THE EDUCATED INVESTOR

Spring 2004

Random Acts of Planning

"Measure twice, cut once." "Save it for a rainy day." "Those who fail to plan, plan to fail." Practically from birth, we are taught the critical role that planning plays in our ability to build, save and succeed.

But how do you plan an investment strategy in the face of overwhelming academic research indicating that the market is subject to bouts of irrational highs and lows? To borrow Burton Malkiel's landmark book title, how can anyone actually *plan* for "a random walk down Wall Street"?

Fortunately, it might not be as hard as you think. Among the most difficult parts is simply accepting the academic literature that we feel best explains the market's random nature. We agree with *Wall Street Journal* columnist Jonathan Clements, who admonishes, "Ignore market timers, Wall Street strategists, technical analysts and bozo journalists who make market predictions. … Admit to your therapist that you can't beat the market."[1]

In this issue of *The Educated Investor* we explain three key concepts to help you achieve your investment objectives amidst the chaos.

1. The market can experience periods of irrational behavior *and* still be efficient. The $20 bill tale below discusses the efficient market hypothesis.
2. Forewarned is forearmed; more accurate planning requires more realistic goals.
3. Risk and expected reward are related; diversification reduces uncompensated risk.

Armed with these components and a basic understanding of the quirks and qualities of the market, you are well on your way to having a prudent plan in place. Read on for more details.

[1] *Wall Street Journal*, December 31, 1996.

The Tale of the $20 Bill

A critical component of any well-built investment plan is recognition of what is referred to among the financial community as the **Efficient Markets Hypothesis**, or the "EMH."

A mouthful to be sure, but essentially the EMH is currently the most widely accepted academic response to the frequently asked question, "How much is a security worth?" The EMH states that the market's existing price is the most accurate estimate of a "correct" price.

Assuming (as we do) that the EMH is correct, we conclude that investors face very poor odds of being able to consistently outguess the market's pricing. Because most people are unwilling to hang their life's savings on unlikely outcomes, those who accept the EMH are served best by taking a different approach. We instead advise building a portfolio that seeks to capture as much of the market's returns as possible.

To help drive this lesson home, the following is legendary humor, particularly

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Forewarned is Forearmed

What kind of person are you? Are you willing to take a lot of risk to potentially retire earlier (or potentially work more years if things don't go as planned)? Or do you seek a more conservative approach to provide the funds needed when your daughter is ready for college? Do you want to spend more today and save more later if things look bleak? Or would you rather save more today and then ease off if you are able?

Each of us answers such questions differently, but any of us can benefit by having the most accurate picture possible of our personal odds for success or failure. One way we help investors form their savings and investment plans is through a statistical method known as **Monte Carlo simulation**. Monte Carlo software provides us with an efficient way to analyze random phenomena such as market returns. The software randomly selects annual returns based upon your unique return, volatility (risk) and correlation parameters. The process is then repeated thousands of times, allowing us to report a range of possible outcomes. The exercise can help clarify issues such as how much you can acceptably expect to spend once you retire, or how much you can expect to have saved by the time you are ready to retire. With this knowledge in hand, you can then make reasonable adjustments to your current lifestyle as needed.

Traditionally, practitioners have used what are known as straight-line estimates of returns to calculate future wealth. This method has three key flaws.

1. It ignores the importance of the sequence of returns. Below-average returns in the early years of retirement combined with portfolio withdrawals can have a devastating effect on the survival of your portfolio.
2. Actual annualized returns may be less than the estimated return.
3. Straight-line estimates, by definition, assume no volatility. But in reality, returns vary from year to year. Monte Carlo analysis assumes that returns are volatile and random. This causes the annualized return — or the portfolio growth rate — to be lower than the expected annual return.

Monte Carlo analysis helps eliminate all of the above flaws. Instead of using a single point estimate to calculate future wealth, it uses a *range* of possible returns, and therefore it produces a *range* of wealth values. This seems a more realistic way to evaluate the odds of achieving a goal in the face of a decidedly uncertain future.

