

Today we take this information for granted, but our grandfathers didn't have anything like it. It wasn't until the mid-'60s that a researcher was able to show that stocks outperformed bonds! And of course, we take our computers for granted. But they weren't always there, either. The first primitive PCs were introduced less than 15 years ago. The average secretary's 386 computer has more capacity than the US had during the entire Korean War. And 25 years ago, NASA put a man on the moon with far less computing capacity than my "old" 486 has.

Finally, all this information is instantly available worldwide. Investors no longer need to be at financial capitals. You or I can see trades at the same time that a trader in Hong Kong or New York does. And we have access to the same databases and research that Wall Street's barons have. Our grandfathers couldn't have even dreamed about these powerful tools. Often the results are surprising, and contradict the conventional wisdom. It's up to us to adapt this new information and the insights we glean from it as we construct our Investment Strategies for the 21st Century.

Rates of Return

Investing is a multidimensional process. Of course, the first dimension is rate of return. The basic economic dilemma is this: Should we consume now or later? Given that our wants and needs are almost infinite, we have a strong preference for immediate consumption. Instant gratification isn't a concept developed by the Yuppies.

If we are going to delay gratification, then most of us demand a reasonable prospect of payback and profit. Otherwise, we might as well enjoy it now.

A person seeking profit has a number of markets from which to choose. Cash, stocks and bonds are the traditional liquid markets which most of us first consider. But there are options, currencies, futures, commodities and other more exotic derivatives which are freely traded and totally liquid. Or an investor might want to consider real estate, fine artwork, baseball cards, stamps, coins or other valuable tangibles.

Each market, as we shall see, can be further broken down into smaller and smaller sub-markets. The list could become almost endless. And each little sub-market, or segment, would have distinct properties which an informed investor would want to understand before placing any funds. I am going to restrict myself to the traditional cash, stocks and bonds, and how we can form them into portfolios that will meet our needs.

The different markets have produced greatly different average rates of return over a long period of time. In the short term, on a fairly regular basis, markets will vary around the averages. These short-term variations are aberrations when viewed from the long-term perspective. Short periods of over- or under-performance are sooner or later reversed as the markets "regress to the mean." Looking at the long-term data will give us a fair platform for evaluating markets. It gives us a powerful tool to estimate the

"ranges of reasonableness" when we build or evaluate our portfolios.
Investors ignore this data at their peril.
We all know that if it sounds too good to be true, it probably is. Long-term data gives us the yardstick to measure whether something is too good to be true. You will buy a lot less pie in the sky if you keep this in mind.
Later we will see that individual investors are often their own worst enemies. Investor behavior can be extraordinarily shortsighted. Foolish investors insist on making their long-term decisions based on very recent experience. Lemming-like, they run from gloom and doom to euphoria. In the process, basic discipline flies out the window, and bad things happen to their investment results. Remembering long-term results can keep them from shooting themselves in the foot. A long-term outlook will stiffen resolve to stick with a well-thought-out investment plan.

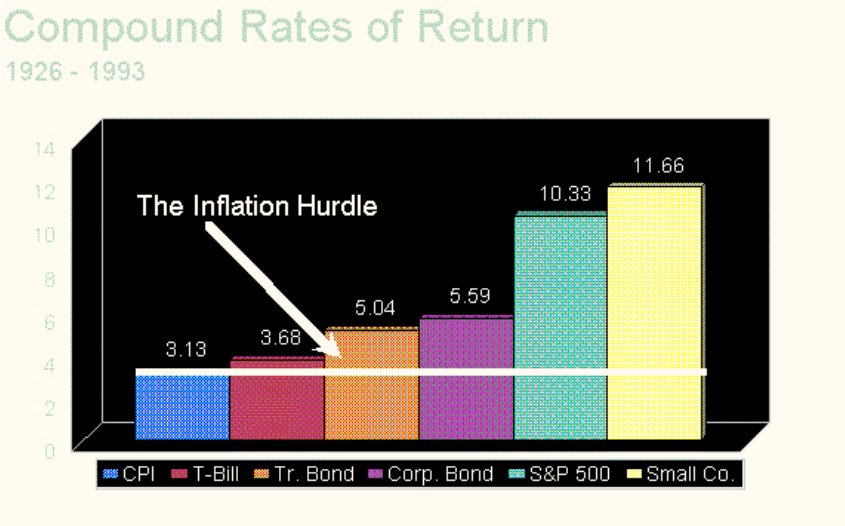
Definitions

A few basic definitions are in order here:
The *Consumer Price Index (CPI)* is a commonly used measure of inflation. Inflation is the erosion of buying power over time, if dollars are used as a store of value. Investment returns must be adjusted by the inflation index in order for us to evaluate "real" returns. In other words, our returns must jump this hurdle in order to provide meaningful increases in value.
Treasury Bills (T-Bills) are short-term obligations issued by the United States government. Because they are guaranteed by the government, and the government can always print more dollars, they carry no credit risk. Treasury Bills are considered "zero-risk" in many academic discussions. We shall see that that is not always the case. T-Bills are a good proxy for many savings plans. They track CD rates reasonably closely.
Treasury Bonds are longer-term obligations of the government. They also carry no credit risk, but there is a substantial capital risk as interest rates change prior to redemption. An existing bond's value changes inversely as interest rates change in the economy. We will talk lots more about bonds later. Commercial bonds are long-term debts issued by corporations. They carry both a default or credit risk, and a capital risk as interest rates change.
Commercial Bonds represent long-term debts of corporations. They are usually issued with a fixed interest rate (coupon) payable every 6 months. Bonds are generally issued with a maturity date, at which time they are redeemed for the face amount. While a commercial bond may default and become worthless, it can never be worth more than the face amount at maturity. The corporation has no other obligation other than to pay the interest and principal upon maturity. Bondholders generally have no say in the operation of the corporation unless the interest payment is in default. Bonds may be issued with specific assets of the corporation to back up the corporate debt, or as a general obligation of the firm.
Treasury Bills, Treasury Bonds, Commercial Bonds, Cash, Savings Accounts and CDs are all debt instruments.
Stocks represent ownership or equity in a corporation. Stocks may or may not pay a dividend. If a stock pays a dividend, it may change in amount from time to time and it is not guaranteed to continue. Like bonds, stocks may become worthless if a company fails. But unlike bonds, if the company prospers, there is no theoretical limit to the increase in value, and no redemption date. As owners of the corporation, stockholders are entitled to vote on the board of directors and may influence the operation of the company.
The S&P 500 is an unmanaged index of the largest 500 stocks on the New York Stock Exchange (NYSE). This index contains only mega-firms and is considered a good proxy for performance of the "blue chip" stocks.
Small cap stocks (as I'll be referring to them) are the smallest 20% of the New York Stock Exchange-traded firms. ("Small" is a relative term. If a firm is traded on the NYSE, it has already reached a respectable size.)
The foregoing definitions are generalizations. My aim here is to keep this simple, and not get bogged down. Of course, there are hybrid instruments such as convertible bonds and preferred stocks. These

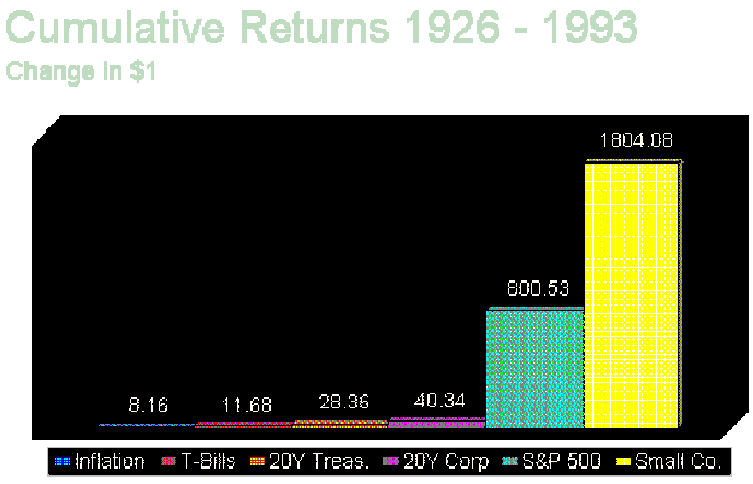
securities have some of the properties of both stocks and bonds. If you want to know more, there are plenty of good finance books available, and I commend you for your interest. Check out my bookshelf in the archives. For now, let us move on.

A Look at the Long-Term Data

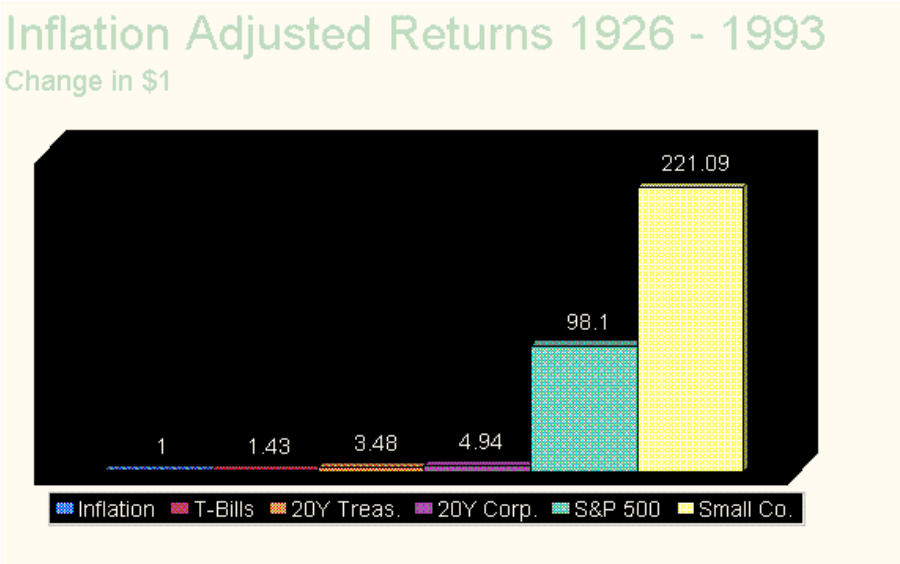
The following charts show performance data from 1926 to 1993. The data is extracted from Roger Ibbotson and Rex Sinqfield's widely quoted annual book, Stocks, Bonds, Bills and Inflation. Compilation of this data has contributed greatly to the understanding we now have of how markets work.
First, let's look at compound rates of return since 1926 in the broad domestic markets we just defined.



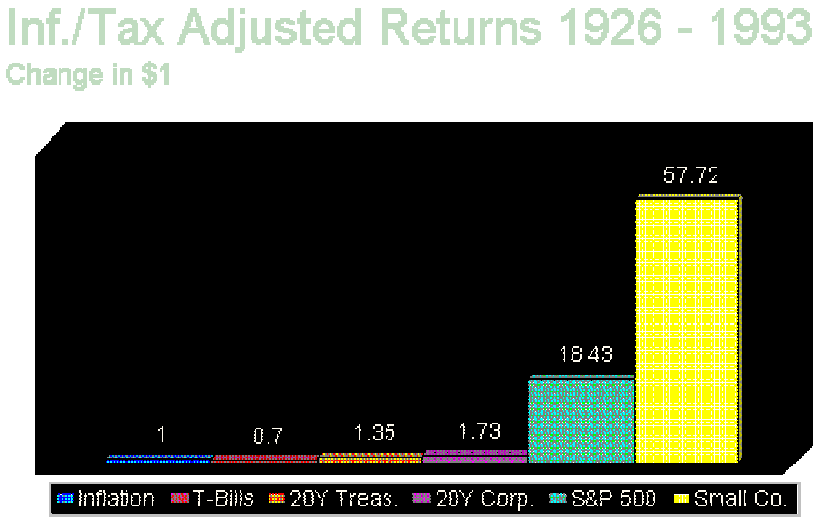
Next, let's see how a dollar grew between 1926 and 1993. Due to the magic of compounding, what seems like a relatively small difference in rate of return will compound to giant differences in total accumulation. Look at the difference that 1.33% makes over time when we move from the S&P 500 to Small Company Stocks.



Next, to show real rates of return, we have subtracted out the average inflation rates. If we don't account for inflation, we are just fooling ourselves. We want to be wealthier, not just have more inflated dollars!



In the real world, most of us pay taxes. Below, I show rates of return after inflation and reducing returns for an assumed 30% average tax rate. While we didn't have an income tax the entire time, this comparison may still be far too kind to debt. For one thing, average marginal tax rates were often much higher during the period covered. For another, stocks offer the prospect of both deferral of tax and capital gains treatment, which I did not build into this simplistic model.



The Bottom Line

So, what can we learn from all this? Plenty!

The Range of Reasonableness

Long-term data gives us some very useful yardsticks.
The '80s and early '90s have been especially good to both stocks and bonds.
However, bad things happened to America in the '70s. The Vietnam War divided the country, as an entire generation watched senseless violent death on national TV over dinner. Protesters took to the streets and grew violent themselves. Groups like the SLA and the Weathermen bombed, kidnapped, robbed and killed. The government became increasingly paranoid. The Nixon administration and Hoover's FBI systematically violated our constitutional rights. The National Guard shot peaceful protesters on their college campus. A vice-president and president both resigned in disgrace, and narrowly missed jail. Nixon's henchmen marched off one by one to prison. Democracy teetered on the brink.

On the economic front, things were just as bad. We charged the Vietnam War and Johnson's Great Society. When the bill came due, OPEC cut off the oil. The government deficit mushroomed. Inflation soared, and interest rates climbed to unheard-of heights. American industry became bloated and could not compete effectively on the international markets. The stock market accurately reflected the turmoil. Returns in the '70s could only be called dismal. During 1973-74 the S&P 500 dropped 50%. Bond investors were brutalized by rising interest rates.
The '80s saw recovery. Over 20 years of concerted government policy steadily brought down inflation and interest rates. Industry painfully modernized and became competitive. Bond holders were finally rewarded by falling interest rates, and reaped rewards far in excess of coupon rates. Stock market returns rebounded after the lost decade. Even after two short "crashes" in 1986 and 1989, investors realized fantasy gains.
As a result, investors have come to expect rates of return which are greatly higher than the historical averages. I view these recent returns as an aberration. There is no data to indicate that either rates of return or risk premium (to be discussed in Chapter 2) have changed in any fundamental way. We are not all entitled to returns in the high teens or low 20s as a birthright. In any event, it seems foolish to project these rates on into the indefinite future.
Investors who view the '80s returns as a yardstick may do themselves serious injury.

1. These investors can set themselves up to endlessly chase rainbows. As they fail to attain unrealistic goals, they often move from advisor to advisor or scheme to scheme, to their detriment. In the process, they inadvertently churn their own accounts. Wall Street is only too eager to help. The brokerage community is ever ready to promise far more than they can ever deliver to "get the business." Investors who achieve, or advisors who deliver, "only" solid realistic results are at a distinct disadvantage in an atmosphere of hype and perfect 20/20 hindsight.
2. By placing faith in an accumulation plan based on a higher-than-realistic rate of return projection, these investors may be setting aside far too little to meet their long-term goals.
3. They also may be living off their nest eggs. Many establish withdrawal plans based on rates of return they cannot achieve in order to finance lifestyles they can no longer afford. They run the very real risk of causing their capital to implode, and they will become destitute in their old age.

Savings vs. Investment

Many academics might quibble, but I find it useful to distinguish between savings and investment. Savings might include all the debt instruments, cash, T-Bills, bonds, CDs, and annuities. Investments (equity) offer a long-term return sufficient to overcome inflation, and because they are traded each day, will fluctuate in value. If you don't have both, you have a savings plan. (Fluctuation is a nice, non-threatening way to say that sometimes prices will go down! We really shouldn't sugar-coat this little fact. It's built right into the system. We will deal with fluctuation later.)
You will notice that the little boxes on the left of all the charts in this chapter represent debt or savings, while the tall, handsome boxes on the right represent equity. A saver who put a dollar into T-Bills in 1926, and who faithfully reinvested the proceeds for 68 years, actually saw his savings shrink to 70 cents on an after-tax, after-inflation basis! In other words, the dollar you put away in 1926, together with all the earnings on it, won't buy as many Cokes or ice cream cones today.
As the data shows, savers must abandon hope of achieving an after-tax, after-inflation rate of return. Think of CD as standing for Constantly Diminishing. The stability of CDs does not translate into long-term security. Viewed from this perspective, the government-guaranteed savings plans are not wise, conservative or responsible. They are actually almost guaranteed to shrink in value! Even when interest rates are high, savings is a bankrupt investment policy. For instance, many savers fondly look back over the last 20 years of high interest rates. But even if all interest was re-invested, the after-tax, after-inflation rate of return on CDs from 1975 to 1994 was -1.85%! Interest rates are high during periods of inflation. A progressive tax eats away more at the higher nominal rates of return. Later we will examine

how inflation ravages a fixed return over time. If a saver attempts to live off the interest on his nest egg, the results are catastrophic over time. He better hope not to live very long.

"Zero-risk" rates of return are very closely tied to inflation rates. So if you just want to keep up with inflation, you can accomplish that limited objective with debt instruments, but not much more. Most of us want an inflation hedge, growth and the ability to make withdrawals. Debt instruments haven't been able to support that. Savings are a unique and treacherous form of capital punishment. Every day, millions of well-meaning savers unnecessarily punish their capital and prevent it from growing and thriving.

Another way to look at the data is to say that equity has returned about inflation plus 6-8%. Many advisors set the real rate of return as a long-term target. But anyone who builds his financial empire on a required rate of return of higher than 8% is skating on very thin ice indeed.

Long-term data gives us all a necessary "reality check." Prudence and realism would dictate use of the more conservative data for planning. If we get more, we will all be pleasantly surprised.

No matter how you look at the data, equity returns swamp anything available in debt. Only equity offers investors the prospect of real rates of return.

So why isn't everybody investing in equity? There must be more to it than this! The next chapter will deal with the investor's four-letter word: risk.

CHAPTER 2

Assessing the Risk

"Risk" is the investor's four-letter word. Everybody is risk-averse. We all would prefer a certain, or riskless, result. It's rational and normal to be concerned about investment risk. But at some point, normal concern becomes irrational fear. And that exaggerated fear keeps too many people from making appropriate investment choices.

Investment risk can be an extraordinary stress for many. I have seen investors throw up when the value of their portfolio dropped by 5%. Others worry themselves sick slowly, over a long period of time. In a society that judges happiness, security, power and prestige by the number of zeros in a bank account, perhaps that shouldn't surprise us. Money takes on a sacred aura, and a threat to wealth, even temporary, seems life-threatening.

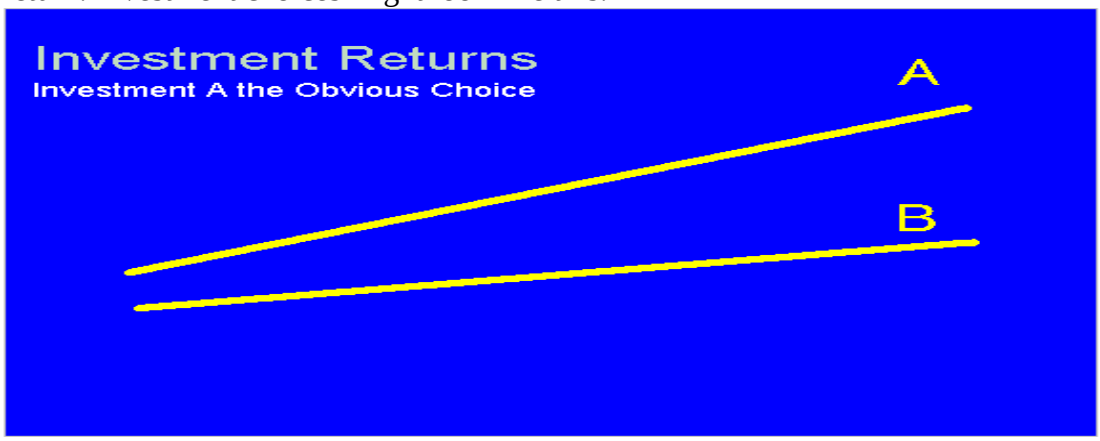
Risk aversion is not a matter of personal courage or "manliness." I know hundreds of combat-tested fighter pilots, infantry officers, and tank commanders who cannot make themselves leave their comfortable, "safe" CDs. I believe in many cases, risk aversion is a fear of the unknown, a feeling of being out of control, or of not knowing how bad things might get. Without solid information on the "threat," risk becomes a Bogey Man 12 feet tall!

The conventional wisdom - that the stock market is somehow treacherous and dangerous - certainly contributes to the problem. As we have seen, the conventional wisdom is often wrong. In fact, stocks have been a highly reliable engine of wealth for long-term investors. In this chapter, we will demonstrate that market risk is almost exclusively a short-term phenomenon which falls over time, and that not being part of the market may be one of the biggest risks of all.

Even investors who are comfortable with risk will benefit from a better understanding of what it is, where it comes from, how it is measured, and how it can be managed. Later we will use this information to construct "efficient" portfolios to meet your individual needs. "Efficient" means that either we will obtain the maximum amount of return for any level of risk we choose to bear, or meet our rate of return objective with the least amount of risk.

A World Without Risk

Just for a second let's try to imagine an investment world where there was only one dimension: rate of return. Investment choices might look like this:



All returns are certain. Investors would, of course, decide that more is better. Everyone would want investment A. No one would consider investment B. Investment B would cease to exist as a choice for lack of takers. Everyone would get the same investment result, and no one could aspire to a higher rate of return.

Risk Offers the Chance for Higher Returns

Now let's imagine a second dimension. Investment choices might look like this.

Investment B offers a known outcome. Investment A introduces an amount of uncertainty. The results are variable.

The Investor's Dilemma

True choice now exists. Investors face a dilemma. They prefer a certain result. However, they also want the higher returns offered by investment A. They are trapped between wanting a certain result, and wanting more. Some investors will opt for the known result, and some will decide to go for the higher rate of return.

Risk is, of course, the primary concern of investors. Acceptance of risk is what separates our "savings" from "investments." The successful investor must come to terms with the implications of accepting risk. He knows he cannot have it both ways. He cannot hope for higher returns without accepting the fluctuation. And he must realize that all fluctuations are not positive. Not every day will be uniformly wonderful. He must be honest with himself about his tolerance for risk, and resist the temptation to second-guess himself when the inevitable bad day arrives. Bad days are built right into the investment strategy. As we shall see, there should be many more good days than bad, and we will make more during the good days than we will lose during the bad. But it makes no sense to pretend that the bad days aren't going to come.

Investors who pretend that they are somehow exempt from risk set themselves up for disaster. One of the very worst things an investor can do is accept a risk with the expectation that his investments will only go straight up. Markets do not work that way. And an investor who doesn't understand that will fall prey to the buy-high, sell-low, vicious downward spiral syndrome.

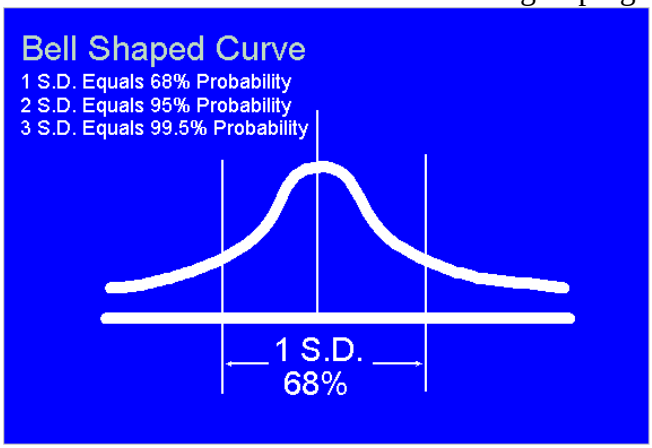
The time to fully understand your risk tolerance and the risks in your investment portfolio is before you make your investments!

In economic theory, at least, we all have many different combinations of risk and reward that we would find equally attractive. If we were to plot all those combinations, the resulting line would be called our indifference curve. We will have to examine the concept of indifference curves once more in relation to Modern Portfolio Theory. Since I have never found a real, live investor who has plotted his indifference curve, we won't spend too much time on it. I must confess that I have no idea what mine would look like.

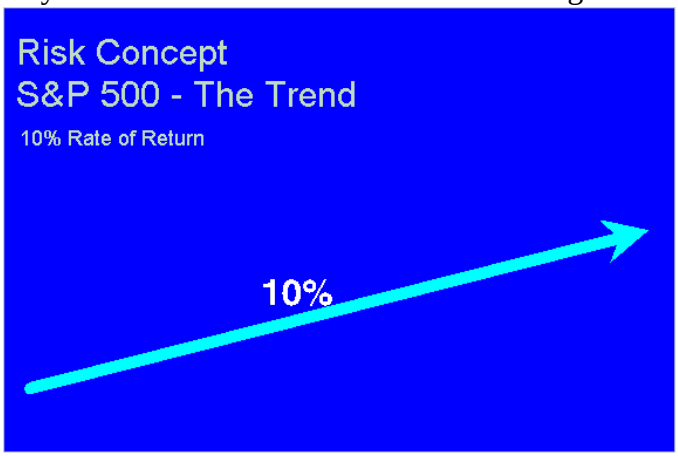
The amount of additional return which must be offered to an investor in order to pry him away from his known result is called the "risk premium." The speculation that investors often change their risk premiums as a result of recent events goes a long way toward explaining market excesses and the lemming-like behavior of investors.

The Professional's View

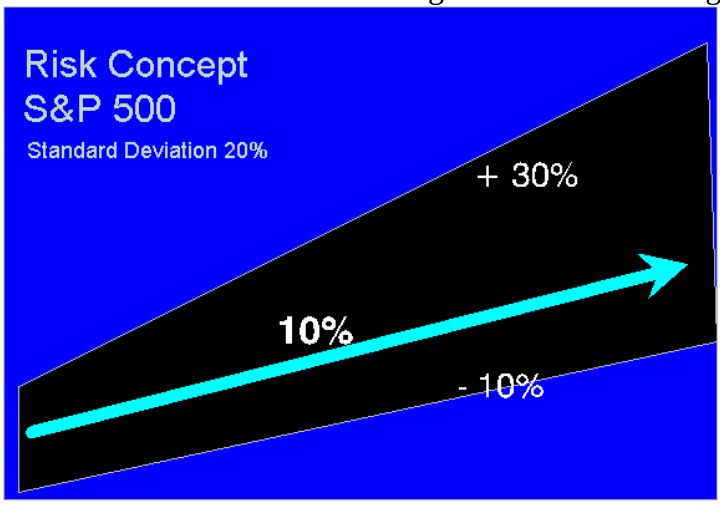
Stock market returns can be described as random distributions with a strong upward bias. Over a long period of time, returns in a market or a particular part of a market remain fairly constant. Periods of over- and under-trend performance are often followed by a regression to the mean.
Distributions around the average line fall in a rather predictable bell-shaped curve. Investment managers describe investment risk as deviation around the expected rate of return. They measure it with standard deviations. One standard deviation will contain about 68% of the expected future returns. A small standard deviation will indicate a closer grouping around the average, and less risk.



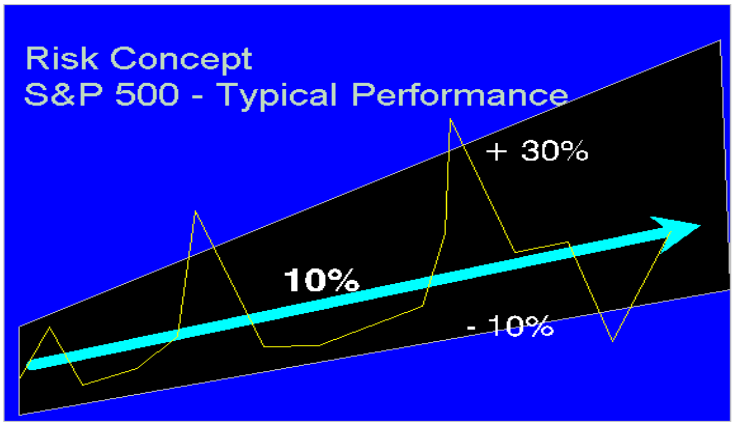
Since most of us don't think about standard deviations very much, this may be a more visual and intuitive way to look at it. The S&P 500 has an average rate of return of about 10%.



The standard deviation of the S & P 500 is about 20%. So about 68% of the time, results should fall between -10% and +30%. We might call a return falling inside this range an average result.



But about 32% of the time, returns will fall outside of the range.



A result may fall outside of one standard deviation, but within two standard deviations (-30 to +50%). We might say that these are unusual returns. Returns will stay within two standard deviations about 95% of the time, or 19 out of 20 years.
Returns may even get outside of the two-standard-deviation range. The three-standard-deviation range is from -50 to +70%. Results will fall within three standard deviations 99.5% of the time, or 199 out of 200 years. In layman's terms, we might describe a result over two standard deviations as very weird.
The smaller the variation around the expected result, the smaller the standard deviation, and the smaller the risk. It's important to understand that risk doesn't necessarily mean loss. All investments vary a little from year to year, even savings accounts, so they have a measurable risk. But in the case of savings accounts, we would never expect to have a loss.
Other markets will have different rates of return and different standard deviations.

Sources of Risk

Risk comes from several sources. Most finance books break it down like this:

- **Business Risk** - A company may fail, leaving the stock or bond you hold worthless.
- **Market Risk** - Even if you have a strong company, a declining market may carry your stock down with it.
- **Interest Rate Risk** - The value of bonds varies inversely with interest rates. Stocks and other property are also affected by general interest rates.
- **Inflation Risk** - Your investment may not keep pace with inflation, resulting in a decrease in wealth or buying power.
- **Currency Risk** - Foreign holdings may change in value as the value of currency changes.
- **Political Risk** - The government may do something to harm the economic climate. This can vary from raising taxes, revolution, war, or confiscation of property, to imposing a minimum wage.

After 22 years of counseling investors, I am convinced that the classic textbooks have overlooked one of the biggest risks of all: Investor Behavior. While there are exceptions, economists are constantly amazed at the ability of individual investors to obtain such poor results. In an efficient market, individuals should not be able to do as poorly as they do. An entire branch of economics has devoted itself to trying to explain investor behavior, and how it affects their results and the markets. We will have lots more to say about that later.
Another risk that we don't find in the traditional finance books is the very real risk that an investment management decision in either market timing or individual security selection may be wrong. Active investment management always adds additional cost, may not produce an additional return sufficient to cover the cost, and may introduce additional risk into the portfolio. The debate over active vs. passive investment style is one of the hottest in finance. See *A Random Walk Down Wall Street* on my bookshelf for an entertaining and enlightened discussion.

Risk is Part of the Investment Process

Risk is never going away. It is part of life, and part of the investment process. Any investor that thinks he has banished risk is just fooling himself. He has traded one risk he understands for another he doesn't. Or sometimes investors simply choose to ignore some risks. In particular, investors often underestimate or ignore the devastation that inflation can cause on a fixed income. Inflation is like a slow-growing cancer. At first you may not notice it, but eventually it will kill you.
Each risk can be mitigated and managed using well-defined techniques. The trick is to manage your portfolio to achieve the maximum level of return at any level of risk you are willing to accept, achieve your goals with the least risk possible, and develop a strategy that has the highest possible probability of success.
Most investors are risk-averse. If they want an adrenaline rush, they will take up skydiving! You can take lots more risk than what we advocate here. But our discussion is intended for the vast majority of Americans looking for a sensible college fund, retirement plan, or general wealth accumulation strategy. We will confine ourselves to the traditional liquid markets, and avoid more risky speculations.

Factors that Multiply Risk

- **Concentration of Investments** - An investor who held only Pan American, Eastern Airlines, or IBM has suffered for violation of the fundamental investment principle of diversification.
- **Leverage or Margin** - We have seen how leverage magnifies risk.
- **Options, Futures, or Commodities** - Speculation in all these markets utilize extraordinary amounts of leverage and carry the appropriate amount of risk. Most speculators are rather quickly wiped out. Ironically, these markets exist to allow business or investors to hedge risk and insure themselves against an adverse market move. Used in this manner, hedgers can usually accomplish their goal at a nominal cost.

