RE-EXAMINING RISK TOLERANCE USING WORST-CASE SCENARIOS

By Maria Crawford Scott

Major bull markets can cause asset allocation strategies to stray and investors to become overly complacent. Seeing how your portfolio would fare under the worst bear market conditions gives you the chance to make changes before it's too late.

Few would have guessed that the stock market would be as strong as it has in recent years. But stock investors aren't complaining. Most are enjoying watching their portfolios shoot up, and some may even have forgotten that the market can go down.

However, market risk remains lurking in every stock investor's portfolio, and re-examining this risk is particularly important when complacency sets in. One good way to re-examine market risk is to see what your portfolio would look like under a worst-case scenario, and this case study illustrates how.

ENJOYING THE FRUITS

The Pinkertons are living off of their retirement savings, and are really enjoying the strong bull market run. They retired several years ago, and at the time they had a total savings portfolio of around $320,000. The savings are used to supplement pension and Social Security payments, and they withdraw roughly $15,000 a year, an amount they could increase by the rate of inflation, if necessary, and still remain financially secure for the rest of their lives.

When they retired, their asset allocation had about 80% of their investment portfolio committed to stocks: 60% in large-capitalization stocks (a growth and income fund), 10% in a small-cap aggressive growth fund and 10% in international. They allocated the rest of their portfolio to a bond fund (10%) and cash (10%). The cash portion is invested in a money market fund to provide liquidity for emergencies and to temper the volatility of the portfolio's value.

Why the heavy commitment to stocks? The Pinkertons regard their monthly pension and Social Security payments as fixed-income assets that, when considered as part of their total portfolio, substantially boost their fixed-income commitment.

The Pinkertons have not really paid too much attention to their portfolio since they retired. Their stock funds have done phenomenally well, in line with the overall market. Their bond and money market funds have provided very modest rates of return, but the Pinkertons have withdrawn their spending amounts from these funds. As a result, the percentage of their total allocation devoted to bonds and cash has dropped. The Pinkertons have realized that their approach may eventually require them to sell shares from their equity funds to use for their annual spending amounts, but at the high rates of return they were receiving, they preferred to keep their money invested in these funds as long as possible.

Right now, the Pinkertons are over 90% invested in stocks, and that figure moves even higher—to 95%—once they take out their current-year spending amount from their money market fund, as shown in Table 1.

More recently, with market valuations at all-time highs, the Pinkertons have become concerned with their approach. Although they have always understood that the high rates of return cannot continue, they now fear that the market could actually go through a short-term correction—a substantial drop that may last for several years.

Maria Crawford Scott is editor of the AAII Journal.

TABLE 1. RE-EXAMINING RISK TOLERANCE: THE WORST-CASE SCENARIO

Savings Portfolio

Holding	Current Value	Worst-Case Scenario Downside Risk*	Worst-Case Scenario Downside Value	Rebalancing Using Withdrawals Value After Withdrawal	Rebalancing Using Withdrawals Downside Risk*	Rebalancing Using Withdrawals Downside Value
Small-Cap Aggressive Growth Fund	$47,125	–30.0%	$32,988	$42,125†	–30.0%	$29,488
Growth & Income Fund	$313,000	–25.0%	$234,750	$303,000†	–25.0%	$227,250
International Fund	$34,840	–30.0%	$24,388	$34,840	–30.0%	$24,388
Bond Fund	$18,550	–10.0%	$16,695	$18,550	–10.0%	$16,695
Money Market Fund	$3,480†	0.0%	$3,480	$18,480	0.0%	$18,480
Total	**$416,995**		**$312,301**	**$416,995**		**$316,301**

** An annual percentage decline based on severe bear market conditions and the conservative assumption that all fund categories would decline simultaneously.*
†Excludes spending amounts.

Asset Allocation

Asset Class	Current Allocation	Potential Downside Risk*	Potential Portfolio Risk**	Target Allocation	Potential Downside Risk*	Potential Portfolio Risk**
Large-Cap Stocks	75.1%	–25%	–18.8%	55%	–25%	–13.5%
Small-Cap Stocks	11.3%	–30%	–3.4%	10%	–30%	–3.0%
International Stocks	8.4%	–30%	–2.5%	10%	–30%	–3.0%
Bonds	4.4%	–10%	–0.4%	5%	–10%	–0.5%
Cash (excluding spending amount)	0.8%	0%	0.0%	20%	0%	0.0%
	Total Portfolio Downside Risk		**–25.1%**	**Total Portfolio Downside Risk**		**–20.0%**

** An annual percentage decline based on severe bear market conditions and the conservative assumption that all fund categories would decline simultaneously.*
*** Portion of portfolio allocated to the category times the downside risk. The Total Portfolio Downside Risk is the sum of the weighted category risks.*

A WORST-CASE SCENARIO

How would they fare under such a scenario?