Let's look at a simple example. Suppose you had $2 million invested completely in an S&P 500 Index fund in a taxable account, with an expected return of 7.2 percent and an estimated volatility of 20 percent.[1] Your goal is to retire within 20 years and then spend $80,000 annually in retirement.

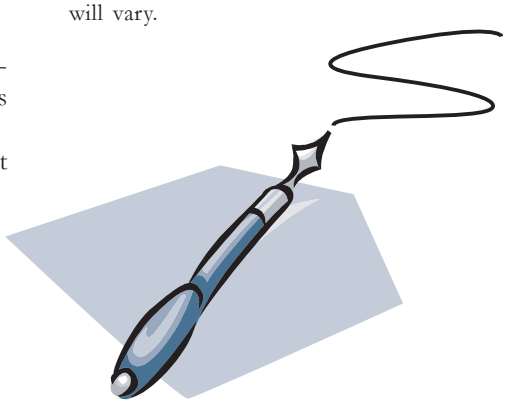
If we used a straight-line estimate, your odds for success would be listed as 100 percent; using Monte Carlo analysis, your odds would be 84 percent. The difference is noticeable. Monte Carlo analysis estimates that you risk running out of money more than 15 percent of the time with your current plan. It more accurately depicts that 100 percent confidence might be misplaced if the market performs worse than expected (particularly during the early years of your retirement). While you may still feel comfortable with an 84 percent chance of success, you may also better understand the need to be vigilant to adverse circumstances that could result in financial disaster.

Monte Carlo analysis is not the only tool we use to help you plan your investment objectives, nor is the analysis usually a one-time exercise.

- Due to statistical limitations, Monte Carlo analysis cannot serve as a reliable indicator for plans that extend much beyond 30-35 years.
- Following an initial analysis, it is important to run a new one periodically to ensure that changes in your own life or within the markets don't require you to revise your plans.
- Successful investment planning also requires an understanding of how the statistics translate to specific portfolio allocations and savings goals.

We can assist you with all of these important steps for building and maintaining your customized, properly diversified portfolio.

[1] This example is for purposes of illustration only. Actual assumptions and returns can and will vary.



Here a Risk, There a Risk

In our discussions with investors, a common theme is the important role that risk plays on expected returns.

Volumes of research have indicated that you can expect to be compensated with a risk premium when you accept the risk of equity investing. However, our preferred method for capturing this premium is by building an appropriately diversified portfolio of various asset class or index mutual funds, rather than by adding the risk of selecting individual equities. The same body of research has demonstrated that, by adding *uncompensated* single-equity risk, you are still likely to receive added risk, but without expected reward.

The bull market beginning in 2003 provides a great example of just how risky individual stocks can be. According to Morningstar there were 5,758 stocks in existence for the entire year. While the S&P 500 rose more than 28 percent in 2003, 866 stocks (15 percent) produced negative returns. Their average loss was 33 percent and they underperformed the S&P an average 61 percent.[1]

Thus investors who fail to properly diversify can still experience losses even when the market is performing well. The data on the riskiness of individual stock holdings is equally compelling over longer periods.

- For the five-year period ending in 2003, the S&P produced a negative return of less than 1 percent. But of the 4,823 stocks that survived the same period, almost 40 percent of them produced negative returns. Their average loss was 22 percent per annum, resulting in an average underperformance compared with the S&P in excess of 21 percent per annum.[2]
- For the 10-year period ending in 2003, the S&P produced a return in excess of 11 percent. Of the 2,829 stocks that survived the same period, 27 percent of them produced negative returns. Their average loss was 15 percent per annum, thus the average underperformance compared with the S&P was in excess of 26 percent per annum.[3]

While those who purchase individual stocks can hope to select the "big winners," they also can experience the pain of severe underperformance. Studies, such as a series conducted by professors Terrance Odean and Brad Barber, have repeatedly demonstrated that investors' overconfidence in their stock-selection skills is more likely to result in high trading costs and underperformance than in a successful investment experience.

In contrast, we can point to the performance of entire asset classes during the same five- and ten-year periods ending in 2003.