An Investor's View of Risk

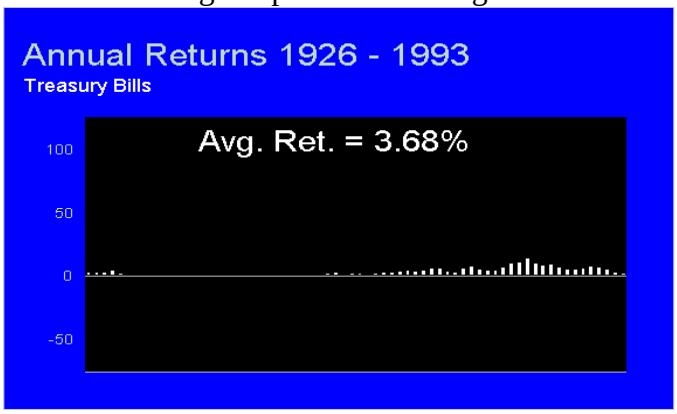
Fluctuation is Not Loss of Principal

In the real world, investors define risk in a variety of ways. Mention risk, and many will begin to imagine total, irrevocable, gone-forever loss of their principal.
Fluctuation is not loss of principal. It is just fluctuation. Here's an example that should make the difference clear. Let's say you believe that your backyard must contain oil. After a million dollars of drilling expense, it turns out that there is no oil. No matter what you do, no matter how long you look at the well, no matter what happens to the price of oil, your money is gone. You have had an irrevocable loss of capital.
Let's say that you took the same million and bought a diversified stock market portfolio. You then have an unusually bad result the first year, and lose 20%. Well, you have had an interesting fluctuation, but have not had a capital loss if you can refrain from doing the very worst possible thing and selling while the market is down. And markets have always recovered in the past. Past history would indicate that all you must do to recover and go on to acceptable profits is to hang tight. While an individual stock can certainly go to zero value, entire markets don't. Except for war or revolution, I am unaware of any market that has gone down without recovering. As long as we expect the value of the world's economy to continue to grow, the value of the securities markets will reflect that growth. Equity investors will profit and be rewarded handsomely for enduring the aggravation that risk entails.

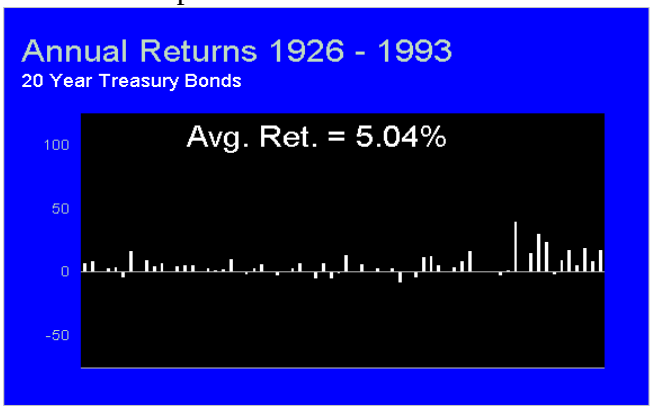
Visualizing Risk

Standard deviations may be a very precise and technically correct way to describe risk, but I don't find it

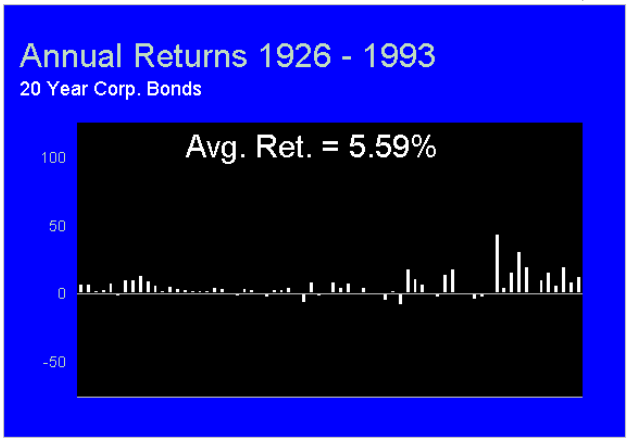
very intuitive. If we look at the pattern of returns in individual markets, we can perhaps get a much more visual and intuitive feeling for risk and reward.
Treasury Bills have low returns and little risk. As you already know, T-Bills have never had a loss, but don't earn enough to provide meaningful real returns.

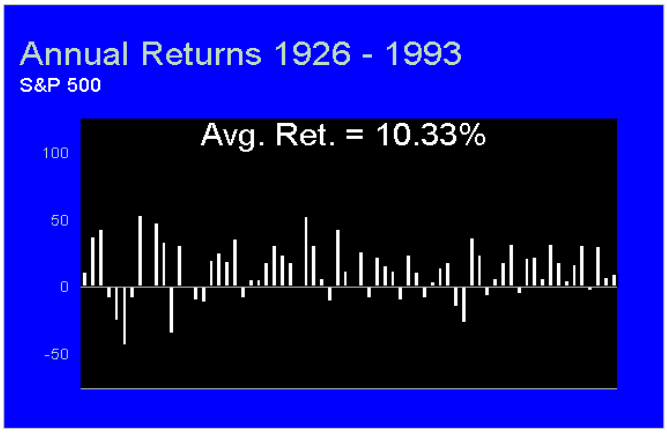


Long-term Treasury Bonds have displayed a surprising amount of volatility as interest rates change. Many investors with "safe" government bonds or high-grade corporate have been shocked to see how much their capital account varies as interest rate changes.



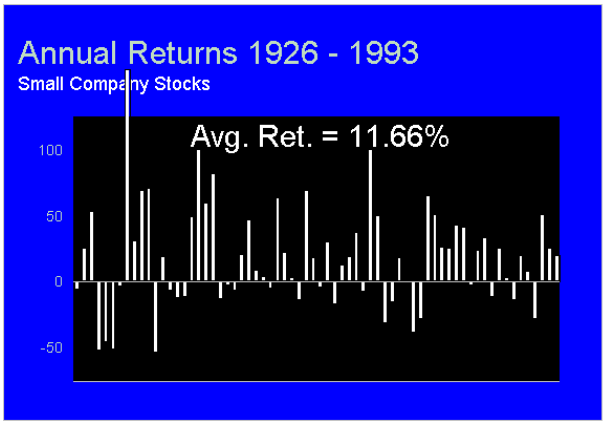
Commercial bonds show some increased risk, but still have disappointing returns.





Turning to stocks, the S&P 500 shows an increased amount of risk, but has generated meaningful real returns.

Small company stocks have even higher returns, but also the highest amount of variation. Not everybody wants to endure this much fluctuation in their accounts. As you can see, it can be a wild ride.



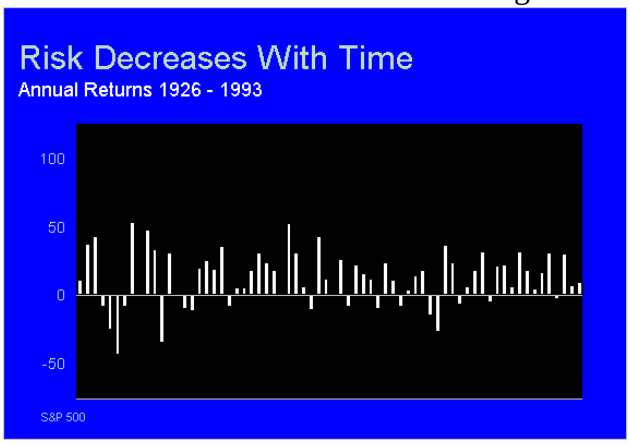
By looking at the previous series of graphs, the relationship between annual (short-term) rates of return and risk becomes pretty clear.

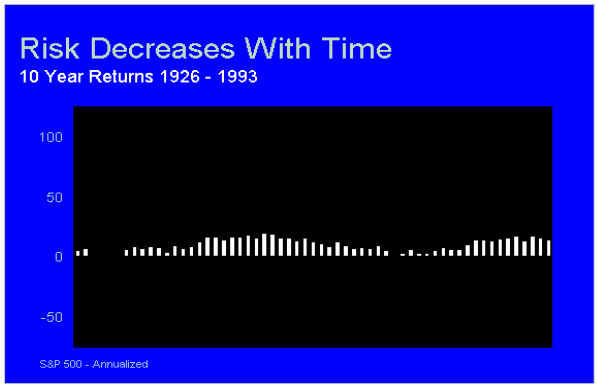
Market Risk is Short-Term Risk

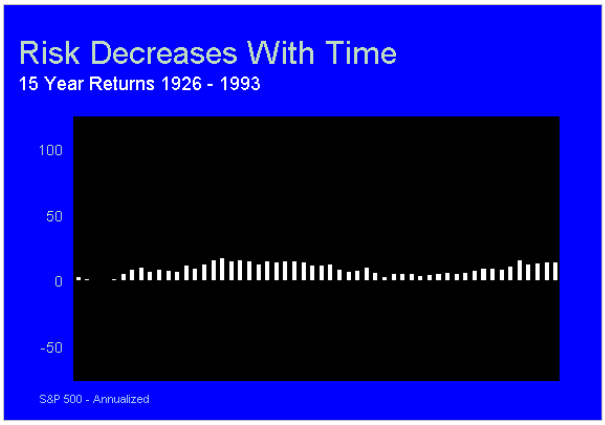
But short-term results aren't the whole story. If that's all you focus on, you will miss the boat. Successful investors know market risk is a short-term risk that dramatically decreases over time. The longer we hold a risky asset, the more risk decreases. Let's look at the S&P 500, for instance. The longer we hold the asset, the lower chance of loss. There has never been a loss during any single 15-year period since 1926.

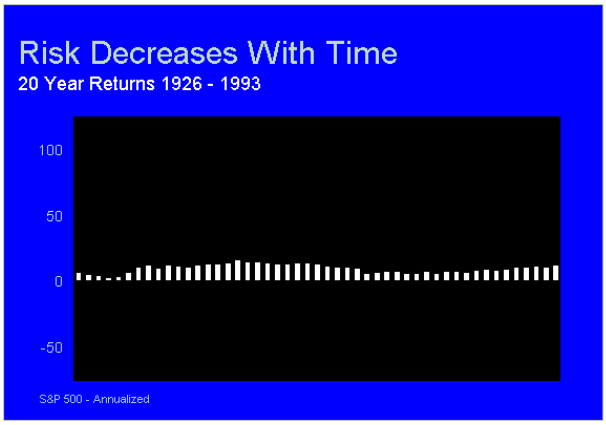
Risk Falls over Time

Look how the pattern of returns changes as we go from 1- to 5-, 10-, 15- and 20-year holding periods. You can see that there is much less variation during longer holding periods. While the chance of loss is reasonably high (30%) in any one year, it falls rapidly. Even during the Depression and in the 1970s, there has never been a loss while holding the S&P 500 for 15 years or longer.





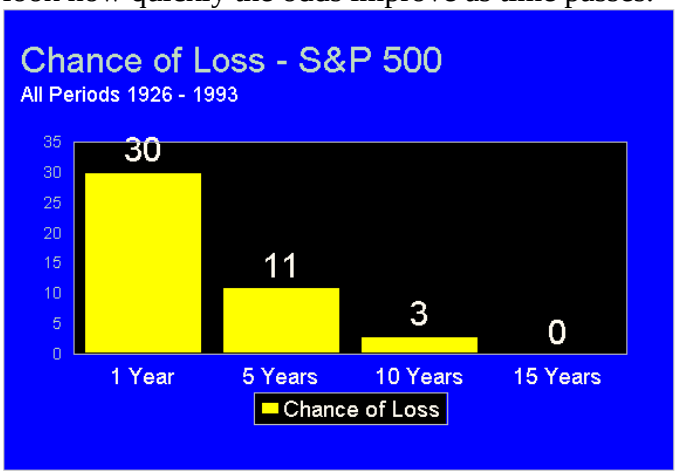




So market risk decreases with time.

How Often Can You Expect Losses?

Here is another way to look at risk. In any one-year period, there is a 30% chance that you may not make money. An optimist like me would say that there is a 70% chance of gain. Now, I will deny till my dying breath that stock market investing in any way resembles gambling. But if it were gambling, the odds would be stacked heavily in your favor. A race track couldn't last an afternoon with odds like that! And look how quickly the odds improve as time passes.

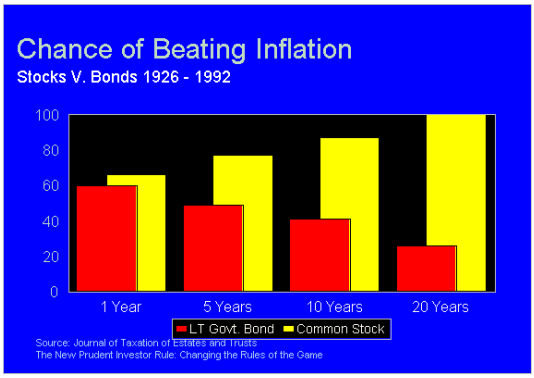


How Bad/Good Can It Get?

Investors may be concerned with a worst-case analysis. They often think: "What's the worst thing that can happen to me?" As we have seen, in a one-year period or shorter, results can vary dramatically. Over time, a different pattern emerges. Here is a best-case, worst-case, and average-result analysis for the markets we have looked at for all 20-year periods in the last 60 years. Notice that the worst-case result for equities almost equals the best-case results for T-Bills (a good proxy for most savings instruments), and the average result for equities exceeds the best case for any debt instrument.

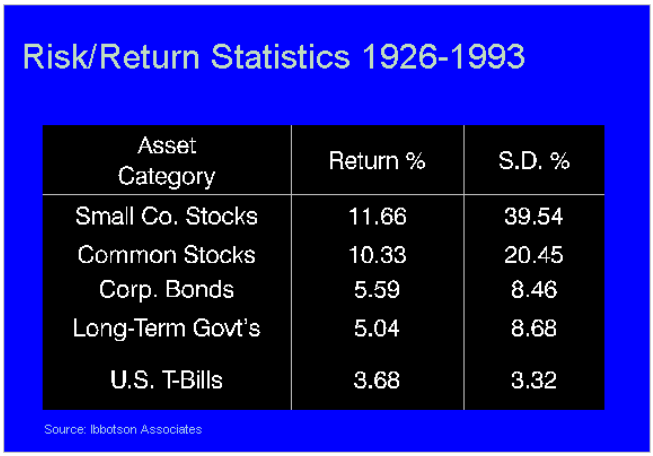
How Often Will You Beat Inflation?

Some investors may view risk as the chance of not beating inflation, the failure to obtain real rates of return, or losing buying power. Here again, stocks perform very well for long-term investors. The chance of beating inflation starts out better with stocks and rises to certainty at 20 years. No one who held the S&P 500 for any 20-year period since 1926 has ever failed to beat inflation. The chance of beating inflation with bonds is lower than with stocks in early years, and falls sharply over time.

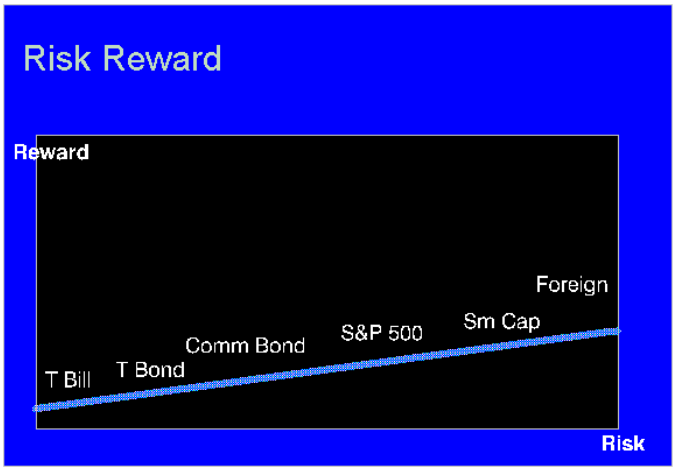


The Risk-Reward Line

So each of the asset classes we have examined has both a rate of return and a risk associated with it.



And if we plot the risk against the reward, we come up with the risk-reward line we all know intuitively exists.



The markets are far too efficient to allow higher rates of return without increased levels of risk. As they are so fond of saying at the University of Chicago, "There ain't no such thing as a free lunch" (a.k.a. TANSTAAFL). An investment proposal in violation of the "free lunch" rule is an early-warning indication of a con job. Investment results far from the risk reward line are just not going to happen. There is never a high return without high risk. If investors would keep that rule in mind, most of the boiler-room operations would be out of business overnight, and many of the horror stories we have heard would never have happened.

Risky Business

As we have seen, there are several ways investors may view risk. Investors might want to consider if the real risk they face is the failure to meet their goals. If so, they will want to construct portfolios which have the highest probability of meeting their goals. The paradox they must deal with is that what appears risky in the short term turns out to be very conservative in the long view. The longer your time horizon, the more certain you are that stocks will outperform alternatives. Given the higher rates of returns associated with stocks and the high probability of attaining those superior returns, what long-term investor in his right mind would want to be protected against that?

An appreciation of risk will make you a better investor. Hopefully we have cast some light on the dimension of risk. Risk is real, and it is built right into the investment process. But it may not be as great as many Americans think. It's not a Bogey Man 12 feet tall. And risk shouldn't prevent you from making rational investment choices. Still, it's the central problem in investment management.

Most of you have probably realized by now that with risk in equities so closely related to holding period, time must be a very important dimension of the investment problem. We will need to pay close attention to time horizon as we design portfolios to meet your specific needs.

No one can eliminate investment risk, but there are effective techniques to manage and mitigate each type of risk. We will deal with the classic risk-management techniques in the next chapter, which will be online April 11. Later we will explore Modern Portfolio Theory, a great advancement in reducing risk by properly balancing and structuring your holdings.

CHAPTER 3

Taming the Beast

Risk is the central problem in the investment process. Specific techniques allow investors to mitigate the effects of each type of risk. In each case, at best, these techniques offer limited relief. In other words, you can get a lot of help, but there are no miracle cures.

As we discuss each of the classic risk classes in turn, remember that while none of us can entirely avoid risks, we can pick and choose the risks we wish to bear. Also keep in mind that we should expect to be compensated for risk, and that without risk, no one could expect rewards above the zero risk rate of return. Having said that, please understand that I am not advocating excessive risks. Investors should carefully evaluate which risks they will bear, and chart a strategy with the highest probability of maximizing their rewards.

Don't take this discussion to an illogical extreme. Recently the airways have sprouted infomercials advocating everything from penny stocks to speculations in home heating oil or soy bean futures. Each carefully explains that there are risks but also opportunities for huge rewards. These are sucker traps, an almost sure disaster. Keep a healthy level of skepticism, and remember that there are still lots of con artists out there. There is a basic difference between investments in which you should expect to make a profit over time; zero-sum games in which you should expect eventually to get wiped out (gambling, options and futures); and fraud, where you never have a chance (penny stocks). Always remember: "If it sounds too good to be true, it probably is."

Business Risk

Business risk is the risk most investors first consider. Many fearful investors see their investments being wiped out by a business failure. A business need not fail to cause your holdings to be unprofitable. It can come on hard times, which will severely affect the value of its securities.

Even large, established institutions can disappear suddenly and without a trace. Over a two-year period, Miami residents lost three major international airlines, their largest bank, and their largest savings and loan. Equity investors received nothing.

Entire industries can decline and fade as their products become obsolete. There are few remaining buggy whip manufacturers, and we can assume that equity investors in that once-thriving industry are dissatisfied today.

Other industries find themselves unable to compete in a shifting global economy. America no longer manufactures a single color TV set. Our shoe industry has almost vanished. Again investors in individual firms have suffered.

Disasters can strike at any time from strange and unexpected directions. Utility investors suddenly found themselves evaluating their atomic exposure after Three Mile Island. Orange County bondholders endured a different type of business risk when they found that an obscure bureaucrat had put one of the richest counties in the country into bankruptcy. Texaco, one of the world's largest oil companies, found itself in bankruptcy after it interfered in an acquisition by a relatively tiny competitor.

We live in an age where that which should never happen - does!

Of course, investors have every right to find this distressing. Fortunately, this risk can be reduced to the point of insignificance. Diversification is the basic investor protection strategy. Diversification offers the only free lunch in the investment business. If an investor owns a single stock, and that company goes broke, the investor has lost his entire portfolio. If the company that went broke is only one-tenth of one percent of the investor's portfolio, the investor will hardly notice. Single companies often go broke. Entire markets do not!

As the number of positions held increases, business risk falls very rapidly. Statisticians often claim that as few as 10 to 15 stocks will offer adequate diversification, and that after that, further risk reduction reaches a point of diminishing returns. As a practical matter, investors of very modest means can own diversified

portfolios of thousands of stocks by using no-load mutual funds or other pooled investments. Business risk is effectively removed as a serious concern.
It's very important for investors to understand that expected rate of return does not fall as a result of diversification. Only the variation around the expected rate of return falls. And, variation is risk!
Investors are never compensated for a risk that they could have diversified away. Securities are priced assuming that investors hold diversified portfolios. Almost any basic finance textbook will explain the math, and no one with an IQ over room temperature will dispute the benefits of diversification. You may assume that this is a fundamental, undisputed truth.
Here's another fact of life: For every fundamental, undisputed truth, eventually someone will devise a ridiculous distortion. Diversification has been used as a rationale for some pretty dumb investment schemes. In the name of diversification, everything from collectable plates and dolls to oil wells, gold, diamonds, oil paintings, futures, commodities and even more blatant scams have been palmed off on unwitting investors by slick salesmen. While diversification is the best thing an investor can do to reduce portfolio risk, a dumb investment is always a dumb investment.
The rational investor will consider the merits of each investment before she includes it in her portfolio. Investments should have attractive risk-reward characteristics as well as add a diversification benefit to the portfolio. We will come back to diversification effect when we discuss Modern Portfolio Theory.

Market Risk

No matter how many issues we hold in a market, we find that there still remains a risk that won't go away. What we are left with is market risk. Market risk is often called "non-diversifiable" risk. No matter how well an individual company performs, its price may be affected by broad market trends. Any neophyte on Wall Street will quickly tell you that "a rising tide will carry all boats," and "few stocks can swim against the tide."
Earlier we made the argument that market risk was primarily a short-term problem. As a result, equity investments are not suitable for short-term obligations. I use this rule of thumb: Any known obligation coming due within the next five years should never be covered by variable assets (stocks or long-term bonds.) In addition, investors should have all of their insurance needs covered and a healthy cash reserve before beginning a long-term investment plan. I never want to be in a position of having to liquidate stocks at a loss to cover an expense I should have anticipated.
Markets do not all move in the same direction at the same time. A properly diversified portfolio will have assets in several markets or segments of markets. In most years, this will offer significant relief from market risk. However, investors who violate the previous five-year rule do so at their peril. The proper allocation to markets to obtain the maximum benefit from this effect will be the subject of a later chapter on Modern Portfolio Theory (MPT).

Interest Rate Risk

Interest rates affect investments in several ways.
First, as interest rates rise, the value of existing bonds falls. Consider a bond that was issued at par with a 7% coupon rate. One month later interest rates increase to 8%, and the company issues new bonds at the 8% coupon rate. You are an investor with a sum of money considering both bonds. Would you rather have 7% or 8%? Of course, you would like the higher coupon being currently offered. So, in order to induce you to purchase a 7% bond, the holder will have to cut the price of the bond below par. At some price below par, the 7% coupon, plus the appreciation between the discounted price and par, will make the bonds equally attractive to you. But the original owner of the 7% bond has had to sacrifice principal value in order to unload his bond. Of course, if interest rates fall, bondholders will enjoy capital appreciation. The rise and fall of capital values introduces a serious risk in what many consider to be a "safe" investment.
The longer the remaining life of the bond, the more the bond will be affected by changes in interest rates. A bond with one week until maturity will be virtually unaffected by even large changes in prevailing rates.

However, the holder of an identical bond with 30 years until maturity will be whipsawed rather violently by even small changes.
Because of this increased capital risk, longer-term bonds usually must provide a higher return than shorter maturities. If we were to graph the yield to maturity of a bond at different maturity lengths, we would normally see an upward slope. This is called a positive yield curve. At times during the economic cycle, long-term rates may not offer any enhanced yield to maturity over short-term rates. This is called a flat or inverted yield curve.
Bond managers spend a lot of time studying yield curves in order to define the optimum point of yield to risk. Conservative investors will prefer to accept a small decrease in yield in order to have a large decrease in risk. More aggressive investors will prefer the opportunity of capital gains in longer-term bonds if they forecast falling interest rates.
Bond traders also spend a lot of time trying to forecast future interest rates. Such forecasts are notoriously inaccurate, and anyone with a success rate of over 40% is entitled to consider himself an expert.
Bonds of high credit quality are less volatile than lower-rated issues. Of course, they must normally provide a higher yield to maturity to compensate investors for the additional default risk they carry.
If a bond manager was convinced that interest rates were going to rise, he would shorten the average length of his portfolio, and seek higher quality bonds. If he is right, this will preserve his principal.

Maturity vs. Duration

Recently a great issue has been made of the difference between maturity and duration. Maturity means just what it implies: the date the bond will mature and receive the principal back. Duration is linked to how much time a bond requires to pay off the principal at its coupon rate. Because the largest part of the value of a bond is the stream of coupon payments, bonds with higher coupons should carry less capital risk. The price at which a bond is purchased will also affect its duration. A bond purchased at discount will have a shorter duration than the same bond purchased at a premium, because principal will be repaid faster due to the lower cost basis. Many mutual funds report both average maturity and duration to help investors evaluate the risk of the portfolio.

Does Capital Fluctuation Matter?

Investors who plan to hold a bond to maturity may be less concerned with capital fluctuations along the way. They reason that they will receive their principal at the agreed date and have already received the agreed income. However, the capital account accurately reflects the investor's position. For instance, let's examine the case of an investor who invested $100,000 at 7%, and then found herself in an 8% interest rate environment. Her capital account is down. Had she previously chosen to keep her $100,000 in cash, she could now buy a great deal more income for it. The reverse is also true. Had interest rates fallen in the previous example, our investor would have a capital appreciation, and more income than she could now purchase with his cash.

Effects on Retirees

Interest rate risk also refers to the risk that you may not be able to reinvest your principal at the same rate you had when your bond or CD reaches maturity. After I left the Air Force in 1972, I moved to Miami. For years, my neighborhood was full of retirees who had sold businesses or taken their pensions and invested them at the prevailing high interest rates. Life was sweet with interest rates in excess of 12% and "no risk." Big boats, lavish parties, and country clubs were the rule. However, over time, the big boats were replaced by smaller boats, and then no boats. My friends stopped showing up at the club. Eventually these retirees left the neighborhood and purchased smaller apartments. None of them had lost interest in boats and parties, or felt their houses were too big. What happened? The income from their CDs fell apart! Each time a CD matured, it was rolled over at a smaller rate. Finally expenses exceeded income, and sometime after they realized that their principal was shrinking, they disappeared.

If we examine the variation in income from CDs, we find that it is very high. From 1981 to 1994, CD rates fell from 17.27% to 3.69%. In other words, income fell by 80%! Of course, on an after-inflation basis, the results were even more disastrous.
The school-book answer for interest rate risk is to arrange a bond portfolio so that maturities are staggered over time. That way not all the portfolio is rolled over at any point, and over the economic cycle, rates may average out.
I would propose that it is inappropriate for long-term investors to place all or even most of their resources in CDs, T-Bills or bonds. Had retirees in 1972 purchased a diversified portfolio including stocks, foreign equities, bonds and CDs, today they would be wealthy. But their perception of risk prevented them from making that decision. To them, equities were risky, and CDs were safe!

Other Interest Rate Effects

Investors must also be aware that the level of interest rates in the economy will have a major influence on all other capital goods. Stocks become less attractive to investors during times of high interest rates. Even if risk premiums don't change, the zero risk rate goes up with high interest rates. The resulting higher return requirements will cause stock prices to contract. High interest rates are often associated with inflation expectations, generally a sign that the economy is not healthy. Interest costs will impact some businesses much more than others. Financial institutions and highly leveraged companies will suffer. Higher costs to finance real estate will have a major impact on that market.
Some stocks act very much like bonds during the interest rate cycle. For instance, utilities and REITs are often purchased for their dividends by yield-hungry investors. Rising interest rates will tend to depress these stocks in particular.

Currency Risk

International investors quickly discover currency risk. Of course, wherever we live, most of us consider the local currency as the "real money," and everybody else's money is "funny money." So, we have a natural reluctance to trust foreign currencies. But even if we choose not to invest in foreign markets, none of us can avoid currency risk. If the value of our local currency falls, we become poorer because many things we purchase from other countries will cost more.
After World War II, the U.S. dollar emerged as the premier currency on the planet. While still a major world currency, events since then have seen the slow erosion of the once-mighty dollar. As the world recovered from the war, often with generous economic help from the United States, it was natural that other currencies should rise in value.
To be fair, America's role as world policeman and superpower have contributed to the problem. Whatever else it may have been, the nuclear umbrella wasn't cheap. However, our failure to maintain responsible fiscal policies, and a chronic balance-of-payments-and-trade problem, have accelerated the slide. In many respects, currency devaluation may be seen as a tax similar to inflation, imposed by the invisible hand on an often-unwitting spendthrift society.
Americans should be concerned about this loss of buying power. As a society, we simply do not possess the political will to reverse the long-term decline of the dollar. But American investors can partially hedge by holding assets outside of the United States. This is a powerful incentive to invest internationally.
International equity and bondholders are affected in a different manner. If you hold stock in a foreign brewery and the country's currency devalues, the effect on beer sales may not be very great. The value of the business may not be horribly impacted, and for long-term investors the net result may not be very noticeable. However, if you hold a bond, you may experience more dramatic effects. You have had a real loss that may not be made up soon. (The reverse is also true. You will benefit from an upward valuation.)
Americans holding foreign bonds have had reasonably disappointing returns for the amount of risk they have endured, while Americans holding foreign stocks have had very satisfactory returns.

Theory of One Price

There is good economic reason for bonds to be more directly affected. The T-Bill is a zero-risk investment for Americans. A short-term investment in German government paper would be a zero-risk investment for a German. There is no particular reason why two zero-risk investments should sell at far different rates in different markets except for currency risk. If there were no currency risk, normal arbitrage would eliminate the difference in returns. So most economists believe that differences in real interest rates are almost exclusively a reflection of currency risk expectations.

To Hedge or Not to Hedge? That is the Question!

In the short term, currency risk can be rather distressing. Local market gains may be offset by losses in currency. Or even worse, local market losses could be compounded by currency losses. So every international investor must decide whether he wishes to hedge against the currency fluctuations. Most developed markets and some emerging markets can be easily hedged for currency risk. But there is a high price in performance. For instance, a perfectly hedged foreign bond portfolio would perform exactly like a T-Bill minus the transaction costs of the hedges. (This again demonstrates that without risk, there is no prospect for higher returns.)

Portfolio managers are sharply divided on the subject of hedging. Some take the position that currency risk will work itself out in the long run, and the price of hedging isn't worth it. These same managers might argue that attempting to forecast currency swings and to structure the portfolio accordingly can add another element of risk if they are wrong. After all, forecasting is always difficult, especially if it concerns the future. Others believe that they can properly forecast currency swings and add value while reducing risk. The weight of the evidence seems to favor the un-hedged approach. In any event, Americans holding foreign equities have benefited greatly from their currency exposure for at least 40 years, and no end seems in sight for the long-term decline of the dollar.

Other Currency Effects and Problems

As with any other trend, there will be winners and losers. Portfolio managers attempt to develop strategies based on the relative impact on various areas and industries of currency shifts. As almost every schoolchild knows, exports are made more attractive and tourism bolstered by a falling currency. Imports become less affordable, foreign vacations less attractive. But beyond these elementary effects, many interesting trends develop that cause either problems or opportunities for portfolio managers.

As has been demonstrated recently in Mexico, currency changes can have serious effects on the local economy. Mexico provides almost a worst-case example. After their devaluation in late 1994, we expect major economic contractions, very high interest rates, business failures, and inflation. Predictably, the market tanked. (Of course, there is a chicken-and-egg problem here. The economic problems probably caused the currency changes.)

Many foreign governments have tied their currencies to the dollar. As our dollar falls, their exports also become more affordable, and the trend contributes to their economic development.

Most commodities still are quoted and traded in dollars. Companies, industries and countries that are heavy commodity users will benefit from a falling dollar. For instance, if a German company consumes large amounts of oil, and if the dollar is weak against the German mark, their price of oil will decrease even if the nominal price of oil remains flat. That company will experience lower costs, and have higher profits as well. These profits should increase the share value of the firm.

American investors holding foreign stocks will profit, or at least offset some of their losses in domestic holdings. The long-term dollar weakness has been a distinct advantage to America's international investors. As with most market trends, there are occasional periods of reversal. But the average American's fear of currency risk would appear unjustified in light of other benefits of foreign investing.

