Think about the following choice:

If you could increase your chances of having a more comfortable retirement by taking more risk in your portfolio, would you:

- be willing to take a LOT more risk with SOME of your money?
or
- be willing to take a LITTLE more risk with ALL of your money?

I've presented this choice to many investors and investment consultants, and if you are like the vast majority of them, you chose A. The overwhelming preference of A over B is puzzling when viewed from the perspective of Markowitz's mean-variance portfolio theory. This theory prescribes that investors focus on the risk of the overall portfolio rather than on the risk of individual mental accounts within the portfolio. But normal investors do not behave according to the mean-variance portfolio prescription. The mental accounting cognitive bias leads normal investors to ignore correlations between assets in different mental accounts and, therefore, choose portfolios that are not on the mean-variance efficient frontier.

Figure 1 shows that the increase in the risk of the overall portfolio is approximately the same whether you choose A or B. When you take a LOT more risk with SOME of your money you add about the same risk as taking a LITTLE more risk with ALL of your money. The overwhelming preference for A over B when each adds approximately the same amount of risk to the overall portfolio is inconsistent with mean-variance portfolio theory, which states that investors should be indifferent regarding A and B. But while the preference for A over B is inconsistent with mean-variance portfolio theory, it is consistent with behavioral portfolio theory.¹

A central feature in behavioral portfolio theory is the observation that investors view their portfolios not as a whole, as prescribed by mean-variance portfolio theory, but as distinct mental-account layers in a portfolio pyramid, as depicted in figure 2, where the layers are associated with particular goals and attitudes toward risk vary among layers. One layer might be a “core” layer, designed to protect the investor from being poor. Another might be a “satellite” layer, designed to give the investor a chance at being rich. Investors might behave as if they hate risk in the core downside protection layer and as if they love risk in the satellite upside potential layer. In behavioral portfolio theory, investors apply “risk budgeting” to their portfolios and allocate the risk budget to the satellite layer. This is what investors do when they choose to take a LOT more risk with SOME of their money, namely the money in the satellite layer, rather than take a LITTLE more risk with ALL their money, namely the overall money in both the core and satellite layers.

Behavioral portfolio theory is a goal-based theory. In the simple version of the theory, investors divide their money into two layers of a portfolio pyramid, a downside protection layer and an upside potential layer. Investors in the complete version of the theory divide their money into many layers corresponding to many goals such as secure retirement, college education, or having the means to hop on a cruise ship whenever they please.

The road to behavioral portfolio theory originated almost 60 years ago, when Milton Friedman and Leonard Savage noted that hope for riches and protection from poverty share roles in our behavior; people who buy lottery tickets buy insurance policies as well. People who buy lottery tickets often are described as risk-seeking while people who buy insurance policies are described as risk-averse, but it is aspirations that animate people, not attitudes toward risk. In 2002, New York Times writer Mylene Mangalindan told the story of David Callisch, a man who bet on one...
When Mr. Callisch joined Altheon WebSystems, Inc., in 1997, he asked his wife “to give him four years and they would score big,” and his “bet seemed to pay off when Altheon went public.” By 2000, Mr. Callisch’s Altheon shares were worth $10 million. “He remembers making plans to retire, to go back to school, to spend more time with his three sons. His relatives, his colleagues, his broker all told him to diversify his holdings. He didn’t.” Unfortunately, Mr. Callisch’s lottery ticket ended up a loser. Nortel bought Altheon, and by the time he dumped his Nortel stock, his portfolio had dwindled to about $400,000.

Mr. Callisch’s aspirations are common, shared by the many who gamble on individual stocks and lottery tickets. Most lose, but some win. Reuven and Gabrielle Brenner quote a New York City subway clerk who won the lottery: “I was able to retire from my job after 31 years. My wife was able to quit her job and stay home to raise our daughter. We are able to travel whenever we want to. We were able to buy a co-op, which before we could not afford.” Investors such as Mr. Callisch and lottery buyers such as the New York subway clerk aspire to retire, buy houses, travel, and spend time with their children. They buy bonds in the hope of protection from poverty, stock mutual funds in the hope of moderate riches, and individual stocks and lottery tickets in the hope of great riches.

Investors want downside protection but they also want upside potential. What should investment consultants prescribe as the right balance between the two? Should investment consultants let investors concentrate their portfolios in company stock? Should they let investors exclude bonds or cash from their portfolios?

Kate Zernike wrote in the Wall Street Journal about the havoc that the early 2000s stock slide was playing with older Americans’ dreams. She described the undiversified portfolio of Gena and John Lovett, people in their late 50s. “Our retirement is one-half of what it was a year ago,” said Mrs. Lovett. “And because John works for GE we have mostly GE stock. I suppose we should have diversified, but GE stock was supposed to be wonderful. John’s simply not looking at retirement. We simply told our kids that we’re spending their inheritance.” Postponing retirement beyond the late 50s and spending the kids’ inheritance are sad but not disastrous breaches of the downside protection layer. Mr. and Mrs. Lovett are no longer rich, but neither are they poor. But sad consequences easily can turn disastrous if GE is replaced by Enron and if no downside protection layer underlies the upside potential one. Investment consultants must guide investors to portfolios with the right balance between downside protection and upside potential, so investors who aim for riches do not plunge into poverty.

Meir Statman is the Glenn Klimek Professor of Finance at the Leavey School of Business, Santa Clara University. “This series draws on my work with investment consultants and investors at Loring Ward Advisor Services,” he says. “They continue to teach me as much as I teach them.” Dr. Statman earned B.A. and M.B.A. degrees from the Hebrew University of Jerusalem and a Ph.D. from Columbia University. Contact him at mstatman@scu.edu.

Endnote

References