- During the five-year period, the only U.S. asset class that produced negative returns was large-cap growth (as proxied by the S&P), and it lost less than 1 percent per annum. The rest of the asset classes produced positive returns, the vast majority of them in the double digits.
- For the 10-year period, all of the U.S. asset classes produced returns in the double digits.

Investors who steadfastly adhered to a prudent, diversified strategy throughout the past decade not only were well prepared to benefit from the bull market upon its arrival, but they were well equipped to avoid the kinds of severe losses experienced by many who were instead invested in individual stocks.

This is not to imply that every (or even most) passive/index investor experienced double-digit returns during the past decade. Each passive investor's experience would have been related to factors such as the asset class allocations within each unique portfolio, and the investor's individual ability to adhere to the original investment policy and perform appropriate rebalancing.

Nor are we implying that every investor in individual equities suffered during the same decade. It is highly likely that there were some investors who happened to pick just the right stocks that soared beyond their wildest dreams, and then were fortunate to sell those stocks at just the right moment before the flight swung back down. Yes, you can hope to beat the odds by gambling with individual stock selections. But we would suggest the more prudent course to achieve your long-term investment goals is to build a passively managed diversified portfolio according to a carefully designed strategy, and then incorporate regular, disciplined rebalancing.

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[1] *Financial Planning,* March 2004.

[2] Ibid.

[3] Ibid.

The Tale of the $20 Bill (cont.)

among those who, in the face of the EMH, continue to propose that markets are *in*efficient, and that clever investors can outperform the market by exploiting mispriced securities.

The $20 Bill Tale

A financial economist and passionate defender of the EMH is walking down the street one day with a friend.

The friend stops him and says, "Look, there's a $20 bill on the ground!"

The economist replies, "There can't be. If there were a $20 bill on the ground, somebody would have already picked it up."

Of course it never hurts to enjoy the humorous side of things, but in this case the standard joke represents a misleading analogy. The following revised joke perhaps doesn't make as rapid a presentation at a cocktail party, but we feel it more accurately depicts the impact of the EMH.

The $20 Bill Tale (Modified)

A financial economist, and passionate defender of the EMH, is walking down the street with a friend.

The friend stops and says, "Look, there's a $20 bill on the ground!"

The economist replies, "Hey, this must be our lucky day. How often do you come across a $20 bill lying in the street? After all, the occurrence is so rare that it would be foolish for an individual to invest significant time or effort searching for more of them; the investment would highly likely be a poor one. For example, I personally am unaware of anyone who has struck it rich combing for treasure with metal detectors. Say, we'd better grab it quickly, because it won't be there for very long."

True enough, by the time the learned economist had finished his speech and looked back to where the $20 bill had been, it was gone.

What the first version of the joke fails to relate is that an efficient market does *not* mean that there cannot be proverbial $20 bills (or undiscovered mispriced securities) lying around. Instead, they are a very lucky find, there are a host of highly educated and trained experts already trying to find them, and their availability is usually brief. Facing these odds, the rewards are highly unlikely to exceed the costs of trying to find and quickly claim them.

In summary, while the markets may not be perfectly efficient (it is possible to find the occasional unclaimed $20 bill), a prudent investment strategy is to behave as if they were. By accepting the EMH as fundamental to your investment strategy, you don't have to spend time chasing the very few mispriced securities that might occur. Instead you can focus your efforts on defining and incorporating an appropriate amount of risk within your asset allocation, capturing as much of the market returns as possible given your risk tolerances, and minimizing the costs that might otherwise detract from returns. On the other hand, if you do happen to run across an unclaimed $20 bill on the sidewalk, feel free to quickly pocket it!

Our Basic Tenets

Our objective is to design portfolios using passive asset class funds that maximize investors' returns within their tolerance for risk. Here is what sets us apart:

- Fee-only investment management
- A disciplined investment strategy
- Access to institutional no-load passive asset class funds
- Fixed income expertise
- An academic Nobel Prize-winning investment approach
- Continued access to academic research
- A tax-efficient focus, with valuable tax and estate-planning ideas
- Risk tolerance assessment
- Periodic portfolio rebalancing
- Regular communications and state-of-the-art reporting
- **MOST IMPORTANT ... A TRUSTED ADVISOR RELATIONSHIP**