Political Risk

For good or evil, governments at all levels have a tremendous impact on the investment climate. We often equate political risk with international or emerging market investing, but our own markets are just as sensitive. You don't have to have an insurrection to experience political risk. Political risks include tax, trade, regulation, education and social policies. A government's attitude on capital and business sets the stage for either success or failure of their economy.
Political risk is not always negative. If we can find a country where political risk is falling, we might expect earnings in the economy to increase as the economy expands. But we also might expect that P/E ratios will expand as a result. Investors will demand less risk premium; put another way, the cost of capital will fall. One of the highest profile international-investment advisors seeks out countries where political risk is very high but improving. (Of course, you still have all the problems of forecasting.) America in the '80s, the U.K. under Thatcher, and many emerging markets benefited by enlightened governments' creating more optimum conditions for capital and markets to thrive.

A Bite out of the Old Free Lunch

As you can see, portfolio managers have a full menu of techniques to reduce risk. Many rely on forecasts, and the result will be only as good as the forecast. Some rely on hedging, which will add cost or reduce returns. The one free lunch we have discovered so far is diversification. But diversification has one more dimension that we must explore: Modern Portfolio Theory. This theory adds a new level of risk control which has revolutionized how many large institutions view the investment process. Investors of more modest means can also benefit. In the next chapter, I'll show you how!

CHAPTER 4

A Nibble from the Free Lunch

Spend a little time wandering around the University of Chicago and you are likely to spot joggers with some unusual T-shirts. The shirts appear to have handwriting and scribbles all over them. If you inquire, you will be told that those are the signatures of all the faculty that have won Nobel Prizes! The university is a world-class institution in many areas of study, but in finance and economics it totally dominates. No other institution is even close.

You may also spot T-shirts emblazoned with TANSTAAFL ("there ain't no such thing as a free lunch"). TANSTAAFL is more than a religion at Chicago. Free lunches are identified and rooted out with the passion and conviction of the Inquisition. At Chicago, it is great sport to debate the implications of tax-deductible lunches, or tax-subsidized school lunches; a true Chicago graduate will deny to his death that there ever has been, or ever can be, a free lunch. Investors everywhere would be well advised to adopt TANSTAAFL as their personal credo. Beware of the salesman offering free lunches!

Harry Markowitz is a very bright star in Chicago's galaxy of superstars. His Ph.D. thesis laid the groundwork for Modern Portfolio Theory (MPT) and revolutionized finance. Legend has it that Markowitz wrote the paper in a single afternoon in the University of Chicago Library in 1952. The paper was later edited, expanded and published as *Portfolio Selection*, and the contribution earned Markowitz a Nobel prize in economics in 1990.

Ironically, Markowitz's paper almost didn't earn him his Ph.D. The review committee had grave doubts about whether it was pure enough economics! That story, and many more about the founders of modern finance and their contributions, is told in the book *Capital Ideas*. See my investment bookshelf for a complete citation.

What follows is a simplified description of Modern Portfolio Theory. My aim is not to turn you into an economist, but to demonstrate how investors can use MPT to control risk. If you have an interest in finance and want a further explanation of MPT, I recommend you go to the source and read Markowitz's *Portfolio Selection*. The book is very readable, even for those of us who are mathematically challenged. Markowitz does us all a great favor by alternating the chapters of text with mathematical calculations.

Markowitz starts out by assuming that we are all risk-averse. He defines "risk" as a standard deviation of expected returns. However, instead of measuring risk at the individual security level, he believed it should be measured at the portfolio level: Each individual investment should be examined not on the basis of its individual risk, but on the contribution it makes to the entire portfolio.

Now comes the great leap forward: In addition to the two dimensions of investment, risk and return, Markowitz considers the degree to which investments can be expected to move together. The third dimension is the correlation of investments to one another (or co-variation).

While Markowitz considered the impact of individual securities in a portfolio, today many advisors use MPT techniques with asset classes in lieu of individual stocks to construct globally diversified portfolios.

Correlation is a very simple concept. If investments always move together in lock step, they have perfect correlation, and that is assigned a value of +1. If they always move in opposite directions, they have perfect negative correlation, and that value is -1. If you can tell nothing about the movement of one investment by observing another, they have no correlation, and that relationship is assigned a value of 0. Of course, two investments can fall anywhere on the spectrum between +1 to -1 in relation to one another.

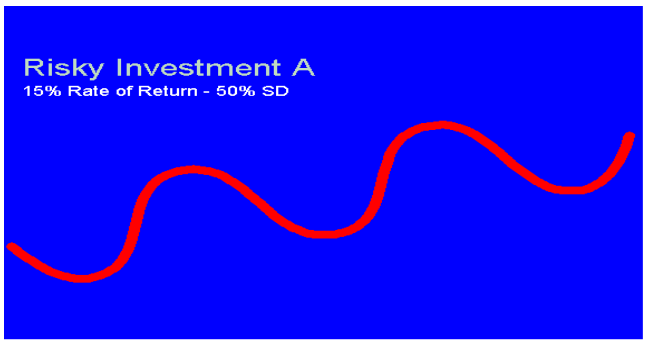
For instance, many factors will affect all airlines at once. Interest rates, cost of labor, the confidence of

flyers, landing fees, regulation costs, and the cost of fuel are very much the same for American, Delta, and United. We would expect that the price of their stocks would tend to move together throughout the market cycle. In fact, the price of the stocks often move together. They are strongly correlated.

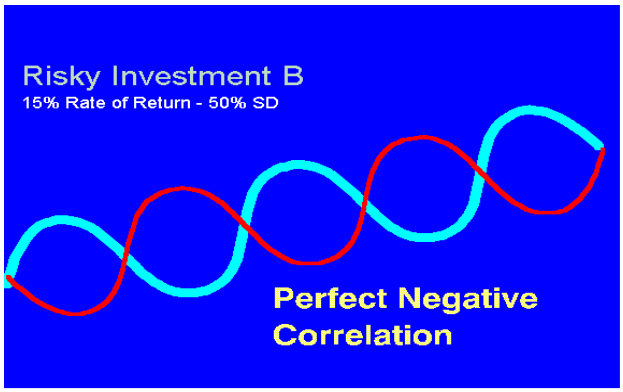
Often factors that are good for one industry are bad for another. Let's look at oil companies and airlines. Fuel is a large expense for airlines. If the price of fuel goes up, we would expect that oil companies will profit, and airlines will suffer. As a result, the price of their stocks should move in opposite directions. They often do. They have a low, or negative, correlation.

So, how can we use this knowledge?

Imagine that somewhere in the world we can find one high-risk, high-return investment. As it goes through the market cycle, it might look like this:



Let's also imagine another high-risk, high-return investment somewhere else. This second investment has perfect negative correlation with the first. Every time the first goes up, the second goes down, and vice versa.



If we put them together in a portfolio, the combined portfolio will have high return and zero risk! Short-term gains in one holding are exactly offset by losses in the other, but because the underlying trend in both investments is a high return, the combination has a high return.

Time for a little reality check. In the real world, we never find two holdings with perfect negative correlation. But the good news is that we don't need to. Any correlation less than a perfect positive correlation will reduce the risk in the portfolio! Risk has not been removed: There ain't no such thing as a free lunch! But perhaps Modern Portfolio Theory offers investors a discounted lunch. Or maybe it's a free nibble!

The implications of this are staggering. For the first time, investors are able to construct portfolios free of the old risk-reward line. In mathematical terms, the portfolio has a rate of return equal to the weighted average rate of return of the holdings, but the risk may fall below the weighted average of the portfolio!

We have come to the point where we must conclude that where most diversification is good, some is better than others. We get a better diversification benefit by including an airline and an oil company in our portfolio than holding two airlines. Classic diversification reduces business risk. But diversification, in the sense that MPT uses it, can actually serve to reduce market risk. Ideally, we will want investments that combine attractive risk-reward characteristics with low correlation to our other investments.

I must be clear here. I am not looking for an opportunity that simply offers the chance to lose money while everything else is making money. To me that's just another dumb investment. I think that each investment in my client portfolios must contribute to expected return.

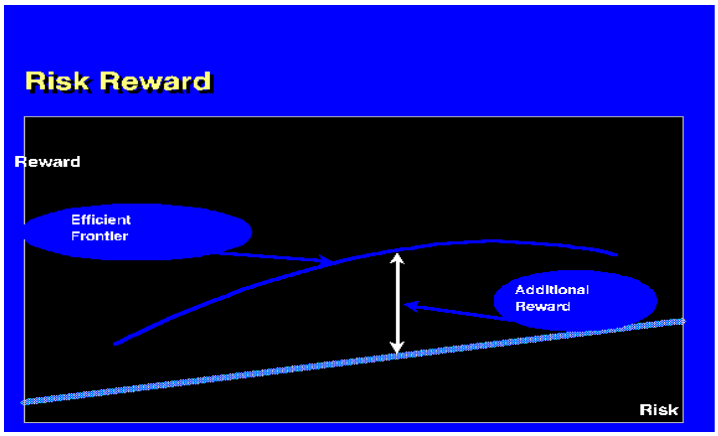
There is another (perhaps even rational and reasonable) point of view. Many practitioners will include an asset like gold purely for its low correlation with other asset classes. This may be a purer point of view. And perhaps this approach leads to a lower portfolio risk. I look at gold's 20-year low rate of return combined with its high fluctuation (risk), and decide not to waste a percentage of my portfolio on that asset.

The math is very heavy-duty, because for each investment we must factor in an expected rate of return, a risk, and the correlation to every other investment we are considering. The required data grows exponentially as we increase the number of possible holdings. Even worse, for just two assets, we must consider an infinite number of possible portfolios. We all know that we cannot have more than an infinite number of portfolios. So, I will leave it to the mathematicians to decide what happens when the potential number of assets in our portfolio grows over two. Those types of puzzles always made my head hurt. The answer may be closer to Zen than math. In any event, the math cannot be done without some heavy-duty computer power.

Markowitz laid out the math in his paper in 1952, and most people thought he had it nailed. But Markowitz had to wait more than 20 years -- until the mid-1970s -- to get his hands on a mainframe computer to prove that he had it right. Markowitz confessed that that was the happiest day of his life, not the day he won the Nobel Prize! At the time, a single run of the optimization problem on a mainframe cost as much as a brand-new car. Today, the definition of heavy-duty computer power has changed. You can

do the same example on an old 8088 PC in a heartbeat.

In a portfolio of a certain number of holdings, only one possible combination will result in the maximum possible return for each amount of risk we might assume. Markowitz called this optimum combination of holdings "efficient." Any other combination of holdings will result in a lower return at that same level of risk. These inferior combinations are less efficient. If we graph the efficient portfolios against the various levels of risk, the resulting line of best possible combinations is called the "efficient frontier." Happily, the efficient frontier falls above the old risk-reward line.



Every point on the efficient frontier offers the investor the highest return for a particular level of risk. But the investor is still faced with an infinite number of efficient portfolios, and must decide how much risk to take. The theoretical answer is this: Select the portfolio on the efficient frontier that is tangent to his indifference curve! I personally think that answers like this give economists a bad name. No wonder we are considered rather boring and a little weird sometimes! Later, I will outline some ways investors might reach a more real-world conclusion to this question. In the meantime, if you should meet an investor who knows where his indifference curve touches the efficient frontier, please have him contact me. I would like to meet him - I think!

The MPT optimization process allows the investor to approach the investment decision from two perspectives. He can start by deciding how much risk he feels comfortable bearing, and then seek the optimum level of return at that point. He might frame the problem like this: I want to be 95% certain (two standard deviations) that I endure no more than a 10% decline in value during any one year. An advisor can then construct a portfolio that has the highest possible expected return within that risk criteria. Or the investor can frame the problem like this: I need to achieve a 12% rate of return, and want a portfolio to do that at the least possible risk.

Is MPT a free lunch? No. But MPT is an incredibly powerful tool to manage risk and construct portfolios to meet various constraints. More than any other person, Markowitz has dragged portfolio management out of the Dark Ages. As we shall see, MPT has substantial limitations, and isn't a cure for risk. Today, financial management is still somewhere between art and science. But we have come a long way from alchemy. Investors who wish to achieve anything close to an optimum performance must not ignore MPT. The investment problem is multi-dimensional. The days when you could solve the investment problem by wandering into your nearest brokerage and letting the friendly salesman select a few good stocks are long gone. If your advisor isn't using MPT, get another advisor.

In the next chapter [online May 9], we will examine just how far the MPT revolution has spread, look at some of its practical limitations, and consider two examples that demonstrate concrete benefits for investors.

CHAPTER 5

Travels on the Efficient Frontier

When Harry Markowitz defended his dissertation on Modern Portfolio Theory in the early 1950s, it's doubtful that anyone present had any inkling of the tremendous impact it would have on modern finance. But the revolution didn't exactly spread like wildfire; it took a long time for the impact to be felt. Academics labored away in obscurity, steadily building a wealth of knowledge until the world was ready for it.

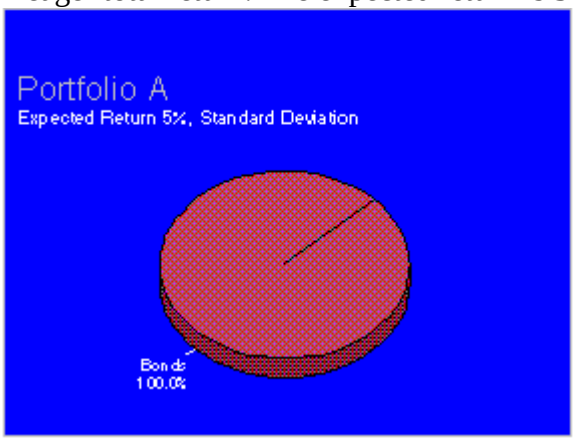
For the most part, Wall Street ignored the academics. The old ways were good enough, and change would have imperiled many of the Street's most sacred myths. During the early eighties, a few academics infiltrated the large houses and institutions, but they were considered slightly unusual. More than any other event, the crash of 1987 focused Wall Street's attention on the need for better understanding of the world's markets. Wall Street was ready to listen, at least at the institutional level. Today, financial economics is in vogue, and academics are widely consulted and sought after by large money managers.

Even the law is rapidly changing to incorporate elements of the new financial theory and practice. Fiduciaries run substantial personal risk if they fail to follow MPT basics. The old "legal list" of approved investments is long gone, replaced by an "expanded federal prudent man rule" for fiduciaries. Risk is required to be measured at the portfolio level, and no single asset is deemed too risky for a prudent portfolio. Rather the impact of the asset on the portfolio as a whole is deemed the appropriate test. Pension trustees and other fiduciaries are now required to properly diversify, follow a written investment policy, consider possibilities for profit as well as risk of loss, and build asset allocation plans with appropriate attention to expected rate of return, risk, and correlation of investments.

What practical benefits does Modern Portfolio Theory (MPT) have for investors? How can you apply this to your needs? Let's look at a couple of real-world, but simple applications.

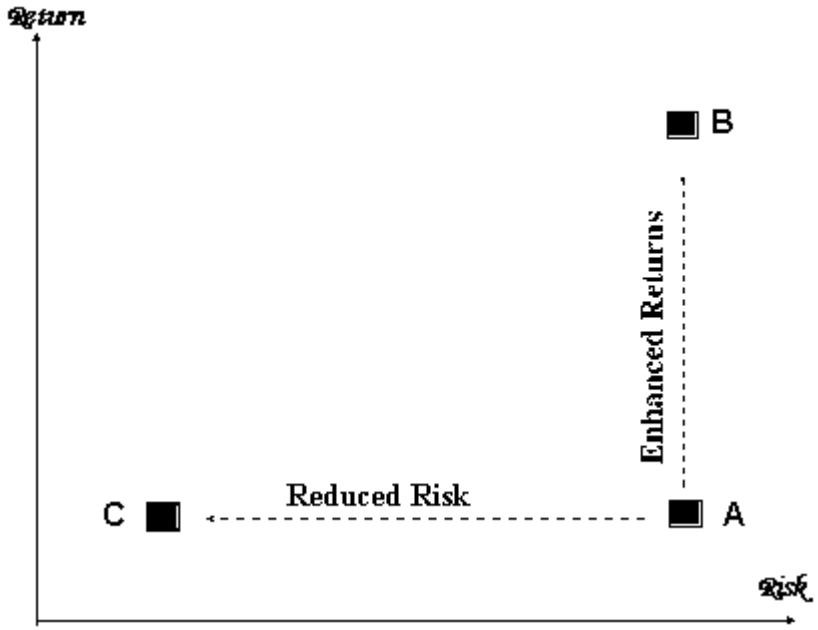
Improving an All Bond Portfolio

First, let's look at the case of a retiree living on his portfolio income. His primary concern is the safety of his principal and income. He presently holds a portfolio comprised exclusively of government bonds. Recently he has noticed that his income isn't going as far as it used to, and the gyrations of his principal value have been disconcerting. He doesn't want to do anything risky, but he is curious about how he might improve his situation.
Our retiree finds himself stuck on the old risk-reward line. Let's examine his portfolio of 100% long-term government bonds (Portfolio A). By itself, it isn't a very efficient portfolio: risk is high compared to the meager total return. The expected return is 5% with a standard deviation (risk measurement) of 11.7%*.



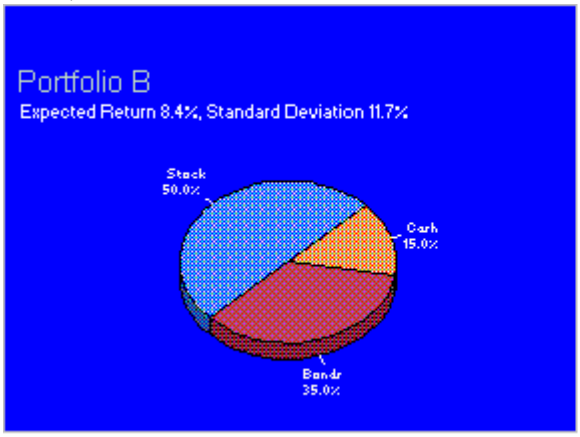
Before the advent of MPT, the traditional answer to increasing his yield would have been to creep ever further out into the risk spectrum with bonds - first to high-grade corporate bonds, then junk bonds, each with a growing risk. But MPT expands the list of options.

From his start position on the risk-reward line, any movement either upward (more return) or to the left (reduced risk) improves his position. (Every investment manager longs to be in the Northwest Quadrant of the risk-reward chart.)

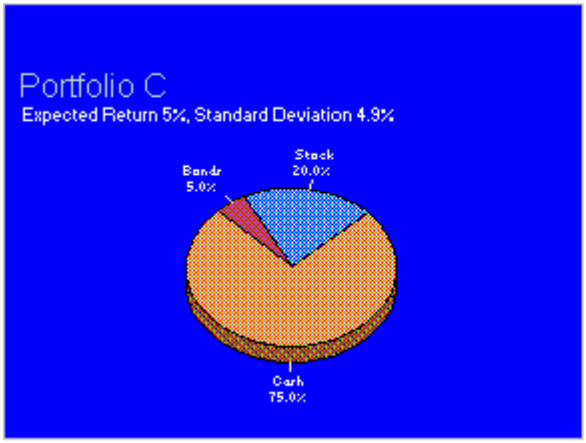


If we add different combinations of cash and stocks, it is possible either to substantially improve returns without increasing risk (Portfolio B), or to dramatically reduce risk without sacrificing returns (Portfolio C). Paradoxically, addition of a more risky asset can actually reduce the risk in the total portfolio! This occurs because cash, bonds and stocks often move in different directions during market cycles (low correlation). MPT proves that the risk level of the portfolio as a whole should be considered paramount rather than any separate component.

Portfolio B contains 50% stocks, 35% bonds, and 15% cash. The expected rate of return has increased to 8.4%, while standard deviation has remained 11.7%.* (Much higher return, no more risk.)



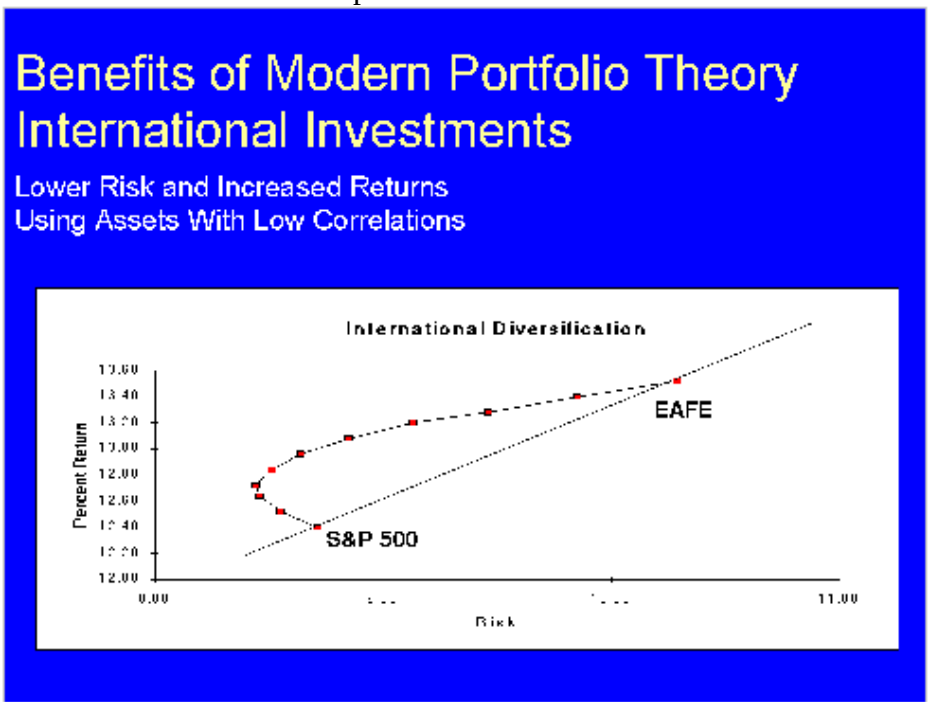
Portfolio C contains 20% stocks, 5% bonds, and 75% cash. This combination achieves the original 5% expected return, while lowering the risk to 4.9% standard deviation. (Same return, less than half the risk.)



Historical returns from 1926 to 1992, courtesy Ibbottson and Associates. Cash based on 30-day Treasury Bills, bonds based on long-term government bonds, and stocks based on the S&P 500 index. Historical returns are no guarantee of future performance.

International Investing and Modern Portfolio Theory

Here's another example: An investor holding a portfolio of large domestic stocks would like to see if international investing would improve his position. He is comfortable with equity risk, but would like to improve his returns, or lower his risk.
Here are various mixes of domestic large stocks, represented by our S&P 500 index, and foreign large stocks of developed nations, represented by Morgan Stanley's Europe, Australia, Far East (EAFE) index. The foreign stocks have both a higher return and risk than our domestic market. You might expect that as we mixed the two together the resulting portfolio combinations would fall on a line connecting them. But you can see that as we add foreign stocks to a domestic portfolio, return increases (moves up) and risk decreases (moves left) until we reach an optimum position at about 60/40 domestic to foreign. The combination of lower risk and higher returns is why we feel so strongly that global diversification is essential for all investment portfolios.



International Investments (click on image for full-size chart)
International investing has two key benefits for American investors: higher returns and a strong diversification effect. International markets have a very low correlation with our domestic markets. This

diversification effect will lower risk at the portfolio level, which is one of the chief advantages offered by Modern Portfolio Theory. (This is a very simple two-asset-class illustration. Our investor should also consider the impact of small cap stocks, emerging markets, value investing, real estate, hard assets and other asset classes on his program.)

Modern Portfolio Theory is certainly a great leap forward in our ability to construct rational investment plans. But like any good tool, it must be used with judgment. And, like any good idea, there will always be someone who will take it to an illogical extreme.

First, we must understand that MPT is not a risk elimination process; it is a risk management tool. It allows us to build more rational investment plans, control risk, and get "the most bang for the buck" of risk. It is not a substitute for judgment, and in fact requires great judgment for its proper application. There are severe limitations which, if not properly understood, can lead to very strange and counterproductive results. When dealing with investment tools we must always remember that none of them work every day, every quarter, or every year. So an optimized portfolio is not a substitute for CDs. Patience and discipline are still required if the process is to bear fruit.

MPT is based on an examination of past results. We can say that some things happen more often than not, but there is no guarantee that tomorrow will always be just like today. Short-term returns will always remain random and variable.

We can take a great deal of comfort in the fact that none of the three variables appears to be changing in any fundamental way. In particular, there doesn't seem to be any fundamental change in the correlations between the world's markets. While we may be moving toward a global economy, individual economies and markets still respond to local conditions and politics.

There are a number of "optimization" programs readily available to financial planners and portfolio managers that will quickly and easily solve the math problems associated with MPT. However, like any computer program, if we put garbage in we will get garbage out. Many of us put far too much value on the output of a computer program without considering the input and programming problems. If it's from a computer, we believe, it must be right! Beware the black-box approach to solving life's little problems.

The MPT process and math is particularly vulnerable to data input distortions. For each asset or asset class, we must enter the expected rate of return, risk, and correlation to every other asset class. This leads to two problems. First, the data changes every day. Next, a tiny change in an input of any of the three factors will have a giant impact on the suggested allocation. Even if we assume that all the data going in is totally accurate, we still have problems.

Left to its own devices, the optimizer will identify the one most efficient asset and suggest that you put all your resources in that asset. Of course, this leads to a gross violation of the diversification principal. In practice, most advisors restrain the program to reasonable asset allocations. Blindly following the black box will lead to putting all your assets into one stock or one market.

I attended a meeting in 1994 where Bill Sharpe spoke on the problem of optimizers. According to Dr. Sharpe, optimizers will readily identify input errors and recommend that you put 100% of your assets in the wrong asset. Sharpe shared the Nobel Prize for Economics in 1990 with Harry Markowitz for his work on MPT. He developed the Capital Asset Pricing Model and other refinements to MPT. I believe he speaks with some authority on the problem.

If the inputs are updated frequently, another strange abnormality creeps into the process. Because assets which are under-performing recently will show lower rates of return and higher risk, the program will decide that they are no longer efficient. Then the program recommends sale of the asset. Blindly following the black box then leads to buying high and selling low. In the real world, tax and transaction costs are high. Frequent updates, and the resulting frequent trading, will increase transaction costs far beyond the benefits that MPT can offer. Most of us don't need that kind of advice. How often to update the data, and what time frames to use, becomes a matter of judgment. The computer can't solve that for you.

In the case of foreign investing, if we examine monthly or quarterly data, we will get different results than if we use annual data in our series. In a like manner, if we look at 10-year time periods, we will get different results than if we use three- or five-year time periods. There is always an effect, and it is almost always better to have a diversified portfolio, but the optimum ratio of foreign to domestic will change with each different set of data observations.

Two very clear examples come to mind to illustrate the problem of the black box. During the preparation for Desert Storm, foreign markets performed miserably. All the optimization software I saw recommended selling foreign stocks. Those investors and advisors who sold locked in their losses, and were not invested when the inevitable turn came.

During 1993, emerging markets exploded upward. Mutual fund companies rushed new emerging market funds through registration. Their representatives touted an asset allocation of up to 40% in emerging markets and used optimization results to add to the hype. Of course, they downplayed the very short-term data that they were using as input to the process. The very short-term data indicated that emerging markets had high expected rates of return and almost no risk! Investors who rushed out to load up on emerging markets were left with egg on their faces, and have had all of 1994 to wonder what went wrong. Longer-term data would have showed a very high rate of return, very high risk, very low correlation, and an optimum portfolio with a low percentage of assets in emerging markets.

Most advisors use past data for expected rates of return and risk inputs. However, some may forecast based on their research or feelings. In my not very humble opinion, this adds another layer of risk and complication to the process.

A better approach, and one that I have used successfully in my practice for years, is to use long-term data to structure a portfolio that makes sense, and then test the results with the optimizer. Rather than sell assets that are under performing in the short term, as the optimizer programs might suggest, we use re-allocation to increase positions in down markets and decrease positions in markets that have had strong short-term results. This can be emotionally painful and requires discipline. I can't honestly say that I enjoy selling winners to buy losers, and I get to explain it all too often to concerned clients. But while it goes against the grain, this discipline will lead to more consistent results, lower risk, and reverses the buy-high, sell-low problem.

The terrible truth is that financial management remains an art much more than a science. Forecasts are notoriously difficult and unreliable, and judgment is always required. We must recognize that nothing works every day, quarter, or year. Discipline is difficult in the face of intense media speculation and hype, but discipline leads to acceptable long-term investment results. As long as the world economy continues to grow, patient investors will profit.

For all its limitations, MPT offers one of the strongest tools available to the rational investor. Used properly -- that is, with judgment, patience, and understanding -- it will go a long way toward smoothing out the often-bumpy investment process.

In the next chapter, I will discuss a closely related area: the impact of asset allocation on investment results.

CHAPTER 6

The Asset Allocation Decision

Like most of my clients, I grew up with preconceived ideas about investing firmly planted in my head. These ideas seemed so sensible that they were almost considered universal truths. Everyone I knew seemed to believe the same things. There didn't seem much point in checking the facts, and anyone who disputed our inspired beliefs was most likely a few bricks short of a full load.

In general terms, our basic understanding was as follows:

- Knowing which stocks to buy and when to be in the market is the key to investment success.
- A good investor can predict which way the market is going and which stocks will profit the most. This power is held by just a few wise men. These wise men will readily share their power with you for a nominal cost. This minor cost will be repaid many times over by enhanced performance. However, one must always avoid the charlatans who give false advice. A wise man is one whose stocks go up, and a charlatan is one whose stocks go down.
- Knowing when the market will fall is a prime concern to the successful investor. One should leave the market when it is about to go down in order to preserve his principal.
- Successful investors trade often, and dart in and out of the market or a particular stock with uncanny skill. Their portfolios benefit from a hands-on approach.
- It is rather easy to spot good companies through an examination of financial data, and to determine what the stock in those companies should be worth.
- An astute investor can apply superior insight to make big killings on mispriced stocks. Using his superior insight he will be able to take action long before other investors catch on.
- Studying past price movements is an aid to predicting future price movements. This skill can be applied to both individual stocks and the movement of the market as a whole.
- Economic predictions are reliable, and form another strong foundation for success.
- It is reasonably easy to select good advisors and managers, because their past track record is a reliable indicator of future success and skill.

Given all that, we tended to think of the investment process in the following terms:

- What stocks should I buy?
- Should I be in or out of the market now?
- When should I sell my stocks?
- Which manager should I hire? Or, what mutual fund should I buy?

Unfortunately, almost all of this conventional wisdom was dead wrong! It doesn't do us any good to think of investing in these terms. In fact, it creates problems, and keeps us from enjoying the fruits of a game strongly tilted in our favor.
From personal experience, I can tell you that it is very difficult to unlearn something you have always known. We tend to cling to those old familiar ways of thinking in most unreasonable ways. Change is difficult and painful. We resist it. We rationalize. We fight for the old ideas every step of the way. We practically have to be hit over the head with a better idea before we will consider it. We want to ignore the idea and discredit the person who calls it to our attention. Most of us are not as flexible or rational as we would like to think we are.
In this chapter, we will consider the merits of the investor's obsession with individual stock selection and market timing. Just how much do these two elements of the investment process contribute to overall success or failure? Is there a better way to think about investing?

A Ground Breaking Study

In a landmark study, "Determinants of Portfolio Performance," published in the Financial Analysts Journal (July-August 1986), Gary P. Brinson, L. Randolph Hood, and Gilbert Beebower examined the investment results of 91 very large pension funds to determine how and why their results differed. The pension funds, which ranged in size from $100 million to well over $3 billion, were studied for the 10-year period ending 1983. Very complete and extensive data was made available on each of the funds from the SEI performance database.

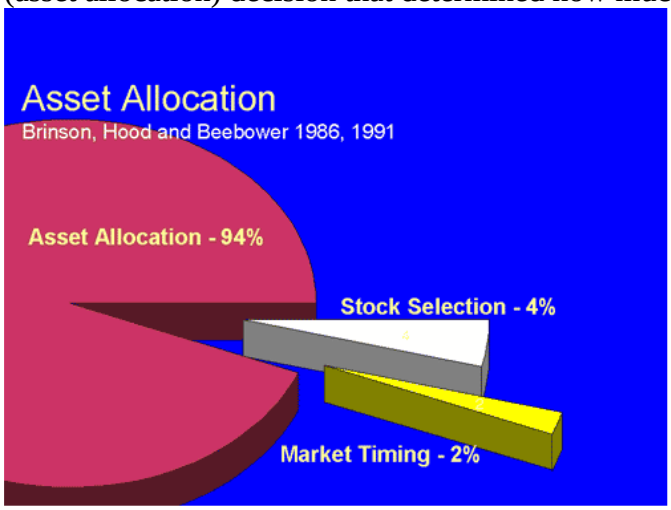
Even the smallest of these pension funds represented a very large investment pool. We can assume that they commanded the very best talent available. Each was the valued client of one or more of the largest and most prestigious investment managers in the world. As such, they automatically received the best research and information. In other words, they certainly had the resources available to "beat the market."

