

Revisiting Risk

Just in case you forgot how you were feeling a year ago, here's the cover of *Time* magazine's March 9, 2009 issue. This issue was on newsstands during the week that investors' fear and panic was at its peak and the stock market reached its bear market low point. Long-term optimism was nowhere to be found and according to *Time*, there was just one thin thread of twine between you and the Jaws of Hell. Then, for no apparent reason, the stock market suddenly reversed direction and began a 60% rebound - the best stock market rally that any of us has ever seen or is likely to ever again see.

The reports that track the flow of money into and out of mutual funds tell us that from this magazine's publication through Jan 31st of this year only \$21 billion found its way back into stock mutual funds while investors poured \$328 billion into bond funds. Surprisingly, this trend continues at an unprecedented pace. During the latest week for which data is available, investors put \$4 into bond funds for every \$1 they put into stock funds.



We have to draw the conclusion that many investors have been frightened out of the stock market. Is this a rational fear? Have stocks suddenly become too risky for the average investor? If you have been waiting for the folks in Washington, DC to make Wall Street a safer place to invest, I have bad news for you. There has been no meaningful financial reform legislation. On Wall Street it is full speed ahead with business as usual.

Now might be a good time to review the topic of financial risk. The purpose of financial planning is to attain lifetime goals through net worth appreciation. But as net worth appreciates we must also concentrate on capital preservation through risk management. There are two questions to ask when analyzing risk. They are "What are the chances that a particular unpleasant event could occur?" and "If this unpleasant event should occur, would the downside be catastrophic?" If the answer to the second question is yes, then the answer to the first question is immaterial.

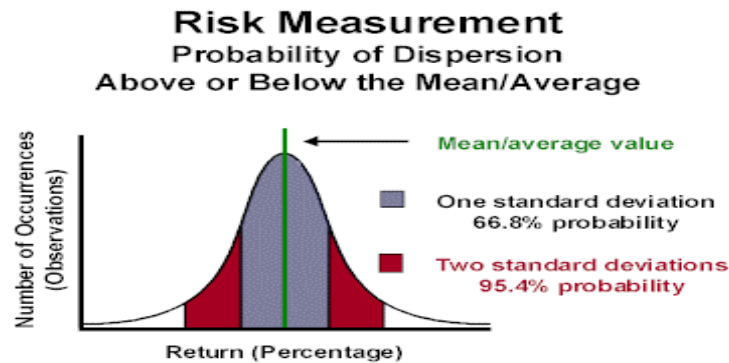
There are easy to understand solutions for many of the risks that threaten a family's long term financial goals. The risk posed by income loss following the premature death of the primary breadwinner is solved by life insurance. The risk of major medical expenses due to an unexpected health problem is solved by health insurance. An umbrella liability policy addresses the risk associated with daily activities that could cause bodily injury or property damage to others. For retirees, the risk of outliving savings can be minimized by purchasing an annuity that guarantees lifetime income. These solutions are easy to understand and implement but the risks involved with the stock market are not so easily understood or simple to manage.

As we all know, the burden of funding retirement has been shifting from employers to employees. It has become necessary for most of us to understand the risks involved with investing in stocks. I don't know anyone who intentionally owns a portfolio that is a ticking time bomb of catastrophic loss. This does not mean that I don't know anyone who owns a portfolio that is a ticking time bomb of catastrophic loss. The disheartening losses experienced by many investors during the global market decline of late 2008 and early 2009 prove that too many investors were unaware of the financial risk hidden inside their portfolios.

It might help if we take a slight detour here to explain a mathematical concept. If we randomly select 10,000 adult American males and plot their weights on a graph, the graph would look like the classic bell curve. If the average weight is 160 pounds, the peak of the curve would be at the 160 pound point. Points on the graph to the right of 160 pounds would indicate the number of men who weigh more than 160. Points on the graph to the left of the peak would indicate the number of men who weigh less than 160. For each man who weighs more than 160 pounds, there is a man who weighs less than 160. The left and right sides of

the bell curve would be mirror images of one another. In mathematical jargon we say that the data is “normally distributed”.

In the classroom, the finance textbooks and most investing theories assume that stock returns are normally distributed, taking the appearance of the classic bell curve as seen below. The peak of the curve represents the long term average annualized rate of return. The far ends of the curve represent exceptionally rare events, either extreme gains or extreme losses. When the academics discuss the financial risk of an investment, they usually equate it to the historical variability of returns around the long term average. This volatility is most often expressed by the mathematical term standard deviation. One standard deviation on either side of the average contains approximately two thirds of all returns; two standard deviations on either side of the average encompass approximately 95% of all returns. Investments that have high standard deviations are considered riskier than those with low standard deviations because they have a greater variation in returns from one year to the next. So, in the classroom, risk equals volatility.



There is much debate in the academic community as to whether or not stock returns are actually normally distributed. The database of historical returns is relatively small. We have less than a century of good data for US stocks and a half-century of good data for the international markets. So, let’s compare classroom theory to the real world returns of the S&P 500 Index from 1926 through 2009. During these 84 years, the S&P 500 Index had an average annualized return of 10% and a standard deviation of 21. Using the graph above as our guide, we can see that approximately two thirds of all the annual returns should have fallen within 1 standard deviation on either side of the 10% average, which is to say between -11% and +31% ($10\% \pm 21$). Likewise, 95% of all annual returns should have fallen within 2 standard deviations on either side of the 10% average, which is to say between -32% and +52% ($10\% \pm 42$). There should be 44 years with returns less than 10% and 44 years that saw returns in excess of 10%. Is this what actually happened?