They decide to take a look at their downside risk—a worst-case scenario in which all of their holdings drop at the same time. The results are shown in Table 1.

For each category, they assume that their holdings drop by an amount roughly equal to the worst one-year return for that category. For instance, since 1945, the worst one-year return for the Standard & Poor's 500 was –26.5% in 1974; the worst one-year return for small capitalization stocks was –31% in 1973, and the worst one-year return for long-term government bonds was –7.8% in 1994. The statistics for international stocks are more recent; the worst one-year return for the Morgan Stanley World Equity Market Index was –24.5% in 1974, but the worst one-year return for the Morgan Stanley Pacific Index was –34.2% in 1990.

Currently, their portfolio is valued at around $416,995; under the worst-case scenario, that value would drop to $312,301, a drop of 25%.

Could they keep their commitment to equities if their portfolio were to drop by this amount?

The most immediate problem with this scenario for the Pinkertons is a liquidity problem. The Pinkertons could withdraw spending money from their fixed-income fund, but they could only do so for one year before they would need to start selling their equity holdings. Of course, that is similar to the situation they are in today, but currently they would be selling at market highs; under the worst-case scenario, they would be forced to sell at the worst possible time, at market lows.

In addition, they are somewhat uncomfortable with the possibility of a portfolio loss of 25%.

RENEWING COMMITMENTS

The Pinkertons decide to rethink their commitment to equities. Examining their percentage commitment to each category and multiplying by the downside risk indicates the downside risk for the entire portfolio, as shown in the Portfolio Downside Risk column in Table 1. If they were to reduce their stock commitment slightly to 75% of their holdings (55% in large-cap stocks, 10% in small caps, and 10% in international), and at the same time increase their money market fund holdings, they can decrease their downside portfolio risk to 20%. Increasing their cash portion would also provide them with the liquidity to get them through several years of a real bear market should the worst-case scenario unfold.

Why not decrease their more aggressive holdings even further? That would be an alternative approach. However, in their current situation, the Pinkertons prefer to be diversified among various stock categories, and a commitment of less than 10% would not have a meaningful effect. Their bond holding can remain at 5% because of their other fixed-income assets—the pension and Social Security payments.

Of course, the next question the Pinkertons must contend with is how to move to the new allocation. Selling a portion of their equity holdings would incur a large tax bill, and they need to balance this against their downside risk. In addition, it is usually better to make major changes over time—for instance, over a two-year time horizon.

The Pinkertons decide that they will try to get their portfolio back on track by withdrawing their annual spending amount from their growth and income ($10,000) and aggressive growth funds ($5,000). The Rebalancing Using Withdrawals columns in Table 1 show the effect of this change for the first year under the worst-case scenario. Although their commitment to equities is still above the target level, they have managed to reduce their liquidity risk—they could withdraw spending money first from cash, then from the fixed-income fund for two years to ride out a bear market. The value of their portfolio would drop almost—but not quite—as much as their existing portfolio.

Over the next two years, the Pinkertons will make selective sales from their stock funds in the most tax-effective way possible.

A DOSE OF REALITY

Major bull markets can cause asset allocation strategies to stray far from their target levels and at the same time cause investors to become overly complacent with their stock holdings—a dangerous combination.

Examining your portfolio and seeing how it would fare under the worst-case bear market conditions gives you the chance to inject a dose of reality into your portfolio. If you are uncomfortable with what you see, you have time to put your portfolio back into balance at a time that is more advantageous to you.

Here are some things to keep in mind when re-examining your downside risk:

- Use the worst-case scenario—the maximum loss for all categories—as a guide to how much of a loss you can stomach, as well as any liquidity problems you may run into. The worst returns for a one-year holding period over a long-term time frame are a good guideline and are available from a number of sources. A relatively inexpensive statistical guide offering data back to 1960 is the Chase Investment Performance Digest ($31.90 including shipping), published by Chase Global Data & Research; 800/639-9494.
- When you are withdrawing assets from your savings, make sure you fully understand your liquidity risk—the risk that you may be forced to sell at an inopportune time. You can reduce liquidity risk overall by increasing your investments in cash, which don't face liquidity risk.
- The best way to avoid being overcome by a strong bull market is to rebalance periodically. Rebalancing helps you remain diversified, so that you are not overly dependent on one area of the market for your performance. And it provides a discipline in that it forces you to sell "high" and buy "low."
- When you do rebalance, try to do so in the most tax-efficient way possible—for instance, withdrawing spending money from funds to which you are overly committed, or by buying and selling from tax-deferred accounts. However, there is only so much that can be accomplished through selective withdrawals, and at some point you will have to balance the risk of being overcommitted to one asset class versus paying taxes—a tough decision, and hard to quantify. ◆