The team did a very simple but powerful and elegant analysis. They reasoned that only four elements could contribute to investment results: investment policy, individual security selection, market timing, and costs. By using a rather straightforward regression analysis, they were able to attribute the contribution (or lack of it) to each of the four elements.

Investment policy was defined as the average base commitment to three asset classes: stocks, bonds, and cash. For instance, a pension fund might have a mix of 60 percent stocks, 30 percent bonds, and 10 percent cash. (Most investment advisors use the term asset allocation rather than investment policy.)

Market timing was then determined by variations around the base commitments. If a pension fund changed its commitment to the three asset classes over time, it was assumed to be an attempt to profit from market timing.

The conclusions were remarkable. Using market-index returns for the three asset classes, (S&P 500 for stocks, Shearson Lehman Government/Corporate Bond Index for bonds, and the 30-day Treasury Bill for cash) the team was able to explain 93.6 percent of a pension fund's performance based solely on knowing its investment policy! The biggest single factor explaining performance was simply the investment policy (asset allocation) decision that determined how much a fund should hold in stocks, bonds, or cash.



That left less than 6 percent of the difference in results to all other causes! The other factors contributed to the differences in total return, but not necessarily in a positive way. Attempts at market timing almost always resulted in a reduction of return, and individual stock selection on average resulted in a reduction to the funds' returns. There was a wider variation in individual stock selection impact than in market timing, and a few managers were able to affect performance during the time period in a positive manner. Cost and execution differences for these very large investment plans were not an important factor (but you can believe they are a very important factor for you!).

Continuing the analysis, the study concluded that on average, attempts to actively manage the portfolios actually cost the average fund 1.10 percent per year when compared to just buying and holding the appropriate indexes. The best and the brightest that Wall Street could offer couldn't reliably deliver.

Wall Street Cries Foul

The study touched off a major war within the industry, and between Wall Street and academics. After all,

Wall Street's entire business is built on the belief that brokers and analysts can contribute value to the investment process with their insight into individual security selection and market timing. Each brokerage house or investment manager wants the public to believe that somewhere in the back office is a genius who can make you rich. Our research/contacts/methods/insights/forecasts/gurus, they say, are better/smarter/more effective than what the other guys can offer!

As the study was further disseminated, cries of anguish and pain resounded across the land. What if investors suddenly got the idea that Wall Street's highly praised research was garbage, that massive active trading didn't add value, and that a broker's advice was worth less than zero? What would happen to fees and commissions? The idea was simply unthinkable! Huge fortunes and giant egos were on the line.

When faced with a study you don't like, one of the first lines of defense is to attack the data. If the data is published for all to see, and indisputable, all is still not lost. You can always claim that the other side "mined the data." (These are serious fighting words in academia!) Mining the data means that the entire study is flawed because the data is so limited that the results can not be projected to other areas. In other words, the conclusion only applies in this one little, obscure, and unimportant case. Your study is garbage, and although interesting and amusing in an academic sense, at the very best you have produced trivia! Left unspoken is the implication that you have a tiny mind and perhaps foul motives.

If you are ever accused of mining the data, your first defense is to go find another set of data and get similar results. The more different sets of data that you can find with similar results, the stronger your claim. So, the authors redid the study, and generated almost identical results.

Today, this issue is considered reasonably settled. No one with an IQ higher than room temperature disputes the impact of asset allocation on investment results. Large institutions and sophisticated investors are increasingly turning to asset-class investing. What's more, similar studies have repeatedly contributed to the diversion of assets away from active management and into passive or index funds. In fact, between 1970 (the year such funds were introduced) and 1990, over $500 billion has moved into these funds. The trend is continuing to accelerate as a growing number of investors realize the advantages: more reliable performance, lower cost, and lower risk.

Asset Allocation: The Lessons for Investors

Is there a lesson here for us? If the vast majority of investment returns can be attributed to an asset allocation decision, shouldn't we concentrate our efforts where they will have the most impact?

It is far more rational to decide first how much risk we are willing to bear, and then decide which markets we wish to enter and which we wish to avoid. Next, we must decide what proportion of our assets to put in each selected market in order to meet goals within our risk tolerance. In terms of ultimate results, these are by far the most important decisions we will have to make. The impact of asset allocation or investment policy outpaces all other decisions.

Having come this far, we are free to consider whether it makes sense to attempt to actively manage a portfolio, use index funds, or mix the two techniques. In terms of the impact we can expect, these choices may reflect fairly important details or perhaps individual preference.

Today, the asset-class decision is more complex than just a decision on stocks, bonds, or cash. Literally hundreds of separate and distinct asset classes could be identified, and more are constantly being proposed. Each has different combinations of risk, reward, and correlation to the others. Putting the asset classes together to meet your goals is where the bulk of the heavy work should be done.

Asset-class investing - that is, investing and making commitments to whole markets rather than individual securities - is a fundamental shift in emphasis from what most of us grew up with. Rather than ponder over whether to purchase GM or Ford, we should be deciding how much of our assets to commit to U.S. large company stocks. Rather than wondering whether to buy now or later, we should be thinking in terms of long-term commitments to our chosen asset classes.

In turn, these new insights open up a whole new can of worms to deal with. What role should investment managers play? Can managers add value to the process? Are they worth their cost? Can they beat the market?

In the next chapter, we will cover some of the debate on efficient markets. If you believe markets are

efficient, then the traditional stock-picking, market-timing managers who claim they add value have a tough case to prove.

CHAPTER 7

The Efficient Market Debate

If you're reading this chapter on the Net, you're already a full-fledged member of the information revolution. You know how quickly information can spread worldwide, and you are aware how thoroughly our lives are being changed as a result. We can all plug into unimaginable wells of information, much of it constantly updated in real time. If we choose, many of us can work effectively from home, or on an island in the South Pacific. Our clients and associates may neither know nor care where we are located. I'm no longer surprised when I see prominent Miami attorneys negotiating deals and settlements on their cellular phones, faxing and receiving contracts and pleadings, setting court calendars, and checking their email while simultaneously trolling for giant tuna off Bimini! Anybody, anywhere can be plugged into almost anything.

How quickly and effectively information spreads is at the heart of the debate over just how efficient markets are. The question, far from being one of just academic interest, directly impacts every investor. Even if investors have never heard the term "efficient market," they form strategies and view their alternatives based on opinions about the efficiency of various markets.

Market Fundamentals

In order for markets to properly set prices and values, two conditions are necessary: willing buyers and sellers (neither being under particular pressure to buy or sell), and those same participants' possessing perfect knowledge. Should one side possess more information than the other, then we must expect that that side has a tremendous advantage. We must then expect the holder to utilize this additional knowledge to extract "undeserved profits" or "economic rents."

Markets are the very heart and soul of the capitalistic system. The system's invisible hand not only sets prices, but determines how goods and services are distributed, and encourages further growth of the system with benefits for all. For markets to work at all, there must be a general feeling that they are fair. In organized markets, governments and regulators go to a great deal of trouble to ensure that both sides operate on a level playing field. Ideally, no one should have an advantage. Consequently, governments require mountains of disclosure, set accounting and financial reporting standards, monitor for compliance, prohibit certain insider trading, and license brokerages, dealers, representatives, investment advisors, salespeople, and even the markets themselves.

Perfect World

Let's look at a perfect market: lots of buyers and sellers, homogeneous products, perfect knowledge, and instantaneous spread of new information. In this market, prices are determined by the independent judgment of thousands of buyers and sellers. New information reaches buyers and sellers instantly, prices adjust instantly, and neither side can expect an advantage or anticipate economic rents. The market is perfectly efficient.

In this perfect market, no amount of additional research will improve an investor's position. All information about each security and its economic prospects is already known. Prices settle into equilibrium at a level that reflects both the market rate of return and the additional risk each security carries. All that is necessary for an individual investor to attain an appropriate rate of return is for her to buy and hold a diversified portfolio. The individual investor need not exhibit superior skill or cunning in order to match the most sophisticated institution. Furthermore, an individual's portfolio cannot possibly underperform, no matter how brain-dead the investor is! The market has set the appropriate price for each security.

Pricing Models

How the market accomplishes the miracle of setting the proper price for each security is still the subject of lively debate. Various models have been proposed that should lead to appropriate pricing. Buyers and sellers are attempting to discount all future benefits of owning a security to a present value that is equal to the price.

When arriving at a price that will "clear the market," buyers and sellers must also assess the risk in a particular asset, and compare that risk to the market as a whole. The most widely known model, the Capital Asset Pricing Model (CAP-M), examines the volatility of an individual stock in relation to the market as a whole, assigns the additional volatility (a factor called Beta), and assumes that stocks will be priced to reflect both market risk and the particular risk of the individual stock. CAP-M and Beta are brilliant and elegant concepts that have a certain charm and intuitive appeal, but they suffer from real-world flaws. There is a lively cottage industry devoted to either bashing or defending the concept. Professor William F. Sharpe, who won the Nobel Prize for proposing CAP-M, thinks the concept was a pretty good first effort, modestly admits its flaws, enjoys the debate, and is happy that no one can take back his prize.

Asset pricing and expected returns are directly related. Risky assets have lower costs and higher expected returns than less-risky assets. In a later chapter, we will discuss some improvements to the theory of asset pricing which can assist investors when plotting their own investment strategy.

No market is perfectly efficient, but our securities markets are pretty close. Today, as we have all observed, information spreads worldwide at the speed of light. Millions of people have access to the same information simultaneously. Millions of traders constantly monitor data for pricing aberrations around the world. Where such pricing discrepancies exist, they are almost instantly closed by normal arbitrage. Thousands of computers continuously screen prices against multiple criteria, formulas, and models to detect mispricing. Hundreds of analysts may follow a single stock. There are very few secrets. With all this activity going on, investors must ask themselves what the chances are that they will be able to develop a single investment idea that hundreds or thousands of others haven't considered already. If others have already acted on a similar concept, then their knowledge must be factored into the price of the stock. Is it ever possible to get an edge, and if so, can we get it reliably enough to make a difference? In the real world, transaction and tax costs are high, and we would have to be right a rather dauntingly large percentage of the time to overcome our trading costs. The cost of research is also high.

In a real way, the very skill, quality, access and number of people doing research limits the value of the process. If nobody did research, then giant market discrepancies would occur. Simple research should lead to giant gains, but with so many players, the point of diminishing returns may be far behind us. The hundreds of thousands of often-brilliant researchers and analysts make the market efficient. I'm not saying that you can never win, only that it is unlikely that you can consistently win enough times to overcome the costs of trying.

Degrees of Efficiency

Debate about the efficient market boils down to the consideration of one of three models. At one end of the spectrum, the "strong" market theory, no one can ever get information that isn't known to the market. Even insiders cannot benefit from their position. Supporters point to studies of price movements before significant public announcements to prove that there are inside information leaks. The "weak" market theory acknowledges that insiders may occasionally profit from their information. The "semi-strong" theory cuts down the middle.

It would be hard for me to argue that markets are always perfect -- insiders do occasionally score big gains. For a fascinating view of the '80s insider trading scandal, see Den of Thieves by James B. Stewart. For generations, insider trading, market manipulation, and other unsavory scams were considered clean sport for Wall Street's barons. JFK, Reckless Youth, by Nigel Hamilton, offers some interesting insight into the role Joseph P. Kennedy played as a master manipulator of stock and bond pricing during Wall Street's darker times. In what appeared to be a classic case of appointing the fox to watch the henhouse, Kennedy was named first chairman of the SEC by FDR, and served with some distinction in the post. Later, he returned to his old seamy tricks as a market manipulator in London while serving as

ambassador to England.
Only the most naive would think that insider trading has been eliminated. But as information spreads more quickly and further, it becomes more difficult to profit from insider trading, and harder to conceal it from regulators. While occasional violations will continue to occur, the impact on the markets is probably minimal. Some economists today argue that the prohibition of insider trading is unnecessary and counterproductive. In view of past abuses, it's a little hard for me to believe that lifting the law would be a good idea. To continue to inspire confidence, markets must appear to be even more chaste than Caesar's wife.
The more important issue is whether research and active management can add value to a portfolio. As we have noted, if markets are efficient, then all the research in the world will not improve an investor's results. If research is a factor, then it can be a valuable addition. If we can set up an appropriate benchmark for a market or portion of it, we can then measure the impact of management. Fortunately, today we have hundreds of indexes that measure the performance of various markets and parts of them. If we don't like the available indexes, it's easy enough to generate others that capture a more specific portion of the target market. Indexes have no transaction, management, or other real-world costs, and are always fully invested. They offer the perfect "investment style" to use as a comparison.
Management offers not only style, but selection of individual securities, and perhaps market timing. Management costs money, both in management fees and transaction costs. In addition, it is difficult for managers to stay fully invested even if that is their goal. Not counting taxes, management is generally assumed to cost at least 2% per year. If the investor pays taxes, the constant buying and selling will create substantial tax liability, which becomes a heavy drag on performance.
Index funds are mutual funds that mimic an index. In the real world, they will have some transaction costs and other expenses. These expenses average between .2% and .5%, depending on the market and the sponsor of the fund. Index funds do not constantly buy and sell, so the tax drag will not be nearly so heavy. This can be a substantial benefit for taxpayers, and occurs as a fortunate by-product. If markets are efficient, index funds do not have to bother with all that pesky research. Is this a free lunch? Not really. Other, less-wise investors are paying for all the research that makes the market so efficient!
In theory, if markets are inefficient, good managers will overcome all the direct and indirect costs they generate and add value; they will exploit market inefficiencies to produce superior results. These managers rely on research, experience, intuition, or superior skill and cunning to decide what and when to buy and sell.

Types of Research

Market research is divided into two categories: technical and fundamental.

Technical Analysis

Technical analysis starts with the assumption that everything one needs to know about a stock or market can be learned from studying its price and past movements. By plotting or charting past movements, technicians believe that they can discover repetitive patterns that will suggest valid buy and sell "signals." Discovery of the right signals will lead to effective market timing. Some of the "pure" technicians insist on studying charts without the name of the firm attached so that they will not be "confused" or "distracted" by their knowledge of the firm! Technicians use all sorts of data and combinations of data to generate their signals. They will study insider trading, consumer confidence, interest rates, yield curves, market volume, short sales, odd lot volume, ratios of new highs to new lows, and hundreds of other "indicators" to generate their signals. They tend to speak in terms of resistance levels, floors, breakouts, proprietary trading strategies, periods of increased market risk, and other mysterious babble. Often they attempt to add a layer of legitimacy to their work by having the data fed into computers for number crunching and analysis.
Technical analysis persists in spite of the total lack of any creditable evidence of its effectiveness. One might as well examine the entrails of animals, chart the stars, or worship the Tooth Fairy. Looking back,

one can always find the patterns that led to market events. The only little problem you have is that when looking forward, those patterns are no help. Many technicians constantly revise their indicators as they fail in real life, then "backcast" using the new indicators and publish the theoretical results. To give the backcast greater validity, it was once common to have a CPA firm certify that had you used these techniques, you would have had the stated result. The fact that real, live investors never obtained those results was seldom disclosed. Today there are several landmark cases winding their way through the courts concerning backcasting, and the SEC has taken a lively interest in the subject.
Wall Street loves technicians and continues to pay them lip service. Right or wrong, technicians generate huge trading volume. And whether the investor wins or loses, the house always gets their slice. The media gives the technicians undue attention in their unending quest for simple answers to complex questions and pithy, quotable, seven-second sound bites. Investors often desperately want to believe that someone can protect them from market forces that they do not understand. Technicians prey on the risk aversion we all feel by offering protection against the market's downside. By offering an illusion of risk reduction, market timers and technicians appeal to conservative and fearful investors. They paint themselves as "concerned" and "responsible," while giving the impression that a buy-and-hold strategy is somehow wild and crazy.

Fundamental Analysis

Fundamental analysis is far more rational. It concerns itself with examination of the firm and the economy. Fundamental research looks at financial data, sales forecasts, market share, quality of management, expansion plans, new products, competitive position, economic forecasts, and other data to search out the "real" value of companies and the prospects that they face. From the investor's point of view, so much fundamental research is done, and the results so widely and quickly distributed, that you must decide if available information will provide a unique edge. One must always assume that a million or more people already know what you have just discovered.
Fundamental research also has a fundamental problem: forecasting. The market and economic environment is far to complex to allow for accurate forecasting even if we have perfect data and insight. At best we have a very poor understanding of how the economy and the world's markets work. Even worse, noneconomic events pop up randomly to confuse us further. One well-placed bullet, typhoon, coup, drought, or earthquake can make a shambles out of the best forecast. As a result, earnings and interest-rate forecasts are so laughably bad that anyone with a 40% success rate can qualify as an expert.

Conflicts of Interest

There is a darker side of the research problem that investors must also consider: The motives of research departments may not always be pure. Wall Street has its fingers in many pies. As a result, conflicts of interest can easily creep into analyses. In one famous case, an analyst observed publicly that Donald Trump was in big trouble with his Atlantic City project. Covering the debt was likely to be a big problem, the analyst claimed. Trump complained, and the analyst was fired. Apparently, his employers had hopes of assisting Trump with yet another bond offering! So much for honest research. Trump's later problems in Atlantic City are well documented, and the story is only unusual in that it became public when the analyst sued over his wrongful termination.
Few things gladden the hearts of Wall Street's barons like a big juicy underwriting or takeover. The fees a big takeover can generate are unimaginable for mere mortals like us. Wall Street knows that sell recommendations hurt the feelings of the very managers who control underwriting and takeover business. Hurt feelings often translate into diminished prospects for further business. So it shouldn't surprise us that the ratio of buy to sell recommendations is skewed, and that a sell recommendation often comes far too late to be of any use.
Wall Street continues to hype their research -- partly to generate trading volume, partly to justify their full service fees, and for another important self-serving reason: Brokers who rely on research for recommendations shed a good deal of their liability if a recommendation doesn't work out. In fact, some

brokerages publish both technical and fundamental research, often with directly conflicting recommendations! Now, how much help is that?

An Alternative Point of View

Detractors of the efficient market theory point to the often-strange behavior of markets. For instance, they argue that the market couldn't have been right both before and after the crash of 1987, when we lost 500 points in one day. They miss the point. Nobody is saying that the market is always right, or even rational. The real point is that if markets are efficient, it is very unlikely that you, or anybody else, will be able to consistently "beat" the market.

Another problem with the efficient market theory is that clearly not all markets are operating by the same standards. Very small companies have fewer analysts, and some issues are thinly traded. Foreign and emerging markets have different disclosure and financial reporting criteria, enforcement may be lax, or corruption endemic. Some markets do not even have insider trading restrictions. All of these complaints are valid, and all give comfort to managers who argue that they can exploit inefficiencies to obtain above-benchmark returns.

So much for theory. The lines are clearly drawn. If markets are not efficient, then managers should have an easy time beating their benchmark. If markets are efficient, then we should consider firing the managers and hiring the index. The proof is in the pudding!

In the next chapter, we will examine the real-world performance of managers. We will also consider whether overperformance is the result of skill and cunning or just dumb luck. Finally, we'll examine whether performance really does matter and if managers can repeat past performance. Will last year's heroes be back, or fall into well-deserved obscurity after their 15 minutes of fame?

CHAPTER 8

Can Managers Add Value?

Tennis, golf, or chess are all activities that require skill. In fact, we can quickly identify the skilled players in these endeavors. On the other hand, craps and roulette are pure games of chance. Skill plays no part in the outcome. But what about managing a stock portfolio? Can managers "beat the market"? If so, can we tell if they are skillful or just lucky? Can we use past performance to predict future performance? Do winners repeat?

In the context of the efficient market debate, if markets are efficient, then management may not be able to add value. Measuring performance for management results requires a benchmark. However, it's important to use the right benchmark or we will hopelessly confuse ourselves. It's not very useful to compare apples and oranges, or foreign and domestic stock performance. As academics and consultants have delved deeper into the performance issue, the benchmarks have necessarily become more elegantly defined.

It's also vitally important to have "clean" data. No one wants to do a study only to find out that the data used was corrupt. The ultimate nightmare for academics is to have someone else point out that their data is corrupt. Fortunately we have a great deal of clean data available from reliable third-party sources that most of us can agree on. For example, SEI, a private consulting firm, maintains the largest database on investment performance of institutional managers. Morningstar supplies extensive data on the mutual fund industry, and the Center for Research Securities Pricing (CRSP) maintains a database on individual security pricing.

A Quick Test

Here's a very crude test of management performance: Let's compare the domestic-equity mutual fund performance supplied by Morningstar against the S&P 500 index for one-, three-, five-, and ten-year periods, looking back from April 30, 1995. The S&P 500 index is a fair comparison for large, domestic companies. Our results:

- Of the 1,097 funds Morningstar covered for the one-year period, 110 beat the S&P 500, while 987 fell short. Results ranged from 46.84% to -32.26%, while the S&P 500 attained a 17.44% return.
- During the three-year period, the S&P 500 returned 10.54%, while results in the funds varied from 29.28% to -15.02% compounded annually. Of the total 609 funds, only 266 beat the S&P 500.
- Shifting to the five-year period, of 470 funds, 204 beat the S&P 500. Results ranged from 27.35% to -8.51%, while the index racked up 12.62%.
- At ten years, only 56 of 262 funds managed to beat the index, and results varied from 24.77% to -4.06% compounded annually against 14.78% for the S&P 500.

If beating the S&P 500 is a valid test of management ability, then a lot of managers are clearly not worth their salt. Far fewer of them appear to be winners than we might have expected.

This Test May Not Be Entirely Precise, But...

Let me be the very first to say that while this little study makes the point and is valid, it isn't perfect. In all cases, the average fund result fell below the index. However, the average result doesn't take into account the size of the fund. A few small funds could throw off the average in either direction, so perhaps we shouldn't be too concerned about the average.
Another reason we might be concerned about our little exercise is the issue of survivor bias. Funds that fail during the measurement period are not measured in the results. Mutual fund companies often make poorly performing funds "disappear" by merging them into more successful funds. Fund performance is not merged and the companies succeed in burying their mistakes. The survivors presumably have a better

record than the total number that started the measurement period. Voilˆ! A little bit of marketing magic allows the fund companies to show performance better than their shareholders actually experienced. A better study would account for this distortion.
A problem that disturbs me in this type of analysis is that a single year may account for extraordinary results. If last year was the extraordinary one, then it will show up in all time periods. The results will appear to be far more consistent than they actually were. A fund that had nine average years followed by a great year will look good for the past one, three, five, and ten years! If the great year had occurred during the first year, then the ten-year result would look good, but the one-, three-, and five-year periods would look only fair. This presents a far different picture, even though the total results are the same. So we haven't adjusted for consistency of results.
Finally, we haven't adjusted for risk. Both the big winners and losers may have taken large risks to get where they are.

What About the Winners?

Some managers did beat the averages, and a few of them did by a very wide margin. All of them may be expected to claim superior skill and cunning. But what about them? Is it possible to conclude that they are wise men and women and that the others are fools? By extension, can the people who invested with these winners also claim to be wise? Could we have predicted which players would have become winners?
Probability theory would account for a number of winners and losers in any random series of events. If a million people each attempted to toss heads with a coin for several rounds, after each round we could reasonably predict the number of winners. For instance, after ten rounds we would expect 976.563 survivors. Each of them came up heads ten times in a row. Since it's random, we would not expect exactly 977 survivors, but we could consult with a statistician and predict a very tight range for the number of survivors. In an event that involves no skill at all, we can, with some confidence, predict that after ten rounds there will be survivors, and have a fair idea how many there should be. Should one of our survivors become convinced that his skill contributed to his success, we might have a difficult time shaking him from his delusion.
One way to determine whether skill contributed to the outcome would be to see if there were significantly more winners than probability would have allowed. Suppose that instead of about 977 winners, we ended up with 5,000 or 10,000. Then we might have to concede that an element of skill was involved.
If markets are efficient, we should expect to see a random distribution of results. When we study mutual fund performance, we should expect to see some winners. Probability theory demands it. We would be very disappointed and concerned if an occasional Magellan Fund (the most famous and successful fund in the history of the universe) didn't turn up. But what we find is far fewer than a random distribution would predict. However, if we adjust the fund results by about 2% to add back in average costs of management and trading, then we get just about the bell-shaped curve that we would expect for performance distribution.
Since we have fewer rather than more winners than we would have expected, it is very difficult to support the argument that the winners got there by superior skill and cunning rather than through pure dumb luck. This is a powerful but not totally conclusive argument. Like our deluded coin tosser, Peter Lynch (former manager of the Magellan Fund) will never agree with that premise.

If It Was Good Yesterday, Will It Be Great Tomorrow?

What about track record? If management skill adds value, can past performance give us an indication about future performance? Do winners repeat? How successful will I be if I only buy the funds with the best past five-year track record?
A recent study examined mutual fund performance by category over several five-year time periods. Funds were divided into quartiles by past total performance, and then followed for an additional five years. The results were enough to blow your mind! A top quartile fund had just less than a 50% chance of being in the top half during the following five years. A bottom quartile fund had just slightly more than a 50%

chance of being in the top half during the following five-year period. Similar studies with similar results were completed by a large pension fund on the performance of their managers, and by a large consulting company on the results of the managers whose performance they tracked. In other words, we can't count on either winners or losers to repeat!

Again, this isn't a conclusive argument. We can't say for certain that a top- or bottom-performing fund won't repeat, just that it doesn't appear to be more likely to continue its performance than random chance might dictate. These types of arguments take on near religious intensity on Wall Street. I don't expect them to be resolved in my lifetime. I do think that the overwhelming weight of the evidence suggests that markets are efficient, and that management has a rather small chance of reliably exploiting inefficiencies. Given the egos and profits involved, you can expect further spirited debate.

Dissenting Voices

To further complicate the issue, two heavyweight thinkers who might be expected to support efficient markets have just published studies which show that in the very short term (less than two years), winners may tend to repeat. Both Roger Ibbotson and William F. Sharpe have international reputations in finance, and Sharpe has a Nobel Prize in economics. So they speak with some authority. They both recently made similar observations on short-term performance. Sharpe in particular goes out of his way to point out that the data may be ambiguous.

Personally, I believe that factors other than skill and cunning can extend a fund's winning or losing streak over a short multi-year period. For instance, during the early 1990s, a large overweighting in health care stocks would have resulted in significant over-benchmark performance for several years. Several mutual funds built reputations based on that one call alone. Since the decline of health-care-sector stocks, most of those funds have descended into a disappointing level of mediocrity. I'm not sure that chasing last year's winner does anything other than position you with next year's loser.

It's easy to pick last year's winner; it's difficult to pick next year's. A number of magazines routinely make mutual fund recommendations. Perhaps the most sophisticated publication among the popular business press is Forbes. One would suspect that if it can be done, they have the resources to do it. They have for years published their "Honor Roll of Mutual Funds." If you had invested steadily in the Forbes funds, you would have had very disappointing results. This underperformance is so consistent and widely known in the industry that many mutual fund wholesale sales representatives I know consider it the kiss of death.

Toward Better Benchmarks

We can build a benchmark for just about any market or portion of a market. For example, suppose we divided all the publicly listed stocks in the U.S. into ten different sizes by market capitalization on one axis, and ten different segments based on book-to-market ratio on the other axis. We now have 100 different possible submarkets. We could call each submarket an investment style, and each style could have its own index or benchmark. If we studied the performance of each style, we would find that they are sharply different from each other. Each style would have distinct rates of return and exhibit different risk or standard deviations. Each would also have different correlations from the other. Each style could go through a market cycle with dramatically different results for each time period. In other words, there isn't just one domestic market, but many.

Most managers, but not all, confine themselves to a distinct style. Very few operate in all parts of the market or switch from one part to another. For instance, they may be large-cap value, mid-cap growth, or small-cap market. This is the area of the market they claim to know best, think has the greatest potential, or perhaps were hired to manage. In any event, over time most of the performance they obtain may simply be attributable to where in the market they invest. It wouldn't be fair to compare a small-cap-value manager with the S&P 500, which is basically a very-large-cap, mostly-growth index. To test whether this is so, we can compare their results with the index matching their area of investment. This type of benchmark is much more precise than just arbitrarily choosing an index like the S&P 500.

These benchmark designs can become very precise and elaborate. One large consulting firm examines the

unique style of a manager within the market, builds an index of all the stocks within the style, and then has a computer construct 1,000 hypothetical portfolios from the index. They then average the results of the hypotheticals to create a benchmark measuring the manager. In the vast majority of cases, managers are unable to demonstrate that they add value against the benchmark.
The conclusion that investment style is much more important than management within a style has become harder and harder to ignore. Even when a manager beats his benchmark, we are left with the problem of determining whether he was good or just lucky. The revolving door, and large institutions' continual search for managers that can add value, adds credence to the belief that beating a benchmark can't be done consistently. The migration from active management to indexing or passive management indicates that many large institutions have concluded that either it can't be done or isn't worth trying.

Taking Big Bets Against the Benchmark

Even within a carefully defined style, investors are still faced with a wide - even alarming - variation of results in both the short and long term. Looking again at the ten-year result for domestic equity funds, there is a surprisingly large variation in outcomes. Part of this is attributable to style differences within the markets. But a large amount of the variation can also be attributed to sector or timing "bets" by managers. When a manager decides to over-weight or under-weight the firms or sectors in his style group, he expects to improve results. He might decide that General Motors will do better than Ford. Or he might decide that cars will do better than banks. Or he might decide that cash will do better than stocks. From my perspective, there is a chance that he will be wrong. If so, he will not make even the benchmark return.
Most of us are risk-adverse. If at the beginning of a ten-year period we were given a choice of a sure return of 14.78% or one that might run from 24.77% to -4.06%, most investors would go for the sure return. Looking back, most individuals never came close to the benchmark and wish they had chosen it. The benchmark would have been better than all but 56 of the 262 funds or top-quartile results. A totally passive approach to selection and a policy of no market timing would have delivered very satisfactory returns. And we don't have to be either skillful or lucky to get them.
Based on managers' dismal record to outperform benchmarks, we have to take very seriously the argument that markets are efficient. While we will never be able to prove our case to the satisfaction of everyone, the evidence is pretty strong. This evidence is supported by studies of markets worldwide. Even if some other markets around the world are not as efficient as ours, they still are pretty efficient. If information in foreign markets isn't as good as what we're used to here, at least all the players are being equally deceived.
When we go about building our investment strategy, a benchmark, style, or passive approach may be very viable. After all, what's wrong with top-quartile results?
In my own practice, I maintain a very heavy weighting in institutional index funds wherever they are available. I think that approach gives us the highest probability of a successful outcome with the lowest risk. I do hedge a little: actively managed funds have a minority position. All other things being equal (they never seem to be), when given a choice between actively managed funds, I will go for the one with the lowest cost, widest diversification, and lowest turnover. To the extent possible, I want to see predictable results. I hate underperforming the benchmark more than I would enjoy overperforming. That makes me pretty much like my clients: risk-adverse.
So we return to the thesis that asset allocation is much more important than focusing on a particular stock, timing, or manager. If it's more critical to be in the right market or style than any other factor, how do we choose the markets? What do we know about style-investing results that will help us construct our own portfolios? In the next chapter, we'll focus on how a firm's size affects returns, and on the debate over growth or value styles.

CHAPTER 9

Doing It With Style

Until just a few years ago, the investment business resounded with genteel arguments between managers with different investment approaches. Each would point to compelling reasons why his or her methods were best.

Growth managers, for one, assumed that rapidly increasing sales, profits, and/or market share would lead to a rapidly growing stock price. Meanwhile, value managers argued convincingly that overlooked or out-of-favor companies would provide steady growth while high dividends and a large asset base would ensure downside protection. Small-company managers spoke fondly of discovering just one or two of tomorrow's Microsofts. Large-company managers favored liquidity and well-established companies. Mid-sized-company investors argued that second-tier companies offered stability, growth potential, and the opportunity to exploit market inefficiencies. The few foreign-stock managers were busy trying to convince Americans that international investing wasn't just plain crazy. (Emerging-market managers were all still in diapers.)

While these arguments made for wonderful entertainment, they were unresolvable. Debaters lacked even common definitions; their discussions were devoid of appropriate yardsticks, and they lacked the necessary tools to measure performance or risk. Each management approach yielded "acceptable" positive results, but each excelled at different times. Comparisons were necessarily difficult, and managers would each stress the time frames in which their own approach excelled.

Investors could hardly be blamed if they didn't find solid guidance from Wall Street's competing gurus. The truth is, all the gurus were just blowing smoke. Nobody knew what was going on! (The idea that various types of investments might be complementary hadn't even been considered.)