The real world results for the S&P 500 Index are pretty close to what the professors told us to expect - with two notable exceptions. The good news is that there were more years with returns above the long term 10% average than below (48 vs. 36). The bad news occurs at the extreme ends of the bell curve. Years with returns exceeding 2 standard deviations (losses greater than -32% or gains greater than 52%) should have occurred only three times in the last 84 years. But there were 5 years in which such events occurred - two on the high side and three on the low side. The best we can say at this point is that stock returns *appear* to be normally distributed. However, negative returns that exceed 2 standard deviations have occurred more often than expected. This changes the graph’s shape making the extreme left end fatter than the classic bell curve figure. In math jargon this is known as a “fat tail.”

2008 was one of these “fat tail” years, with a loss of 37% in the S&P 500 Index. The magnitude of this loss stunned many unsuspecting investors who now want nothing to do with stocks. But I have to ask, “Why were you so shocked? Didn’t you understand that a decline of this magnitude was not only possible but inevitable?” For most of these upset investors, I imagine that their answer would be “No, I didn’t.”

As I mentioned previously, risk management must not only consider the probability of unfavorable events but also the consequences of those events. A loss in excess of 32% in the stock portion of your portfolio every quarter century or so doesn’t seem to pose an unacceptably large risk. However, if it occurs one year into your retirement or the year before you retire, knowing that it is a rare occurrence will provide little comfort.

More often than not, investors focus only on the upside potential of volatile investments. What’s not to like about a long term 10% average rate of return? I’m afraid that the majority of investment “advice” comes

from marketing scripts written by someone other than the advice giver. It's easy to sell the upside potential of an investment while ignoring or minimizing the potential downside. When this happens, it's no surprise that an inappropriate amount of volatile investments make their way into client portfolios. It seems that marketing always trumps common sense, prudence and the lessons of history.

There've been many discussions in the advisor community about how to determine a client's risk tolerance. Most surveys that investors take are elementary and nonscientific. Questions often require an understanding of financial terms and concepts that many clients do not possess. But even if your financial risk tolerance could be determined, there is another issue that has to be addressed. I call it risk capacity. Risk capacity is the ability to absorb financial losses. Two investors with equal risk tolerance may have completely different risk capacity because of the difference in their ages. A 25-year-old has more risk capacity than a 65-year-old who is on the eve of retirement, even if they both have iron stomachs for the volatility of the stock market.

We often hear that the risk of owning stocks declines as the holding period increases. This is because the finance professors tell us that standard deviation decreases as the holding period increases. This is true as far as it goes but it ignores an important detail. Regardless of how long you've held your S&P 500 fund, each January 1st brings the risk that the New Year will be a "fat tail" year. As we get older and approach retirement, most of us have more dollars invested in stocks than at any other time in our lives. But our risk capacity has declined even as our net worth has risen. Therefore, in my opinion, the real risk of owning stocks increases as time goes on unless the allocation to stocks declines as retirement approaches.

It dismays me that very risky investments are all the rage today. Hedge funds, managed futures, commodity funds, emerging market funds and leveraged funds are being sold by proclaiming past performance without mentioning (except in the tiny writing) the extreme volatility of these investments. They are attracting investors like moths to a flame. Investors who sat on the sidelines this past year and are now desperate to make up for missing the market rally are especially vulnerable. Nothing is easier to sell than good past performance, especially if the buyer doesn't ask the right questions. A pertinent question to ask would be "What's the standard deviation?" And don't be surprised if your broker doesn't know the answer and looks at you like a puppy peering at a new toy.

When it comes to the stock market, average returns don't tell the whole story. Even though the S&P 500 Index has an annualized average rate of return of 10% since 1926, there have only been 2 years in which the return fell between 9% and 11%. Strange but true. Understanding the variation in past returns is essential to good decision making. Beware of proclamations about long term averages. Never forget that it can be quite dangerous to wade across a river that, on average, is 3 feet deep.

Using standard deviation to measure risk may be fine for textbooks or in classroom discussions. It measures the volatility of an investment both above and below the long term average. But how many of us lose sleep over an annual return that might be two standard deviations above average? In the real world, risk cannot be measured by such an arcane mathematical concept. When most people think about risk, they're thinking about possible losses. I prefer to define risk as the possibility of not being able to maintain your desired lifestyle in retirement.

Modern finance suffers from the hubris of overestimating our understanding of why markets have done what they've done in the past. We fool ourselves if we think that we know what markets will do in the future. Wall Street's emphasis on maximizing portfolio returns is a disservice to its clients because the emphasis is on performance rather than risk. As long as this continues, tomorrow's inevitable "fat tails" will frighten more investors out of the stock market, a mistake that they will inevitably regret. Wise investors will choose instead to focus on net worth accumulation through capital preservation and risk management. Their allocation to stocks will be appropriate for their age, risk capacity and station in life. And, hopefully, the next scary *Time* magazine cover won't frighten them at all.

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