A Modest Proposal

Two University of Chicago professors, Eugene Fama and Kenneth French, found an elegant way to help resolve the above problem. But in doing so, they touched off one of the liveliest debates -- and biggest dogfights -- finance has seen in years. While the results are surprising, their arguments are compelling. In fact, other data solidly supports their original study: Markets appear to have a sweet spot where higher returns can be expected without additional risk!

Under the Capital Asset Pricing Model (CAP-M), stock prices and expected future returns are related to both market risk and a unique risk that each stock has, called "Beta." Beta is a measure of the volatility of the individual stock in relation to the market as a whole.

Everyone in finance loved CAP-M. It was elegant and relatively easy to understand and explain. There was just one small problem: Beta didn't do a very good job of explaining either price or returns. In particular, CAP-M and Beta left large anomalies in two areas: small companies and low-priced companies had higher-than-expected returns.

In their June 1992 article, "The Cross-Section of Expected Stock Returns" (published in the *Journal of Finance*), Fama and French set out to find a better way to explain prices and returns.

Beta is a single-factor variable. Fama and French tried a number of other factors in combination to see if they could provide a better fit. They found that together, size and book-to-market (BTM) ratio did the best job of explaining stock performance. BTM is the ratio of a firm's book value per share to its stock price. If you are particularly observant, you may have noticed that BTM is the inverse of price-to-book (P/B). This alternative figure was created out of necessity, because book value may sometimes be zero, and a ratio with zero on the bottom is impossible to use in calculations.

A firm with a high BTM has lots of assets per share compared to a low-BTM firm. As it happens, high-BTM firms have characteristics associated with "value" and low-BTM firms tend to be "growth" firms. Growth and value are somewhat fuzzy terms. Everyone seems to agree that Microsoft is a growth

company, but value seems to be in the eyes of the beholder. BTM provides an objective measure. "Value investing" may be one of the world's greatest public-relations terms. Value firms are sick puppies. High-BTM firms (low P/B) tend to have low P/E's (price-to-earnings ratios), low return on equity, low return on assets, slow or no growth of sales, disappointing profits, and other discouraging financial results. Even though they have large assets, the market has driven down the price of their stock. Because management often has no clear idea how to generate additional business growth, many high-BTM firms pay large dividends. They are troubled firms. Usually they have been troubled for a while, and will continue to be troubled for some time in the future. The risk of business failure is higher than that for healthy, growing firms. They are companies under stress.
Low-BTM firms (high P/B) are just the opposite. They have high P/Es, return on equity, and assets. Usually, they have histories of exponential growth of profits, sales, market share, and other healthy, desirable attributes. Generally they have so many investment opportunities internally that they do not pay high dividends. They are healthy companies.

Dividing the Market by Size and BTM Ratio

Fama and French took all the stocks in the N.Y. Stock Exchange and divided them into 10 groups, or deciles, by market capitalization. Market capitalization is the total value of all the securities of a firm. It is found by multiplying the price of a share by the number of shares outstanding.
Having now established arbitrary size groups, the pair took all stocks traded on all exchanges and distributed them into the appropriate size groups. Because of the smaller, average size of the non-NYSE stocks, the groups now contained many more stocks listed in the smaller deciles than seen in the equal distribution of the original NYSE deciles.
If you think of the size groups as being listed from top to bottom, Fama and French then horizontally sliced the result into ten groups (deciles) by BTM. They now had 100 portfolios or styles. Each portfolio was followed for one year, and then the procedure was done all over again. The performance of each of the 100 portfolios, as annually redefined, was followed from 1964 to 1992, a 28-year period.
The results were surprising. Small-company stocks had higher rates of return than larger-company stocks, but they had a much higher risk as measured by standard deviation of returns. However, high-BTM stocks (value) had higher rates of return than low-BTM stocks (growth) without any higher risk, as measured by standard deviation. This occurred at every size level. The value guys were right all along!
Investors in the bottom three deciles by size might expect a total return of about 5% (compounded annually) higher than the top three deciles. However, they will experience greatly increased volatility. At every size level, investors in the highest three deciles by BTM will receive about 5% greater compounded return than the bottom three. Value investors will not experience any significant increase in risk, at least as measured by volatility.

New Study, New Problems

The implications of this study, if validated, are staggering for both economists and investors. CAP-M and many of its implications are discredited. Investors can now construct portfolios with better performance than the market as a whole. Economists are stuck with the problem of explaining how value stocks can provide higher total returns without being subject to additional risk.
The author of CAP-M, William F. Sharpe, seems to be enjoying the debate. He has stated that he thinks Fama and French are on to something. He has also said that he thinks CAP-M, for which he won the Nobel Prize in Economics, was a pretty good first effort, and he is glad that the committee can't take back the prize. The rest of the academics seem to have worked themselves into a frenzy either attacking or defending CAP-M. You can find plenty of papers posted on the Net at various universities if you care to follow the battle.
One of the implications of CAP-M was that the "super efficient" portfolio, the one which generated the most return per unit of risk, was the total world-market basket. An investor who wanted more or less risk could take this global-market index and either leverage it or water it down with a "risk-free" asset. This

led to the spread of global indexing as an investment technique. Now it turns out that investors can do considerably better than the world-market index by heavily weighting their portfolios with value stocks.

Economic Justification for the Three-Factor Model

The idea that investors can expect additional returns without additional risk has even Fama and French struggling. It smacks too much of a free lunch. As faculty members of the University of Chicago, we would expect them to cheerfully die before they would admit to the existence of a free lunch. Consequently, they are trying to identify factors other than volatility that might explain the paradox. Fama and French believe that their findings are consistent with an efficient market. They relate the differences in pricing and performance to cost of capital. If you run a large company and either borrow money from the bank or issue bonds, you will generally have to pay a lower interest rate than a small company because of the lower risk you appear to offer. In the same manner, if you issue stock, you will generally command a higher price than a small company. As we might expect, large companies have a lower cost of capital.

In a like manner, well-run firms have a smaller cost of capital than poorly run or stressed firms. High cost of capital means depressed stock prices and translates into higher expected returns.

A Bagful of Sick Puppies

I must admit that it is difficult to get too excited about an investment philosophy that advocates buying sick firms. It goes counter to the grain, and the whole idea takes a little getting used to. It's hard to imagine generating much envy as you describe your portfolio of downtrodden losers. However, the returns generated by a diversified portfolio of distressed companies more than make up for the glamour of trying to uncover tomorrow's Microsoft. It appears that investors have been paying too much for growth firms and too little for value firms.

Of course, the Fama-French research was subjected to all the normal indignities of any revolutionary study. However, enough studies in other markets and other time frames have validated their original work. Value stocks appear to perform equally well in global markets.

The three-factor model goes a long way toward explaining the returns of many mutual funds and portfolio managers. By examining managers' styles (as defined by the size and BTM ratio of their portfolios), we have another powerful tool to evaluate management effectiveness. It's even possible to examine the pattern of a fund's past performance and make a very close guess as to the portfolio composition. In most cases, style accounts for far more of the performance than does skill, cunning, or luck.

Investors receive another benefit from the Fama-French three-factor model. By incorporating explanations of stock returns based on size and BTM ratios, we are able to more confidently predict expected returns when modeling portfolios. This methodology represents a measurable improvement over using unadjusted, raw-data past returns as the expected future rates of returns. Historical raw data is subject to unusual non-recurring, non-economic events that can dramatically distort its usefulness as a forecasting tool. Improved rates-of-return forecasts will lead to much-improved optimization models and better-performing, lower-risk portfolios.

While long-term data would strongly suggest the superiority of small-company and value investing to maximize returns, we must still be aware that growth and larger companies may experience extended periods of market favoritism. For instance, small companies did far below average in the 1980s. In the short run, we can expect significant year-to-year variation. Accordingly, it appears wise to continue holding some of both in a well-constructed plan to minimize risk at the portfolio level. However, the best available data would indicate that a strong tilt to value and a higher representation of small-company stocks in equity portfolios will handsomely reward long-term investors.

Next: Fun with Numbers

In the next chapter, we will shift gears and examine some basic techniques investors should utilize to

build an investment strategy that will carry them into the 21st century. I call these techniques "no-brainers": the magic of compounding, dollar-cost averaging, the joys of tax deferral, and why the best time to invest is the time when you have money.

CHAPTER 10

Fun with Numbers

The Census Department estimates that over one million baby boomers will live to be more than 100 years old! Unfortunately, few of them have even begun to save for retirement, or even know how much it will cost. Like two trains hurtling down a track toward each other, savings rates have fallen, and life expectancy is increasing. The resulting crash will not be pretty!

Boomers wishing to avoid the financial disaster of outliving their money have two realistic options: They can beat the odds and die early, or begin saving now in a serious manner. As we shall see, any delay in beginning to save is not a viable option. And, when boomers save and invest, they had better get close to a market rate of return. Otherwise, there are going to be a lot of very old, very broke people wandering around. Given demographic trends, it's not likely the government is going to be in a position to bail boomers out.

One of the most powerful financial concepts assisting investors is the magic of compounding. It looks like magic because rather than increasing in a straight line, compounding investments increase geometrically. Not only does principal increase each year, but this year's earnings become next year's principal and accrue even more earnings. The process repeats as long as the money is left to grow. As a result, what seem like small differences in input generate giant differences in the final result. In other words, what appears to be a small change in rate of return, or slightly longer time period, will make the difference between poverty and comfort in your old age.

Let's have a little fun with numbers to see how compounding can work for us. Applying what we can learn about compounding will give us some "no-brainers" to guide us in our accumulation planning.

First Things First

Before you start a long-term investment plan, you must have your basic financial house in order. No one should invest until they have a 3- to 6-month cash reserve for emergencies, the proper insurance protection, and the basic legal documents. It won't do you or your family any good at all to get a 30% rate of return if you lose your job, wreck your car, die, or get disabled tomorrow. In a very real sense, life and disability insurance buy you time.

Put Time on Your Side

Here's an example of how compounding can put time on your side:
Suppose on the day you were born your parents wanted you to have a nice retirement when you turned 65. Each year for 10 years, they deposited $1,000 into an account for your retirement. Assuming that they earned a reasonable 10% net, your retirement plan would grow to $15,937.42 by your tenth birthday. At this point, your parents stop making contributions. The fund continues to earn 10% net, and you are able to resist the overwhelming urge to cash it in for a new Corvette when you reach 21. The fund grows to $3,013,115.83 over the next 55 years!
To adjust for inflation, we assume that about 3.5% of the nominal yield was eaten away. The "real value" of the accumulation in terms of dollars when you were born is $322,027.60. The "real value" of the inflation-adjusted income available to you is $20,931.79 for the rest of your life. We are assuming that you withdraw 6.5% beginning at age 65, and leave 3.5% to grow to hedge the inflation rate. All of this was accomplished with a total cost to your parents of only $10,000. Compounding had worked its magic.
Now let's assume that your parents waited until your tenth birthday to begin a savings program for you. If they deposit $1,000 a year for the next 55 years, they will "only" accumulate $1,880,591.43 for your retirement. Waiting 10 years has cost the accumulation more than $1.2 million, even though they have contributed $55,000 to the program.

If they still want to accumulate $3,013,115.83, they must contribute $1,602.22 per year for 55 years at 10%, and the total cost of the program has grown to $88,121.94.
Let's change the example again. You are now 20 years old, just out of college, and want to save for your own retirement. How much must you save each year at 10% to accomplish the same goal at age 65? A few seconds with a calculator will show you that it takes $4,191.26 per year. The price is going up, but it's not out of reach. However, since you are entitled to a new car, and you don't have a stereo yet, you put your savings plan off for a little while.
At age 30, you briefly toy with the idea of starting a retirement plan, but you now have two children, a spouse, and a new condo. You are a little distressed to see that the annual cost of meeting your goal has grown to $11,117.51.
Age 40 finds you with a new home in the suburbs, and for your birthday you fulfill the right of every American to own a wide-screen TV. At half-time during the Superbowl, you pull out the old financial calculator and find that with 25 years remaining to age 65, your cost to fund your retirement supplement is now a serious $30,637.58 per year. The shock sends you to the refrigerator for another brew. As the half-time show winds down, you tell yourself you'll think about it next year.
Fifty finds the kids away at college and a new Infiniti in the driveway. Your company may lose a big contract, and there is disconcerting talk about downsizing, so now doesn't look like a great time to start a serious savings plan. You're too stressed out to check, but if you had, you would have been shocked to see that with only 15 years to go until your planned retirement, you will need to deposit $94,823.14 each year!
Age 60 finds the "children" living at home again. They don't seem to be in any big hurry to leave, although there has been a trial balloon floated to "borrow" the funds for a down-payment for their own condo. The $189,059.14 required each year to fund your retirement plan is clearly out of the question, and you are wondering how it will feel to still be working at 80. You catch yourself daydreaming about winning the lottery.

Lesson No. 1: Start Early

The first lesson we learn from our little exercise is to start investing early. Put time on your side; the earlier you start, the easier the burden, and the more likely you are to have a successful outcome. It's never too early to invest for retirement, but it can get too late. It's easy to put it off. There is always a good excuse. Don't let it happen to you. The cost of reaching your goal goes up each day.

Lesson No. 2: Plan for a Reasonable Rate of Return

The next lesson we can learn from an exercise like this is the importance of getting a reasonable rate of return on our investments. While I used 10% as a "fair" rate, I don't think many Americans actually come close to this as a net rate of return over time. Far too much money is committed to "safe" low-rate-of-return asset classes, and far too little to the higher-risk, higher-return classes.
Let's go back to the time you were a 20-year-old. It took $4,191.26 each year for you to reach your goal at 10%, but if you expect to make only 9%, you must save $5,729.90 per year. Of course, if you expect to earn 11%, you can reduce your funding cost to only $3,053.92. So a 1% change in earnings has a huge impact on funding costs.
Given that we know that risk in an equity portfolio falls as time horizon increases, and that a retirement plan certainly has a long-term horizon, investors should consider shifting assets to where they will get higher rates of return. That means fewer bonds, CDs, and annuities, and more stocks. Within the stock classes, research would indicate that a tilt toward value and small-cap stocks, and international and emerging markets, will increase rates of return. Properly mixed, these asset classes should generate handsome increases in return without undue risk. In later chapters, we will construct a portfolio to demonstrate the possibilities for both increasing rates of return and reducing risk.

Lesson No. 3: Control Costs

Rate of return is not exclusively a function of risk. Cost can have a major impact on an investment program. Markets are reasonably efficient, and it is not likely that you can beat them by much or even at all. Each market can only return so much. That return is reduced by cost. You must adopt an effective cost control program as part of your overall strategy. We will have much more to say about how Wall Street can get in your knickers later. But for right now, I will state that the average client of a full-service brokerage house could save an easy 3% per year by dispensing with its dubious advice.

Lesson No. 4: Control Taxes

One of the least-understood costs in an investment portfolio is tax. In the real world, most of us have to pay tax, and many times our investment plans increase our tax burden. Each time we receive a dividend, interest payment, or capital gain, Uncle Sam has his hand in our pockets.

Tax can become a very serious drag, but it doesn't have to be. In many cases, taxes on investments are voluntary. Or perhaps we should say they are a tax on ignorance, because they can easily be avoided.

If we go back to our example, suppose the 10% rate of return we spoke of was all dividends or interest, and we received all of it each year as we went along. If we traded the portfolio each time we made a profit on a trade, we create a tax liability. Even if we are in a very modest tax bracket, taxes could reduce our return by 25%. That would mean that our net return is only 7.5%, and we will have a much harder time reaching our goal. Either we invest more or we fall short.

In real estate, the prime considerations are location, location, and location. In tax strategy, the prime considerations are defer, defer, and defer. The longer we can defer paying a tax, the longer we have investment dollars compounding for us rather than going to Uncle Sam. If you buy a stock and never sell it, you will never have to pay a capital gains tax. When you die, your heirs will receive the stock on a new basis from your estate. (They may or may not have to pay an estate tax. That is a separate consideration.)

Mutual Funds

Mutual funds present a couple of interesting wrinkles. I want to preface my remarks here by clearly pointing out that I am neither an attorney nor an accountant. As such, I never give tax advice. You should check with your professional tax advisor about the implications of the following information. Also, since the Net reaches so many international investors, understand that the following pertains only to U.S. taxpayers. (Almost all other countries have more favorable tax treatment for investors than does the United States. We seem intent on punishing investors here.)

Many mutual funds have huge portfolio turnover. As you are probably aware, each time a fund manager sells a stock in his portfolio, you get a pro-rata share of the gain or loss. All the transactions are totaled at the end of the year, and you get a 1099 tax form for your share. A copy goes to your favorite uncle, Sam. This can often result in a tax to you even in a year when you have losses in account value. The cumulative effect of taxes each year can seriously erode the returns that equity funds can generate. Some of the mutual-fund rating services have included information on tax efficiency. This is a very rough estimate of the capital gains already built up by a fund. Few investors are aware that when they buy a fund that has a substantial unrealized gain, they may soon have to pay taxes on the gain as if they had held the fund from the time it first bought the stocks. This is hardly what we would consider an optimum outcome.

But help is at hand. By their very nature, index funds don't turn over their assets. So taxes will be minimal compared to an actively managed portfolio. Some index funds have even taken this a step farther. They have a stated objective of never incurring a capital gain for the shareholder. The only time they expect to incur a capital gain for the account is when a company is acquired for cash. In that event, they expect to be able to sell sufficient stocks with a loss to prevent a net gain for the shareholder. So only dividend income and nominal interest income are subject to tax. In an equity portfolio, this should be a very small amount compared to the total appreciation over time.

Just over the horizon are even more tax-efficient index funds. These funds would manage themselves so that dividends and interest were smaller than the funds' expense ratio, so shareholders should never have to pay a tax until they sell their shares. (We can presume that the implied strategy will favor growth and smaller companies.) When it comes time to sell, if the holders meet the capital-gains holding period, they should get the more favorable capital-gains rate. I expect these funds to be available during the next 12 months.

To maximize your own benefit from this strategy, keep records of each purchase so that you can identify the shares you sell as the highest-cost ones in your portfolio. That will minimize the gain and the taxes.

Beating the Tax Man

Uncle Sam does offer us one great way to beat the tax man for long-term investors. Pension plans, 401(k) plans, IRAs or SEP-IRAs, and Self-Employed Pension Plans (HR-10) all offer total tax deferral. There are no taxes on interest, dividends, or capital gains as long as the funds remain in the retirement plan. You should take advantage of any tax-favored retirement plans available to you. The combination of current tax deduction and tax deferral is the best thing since sliced bread. Hopefully you will pick up some employer matching contributions, which will really sweeten the deal. Stuff every penny you can afford into your retirement plans as early as you can afford it. As the ad says: "Just do it!"

What's more, invest in equities for the long haul, and don't get hung up on trying to time the market or be too concerned about normal market variations. They work in your favor.

Dollar-Cost Averaging

Dollar-cost averaging has been described as one of the oldest, least-exciting ways of investing. But almost everyone agrees on its validity. Actually, it is a simple discipline. It requires investing a set amount of money at regular intervals in a particular investment over a period of time:

$$ Invested @ Regular Intervals x Time = Dollar-Cost Averaging

Studies show that investors who use this strategy average a lower cost per share on their purchases than those who try to time their purchases to buy at the lowest prices. Most experts agree that it takes a minimum of 18 months for dollar-cost averaging to be effective.

The advantage of dollar-cost averaging is apparent when you sell a larger number of shares at a higher price. Remember, you accrued more shares because your investment bought them over time at a lower price. Certainly, averaging works best with funds or stocks that have sharp ups and downs, since that gives you more opportunities to purchase shares less expensively.

Simple Example

A simple example developed for the May 1993 issue of *Worth* magazine illustrates the concept:

You decide to invest $1,000 in your favorite stock on the first of each month for three months. The first month, the stock sells at $100 a share; you buy 10 shares. The second month, the stock falls to $50 a share and you buy 20 shares. The third month, the stock recovers to $75. Your $1,000 investment buys you 13.3 shares.

You now have 43.3 shares that you bought at three different prices for a total outlay of $3,000. The stock is currently selling at $75 a share, so your 43.3 shares are worth $3,247.50. That's an 8.25% profit. Also, your average cost per share is less. If you divide the average price per share by your total investment of $3,000, your average cost per share is $69.28.

Dollar-Cost Averaging Sample

Month	Amount Invested	Price Per Share	# Shares
1	$1,000	$100	10.0000

2	1,000	50	20.0000
3	1,000	75	13.3333
	$3,000 (Total)	**$75 (Average)**	**43.3333 (Total)**

Amount Invested = $3,000 ($1,000 x 3 months)
Current Value = $3,250 ($75 x 43.3333)
Average Cost/Share = $69.2308 ($3,000 / 43.3333)

Of course, this is a hypothetical illustration. It does not imply a guarantee of a specific return on any particular security. It does not take into consideration taxes, inflation, and costs in purchasing stocks, which should all be factored in when you figure your return on investment.
A 401(k) plan is an excellent way in which to implement dollar-cost averaging. Since money is deducted each pay period from your earnings and placed into the 401(k) plan, you will find that you have paid less per share over time if your choice of investments remains constant for a substantial length of time.
Reinvestment of dividends and capital gains is a form of dollar-cost averaging and one of the smartest things investors can do. Also, with few exceptions, reinvesting costs you nothing in terms of loads or fees.
Finally, if you do decide to use the dollar-cost averaging strategy, you need to bear in mind that, although it has been a highly successful investment technique in most instances, it neither assures a profit nor protects against losses in a down market. Dollar-cost averaging works only if you continue to purchase systematically, regardless of whether the market fluctuates up or down. As such, you have to stick with the program to get the best benefits.

Force Yourself

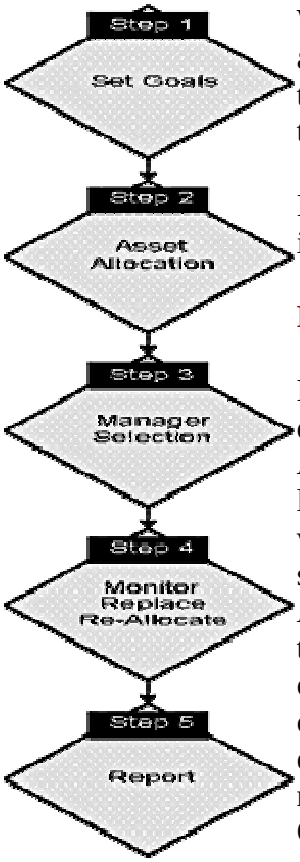
Nobody enjoys their toys more than I do. I know I am entitled to each and every one of them. So I have had to trick myself into saving. I am constantly searching for ways to keep my grubby little hands off my money. In fact, I've set up a process that doesn't allow me to ever see the money. I use a maximum pension contribution to make sure I don't convert all my earnings into boats.
The best way to make sure you have the funds when you need them is to set up a payroll deduction each month. This will put the tremendous power of dollar-cost averaging to work for you, and painlessly reinforce your wise decision to start now. One of my friends wants a bill each month for his savings goal. Another gives it to his wife to invest. Just find a method that works for you. If you need further discipline, just remember that the only thing worse than being dead may be to have outlived your money!

Summary

So, there it is: Put time on your side, start early, invest for high rates of return, control costs, control taxes, use dollar-cost averaging, and initiate a forcing system if you need to.
In the next chapter, we will start to develop an investment policy by defining our objectives, time horizon, and risk tolerance.

CHAPTER 11

Setting Your Goals



When people find out that I'm an investment advisor, the first question they often ask is: What should we invest in? But when I look them straight in the eye and ask them why they are investing, for how long, and how much risk they are willing to take on, they become very impatient.

I guess we all want to jump right to the "good parts." But investment management is a continuous process where the goal must define the plan.

Planning Process Overview

Many professional investment advisors divide the planning process into five clearly defined steps as seen at the right of your screen.

Actually, we all know that the steps cannot be separated, and instead of a straight line, we should think of the process as a continuous loop. But the five-step process will give us a good framework for discussion as we begin to develop investment strategies.

A clear definition of objectives, time horizon, and risk tolerance goes a long way toward suggesting the appropriate investment strategy. The better we can define our objectives, the better plan we can craft to meet them. The more precisely we can define our goals, the better plan we can design to meet them as well. It's not enough to say: "I want to make a lot of money," or "I don't want to take a lot of risk."

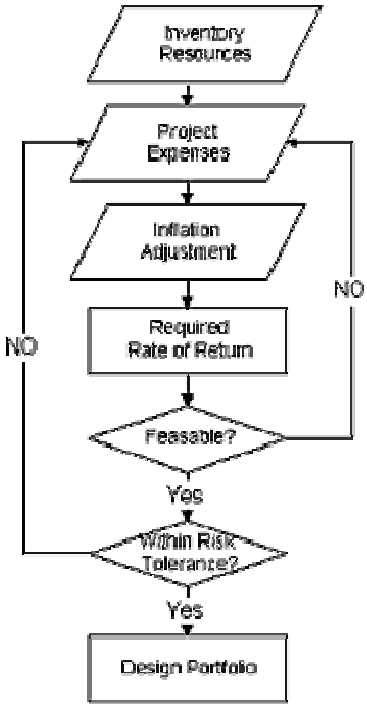
Of course, in real life you might normally be expected to have several distinct financial goals, each with different parameters. A young family may be simultaneously saving for a down payment on a home, retirement, and college-education expenses. An older couple may be focused on retirement and estate conservation. Each objective may have different time horizons and risk parameters.

Because of the nature of my practice, and because most long-term investing tends to be for retirement, I'm going to slant the remaining discussions toward that goal. However, the lessons we learn can be applied to any investment goal.

Setting Monetary Goals

Setting monetary requirements for each goal is a straightforward process and can be outlined according to the chart below:

- As a first step, inventory your resources, including pension plans, social security, other existing investments, and real estate. Add in any other planned investments.
- Project your income needs and capital needs in today's dollars.
- Add an appropriate inflation adjustment. This will give you a target in inflated dollars.
- From this information you can determine your minimum required rate of return on your current assets and planned investments.
- This required rate of return must be feasible and attainable, and within your risk tolerance.



If the rate of return isn't feasible, you better go back and make adjustments in your lifestyle or increase your planned investments. Based on what we know about long-term returns, I wouldn't be very comfortable if your retirement strategy required an 18% return on your portfolio. It's just not likely that you will be able to find a combination of assets which will reliably deliver that rate of return.

Often investors feel driven to take excessive risk when they are unable or unwilling to invest enough to meet their goals. They become prime targets for scam artists with inflated promises. The elderly often become victims of fraud when they see that their existing assets will not be enough to support their lifestyle. Then they lose everything.

Finally, we can design a portfolio with an expected rate of return adequate for your needs. Most of you will find that you must develop a required rate of return higher than bonds and savings can generate. The next question is: Can you live with the risk required to meet your goals? If you can't, we have to go back and adjust your lifestyle or increase planned investments.

Software Help

If this sounds like a very complicated exercise, relax. We have software to do these calculations. Many available programs are very powerful, and allow for instant comparisons of alternative scenarios. You will be able to see instantly if your assets will support your desired lifestyle, and what rate of return is necessary to keep you from running out of funds. We can also determine how much risk you will have to assume to get the desired rate of return.

Vanguard, for instance, has a very sophisticated retirement planner. This program will guide you through many of the items you must begin to consider as you build your plan. It makes quick work of budgeting, social-security forecasts, inflation adjustments, assets available, time to go to objective, rates of return required to meet objectives, and risk required to meet rate-of-return requirements. You can build in known expenses like college or a new boat, and expected future receipts like sale of a home or inheritance. You can see the effects of tax-rate changes, and play "what if?" with investment returns or risk levels.

Because this software does such a great job of pulling together so many elements of the problem, and graphically illustrating the possibilities, it may be about the best $17 you will ever spend. Check out my bookshelf for contact numbers. Quicken just announced a retirement planner, and Microsoft Money won't be far behind. Other mutual-fund companies provide software now or will soon. Several freeware and shareware packages are available on the Net.

Your age and financial situation will impact how you set your goals. It's silly for 25-year-olds to attempt to exactly forecast their retirement budget. At that age, few of us know how our lives and careers will develop. In addition, the very long time frames mean that if our estimates of rate of return, inflation, or expenses are off just a little, the resulting error will be enormous. But while our future may be a blank sheet, the need to provide for it is not.

Putting Time on Your Side

As we saw in the last chapter, it is vital to begin investing as early as possible, and small periodic savings early in our career will grow to really meaningful balances given the magic of compounding. So, 25-year-olds may be content with a goal of saving 20% of their gross income, obtaining a rate of return of at least 6% over inflation, and avoiding taxes on their investments. If they continue this discipline throughout their careers, they may reasonably expect to attain financial independence and security.

The idea of saving 20% of your gross pay may seem a little revolutionary to many of today's consumers. Since we're showered with credit cards, it may be difficult to resist the temptation to spend, spend, spend. But keep in mind that no matter how little you think you earn, many others would be happy to have 80% of it. If we don't establish the discipline to live on less than we make, no one else can do it for us, and no

amount of investment advice will help.
All investors with access to a tax-favored retirement plan offering a current tax deduction, as well as tax-deferred accumulation for the life of the plan, should take maximum advantage of this opportunity. It will reduce the real cost and increase the benefits of your hard-earned investments. By providing both a carrot (in the form of tax deductions) and a stick (in the form of tax penalties for early withdrawals), retirement plans increase the chance that money will be saved, and that it will be used for the intended purpose.
Many people find it helpful to put their goals in writing, and actually sign this document as a contract with themselves. This gives them an extra sense of commitment. As I've said before, if you're anything like me, you need a system to enforce discipline when the child in you craves another toy.
As we grow older, we should be better able to get a handle on our career progression and lifestyle. By age 50, it begins to be possible to forecast retirement requirements. Most of us have some fuzzy idea about where we would like to live, in what style, what size boat we want, how many children we have left to put through college, and other needs. By this point, we also have some assets to inventory. We can begin to put numbers on our requirements. The assets available, the extent of our needs, our past investment success, time remaining to retirement, future investment levels, and required rates of return can begin to be estimated.

Nest Egg

Hopefully, we will have accumulated a good-sized nest egg. This nest egg will continue to grow, and along with planned additions provide for our future security. If we have no nest egg, it's not too late to begin a serious investment program.
As we approach retirement, our planning can become more refined and precise. All along the way we will need to adjust constantly. We may develop new requirements, or need to incorporate new research into our plans. A good plan is flexible, but focused and disciplined at the same time.
Investors must not assume that because they are retired, their need for income will automatically decrease. Many "young" retirees (say under 75) actually find that they need more income than they did before retirement. Because of increased free time, they can now travel and pursue other interests which were deferred during their working and child-rearing days. In any case, it's probably not realistic to plan for less than 75% of your pre-retirement income in "real" or inflation adjusted dollars.
Somewhere between age 70 and 85, retirees may begin to limit the number of trips they take and reduce their income needs. However, about age 70 many retirees find that their income needs increase again as their health-care and long-term-care expenses increase.
My own experience with retirees bears this out. Few choose to sit in a rocking chair on the porch and drink iced tea all day. A friend of mine recently invited me to jog with him one morning at a fishing camp. I run several miles three to four times a week, but after a few miles, I had to quit while he continued on for another three miles. After breakfast, we went fishing for the entire day. After dinner, the retiree led an evening hike, followed by card playing well into the night. The next morning, he was up early to go fishing again. His age? A mere 75!
So, don't assume that your income needs stop when you retire. If your retirement is going to be the "golden years," you will need money. If you set your sights too low, you can absolutely guarantee yourself a lifestyle of poverty in your old age.

Time Horizon

Time horizon is a critical factor in investment planning, but often not properly understood. Time horizon ends when you plan to liquidate an entire portfolio to meet a goal. For instance, if you are saving for a down payment on a house in two years, the time horizon left is two years. However, if you are investing for retirement, the time horizon is the rest of your life. Let me say that again: The time horizon for a retirement plan does not end the day you retire. The average married couple at age 60 will have at least one partner reach 93. By definition, that's a very long-term time horizon.
One of the most inane ideas regularly foisted upon the American public is the idea that retirees should

invest only for income, and that as investors grow older, they must become more conservative. Even The Wall Street Journal occasionally quotes some brain-dead financial planner reciting the formula that the percentage of bonds in a portfolio should equal the age of the investor. Hogwash!
Many financial planners who specialize in investing for retirees insist that their clients invest for both growth and income until their late 90s! Given the very long term that retirees can be expected to live, a planner who recommends a heavy percentage in "safe" fixed assets such as bonds, annuities, or CDs might later expect to be sued for malpractice since the investments and income failed to keep pace with inflation.
As we have previously observed, if you have a short time horizon, anything under five years, you have no business in the market. In the short term, risk to your nest egg is too high. So if you are two years away from building a new house, or your daughter is about to enter Harvard, your funds for those goals probably ought to be in CDs.
But market risk falls as the time horizon increases. It actually falls as the square root of the time horizon. That means that the difference between the best case/worst case expectations for a one-year time horizon is only one-third as large after 9 years, or one-fourth as large after 16 years. We have also seen that with very long time horizons, the worst case expectation in the stock market may be better than the best case with "safe" assets.

Dual Horizons

Retirees who anticipate living off their capital should consider that they have two time horizons. In the short run they will need income, and in the long run they will need a growth of capital and income. They should arrange their asset allocation accordingly.
Nothing is worse than having to sell assets at depressed prices to meet a need that we should have forecast and provided for. For retirees who need a steady income, in a very bad period, this could result in the portfolio self liquidating. Accordingly, I recommend that my retired clients set aside the equivalent of at least five years' worth of income needs in very short-term bonds and money-market funds. The balance can be set aside to grow. For instance, if we are withdrawing 6% a year for our income needs, then we would have about 30% set aside for our needs in a five-year period.
In a bad year, we can liquidate the short-term bonds to provide for our income needs. In a good year, the stock-market funds can be reallocated back to bonds. The resulting 30/70 mix will suffer a small total return penalty, but because of the short-term bonds, the portfolio picks up a large increment of safety. In a bad market, the bonds allow us to "live off the fat of the land" while the stock market recovers.
Some fortunate retirees do not anticipate having to draw against their capital for extended periods of time. Perhaps they have a large fixed pension or other guaranteed income. In that case, there is no particular reason for them to invest more conservatively than they did before retirement, and no particular reason to load up on bonds. The market will neither know nor care what their age is, and the asset-allocation decision can be determined solely by their risk tolerance.

Risk: The Four-Letter Word

Risk tolerance is the final dimension of the goal setting process. We have discussed the unfortunate effects of excessive risk aversion. Retirees face a far greater risk of outliving their capital than losing it in a properly designed, equity-based, global asset-allocation plan. On the other hand, excessive risk at the portfolio level can lead to real and permanent losses. Where we take a risk, we want to achieve the highest rate of return per unit of risk. So, even if we have a high tolerance for risk, we shouldn't just throw stuff against the wall to see if it sticks. The idea is to get rich, or at least achieve financial independence, not generate cheap thrills.
From my perspective, one of the biggest problems of risk is that when the market goes down, as it surely must do occasionally, clients will lose faith and bail out in a panic. Sometimes I suspect that when we speak of risk to the investing public, they filter out some of what we say. They may think that risk doesn't apply to them, or that the professional's role is to eliminate it in their portfolio, or that they will otherwise be immune.

So, when the inevitable market decline comes, investors feel betrayed, shocked, confused, and frightened. It shouldn't happen to them! In this frame of mind, investors are primed to do the worst possible thing: sell and retreat to the "safety" of cash! All thoughts of long-term objectives vanish. The investor locks in his loss, and guarantees that he won't be on board for the inevitable recovery.
Market risk means that sometimes your equities will go down. We can't determine when that will happen. The market doesn't care whether you just invested, or if you are above your starting capital, or how close you are to your goal. So, if you are in the market, get used to the idea. If you can't get used to the idea, don't go into the market. Better to have not been in the market at all then to panic and sell when the market dumps.
Decide in advance how much risk you are willing to tolerate. You may define it in many different terms. You could say to yourself that you want to be 95% certain (that's two standard deviations) that you will never have a loss exceeding a given amount. Or you could say that you can accept a risk level about half way between the S&P 500 and short-term bonds. Or you could even say to yourself that you are willing to tolerate whatever risk is required to achieve a long-term result 3% better than the S&P 500.

Risk-Reward Relationship

However you define risk, remember that savers sleep well, while investors eat well. The relationship between risk and reward is almost a physical law. If the worst result you are willing to accept is a CD result, than that is also going to be your best possible result.
Now that we have decided where we want to go, we can begin to examine roads which will get us there. A clear statement of objectives, risk tolerance, and time horizon should be reduced to writing and will form the first portion of a policy statement for your investment strategy. The law requires that fiduciaries have and adhere to a written policy statement. But every plan should have a policy statement, and I strongly recommend that you put it in writing so that you can refer to it later. It will help keep you focused on achieving your goals, which will in turn help you to keep a clear head in times of stress. If you think that you can administer a long-term investment plan without occasional days of stress, either you are a very laid-back person or you haven't been paying attention.
The next step in developing your strategy is to begin to formulate an asset-allocation plan which will satisfy the requirements we have just laid down. Stay tuned!

CHAPTER 12

Building Your Portfolio

Let's see how what financial economists have learned over the last 20 years can help us build a portfolio. After all, we haven't come all this way together just to go back to doing things the way our grandparents did.

In the Real World

While we are building an investment strategy, we must acknowledge that we operate in an uncertain world -- few of the variables are under our control. Because we are dealing with future events we cannot see, we know in advance that any strategy we are able to devise is unlikely to turn out to be the "best" strategy in retrospect.

However, with what we do know, we can build a very good strategy. Rather than trying to beat some yardstick, or every other investor around, a superior strategy has the highest possible probability of meeting our long-term goals, and will subject us to the least risk along the way. It will attempt to maximize our returns for the risks we are willing to take, and systematically whittle down the risks and costs of being wrong.

In the short term, every portfolio will be "wrong" a great deal of the time. At the end of each period, with the benefit of hindsight, we will wish that we had been more or less committed to each asset class. For instance, we might have wished for more stocks in a year when the markets did well, and more cash in a year when they did poorly. We will just have to accept this in order to be "right" for the long term.

A Quick Review

Let's take a minute to review some key points found in earlier chapters:

- Capitalism is the greatest wealth-creating mechanism ever devised. As each of us goes about serving our own interests, the value of the world's economy increases. The markets, which are an integral part of capitalism, rise to reflect the increase in the world's economy. We expect this trend to continue. Markets offer each of us the surest opportunity to participate in the growth of the global economy.
- Risk should not be avoided, because it offers an investor the opportunity for higher returns. In particular, equities offer investors the highest real returns over time. Most investors cannot expect to meet their reasonable goals without accepting some level of market risk.
- Asset allocation decisions explain the vast majority of investor returns, and offer investors the biggest chance to control their investment results. The impact of market timing and individual security selection pale by comparison to asset allocation. It follows that the greatest share of the investment process and attention should be devoted to the asset allocation decision.
- Risk can be actively managed. Diversification is the primary investor protection. Asset allocation between stocks, bonds, and cash allow investors to tailor portfolios to meet their risk tolerance. Modern Portfolio Theory offers investors the chance to obtain efficient portfolios that maximize their returns for each level of risk they might be able to bear. New research by financial economists (Fama-French) examines the expected cross section of returns, which gives us an opportunity to predict expected returns by categorizing stocks by their size and Book-to-Market Ratio. The practical implication of the Fama-French research encourages investors to construct portfolios with higher expected returns than the market as a whole by increasing their holdings in smaller companies and value stocks.
- To paraphrase the popular license plate: "Risk Happens!" Investors must accept and expect reasonably regular market declines. These events should be viewed as perfectly natural. At worst they are a non-event to long-term investors; at best they may represent buying opportunities. It is vital that investors maintain a long-term perspective and exercise discipline if they are to avoid

the dreaded "buy high, sell low" behavior.

- Markets are efficient, and attempts to either time the market or select individual securities have not been effective or reliable methods of enhancing returns or reducing risk. Active management cannot demonstrate sufficient value added to offset their increased costs. Deviations from benchmark portfolios can explain the variability of mutual fund and institutional performance.
- Market and economic forecasts are notoriously unreliable. Accordingly, strategies based on forecasting have not been successful when compared to a long-term, buy-and-hold strategy. The only forecast we make is that the world is not likely to end, that the world economy is going to continue to expand, and that the world's stock markets will continue to be an efficient mechanism to capture this growth in value.
- Past performance of investment managers is not a reliable indicator of expected future performance. Neither this season's big winner nor it's big loser is any more likely to repeat than pure random chance might predict.
- Cost is a major controllable variable in investment management. Low cost is strongly correlated to higher investment returns. Management fees, transaction costs, and taxes all serve to reduce investor return. Cost must be rigidly controlled.

Plan of Attack

Our discipline to attack the investment problem is called "Strategic Global Asset Allocation," a long-term strategy in which we will divide the investor's available wealth among the world's desirable asset classes. Naturally enough, our first task is to decide which assets to include and which to exclude.

We will confine ourselves to liquid, marketable securities. This policy represents a major constraint, but not a particularly burdensome one. It allows us to price each asset in our portfolio on a daily basis. Should we wish to liquidate any or all of the portfolio, we can cash out for full value within one week.

Right off the bat, we have excluded many asset classes, some of which might be frivolous, some desirable. Baseball trading cards, diamonds, postage stamps, rare coins, antique automobiles, and commemorative plates are all out.

Other asset classes are excluded for different reasons. Most individuals will not be comfortable with options, commodities, futures, and the more exotic derivatives. Far fewer "professionals" understand the complicated trading strategies than claim to, as can be attested to by the occasional multi-billion dollar losses suffered by major institutions. If Barings Bank can't monitor its trading strategy, how can you and I hope to?

Managed commodity pools are sometimes touted as prudent diversifiers for balanced portfolios, but results have been distinctly under-whelming. As a general rule, all investors, no matter how sophisticated they judge themselves, should restrain the occasional urge to invest in things they don't fully understand. Looking back over my own career, the more I have adhered to this general guideline, the better job I have done.

To me, gold is just another commodity, an asset with a limited expected rate of return and a very high risk level. Many managers include gold as an asset class in their portfolios. They are attracted by its very low correlation to other asset classes. While I understand this point of view, I won't tie up any percentage of my clients' wealth in an asset with such a dismal return history. Lots of gold bugs are still holding on to "treasure" purchased at prices of almost $800 an ounce 20 years ago.

By now, you are probably beginning to suspect that asset class selection may be rather arbitrary. If so, go to the head of the class. Mine is a very "stick-to-basics" approach, and subject to my own value judgments. In addition, as a manager of other people's money, I must respect their constraints. For instance, some clients may dictate that their portfolios contain no emerging markets.

A Shining Example

Mr. and Mrs. Jones are 60 and 55 years old, respectively. Mr. Jones is about to retire with a fixed pension of $50,000 a year from a major corporation. Recently, Mr. Jones received a substantial inheritance. The

Joneses' total accumulated liquid assets are one million dollars. The Joneses lead an active lifestyle and will need an income from their liquid assets of approximately $60,000 fully adjusted for inflation. The Joneses expect that inflation will run at least 3.5 percent on average over the rest of their lives. They are very reluctant to consider invading principal to fund their income needs, and feel an obligation to pass on their wealth to their children, if possible. Above all they do not wish to outlive their income, and would like to remain financially independent. The Joneses describe themselves as conservative investors, and describe their goal as inflation-adjusted income and conservation of wealth. They are sophisticated enough to realize that they cannot accomplish their objectives using guaranteed investments, but do not wish to assume excessive risk.

My first observation is that the Joneses have a very long time horizon. As we have observed, the average life expectancy for a survivor of this couple (from a government table used widely for tax calculations) exceeds 34 years. Because this is an average life expectancy, about half of such couples will have a survivor longer than this. In addition, the Joneses do not want to invade principal, so amortizing the funds over their projected lives is not an option.

In addition, the Joneses will need a fair withdrawal (starting at 6 percent of initial capital) each year in order to sustain their projected lifestyle. Because they expect inflation to run an average of 3.5 percent, their minimum acceptable return must be at least 9.5 percent.

A quick look at the long-term data on bond and CD returns confirms that the Joneses are not going to be able to come close to meeting their objectives without accepting some equity risk. On the other hand, their known withdrawals for the next several years are high, so they cannot accept the risk of a 100 percent equity portfolio. In a bad market, they might run the risk of depleting their capital to finance withdrawals.

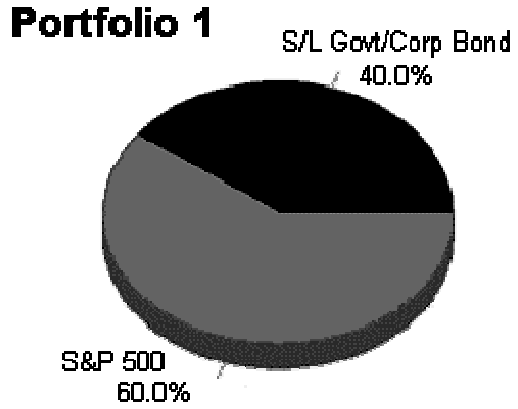
For Starters

As a first cut, we could examine a traditional institutional asset mix of 60 percent equities and 40 percent bonds. A very naive and simple strategy would be to buy the S&P 500 index for 60 percent and the Lehman Brothers Corp/Government Index for 40 percent. Once a year we could rebalance the funds to account for withdrawals and the natural market value fluctuations.

This strategy is certainly simple enough to execute. It doesn't require expensive consultants or a giant staff. It has low cost, meets our minimum required rate of return, sets aside enough in bonds to meet our known income requirements for almost seven years, and has a tolerable risk level.

But wait a second, this is for the dumb guys, right? Certainly large institutions must do better! How could we brag at cocktail parties? Everyone would think we were just big rubes. We want a sophisticated, power strategy with lots of consultants to impress our friends and get those big returns we always read about in Money Magazine. Where is the pizzazz? Where is the beef?

As it turns out, this would be a very good strategy indeed. During the five-year period ending December 1993 (the last full period of reliable data I presently have available on the largest pension plan results), this dumb little strategy would have outperformed 29 of the largest 30 pensions in the United States! While the media is full of stories touting enormous returns and legendary managers, perhaps only 1-2 percent of individual American investors actually obtained investment results this good.



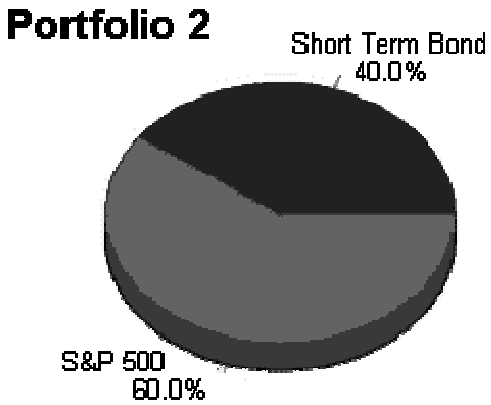
1975-1995

	Average Return	Standard Deviation
Portfolio 1	13.21	10.12

If the Joneses adopt this simple, naive, dumb little strategy, they will meet their objectives, outperform most large institutions, and be way ahead of their fellow investors.

Improving the Portfolio

Using this pretty good little portfolio as a benchmark, let's see if we can use what we have learned to form an even better portfolio. We will hold the original asset allocation of 60/40 stocks to bonds constant, but expand our asset class choices to see if we can lower risk or improve return.
First, we will look at the bonds. The primary reason to hold bonds in a portfolio is to reduce equity risk. As you will recall, long-term bonds have a reasonably high risk and offer a very limited return. Bond-holders generally demand increased interest rates for longer maturities to compensate them for the increased risk. But an in-depth examination of bond returns would indicate that there is very little extra return associated with increasing maturities. What would happen if we dumped the Lehman bond portfolio and substituted two portfolios with a much shorter maturity? Let's substitute a high-quality bond portfolio with a maximum average maturity of two years.



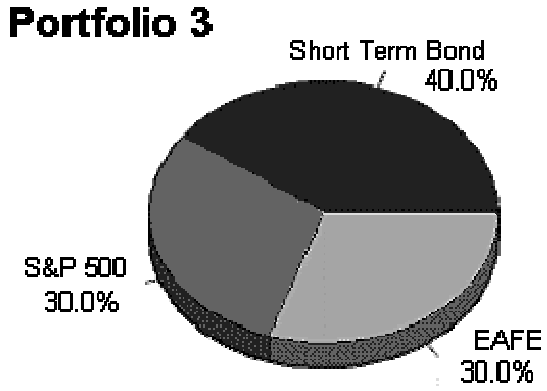
1975-1995

	Average Return	Standard Deviation
Portfolio 1	13.21	10.12
Portfolio 2	13.18	9.03

The new portfolio exhibits a very satisfactory decrease in risk without suffering any decrease in expected return.

The Foreign Connection

Next, let's look at equities. It has long been established that international diversification will increase returns and decrease risk in a domestic-only portfolio. So, we test the effect of splitting half the equity portfolio into the EAFE (Europe, Australia, and Far East) index and S&P 500. True to our expectations, we note a gratifying increase in rate of return and a decrease in risk. This apparent magic can be explained by the low correlation that EAFE has with our domestic stocks.



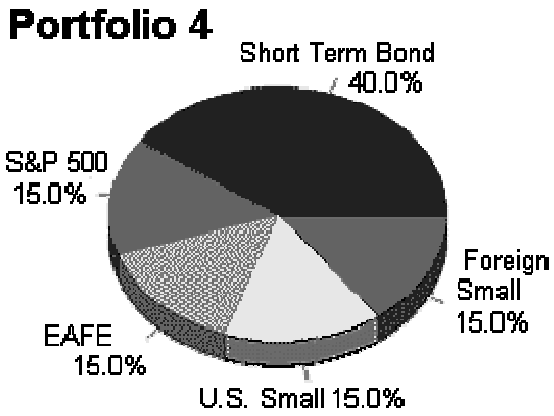
1975-1995

	Average Return	Standard Deviation
Portfolio 1	13.21	10.12
Portfolio 2	13.18	9.03
Portfolio 3	14.05	9.49

Think Small

EAFE and the S&P 500 are composed of large companies in developed countries. Small companies offer

much higher returns than large companies, so let's divide both our domestic and foreign portfolios to capture some of this extra return. Not bad. Small company stocks not only have a higher return than large ones, but they also have a reasonably low correlation with them.

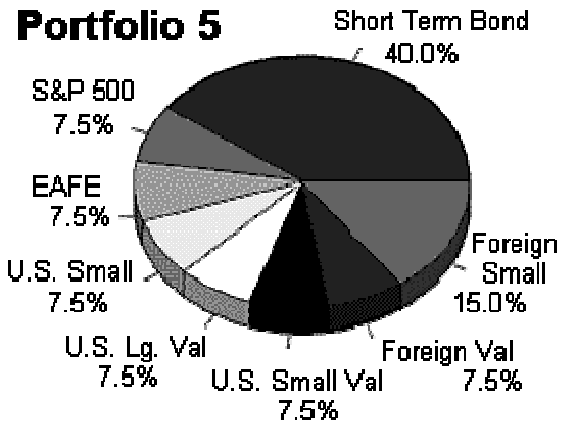


1975-1995

	Average Return	Standard Deviation
Portfolio 1	13.21	10.12
Portfolio 2	13.18	9.03
Portfolio 3	14.05	9.49
Portfolio 4	16.26	9.71

Think Value

Most of the index comprises growth stocks (stocks with low book-to-market ratios). The Fama-French research, which subsequent studies have confirmed, points out that value stocks (stocks with high book-to-market ratios) have a much higher rate of return without additional risk. So, let's split the equities again to add a strong value tilt.



1975-1995

	Average Return	Standard Deviation
Portfolio 1	13.21	10.12
Portfolio 2	13.18	9.03
Portfolio 3	14.05	9.49
Portfolio 4	16.26	9.71
Portfolio 5	17.15	9.69

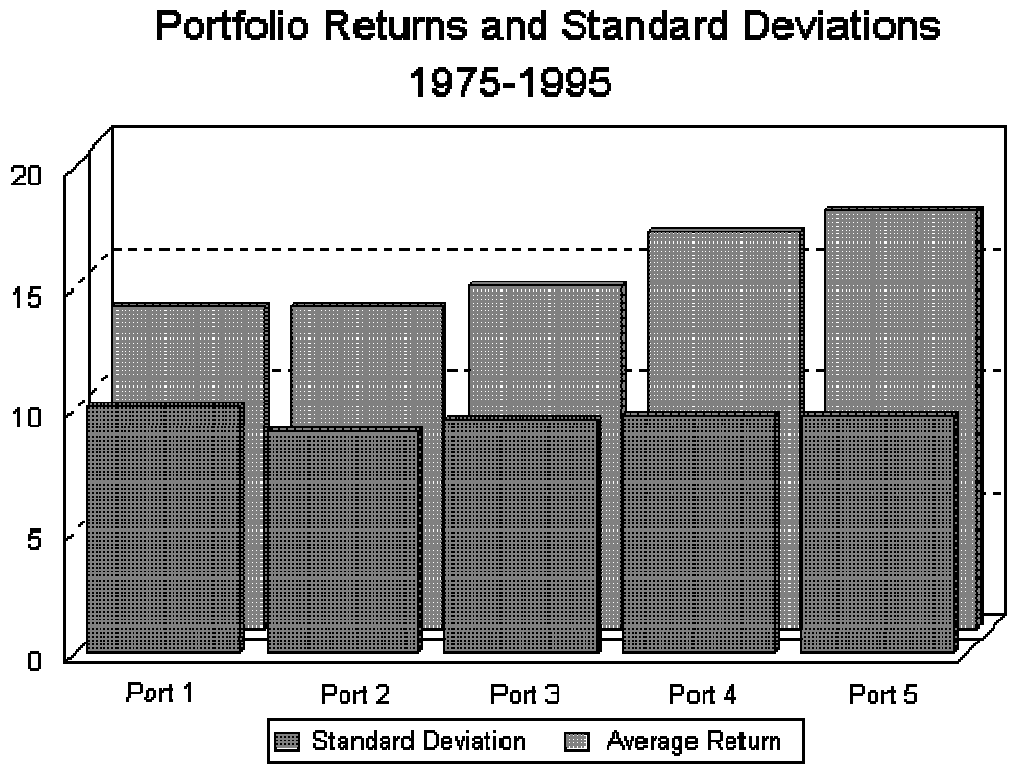
Moving On

The process could continue, testing the effects of including such asset classes as emerging markets or real estate (in the form of equity REITS). However, this example does not include them because we don't yet have reliable 20-year data. As new asset classes are defined, their usefulness will be determined by whether they increase return or reduce risk at the portfolio level. If so, they add a valuable diversification effect. Given an appropriate data series, a little trial-and-error and a little judgment will identify which asset classes add enough value to justify inclusion.

The Rewards of Success

While our initial 60/40 mix of S&P 500 and Lehman long bond index was a pretty good portfolio, we

have been able to substantially improve it. We have met the clients' minimum required rate of return, stayed well within their risk tolerance, and improved both risk and return over the initial portfolio.
Our "improved" balanced account has greatly out-performed the S&P 500 while taking less risk. We accomplished this by making no forecasts, selecting no individual stocks, and not attempting to time the markets. We didn't try to pick the "best" asset class, and we didn't trade frantically. We just put a number of attractive asset classes together in a way that made sense. You don't need to watch the market 24 hours a day, and you don't need to be wired to your PDA while you play golf.



A Minor Adjustment?

The last 20 years have been good to equities. But our time period included a few anxious moments. We witnessed the final fall of Saigon, three minor police actions (Panama, Haiti, and Grenada), and one all out war with Desert Storm. We had nuclear confrontation and the fall of the Berlin Wall. We had low inflation, high inflation, booms, and recessions. We had high interest rates and low interest rates. We had a strong dollar, and we had a weak dollar. We had Democrats and Republicans in both the Congress and White House. We had good markets and a couple of spectacular crashes.
In short, it was a little better than average for investors, but they still had plenty to worry about if they were so inclined. Depending on your particular personality, it took either courage, faith, or a very laid-back attitude to stay fully invested every day. Whatever it took, remaining fully invested in a diversified portfolio was a key element in success.
Because we had better-than-average returns for the last 20 years, it would not be appropriate to forecast those rates of return forever. A prudent person might knock off 3-5 percent for planning purposes. If we get more, we can all celebrate. If not, we haven't built a plan destined to fail due to pie-in-the-sky estimates of future returns. Even with a liberal discount from the expected rate of return, we are still well within the minimum required rate of return for the Joneses.

The Leading Edge

The portfolio we designed is on the leading edge of financial research. But research continues, so the story is far from over. Each year we get better and better tools. Today's leading edge research becomes

state of the art tomorrow and, ultimately, becomes generally accepted practice. As the new tools are developed, they will first be available to large institutions and investment advisors. The speed at which they filter down to the retail level is purely a function of demand. Until enough of you demand it, only professionals will have the best tools. For instance, when consumer demand develops for a no-load, international small-cap value fund, one or more of the retail fund families will make it available.
Demand, in turn, is a function of education. In general terms, Wall Street has little interest in educating investors to prefer low-cost, low-profit-margin investment strategies. The old ways are so much more profitable -- for it. Because Wall Street has enormous advertising and public relations budgets, it shapes the debate and discussion in the popular media. Independent investment advisors advocating low cost, low-profit-margin investment strategies tend to have rather smaller budgets for advertising and PR.
For instance, it's rare to see an intelligent discussion of value vs. growth investment style, or anyone advocating index fund investing either on TV or in what passes as the sophisticated financial press. But it's not unusual at all to see yesterday's hero sharing tidbits, gossip, and speculation. This type of activity may have great entertainment and amusement value, but is of little help in assisting investors to formulate their plans. Some of the more popular Wall Street TV programs have little trouble giving a half dozen conflicting strategies in a single 30-minute program.
So, investors will have to get used to the idea that they must educate themselves and go beyond the traditional Wall Street sources of investment advice if they want to utilize the most effective investment strategies. Many of you will decide to work with a professional. But you still must know enough to choose between the con artists and the true pros. The Net can help. In particular look for academic research from the economics and finance departments of the major universities that now maintain sites on the Web. Start with FENWeb and branch out from there. Read the selections on my bookshelf.
As you educate yourself, demand better strategies, lower costs, and better research. Don't settle for what Wall Street wants you to know. Don't settle for what Wall Street wants you to have. That's the financial equivalent of letting the foxes guard the hen house. Perhaps the thing that Wall Street understands best is a loss of market share. Demand better. The best way for you to send that message is to vote with your feet. Refuse to put up with high costs, conflicts of interest, poor strategy, and amateur advisors.

Coming up

This portfolio won't meet the needs of every investor, however it can easily be tailored for many other investor needs. In the next chapter, we will illustrate how to adjust the relative proportion of bonds in the portfolio to increase rate of return or decrease risk. We will also take an in-depth look at how our portfolio performed, and the implications of the strategy we designed.

CHAPTER 13

Portfolio Tactics

Building a successful investment plan for the twenty-first century may require a fundamental change in the way we think about investing. For instance, while taking less risk, a portfolio comprised of only 60 percent equities that outperforms the S&P 500 by a wide margin should certainly be considered a superior portfolio. Furthermore, new advances in investment and finance offer us solutions both simpler and more elegant (and very, very different) than what we grew up with.

Old School Investing

We have been conditioned to think of market timing, stock selection, and manager performance as the keys to success. Because these beliefs are deeply ingrained, even superior investment strategies like Strategic Global Asset Allocation take a little getting used to.
What I'm advocating is so different from public expectations that sometimes people look at me as if I'm not quite right or a few bricks short of a full load. For instance:

- As an investment advisor, I'm expected to have an opinion on where the market is going. Well, I have an opinion, but it's no more likely to come true than yours or your dog's. People are offended and disappointed when I tell them that.
- Thanks to the media, we are exposed daily to countless "experts" who are worried about the market. Their indicators and forecasts point to a possible "correction." They are prepared to retreat to the "safety" of cash. This allows them to look responsible, conservative, and caring. By pandering to the public's fear, they hope thousands of anguished investors will decide to trust them with their money. On the other hand, advisors who insist on remaining fully invested at all times appear wild and crazy.
- Advisors are supposed to beat somebody or something. Often the first question people will ask is: "What kind of numbers have you achieved this year?" Those numbers become the chief yardstick to determine if the advisor is good or bad.
- I'm still waiting for the first investor to ask: "What's the best long-term allocation?" Or, "How much risk do I need to take to meet my goals?"

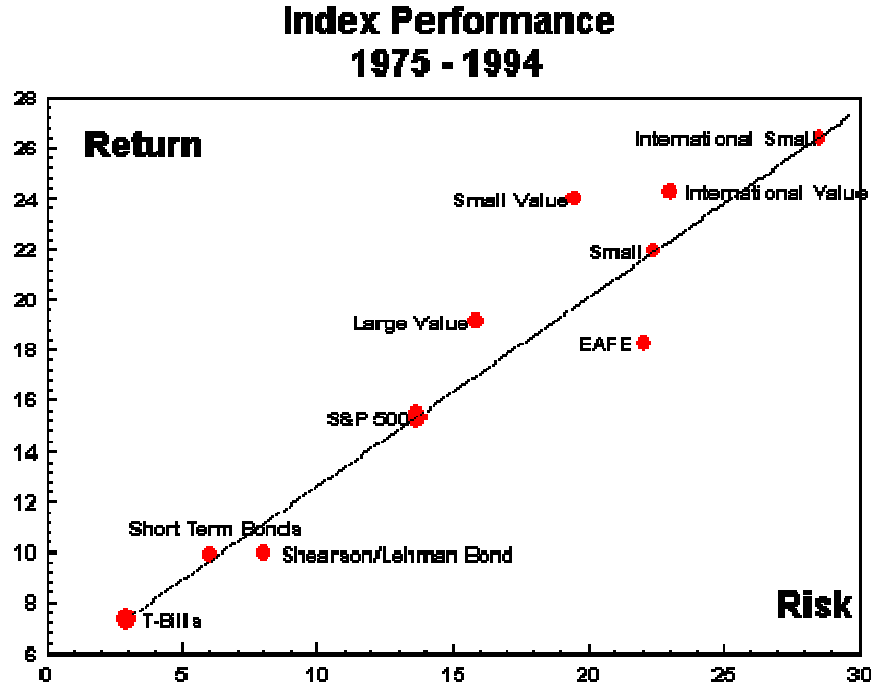
Without tools to evaluate risk or choose between alternative strategies, investors are left with just one number to compare performance. By default, year-to-date or last year's performance figures are the only criteria for measurement. If those figures alone determined a successful investment plan, we could all buy one copy of *Money Magazine* each year, pick the single, top-performing mutual fund, and go sailing. Unfortunately, the *Money Magazine* approach is often the worst way to form a strategy.

Turning Your Goals into a Strategy

Every strategy has certain performance implications. The word *strategy* implies a conscious effort to achieve stated goals. As we saw in Chapter 12, the Joneses' goal is not to beat the S&P 500, or any other index or person. They are not interested in maximum performance. Their concern is to at least meet their minimum acceptable return levels without taking excessive risk. They want a comfortable and stress-free retirement.
The asset-allocation design will determine results in both short- and long-term periods. What's more, both risk and returns will be driven far more by asset allocation than stock selection or market timing.
We could have looked at the 20-year, asset-class returns and seen that foreign, small-company stocks produced the highest return. But putting all the Joneses' money in foreign, small-company stocks will not produce a comfortable and stress-free retirement. Any asset class can and will have extended periods of serious under-performance from its long-term trend. And foreign, small-company stocks can and do have wild swings in short-term performance.

Let's Get Risky

So why put any of that risky stuff in the Joneses' plan? Why not just buy them a few utility stocks and forget it? The reason is this: When we measure risk at the portfolio level, we can see that the best way to construct a conservative portfolio is not to have all "safe" assets, but to have a conservative mix of *attractive* assets. A risky asset with a low correlation to other assets in the portfolio can actually reduce risk in the portfolio. It's a question of trying to get as much bang (return) for the buck (risk) as possible. A diversified portfolio offers much higher returns per unit of risk than does a utility or "blue chip" portfolio. If we individually examine each asset class, we will see that some have considerable risk. I have used the traditional definition of the risk-reward line as falling along the points between the "risk free" Treasury Bill rate, and the S&P 500. Any point falling above or to the left of the line is "good" while below or to the right of the line is not. Investment managers all strive to have their performance fall somewhere in the northwest quadrant.



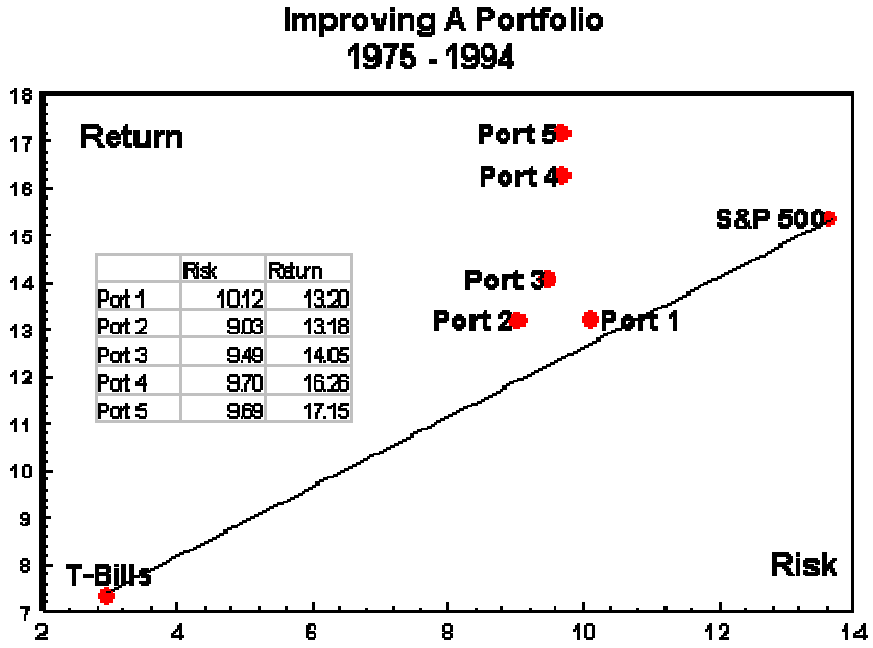
Over the long term, investment markets and portions of markets generally sort themselves out just about as they are here. In the short run, we might expect just about anything. It's not terribly unusual to see a negative-sloping, risk-reward line for short time periods. That just means the market went down, and that stocks performed worse than T-Bills. In the business, we tend not to put many of those charts on the wall, but you should know that they exist. You must think of these temporary reverses as just another non-event on the way to meeting your goals.

Balancing Risk with Return

While you are looking at the chart, you might notice that the statistics generally confirm that small stocks have a higher return and risk than large ones - and that "value" has a higher return without any more risk than "growth." During this particular time period, value stocks had higher risk than the S&P 500, but turned in higher returns. Foreign stocks, adjusted for currency back to U.S. dollars, have had higher returns and risk than domestic stocks.

EAFE had somewhat lower returns than we might have expected, but higher ones than our own domestic stocks. Because it is primarily a large growth portfolio, it falls considerably below the large foreign-value stocks. Foreign small-company and value stocks are particularly attractive in terms of return -- generating much higher rewards than EAFE. Fortunately, they also have low correlation to our domestic stock

markets. Notice how far below the line the long-term bond portfolio falls. Long-term bonds show much higher risk for no more reward than a short-term portfolio. How do they find people to buy that stuff anyway?
What is important is how much risk the portfolio has, and that it is reasonably conservative. From another perspective, few portfolios with this level of risk will offer better total return. While the "efficient frontier" is a constantly changing target, we must conclude that our superior portfolio is reasonably "efficient." Here's another view of our efforts to improve the starting portfolio:



How did each of our "improved" portfolios perform over the 20-year period? Check out the year-by-year performance of each of the portfolios along with the inflation, T-Bill, and S&P 500 returns.
The word strategy also implies a long-term approach. Even the "best" long-term strategy will not be the best each year -- or even each five years. And since we are dealing with equities, and equities have risk, it's important to understand that even the "best" strategy isn't a guarantee against occasional bad (negative) periods. Remember, risk happens!

Expect Periodic Declines

One measure of risk that investors use is chance of loss. Let's face it, none of us like even temporary declines. In a 20-year period, our portfolio had only one loss. Both the S&P 500 and Portfolio One had three losses. But that doesn't mean that worse performance wasn't possible.
For instance, had the data been available to build our model, we would have seen larger losses in the dismal 1973-74 period. The possibility for larger losses is incorporated in the model. We have enough data points during the last 20 years to build a reliable model and have faith in our Standard Deviation measurement. Just keep in mind that performance can and will exceed one standard deviation about three years in 10. Of course, few complain if the performance exceeds a standard deviation on the upside!
Investors also seem to have any number of mental yardsticks that they employ relentlessly either against themselves or their financial advisors during periods of under-performance. Investors want to do better than CD rates -- and they want to do that every day! Of course, even a superior portfolio will not outperform CD rates every day or every year. In fact, this portfolio fell short of that yardstick a total of five times during the 20 years.

No More Second-Guessing

Investors often have one more mental yardstick for comparison. The temptation to second-guess yourself or your strategy is enormous. Investors are, after all, quite human, and they believe, quite reasonably, that

they should have it all. For instance, often they want to "beat the S&P 500." We have gone to a great deal of trouble to build a portfolio which doesn't look anything like the S&P 500. The S&P 500 is made up of large domestic-growth stocks. These tend to have a relatively low return per unit of risk that they endure. Our strategy has been to seek out asset classes that have a higher rate of return and very low correlation with domestic large-company growth stocks. It stands to reason that our portfolio will not track with the S&P 500. This means that sometimes the S&P 500 will outperform our superior portfolio. When foreign, small-company, or value stocks are having bad years, it is not likely that we will outperform an exclusively domestic, large-company, growth portfolio. In fact, the S&P 500 outperformed our portfolio 10 out of 20 years! So, in summary, our superior portfolio had one loss, failed to beat CDs five times, and failed to beat the S&P 500 10 times!

Investors often tend to narrowly focus on any yardstick which is exceeding their portfolio performance for the moment. This practice can lead to some interesting conversations between investors and their advisors. Unless investors can focus on their own goals, risk tolerance, and strategy, performance becomes an impossible moving target. Investors must understand that a superior portfolio will underperform from time to time, no matter what mental yardstick they are using. If they are prepared for this disconcerting reality, they are less likely to find themselves abandoning their superior portfolio in favor of Wall Street's deal of the day.

Adjusting the Portfolio

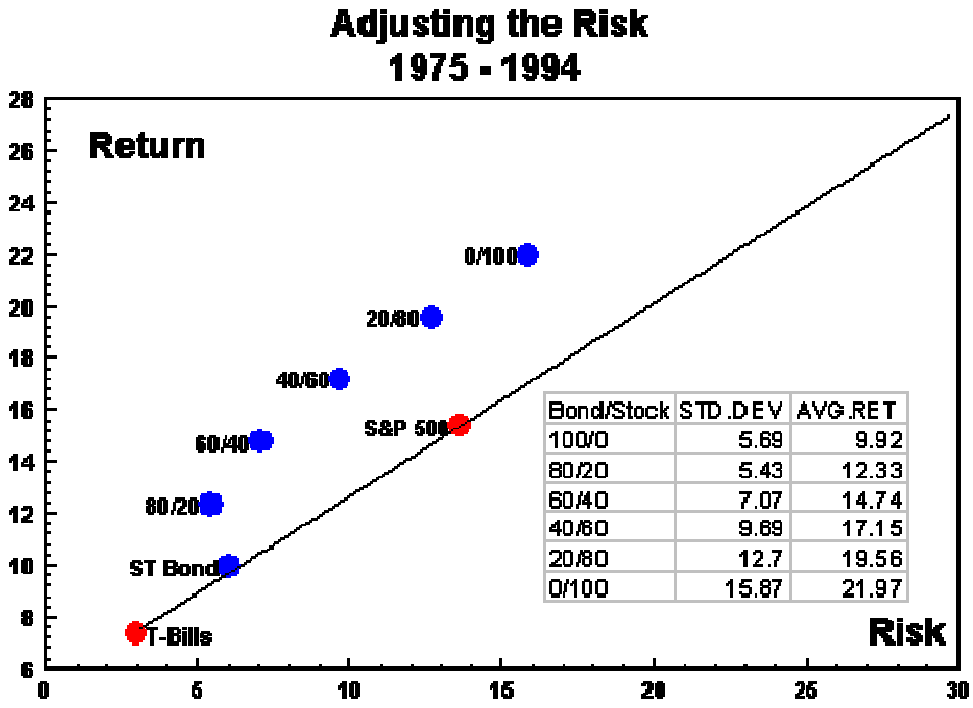
As good as this portfolio is, it won't be right for every investor. Some will want more return, some will want less risk. But it's pretty easy to modify the portfolio to meet most objectives. For investors seeking lower risk, we can just shift the proportion of assets from equities (stock) to short-term bonds. We started with a 60/40 mix of stocks to bonds. More conservative investors might opt for a 40/60 or even 20/80 mix. However, they ought to hold each of the asset classes, even the riskiest in their portfolios - they will just hold a smaller percentage of each.

Investors wanting higher risk and reward can just reduce the proportion of bonds. Once they get to zero bonds they have two potential courses to follow if they still want higher returns. First, they could shift the asset allocation to more value and small-company stocks. While this example didn't include emerging markets, we can assume that they might opt for a healthy portion of them in their portfolio as well. As an alternative, they might consider purchasing the portfolio on margin.

As a practical matter, most investors would not be comfortable with these higher levels of risk - very few of my clients have complained that we aren't taking enough risk. My view is that, properly practiced, investing should be reasonably boring. Perhaps there are some intrepid souls out there craving excitement, but they don't find their way to my door in large numbers. So, while I have a number of investors fully invested in equities, I have exactly zero investors on margin.

Proof Is in the Performance

Here is how the portfolios would have performed. Each portfolio containing equities is comfortably above the old risk-reward line. You should also notice that the most conservative, balanced portfolio with 20 percent equities has both lower risk and higher performance than a pure short-term bond portfolio. Each of our adjusted portfolios is a very good strategy at a particular level of risk.



Bond/Stock	STD.DEV	AVG.RET
100/0	5.69	9.92
80/20	5.43	12.33
60/40	7.07	14.74
40/60	9.69	17.15
20/80	12.7	19.56
0/100	15.87	21.97

You can also check out the year-by-year results of each of the several portfolios.

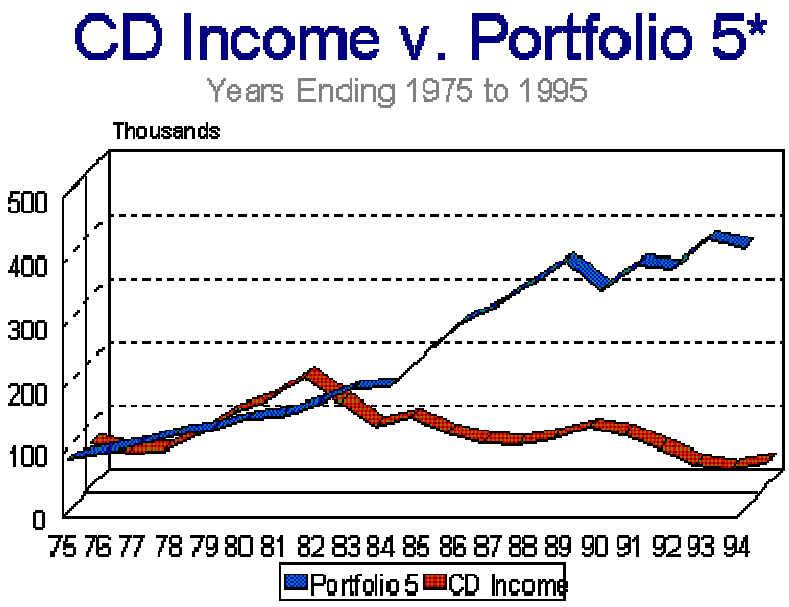
Happiness through Asset Allocation

Back to the Joneses. How would the portfolio have performed for them? Would it have met their need for income, an inflation hedge, and an increase in real value? And how should they turn this portfolio into an income-generating machine?

If the Joneses had looked at their total capital each December 31 and withdrawn six percent for the following year's income needs, the income stream would have been very favorable.

Growth above the six percent income withdrawal is reinvested to provide an inflation hedge and long-term growth of capital. The healthy level of short-term bonds keeps us from having to consume stocks during market declines. The process of reallocation each year back to the original proportions will result in selling bonds following bad years, and stock following good years. Reallocation actually contributes to total return, while holding the risk level constant.

Income under the Joneses' plan began at $79,674 and grew to $410,450 last year. Income from CDs started at $66,300 and trended up until 1981 when it reached $172,700, then tapered off to $26,600 in 1993 and "recovered" to $36,900 last year. Total income under the plan of $4,884,848 compares favorably to income of $1,633,200 with the CDs.



** Assumes 6% withdrawal from capital at end of each year.*

The Joneses had a clear choice, and they could have gone the safe route. Of course, the CDs are still only worth $1 million and the example portfolio has grown to $6,430,380 by the end of 1994. Rather than nibbling caviar and toasting champagne, the Joneses would be out cashing in McDonald's discount coupons. While they are there, they can check out employment opportunities behind the counter. Not all those smiling older faces are there just because they're bored with retirement. That million dollars didn't go as far as you might have thought if you simply put it in the bank 20 years ago.

Reality Rears Its Nasty Head

Please don't read too much into this model. The time period we were forced to use was considerably better than normal. (Data is not available in all the markets we wanted to demonstrate for longer than 20 years.) The 20-year period was characterized by falling interest rates, falling inflation, and superior stock markets. Both nominal and real rates of return were significantly higher than long-term trends. For instance, if we had included the dismal 1973-74 years, our rates of return would be lower.
No one should base their planning on attaining anything like the rates of return here. As a rule of thumb, don't expect long-term results higher than eight percent above the inflation rate. If you do get better, celebrate. Just don't base your whole strategy on attaining returns which are so much higher than normal.

A Strategy for Everyone

We have demonstrated a superior investment strategy. Looking forward, our strategy should yield superior results while limiting risk for long-term investors in almost any economic environment short of unlimited nuclear war or total global economic collapse.
Whether you are playing tennis, flying fighters, or practicing medicine, you should be constantly looking for the highest probability shot. The combination of Strategic Global Asset Allocation and Modern Portfolio Theory (with an appreciation of the cross section of expected returns in various parts of the world's markets) offers investors the highest probability shot of making their objectives a reality.

Coming Up

Designing a strategy is one thing. Implementation is another. In the next chapter, we will begin to implement our strategy. We will start by examining the profound changes in the financial services industry over the last generation. These changes allow knowledgeable investors to execute sophisticated strategies in a very economical manner. You don't have to be a multibillionaire, but you do have to know

what is available. Wall Street isn't going out of its way to show you how to economize. "Business as usual" is just too profitable - for them! Until you demand better, Wall Street is only too happy to sell you the same old stuff.

CHAPTER 14

Pigs, Mousetraps & Revolution

CONGRATULATIONS! Based on the knowledge you've accumulated from the previous chapters, you now possess the broad outlines necessary to achieve financial success. But since implementing your strategy is just as critical as designing it, there are still lots of ways you can screw up. The devil, unfortunately, is in the details! Luckily for us, there are resources available today that our parents couldn't have even imagined years ago. Obstacles may appear in our way, but as long as we know what to expect, they are easily avoided.

In many ways, 20 years after May Day, the process of change is still just beginning. As more and more investors vote with their feet, they are further transforming the industry in their favor.

But before we turn to the nuts and bolts of implementation, let's shift gears a bit. We first need to examine the landscape of the financial services industry -- an industry undergoing radical change. In the past, we have talked about many of the advances in financial economics over the last 40 years. But there is one cataclysmic event I've yet to elucidate that is behind the sweeping transformation now taking place.

Viva La Revolution!

You're forgiven if you missed the revolution that began on May Day 1975. No, it's not an event celebrated each year with a giant march through Red Square. No epic poems chronicle the events of this glorious revolution, and it lacks any anthems or ballads. There is no holiday, are no statues, and no fireworks. The revolution's heroes never received a parade, and the whole thing passed almost unnoticed by an indifferent public.
Nevertheless, May Day 1975 should be celebrated vigorously by all investors. The revolution set us free, and today we have options we couldn't have imagined previously. Clearly, a short history lesson is in order.

The Dutch Make a Purchase

A few hundred years ago, the Dutch made a small real estate deal to acquire a little island in the Northeast. The price was certainly reasonable, and the island was nicely located at the mouth of a great navigable river which opened up to a fine harbor and sound.
Given the nifty location, it wasn't long before the Dutch began trading with their new neighbors on the southern tip of the island. At first, trading was primarily confined to commodities, which the surrounding area had in abundance. These commodities were then shipped home through the harbor facilities. Over time, trading expanded to finance a lively commerce. New companies were formed, and investors were invited to purchase "speculations" in fledgling ventures. These "speculations" were certificates of ownership or debt and would much later be called stocks and bonds. The certificates were placed on open-air tables, and investors wandered the area examining the certificates, gossiping, bargaining, and eventually buying or selling.

Enter the Pigs

With all this trading, a problem soon developed. Pigs from the adjacent common area often ran wild through the trading area, splattered the traders, knocked over the tables, and trampled the speculations. After short consultations, a wall was built to keep the pigs out. Later, the street where the trading took place was named after the wall. In time, the area grew to become the financial capital of the world. (Some

might speculate that the wall was never effective, or at least that the pigs now have two legs!)
Early on, the securities traders formed an association to govern their business transactions. It was decided that the association should have a monopoly on trading, and that no traders should undercut the prices of their competitors. Traders who violated the agreement were banished from the association, which effectively ended their careers. This arrangement greatly enriched the traders, but certainly couldn't have been considered unusual given the business climate at the time. At least there was very little recorded dissent or comment from economists on the negative implications for market efficiency. Later, the trade association was given government sanction, and commission price fixing became the law of the land.

May Day

Business continued in this manner until May 1, 1975. "May Day," as it is called in the industry, marks the point at which the SEC began allowing negotiated commissions. The event was greeted with howls, gnashing of teeth, and predictions of doom by the brokerage houses. Somehow these symbols of capitalism believed they couldn't survive competition! May Day was the beginning of the end of Wall Street's guaranteed good deal. As you can guess, brokerages didn't exactly fall over themselves advertising discounts to investors. But the genie was out of the bottle. Little by little, Wall Street found itself being dragged into the real world of competition.
Initially, the benefits of May Day were unevenly distributed. Large institutions could immediately trade blocks of stock for a tiny percentage of previous costs. But small investors' trading costs actually increased at the "full service houses." Soon, however, discount brokers appeared offering sharply lower trading costs to retail investors. At first, discount brokerages provided few services, but little by little the quality and quantity of their services increased. The success of early entrants such as Charles Schwab attracted additional players. Competition did what it usually does: further reduced prices, increased quality of service, and multiplied consumer choices. Stay tuned. The story is far from over, and things will keep getting better and better for the small investor.

A Monumental Change

Meanwhile, other institutions are also keeping the heat on. Banks, insurance companies, and mutual funds are cutting into Wall Street's traditional turf. In particular, no-load mutual funds have provided attractive alternatives to traditional brokerage houses and broker-dealer operations. Independent investors have embraced them in amounts that are hard to imagine. But "no-load" means "no help," and many investors lack the time, inclination, or confidence to choose from a variety of offerings. Last year, over 1,500 new mutual funds were launched in the United States alone. Naturally, the selection process can appear rather daunting.
This monumental change wasn't just confined to the brokerage industry. Insurers and bankers have undergone a parallel experience. In the good old days, long before voice mail, and even before the break up of the phone companies, stock brokers sold stock, insurance agents sold insurance, and bankers took deposits and made loans. Today everybody does everything, and it is difficult to tell who the players are even with a program.
Until just a few years ago, bank and saving-and-loan interest rates on deposits were capped by federal law, while bankers were free to charge whatever they could get away with for loans. Individuals had few alternatives for savings. Most could not afford to purchase individual T-Bills. Savings bonds required long-term commitments.

Money Market Funds

The advent of money market funds changed all that. When interest rates began to rise during the 70s and 80s, banks found themselves hemorrhaging deposits. "Disintermediation" became the buzzword of the day. A succession of extraordinary policy blunders followed. To compete against the money funds, deposit interest rates were unfrozen. But the banks then found themselves in the unfortunate position of

paying high rates to depositors while many of their older loans were fixed at very low rates. Banks were encouraged to make high-risk loans and enter other lines of business to increase their earnings.
Federal deposit insurance may have protected savers, but the resulting frenzy of foolishness, greed, and corruption lead to the near collapse of the banking system. (To be fair, the banks didn't create the inflation that drove up interest rates; Lyndon Johnson's Great Society, the Vietnam War, and the oil embargo did that.) Today, after a zillion dollar bail-out program provided by the taxpayers, banks have adjusted to a system where they pay reasonable rates to depositors. While banks have not exactly rushed to increase deposit rates, the availability of money market funds enforces a market discipline that keeps rates in the ballpark.

Price Competition

For a long time, insurance companies lived in a world protected from price competition. While no federal regulations governed their rate making, each state reviewed rates with an eye to protecting the solvency of the insurance industry. In practice, the State of New York was able to set rates for most insurance companies nationwide. As a condition for doing business in New York, insurance companies had to charge uniform rates and pay uniform commissions in every state in which they did business. Few companies wished to be locked out of New York, so they happily went along. Like the securities business, an industry ethic developed which considered price competition dirty. It simply didn't exist. Policies were carefully designed to provide comparable but not superior value to the insured. Insurance departments rewarded any attempt by companies to lower rates, provide discounts, or offer rebates with license suspensions. Fair policy comparisons were just about impossible, and the widespread use of dividend projections rendered the entire exercise meaningless in any event. Agents were carefully trained to sell high-cost, high-commission products, and avoid the use of term insurance at all costs. Loyalty to the company was considered superior to loyalty to the client.
Eventually the insurance companies succumbed to the same market forces that affected banks. Rising interest rates in the 70s and 80s, coupled with the widespread acceptance of money market funds, provided savers with far more attractive alternatives to insurance policies. "Buy term and invest the difference" became a popular philosophy for savers. Little by little, the insurance industry was forced to increase policy values. New types of policies like universal life, variable life, and lower cost term were introduced to re-capture the market. Internal expenses were cut, and mortality charges adjusted to reflect longer life expectancy. Today, a dollar of life insurance costs about one-third of what it did 25 years ago, and cash values are greatly enhanced.
All this change comes at a price. Change brings noise and confusion. It takes us awhile to sort out the new benefits (for instance, I still don't know who to call when I have a problem with my phone!). But the trade-offs are overwhelmingly favorable. Investors astute enough to look beyond traditional sources found themselves richly rewarded with lower costs, increased options, and fewer conflicts of interest.

Monopoly and Regulated Industries

Many regulated industries share common characteristics. A great many people get paid far too much to do far too little. Innovation is stifled and consumers pay far more than they should. Wall Street was no exception. Prior to May 1, 1975, price competition in the securities industry was illegal. Wall Street was one big gentlemen's club raking in inflated monopoly prices while worshiping the status quo. Commissions were fixed. Competition, such as it was, revolved around peripheral services such as research or other advice. Prices for services were bundled together. You paid for the research and other services whether you wanted them or not. Even if you considered Wall Street's advice worth far less than zero, you paid.
The discount brokerages unbundled services and slashed pricing. Investors who had the time and inclination to go it alone reaped enormous benefits. For instance, several years ago, brokerage houses offered to trade and hold no-load mutual funds in their accounts. Initially, they charged a small transaction fee to cover the cost of the service. More recently, however, they have introduced a no-

transaction fee service for selected mutual funds. (As you will recall, there ain't no such thing as a free lunch. The brokerage houses receive compensation from the mutual fund company directly for acting as a distribution channel, and for providing certain shareholder and administrative services. These payments average about .25 percent to .35 percent annually. However, no additional cost is incurred by an investor who utilizes a brokerage account over what a direct purchaser would pay. As long as a fund has a 12(b)-1 fee of .25 percent or less, they are allowed to call themselves a no-load fund.)

Even if the investor pays a transaction fee to the brokerage house, it is a small portion of the cost of purchasing a typical load fund. For instance, at $100,000 a typical front-end load commission would be $3,500, while a transaction fee at a discount brokerage would be below $300.

This seemingly simple service is a giant advance for investors. Prior to this, investors had to identify a fund, open an account with the fund through the mail, and transfer funds to purchase shares. The entire process could take weeks. Redeeming shares involved much the same process and time. Funds could be out of the investors control for extended periods while in the mail, waiting for redemption, or waiting for the checks to clear. Transferring from one fund family to another was a nightmare of paperwork and delay. Tax accounting was too dreadful to contemplate. Each fund family provided their own reports. Managing a diversified portfolio was a complex task indeed.

Easy Street

Now a single account can hold many funds or families of funds. Funds are cleared overnight, and transferring requires a single telephone call. The brokerage provides a monthly consolidated report, and managing the funds becomes a reasonable task. What's more, a consolidated tax statement comes once each year. More recently, the discount brokerage houses have introduced software for 24-hour trading and account monitoring from the comfort and convenience of your home or office.

When discount brokerages began to offer their "back office" facilities to independent fee-only investment advisors, retail investors could obtain professional unbiased advice -- and efficient execution -- at a total cost far below what was previously offered. By providing a clear separation between brokerage functions and advice functions, investors who sought advice avoided the conflict of interest which poisons the commission-based brokerage business. This arrangement offers such enormous, readily apparent advantages that it threatens the way Wall Street has done business for generations.

Building a Better Mousetrap

The person who said "Build a better mousetrap, and the world will beat a path to your door," didn't understand much about business. The inventor of the new improved mousetrap must contend with the manufacturer of the old mousetrap. Even if his product is demonstrably better, he will face inertia and indifference from the buying public, and a well-orchestrated public relations campaign by the established company. After all, the established company is raking in a fortune selling the old mousetraps. Often it is well-capitalized and has a strong brand name. It is not likely to just roll over and give up its market share. It will fight like crazy to maintain business as usual.

Even if the new mousetrap eventually replaces the old one, the older company still has many options. Often the best option is to "harvest the business." The old company can continue to profitably sell the old mousetraps for years to anyone who is foolish enough to buy them.

Another option is for the old company to introduce its own new mousetrap with some of the features offered by the competition. However, in the process, it risks cannibalizing its older product's sales. Consequently, if the older product is more profitable, the company will attempt to maximize sales of the older line as long as possible. Taking this course maximizes profits and buys time to adjust to the new environment.

Welcome to the New World

Wall Street's traditional brokerage houses and broker-dealers are both harvesting their business and

attempting to improve their offerings. But they are clearly being dragged kicking and screaming to the party. Even if they wanted to, traditional brokerages have some formidable problems with joining the new world. Their overhead in terms of real estate, systems, and people is enormous. They will never be able to compete on a cost basis with discount brokers and independent advisors. Their used-stock sales force is poorly trained in basic economics and finance, and determined to preserve their antiquated commission structure. In addition, they suffer from a well-deserved image problem. In the meantime, the public is becoming increasingly disenchanted. Better mousetraps are available, and market share is flowing at an ever increasing rate in that direction.

In many ways, 20 years after May Day, the process of change is still just beginning. As more and more investors vote with their feet, they are further transforming the industry in their favor. The one and only thing that Wall Street really understands is loss of market share. Demand better, and you will get it. The choices are already there. All the tools necessary to implement a superior investment strategy are yours for the choosing. Your parents never had it so good.

Coming Up

We have all heard the sob stories about money lost, stolen, or swindled. How can you avoid becoming a victim? The answer is really quite simple. In the next chapter, we will give you a few common sense rules to avoid disaster.

CHAPTER 15

It's a Jungle Out There

When Singapore fell to the Japanese during World War II, William Spencer took off into the jungle to avoid capture. Armed with only his wits, he survived there alone for nine months. All he knew about the jungle was what he had heard in children's stories: it was a place full of lions, tigers, snakes, and insects just waiting to devour a tasty Englishman, or it was a Garden of Eden full of delicious treats.

The capitalist system, and Wall Street's markets which make up an integral part of the system, are the economic miracle of the world. But even miracles aren't perfect.

Spencer soon discovered that it was neither. As he recounted in his famous adventure book, *The Jungle is Neutral*, it doesn't care the slightest bit about you. It neither wants to destroy or reward you, it just is what it is.

Wall Street is the same way. The devouring beasts and the delicious bounty are both there. One way or another, you and your money are going to be in that jungle. But it's up to you to make the best of it.

While Spencer survived quite nicely, and lived to tell his tale, I'm sure he would agree that the whole experience would have been a lot more civilized if he only had had a good guide. My wife and I recently spent a week in the Amazon jungle. Led by a native guide, we marched miles through the jungle at night, chasing down bugs, snakes, and other critters. We fished for and swam among piranhas, and watched while the guides caught caymans with their bare hands. The guides showed us how to make poison darts and hunt with blow guns, introduced us to hundreds of tasty plants, and pointed out scores of medicinal herbs and vines.

Without the guides, we wouldn't have seen one percent of what was right there before our noses. With the guides, we thoroughly enjoyed a grand adventure with little more danger than we might have had at home in our living room. Even though I was a Boy Scout, and a graduate of the Air Force's survival school, I am sure that, left to myself, I would have stumbled around until I encountered a disaster. To put it plainly, I would have been nuts to wander around in there alone. A guide familiar with the "local lore" made all the difference.

As Spencer discovered, jungles aren't always what they seem. There are always a few predators, and an unsuspecting or unwary Englishman might very well find himself as the main course of a jungle banquet. But from a guide's perspective, most such disasters are entirely preventable.

For this little tour of Wall Street, I propose to be your guide. I've survived in this swamp for almost 25 years, so I think I can point out a few things that might help ward off disaster.

Before we start, I want to say that things are good and getting better. The capitalist system, and Wall Street's markets which make up an integral part of the system, are the economic miracle of the world. But even miracles aren't perfect. One of the great things about this miracle is that it doesn't rely on saints or even particularly good people to make it work. In a very real sense, the markets are always under construction and self-improving. As we have seen in the last chapter, improvement has been gradual but relentless. Consumers always want more or better deals. By demanding better, they force change. Just by voting with their feet -- or dollars -- they make the whole system better.

Make no mistake about it, I'm proud to be a capitalist tool. But there are a few flaws left in paradise, and we might as well discover how to either work around them or turn them to our advantage.

This chapter is devoted to showing you how to avoid totally unnecessary disasters as you execute your investment strategy. In particular, we will discuss non-market risks that could separate you from your hard-earned money. To be more precise, we will examine scams, rip-offs, conflicts of interest, and other dastardly deeds.

All of us have heard the horror stories:

- A Miami "investment advisor" leaves his family, cleans out a large number of client accounts and disappears. He is found months later living in a house of ill repute on Taiwan. Returned for trial, he is promptly convicted and sentenced. The money is not recovered. Some of Florida's top physicians are wiped out.
- Three airline pilots in Atlanta lose their entire retirement accounts after their airline folds. A total of $1.3 million disappears from accounts controlled by a "financial planner."
- In Texas, a small state-chartered trust company with strong ties to a major air carrier fails. Accounts are frozen for over a year while the state literally digs through shoe boxes to construct records several years in arrears. It is discovered that the trust company carries only $1 million total insurance to cover more than $100 million of deposits. After the failure, the insurance carrier cancels coverage, claiming fraud. There is no state fund to cover deposits. Fortunately, most of the deposits are recovered.
- Recently, some of America's largest brokerage houses have settled multimillion dollar claims for fraudulent sales practices, inappropriate investment recommendations, failure to supervise account executives, and churning of accounts.
- Each year, boiler room operations swindle thousands of unsuspecting investors out of millions of dollars in total scams.
- Thousands of investors have complained that banks misrepresented mutual funds as government-guaranteed investments.
- One of the nation's largest insurance companies is accused of selling high-cost insurance policies as retirement accounts.

The list is almost endless, but you get the idea. Those kinds of catastrophes don't have to happen. If you really think about it, a few basic precautions could have prevented each of the tragedies.
Here are a few of "Frank's Rules of Survival":

- **Never give any investment advisor a general power of attorney over your account.** Use a **limited** power of attorney to authorize your advisor to make trades within your account for your benefit. There is never a reason to name an investment advisor as owner, contingent owner, or joint owner of your account. It shouldn't be possible for any other person to ever receive a disbursement from your account. Your brokerage or trust company should only disburse to you at your home address or to your bank account. Insist on confirmation of all account activity, and statements directly from your custodian. Check your statements for unusual or unauthorized activity. Never use your investment advisor's address as your address to receive statements. As President Reagan used to say: "Trust but Verify."
- **Select strong custodians for safekeeping of your assets.** Use major brokerage houses or trust companies that are properly insured, audited, and regulated. Don't let some Mickey Mouse little financial institution act as custodian of your assets.
- **Remember, if it sounds too good to be true, it probably is.** The markets are far too efficient to allow for excess profits in excess of the risks taken. Con artists almost universally appeal to investors' greed and unrealistic expectations. They can't exist without rubes willing to believe the unbelievable. By now you should have a good feel for the range of reasonableness in various investment markets.
- **Consider carefully whether you need a guide.** Many investors shouldn't try to go it alone. Investing funds professionally is a full-time job. It takes specialized knowledge and significant resources. The field is rapidly evolving. It's a full-time job just to keep up with the research. Evaluate whether you have the skill, judgment, discipline, and experience to do a proper job. Your investment plan is your future. It's too important to leave to amateurs. I once read a Robin Cook novel, but I don't think I'm ready to do brain surgery. Heck, I don't even know how to change the spark plugs on my car.
- **Avoid commission salespeople.** All financial professionals get paid. And, of course, all of them

have an interest in attracting your business. You can't expect any of them to send you to the competition. But how they get paid can have a very significant effect on the nature of their recommendations. In fact, how you pay for advice may be much more important than how much you pay.

The Role of Commissions

The commission sales process opens the door to a host of potential consumer abuses, including serious conflicts of interests, inappropriate investment recommendations, very high costs, and excessive portfolio turnover or churning. With all the hidden agendas possible in the sales environment, it would be extraordinarily naive to expect objective advice.
Business Week's February 20, 1995, cover story, "Can You Trust Your Broker?" lists an entire catalog of investor abuses. Proclaiming on the cover that, "Too many brokers are working in their own interests, not yours." Business Week leads into the story with, "Questionable sales tactics fueled by lavish incentives are prompting a rising tide of criticism." Here's how the magazine sums it up, in a sidebar called "The Case Against The Brokerage Industry."

- **PRESSURE:** The compensation system at brokerage firms creates intense pressure on brokers to generate a high volume of commissions.
- **INCENTIVES:** Brokers are given extra incentives, such as Rolex watches and all-expense-paid vacations, to sell special high-profit-margin products with little regard to their suitability for customers.
- **BAD ADVICE:** Firms push brokers to recommend in-house mutual funds, where the firm earns management fees, instead of funds run by outside managers. Most in-house funds have mediocre performance records.
- **BONUSES:** Many firms recruit top "producers" from other firms with huge up-front bonuses and extra-high commissions. That gives the producers an added incentive to promote excess trading.
- **POOR INFORMATION:** Firms don't provide customers information on the overall return on their investments and aggregate commissions they've been charged.

Commissioned sales have been good to Wall Street. It's a great way to distribute products. Investors, on the other hand, are often poorly served. The brokerage system is inadequately policed and rife with built-in and undisclosed conflicts of interest between broker and customer. Hardly a day goes by without disclosure of another violation of trust. Unable and unwilling to repair an extremely profitable system, Wall Street responds with slick public relations measures and advertising.
Wall Street's large brokerage houses are very complex businesses. What you see at your local office is just the tip of the iceberg. But the retail operation is essential to support many of the more profitable lines of business. Commissions are the mechanism that allow the house to manipulate the broker. With the right commissions, incentives, and bonuses, Wall Street can get their brokers to sell *anything*!
The common thread that runs through many of the worst abuses is the commission-based system of compensation. Commissions create the conflicts of interests between the broker and client.
For instance, many brokerage houses also act as market makers for NASDAQ stocks and bonds. In this capacity, they buy and sell for their own accounts. It's a neat little business where, like Las Vegas, the house almost always wins. They buy at one price from the public and sell to them at another. The difference is called the spread, and is the profit the house makes for bearing the risk of holding an inventory of stocks. It turns out that making a market is generally very profitable. It also doesn't have very much risk. It turns out to be a lot more profitable than brokerage on the New York Stock Exchange. If the house has a lot of transactions where they act as market maker, they can make big profits. That's why many brokerage houses pay higher commissions to brokers for selling stocks where the house makes a market than stocks where they don't make a market. A little disclosure on the bottom of your confirmation that the brokerage may make a market in the stock is supposed to alert you to this little conflict of interest. But most investors never consider why they get so many buy and sell recommendations where the house

just happens to make a market in the stock.
Another interesting peculiarity of the commission system is the way bonds are treated. While commissions on NYSE stocks are tightly controlled and disclosed on the confirmations, bond salespeople are allowed to tack on just about anything they think the market will bear. Bond commissions are never disclosed on confirmations. The buyers just get a statement that they purchased a bond at a particular price. Of course, most brokerage houses make a market in bonds. More obscure and thinly traded bonds have higher spreads. In general, very liquid bonds have about a one to two point spread, but it can go much higher. Occasionally a bond salesperson can sell a bond with a 6 percent spread. These six-point bonds are often referred to as "touchdown" bonds. In some offices whenever a touchdown bond is sold, they ring a bell. If there aren't any customers about, everybody cheers. Perhaps this explains why brokerages seem so partial to bonds.
Any brokerage house or broker-dealer worthy of the name has a family of mutual funds. They all love this business because it becomes an annuity for them, paying them fees forever almost without regard to performance. As a class, brokerage funds have some of the highest expenses and worst performances being offered. For instance, when Business Week did their story they included a table comparing the largest brokerage-house funds to the largest independent families of load funds. The worst performing family of the independent funds had better performance than the best performing brokerage-house funds. Most large brokerage houses pay higher commissions for sale of their funds than outside funds (a few have recently very publicly abandoned the practice). But you shouldn't be too surprised to learn that most brokerage accounts are comprised of a high percentage of house brand funds.
Not content to receive the sales allowance alone from outside mutual funds, many brokerage houses have begun to demand and receive a portion of the fund's ongoing management fee and other allowances from outside mutual funds. Some mutual funds have refused to pay, or have internal expense charges too small to allow a continuing fee to the brokerage house. So some brokerages have established dual lists of outside fund families. Those who pay get preferred treatment, while those that don't have the commissions paid to the salespeople cut.
Initial public offerings (IPOs) generate lots of fees for brokerage houses. Strangely enough, the "offering allowance" to the brokerage house and the salesperson is never called a commission. This offering allowance is a multiple of the commission that a salesperson could earn on a NYSE trade. Notwithstanding the tremendous frenzy that the recent Netscape IPO generated, most investors in IPOs have very poor results over the following few years. But, perhaps driven by the high offering allowance, Wall Street's brokers rarely fail to generate tremendous enthusiasm for IPOs.
New unit investment trusts (UITs) and new closed-end funds are similar to IPOs in that brokers earn a multiple of what they could earn from the sale of an existing UIT or closed-end fund. In addition, the offering allowance doesn't have to be called a commission. Because of the high offering expenses built into UITs and closed-end funds, the overwhelming majority of the time a new offering begins to trade, the price falls to net asset value or below. Most investors would be far better served to wait a few days or weeks after the offering trades and then buy at the far better prices. Almost everybody on Wall Street knows this. But, unfortunately, the commission is very small compared to the initial offering. So, new UITs and closed-end funds continue to be manufactured and sold as if they were some kind of great neat deal.
So far, we have just described cash payments to stock brokers and registered representatives. But there are other neat ways to lead them around by the pocket. Many firms offer deferred compensation in addition to direct commissions. Invariably, these plans are tied to proprietary products and other high profit offerings. Private offices, secretaries, titles, and other perks depend on selling enough of the right stuff.
And, don't forget the free trips. Hang around most brokerage houses and you will begin to think you are in a travel agency! More time is spent deciding which trip to qualify for than which asset class might benefit a client's portfolio. Somehow I thought they were supposed to be planning the clients' financial future, not the salesperson's next vacation.
If the carrot doesn't work, there is always the stick. Brokers who fail to meet quotas, including minimum production of proprietary product, just don't seem to last long. Managers whose offices don't produce don't last much longer, and so on up the food chain. The single driving ethic and obsession in the brokerage

industry is: Sell more! Success or failure is measured by commission dollars, not client returns or satisfaction. Most stock brokers can tell you to the penny what they earned in commissions last year; few have the foggiest notion what their clients made as a result of their advice.

These conflicts of interest are not just incidental to the business. Rather, they are a fundamental part of traditional commission-based transaction-oriented brokerage. I believe that there are a great many talented and ethical people in the business, but the system is fundamentally flawed. The system makes it very difficult for brokers to do the right thing by clients. A broker who practices a long-term, buy-and-hold strategy is not liable to endure long in the business. She can never get paid for recommending that a client do nothing at all, but we all know that often that's the best course of action. Finally, a broker who institutes a rigorous cost containment and control program for his clients has just signed his own retirement papers.

But surely, you say, the value of these professionals' advice makes up for it. These aren't just used stock salesmen they are highly trained financial consultants. Right? Well, not quite. We have examined the quality and integrity of Wall Street's research efforts. My opinion is that that advice is worth far less than zero. Wall Street's research efforts are both a fine justification for excessive trading and a defense against litigation for the house. And for this they expect the investor to pay!

But what does the stock broker or registered representative bring to the table? It's a mixed bag, but it would be a mistake to assume that they are all choir boys or highly competent. The best of them got that way through their own efforts in a system that demands very little. You wouldn't be far off if you considered entry requirements to be a total sham.

It turns out that almost anyone without several felonies can qualify. Of course, there are a couple of short exams administered by the feds. But plenty of schools offer three day cram courses which carefully cover only the questions and answers. Any dull tool with a few hundred bucks is guaranteed to pass the test or she can repeat the course as many times as necessary. Fortunately, the cram courses have the questions wired, so few suffer that indignity.

While many brokers are very bright, it's not a requirement for the job. Neither is advanced or even related education. Several successful brokers I know have never seen the inside of a college or taken a finance course.

Once the aggravating formality of the exam is out of the way, the real training begins. Most brokerages' in-house training courses could fairly be described as 10 percent product knowledge, 90 percent sales training, then get on the phone and sell. The technique, described as either "smiling and dialing," or "dialing for dollars" is the fundamental education for new-hire stock brokers at most houses. It's strictly sink or swim, and attrition is high. You shouldn't be surprised to learn that once the entrance exams are passed, there is never a requirement for continuing education. What continuing education is provided generally comes from the house, and consists of about the same proportions of product knowledge and sales training. Controlling the education process rather effectively limits the options to the house preferences. So, many brokerage houses actually actively discourage their salespeople from pursuing independent professional training. For instance, one very large brokerage prohibits their salespeople from displaying the CFP certification on their cards, letterheads, or any other client contacts. Whatever their reasons, they certainly aren't bullish on education.

So, what are the qualifications? The single biggest attribute the brokerage houses or broker-dealers are looking for is sales experience. It doesn't matter what you sold in the past; if you can sell, the brokerages want you. At a Florida brokerage, for example, the prior job experience of one of its "top producers" was limited to selling swimming pools.

In the real world, financial advisors must get paid. Otherwise they will all close up shop and go sailing or play golf. But how that compensation is structured can play a large role in determining the quality and integrity of the advice received. Wall Street's failure to resolve the commission compensation issue in a manner favorable to investors has led to the rapid erosion of their market share to independent fee-only investment advisors. Let's face it: nobody really likes the big brokerage houses. They just didn't know they had alternatives. But they are beginning to learn.

Not all investors need or want investment advice. For those people, books like this and others will help to define their strategy. Discount brokerages and no-load mutual funds (which weren't available just a few years ago) now provide eminently satisfactory solutions to the custody and execution problems.

Other investors who need and want professional advice, but are not satisfied with the traditional "churn and burn" brokerage tactics, also have better solutions. (In a later chapter, we will discuss some criteria for selecting and working effectively with financial advisors.)

Voila! Another chapter in the continuing improvement of the market brought to you by an ever evolving capitalistic system. All that is necessary to keep the improvements rolling is to keep demanding better. Pretty neat!

In the next chapter, we will examine mutual funds, the essential building blocks for a globally diversified investment plan that will take you safely into the twenty-first century. Mutual funds may not be perfect. But if you have less than $50 million to invest, they are your best hope. Last year, there were more than 1,500 new funds brought to market, bringing the total to over 6,000 (not counting money market funds!). Now there are more classes of shares and cost structures than you can shake a stick at. Don't despair. It's really pretty easy to cut through the clutter.

CHAPTER 16

The Joys of Fund Selection

The asset allocation decision is the heavy lifting in the investment process. Having decided on an appropriate asset allocation plan, our quest now turns to finding the appropriate funding vehicles to best represent each asset class. As it turns out, mutual funds are almost the ideal building blocks to construct your globally diversified investment strategy.

We have absorbed a fair amount of financial theory -- now it's time to get down to the nitty-gritty of selection. You shouldn't be surprised that our criteria will meet the needs of the process.

The Rise of the Mutual Fund Industry

Unless you have been on an extended vacation, you can't have helped but notice that mutual funds have become a very popular way for Americans (actually much of the world) to invest. In a reasonably rational world, things like this don't just happen. Mutual funds have become popular because they offer huge advantages to small (loosely defined as those with less than $50 million or so to invest) and large investors. The advantages are just about overwhelming.

Mutual fund companies are good capitalists, and they certainly are not dumb. They have spent freely on advertising and public relations to educate us to all the advantages. They have been very successful in getting their message across. By now, almost every small school child can effortlessly list all the reasons why mutual funds are the investment vehicle of choice.

Traditionally, we have thought of diversification, low cost, and access to superb managers as the chief advantages of mutual funds. The first two are certainly true. Where else can an investor purchase a portfolio containing hundreds or even thousands of individual issues across a market with as little as $500 or less? How could he do it without being destroyed by transaction fees? Now, of course, we have to wonder if management can add value. If the investor is convinced it can, then by pooling his funds with thousands of others, he can attract the attention of the best talent available. If the investor doesn't believe that, then he has the alternative of investing in index or passively managed funds.

As designers of a superior investment strategy based on strategic global asset allocation, we will select mutual funds which allow us to very tightly control our portfolio. We will be seeking very precisely targeted funds in diverse markets and investment styles. This will require us to leave behind any notion that there is a single "best" fund which might meet our needs, abandon the ever popular but childishly simplistic and ineffective magazine ratings, and redefine our performance benchmarks.

Unwarranted Concerns about Fund Trends

All the money flowing into mutual funds gives rise to a constant stream of concern by writers in the popular press that somehow mutual funds are going to be responsible for the next big market crash. Under this theory, individual investors have not been tested by a bear market recently. When the bear arrives, all the neophyte fund investors will head for the door at once. The resulting redemptions will trigger a liquidity crisis and vicious unending downward spiral in the markets. The core of this argument seems to be that only mutual fund investors will behave irrationally. The evidence seems to point at large institutions, traders, and speculators as equally liable to panic.

In fact, mutual funds are simply replacing other investment mechanisms that are less efficient and economical for investors. Rather than sit around worrying about too much money going into mutual funds, those same writers ought be considering how to encourage individuals to increase their long-term investing, and the percentage that goes to equities. The overriding concern I have is that Americans are investing too little and too conservatively to meet their long-term needs. All investors, whether invested in funds or individual issues, need to restrain themselves from irrational behavior during the occasional, inevitable, temporary market decline. We will examine investor behavior and its effect on markets in a later chapter. For now, I will assert that mutual fund investors seem as rational as any other large block of

investors.
Two other recurring themes crop up enough to bear comment. One would have us believe that mutual funds are some type of passing fad, soon to fade from sight like the hula hoop. The other implies that funds are somehow inferior devices designed for the unsuspecting rube, and that larger sophisticated investors will soon outgrow them. This makes me wonder what the authors have been smoking. Mutual funds are gaining market share because they are a better investment medium. And not just for small investors. Huge institutions routinely buy funds. We can assume that they are aware of their alternatives and have made reasonably intelligent decisions.
Mutual funds have a few flaws left which we must soon address. As we do so, keep in mind that warts and all, this is the best solution for the overwhelming majority of investors. We are not in the position of having to accept the best of a bad deal. Rather, we have an abundance of truly great deals to choose from.

A Huge Universe of Funds

This abundance causes a problem. Today there are over 6,500 non money-market funds, and over 1,500 were added just last year. So, rather than have too few choices, in most asset classes we are buried in them. With more than three new funds coming on stream each business day, just reading the new offering prospectuses would be a full-time job.
Of course, there is lots of information from numerous sources. You don't even have to leave your home. You can spend all day and all night surfing the Net. Before the end of next year it will be a sorry mutual fund family that doesn't have their own Web site. But, data, facts, and information aren't knowledge.

Fund Basics

So, let's see if we can cut through all the noise and clutter to see how the fund industry works. Then we can develop a few simple criteria to drive your selection decisions. This procedure is fairly straightforward, and it allows you to get in control of the total investment process.

Cost: The Natural Enemy of the Investor

Cost is an important consideration for investors. Cost is also one of the few areas over which investors can exercise a great deal of control. There seems to be a concerted effort by the fund industry to absolutely prevent investors from figuring out what their costs really are, and what the implications of the various pricing strategies mean. Don't despair. It can be explained very simply.

Management Fee

Every mutual fund has a management fee. It is fully disclosed in the prospectus. This fee goes to pay the normal expenses of running the management team and the business. It includes postage, printing, rent, salaries, accounting, lights, telephones, equipment, and the like.

The Dreaded and Much Maligned 12(b)-1 Fee

Some funds charge a second fee called a 12(b)-1 fee. The purpose of this fee is to promote the sale of more shares of funds to the public. The fund might use this fee for advertising, commissions to salespeople, or to pay custodian and service fees to a discount brokerage house.
It's not important whether the fund breaks out the 12(b)-1 fee in the prospectus. All funds have some type of promotion expenses. Some just choose to show them as a separate cost.

Expense Ratios

Both management fees and 12(b)-1 fees, if any, are included in the fund's expense ratio. Expense ratios

are always fully disclosed in the prospectus. This is the number the investor should zero in on. There is a very strong inverse relationship between total cost and investor return. While purveyors of high price goods invariably love to imply that "you get what you pay for," on Wall Street it's often easy to get far less. As you might expect, low expense ratios are very, very good. Expense ratios can vary from under 0.25 percent to over 3 percent.

Trading Costs

Trading costs are not included in the expense ratio, and not disclosed. (More about the second point later.) We may impute some information about trading costs from the portfolio turnover. Some funds never trade, and some may turn the entire portfolio over several times a year. We know that lots of buying and selling is expensive. Just how expensive trading can be varies from market to market. Trading costs are generally very small for NYSE stocks. But when we get into small company, foreign, or emerging market stocks or bonds, prices can get very high. For instance, a "round trip" on a small company stock may exceed 7 percent. So, an average of two trades a year on a small company portfolio can go a long way toward eating up the average profits.
Trading costs fall directly on the fund. When a fund buys a stock, it carries the stock on the books at cost, including commissions. When it sells, it shows the net receipts after commissions. Neither commissions nor the "spread" are ever accounted for. Unless one can demonstrate a very positive benefit from trading, and most managers can't, then small turnover is good.

The Bottom Line: Well One of Them Anyway!

Simply put, the ongoing cost of running any mutual fund is the expense ratio plus the trading costs. Unfortunately, this definition doesn't include the impact of commissions.

The Impact of Commissions

Some funds are sold directly to the public. Others are sold by salespeople. The second type of fund has to figure out how to pay the salesperson. A number of interesting arrangements have developed to solve that problem.
In the bad old days, many mutual funds were sold by contract. The investor paid a set amount every month for a number of years to satisfy her contract. During the first year, the salesperson got half of the investment. After that, the salesperson usually got about 4 percent of the continuing contributions. Perhaps that explains the slow acceptance of mutual funds by our parents.
Later, so called "front end load" products emerged with a top sales charge of about 8.5 percent. This sales charge was deducted from the total investment, and the balance ended up in the fund. So, out of a $10,000 investment, $9,150 went into the fund, and the balance ended up in the sales organization's pockets. Larger investments might qualify for a discount. For instance, at $100,000 the typical sales charge would be 3.5 percent. Front end load products are often called "A Shares" within the industry.
Over time, resistance to the high sales cost drove many companies to cut their maximum sales charge to around 5 percent. But, as true no-load mutual funds cut into the market, funds began to look for ways to hide the sales charge. This effort reached its brilliant conclusion with the invention of the brokerage houses' no-load or "back end surrender charge" funds. (Commonly called B Shares.)
Until the investing public began to figure it out, the brokerage houses and broker-dealers had the best of all possible worlds. They were able to increase the average commission paid to the salesperson, and at the same time claim that the product was no-load. The broker got a 5 or 6 percent commission the first day, but the client saw all his money go to work in the fund at the same time. This little piece of Wall Street Magic was possible because the sponsoring company "fronted" the commission to the broker. The company recovered their payment to the salesperson by increasing the charges to the fund about 1.5 percent per year. (This charge was the so called 12(b)-1 fee, named after the NASD's enabling regulation.) In the event the investor liquidated his fund prior to the company recovering the commission,

interest, and a profit, the investor was charged a "back end surrender fee" before his proceeds were paid out. This last part of the transaction was not often emphasized during the sales process, so many investors were in for a rude shock if they bailed out for any reason.
If investors took the time to do the math, they discovered that the back end surrender funds could be a very expensive way to invest. For one thing, large investments got no discount. An investor placing $250,000 in a front end load fund could expect a one time 3 percent charge. But if she held the same size investment in a back end surrender charge fund until the end of the typical surrender period of 6 years, she would end up paying 9 percent in hidden fees. Assuming growth of the investment, the fees got larger! Finally, the hidden charges continued forever, so the total cost could be huge. Of course, in our example, the salesperson got twice the commission he would have earned in the more straight forward front end transaction. It's not too hard to see why brokers loved the back end surrender products.
If the evolution of the load fund industry had stopped there, our task would be somewhat simpler. But, as investors began to wise up, fund families tried to stay one step ahead by introducing new types of shares with new pricing. The names they gave the pricing schemes aren't always consistent from one company to another. "C Shares" look rather like B Shares, but the internal charges fall after the surrender period. "D Shares" have a level 1 percent charge paid to the salesperson each year, but have no surrender period or charge. Many "A Share" funds have introduced a 12(b)-1 charge to finance a "trail commission" to the salesperson on top of the original sales commission. Still other companies are experimenting with reduced front end charges but larger ongoing fees to finance increased trail commissions.
Recently, the NASD issued regulations that prohibit any fund charging a 12(b)-1 fee in excess of 0.25 percent from calling themselves "no-load". The same regulations have allowed fund families to actually increase trail commissions to salepeople, who now presumably refer to their products as "no front-end load," all in the name of consumer protection! At the same time, some true no-load funds have expense ratios high enough to choke a horse. So, look beyond the labels.
If all this is beginning to make your head spin, there is a simple solution. Just buy no-load funds. Then all you need to be concerned about from a cost perspective is expense ratio and trading costs. Your broker may not care for that solution. But, it's not your job to keep her happy. Even if we ignore the effects of embedded conflicts of interest in the commission sales process, commissions have a direct economic impact on the investor. You may think of front end load funds as being the equivalent of running a 100 yard dash from 3 to 8 yards behind the start line. Back end funds might be thought of as running the same race while carrying a 150-pound load.
Another problem with the traditional load products is the psychological feeling of being trapped in an investment by the large cost of moving. Investors will often stay in an inappropriate investment rather than endure a second set of fees required to bail out of the first poor choice. Families of funds mitigate this problem. They allow an investor to switch without penalty within a single family of funds. This still requires the investor to severely limit his choices. With true no-load funds, especially if held as custodian by one of the large discount brokerage firms, the investor may have over 1,000 choices in over 200 fund families, and she can execute them with just a phone call. (Some transaction charges may be tacked on by the brokerage firm, but these are a very tiny portion of the commission charges on load funds.)
One great working solution to defining of a no-load fund is to inquire about the cost of a round trip. If you can buy a fund today for a dollar, and sell it tomorrow for a dollar (assuming the market hasn't moved), you have something that looks, smells, and feels like a no-load fund. While this definition may not be technically accurate, it will uncover lots of deceptive sales tactics. You will quickly be able to quantify the costs of brokerage and trading costs.

Targeting Your Market Segment

The next big issue we face in building our investment plan is that the funds we select must reliably capture the performance of the market or segment of the market we have specified in our model. We know a great deal - but never enough - about the risk, return, and correlation of stocks based on the size of the firm and the stock's book-to-market ratio. This information was crucial in designing the asset allocation plan.

If we are going to have control of our asset allocation plan, we must seek out funds that will confine themselves to a definable style. For instance, we know that across most of the world's economies, the smallest 20 percent of the companies have about a 5 percent higher expected rate of return than the largest companies over long periods. Of course, this return comes with a higher risk, and a correlation with other asset classes. So, if our asset allocation plan calls for, say, a 15 percent weight in small companies, that is what we want to have. One person's definition of small may vary considerably from the next. So, our terms must be objectively defined. For instance, we might define small as a fund with a maximum size company of $500 million. Other observers might call these companies micro-caps. But if we want the performance that comes with small companies, we are just kidding ourselves if buy the smallest firms in the S&P 500.
The same goes for value. Value is an even harder term to pin down than size. Lots of managers call themselves value managers, but own portfolios of stock with very low book-to-market ratios. If we want a strong value representation, we must seek out funds with stocks in the highest third when ranking book-to-market scale for each size company.

Style Drift: The Natural Enemy of Asset Allocation

It would be disconcerting to find that a fund we had selected to represent small companies was suddenly investing in GM, IBM, and ATT. Now, many "growth" funds have decided to add foreign stocks to boost their performance. That might or might not work out well for their particular fund, but it skews the model badly.
The tendency of managers to wake-up one day and decide that an entirely different market segment looks more attractive than where they are is called "style drift." Style drift is the natural enemy of the asset allocation plan. It goes without saying that we have no way to control risk if we don't know what is in the portfolio, or if the portfolio can change radically without any advance notice.

Traditional Labels and Fund Objectives Obscure Rather Than Enlighten

Traditional labels and prospectus categories are not much help here. In fact, it's best to forget them. The categories are arbitrary and ambiguous. Just where is the boundary between a "Growth and Income" and a "Growth" or "Equity Income" fund? These nuances have always escaped me. Many fund rating services attempt to use these categories to compare fund performance. The funds often respond by redefining their objectives to fit a category where their relative performance is better.
Defining the investment manager's style provides us with a great deal more useful insight. Morningstar's style boxes allow the potential investor to determine at a glance the average size and growth/value characteristics of the portfolio. While far from perfect, this system is a big improvement. The style boxes are limited in that they describe only the average holdings in the portfolio. Some portfolios are hard to properly categorize, and the boxes are no assurance against style drift.
Many mutual funds have wide latitude to invest wherever they wish. Some have demonstrated either superior skill and cunning, or tremendous luck as their portfolio zigged and zagged. Magellan and 20th Century Ultra are famous for refusing to stay put. Their management will, of course, claim skill. Putting aside the question of skill vs. luck, for each happy example, the landscape is littered with failed attempts.
Once we have made our asset allocation decision, we have absolutely no interest in the fund manager's market forecast. We want him to stay fully invested in the market we expect at all times. We have made the decision as to the exposure level we wish to have, and attempts by the manager to time her little part of the market are unacceptable to us. The mutual fund is simply a building block for our investment strategy, and the more predictable the building block, the better the finished structure. The days when we would turn over our money to a manager who could do whatever she wanted should be long behind us.
The asset allocation approach is a far cry from the traditional view of the role of the fund manager. Her role is reduced from exalted guru to subordinate technician. Her mission is to stay fully invested, widely diversified, keep her costs down, and reliably capture the performance of her assigned market segment. Should she stray from her assigned turf, or attempt to market time, she will be replaced. Should she fail to

match her assigned market's performance, she can easily be replaced by an index fund that will. On the other hand, it's not appropriate to blame the manager if her asset class shows poor performance. For example, Japanese small company fund managers are not to blame that the asset class has shown 6 years of dreary returns.

When it comes to picking funds, very little of what you hear in the popular financial media is useful, unless you just want to collect a few tidbits to drop at cocktail parties. Lionizing last year's lucky manager is fun and probably harmless, but it tells us little we want to know about next year's performance.

Rating services such as Morningstar's star awards, or *Forbes* Honor Roll, attest to the futility of applying past performance to tomorrow. Investments in either set of recommendations would have produced sub-standard results. If those two organizations, with all the resources they have, can't make useful predictions, how can the rest of us hope to? So why do people keep listening to that trash? When *Wall Street Week* starts interviewing next year's winners, I'll tune in. If successful investment management simply required counting stars, or buying *Forbes'* list, we would all be rich and carefree.

On the other hand, there are some great resources widely available. For example, Morningstar's database on disk provides a treasure load of information. It allows us to screen well over 100 criteria including P/E ratio, Price/Book ratio (the reciprocal of book-to-market ratio), turnover, medium market capitalization, expense ratios, earnings growth, sector weightings, standard deviation ratings, estimated potential capital gains exposure, minimum purchase amounts, and a host of other information useful in choosing our portfolio components. You can, for instance, with just a few mouse clicks, screen for no-load foreign equity funds with an average firm capitalization not to exceed $500 million, which accepts initial account sizes below $2,000, available through the Fidelity or Schwab brokerage systems, with expense ratios below 1.25 percent and then sort in descending order of P/E ratios. Another click, and you can compare your candidate funds with an appropriate index, check industry weightings in the portfolio holdings, and insure that the fund holds enough issues for proper diversification. Morningstar even gives you the 800-numbers for most funds, so that once you have identified a few likely suspects, you can order prospectuses. Many city libraries have access to this or similar services.

I submit that this caliber of information is a great deal more useful than *Money Magazine's* "Eight Great Funds for the 90's" type article. With data like this, you can select and monitor your asset allocation plan segments.

If you have a large portfolio, you may want to have several funds in each category. If so, I would build the core of my holdings around index funds. Today, I personally try to use a minimum of 60 to 75 percent index, or passively managed funds in each category. The advantages of low expenses, low trading activity and cost, and the assurance that we can reliably track our desired market segment are compelling. Additional advantages are a reduced tax exposure, and you will never have to be concerned about style drift.

While I haven't foreclosed the possibility that active managers might add value, I am strongly leaning in that direction. In a debate that takes on almost religious or mystical overtones within the industry, I guess I am an agnostic. I've seen too many high-flying performers suffer ignoble crashes to have much faith left. If you asked me to guess, I would probably say that in 5 years I may have weeded all the active managers out. In the meantime, I am limiting their role so that if one or two make a few bad plays, it doesn't ruin my portfolio performance.

A Checklist for Action

Here is a checklist you could use to develop your fund selection process for each individual asset class. My suggestions are included:

- Decide mix of active and passive techniques. (As a minimum, the core portfolio, say 70 percent, should be indexed.)
- Define the market as tightly as you can -- large, small, foreign, emerging market, Asia, Japan, Europe, etc. Make sure the manager stays fully invested and within the assigned market.
- Define style -- growth vs. value. (A strong value tilt should enhance performance and reduce risk.)

- Eliminate all load funds. (Never pay a load!)
- Check expense ratio. (The lower, the better. But remember, some markets cost more than others.)
- Check portfolio turnover. (The lower the better.)
- Compare performance to appropriate benchmark, and competitive funds. Try to understand any variation from benchmark. (There is always a reason. Higher returns mean higher risk. For instance, this year's big heroes are very strongly concentrated in technology stocks. They could easily look like the worst dogs someday soon.)

But what if you are just starting out? What if your budget is very limited? You can still build a Champaign globally diversified portfolio with a beer budget. While a $1 million portfolio might have 20 or more funds, you can do a reasonable job with just 3 or 4 index funds. For example, index funds: the Schwab 1,000, Small Cap, and International would be a good start. Or, Vanguard will send you information on how to index most of the world's markets. As your portfolio grows, you can tilt toward smaller firms, and value. Later add emerging markets. These are just examples; there are lots of great no-load families that accept very small initial purchases. Many will take on contributions as low as $50.
If you are making ongoing contributions to your investment plan, after you have built up a good core, consider tilting your purchases to the most thoroughly beaten-up markets as you go along. For example, this year I would be looking strongly at Japan and Latin America.

Just do it!

Remember, it doesn't have to be perfect to be great. Get started. Don't wait for it to be perfect. It never will be, and you will still be waiting when you are old and broke. If you need a little forcing system, use an automatic check withdrawal to your investment account. The important thing is to get started on a sensible plan, and exercise the discipline to carry it out. Start small and build in pieces. Use your company savings and pension plans. If the choices aren't perfect, do the best you can. For instance, almost any growth fund in your company plan is going to pay off better in the long haul than any bond or guaranteed account. If the company plan offers foreign, value, small company, or emerging markets, use them. If not, balance your company plan with your own investment plan so that the whole thing looks like your ideal asset allocation.

Coming up

While I am one of the great mutual fund boosters, there are a few problems in the industry that you should be aware of. Warts and all, no-load funds are still the best deal around. But, it's always a mistake to think that everybody on Wall Street is a choir boy, even in the no-load mutual fund business! I will show you some things to look out for. Remember, if we all demand better, we will get it. Just by voting with our feet we can make the best deal even better. It's the one way to really get Wall Street's attention. There are lots of alternatives to no-load funds, and a few of them even make pretty good sense as part of a balanced portfolio. We'll take a look at them, too.