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Seeking Stability

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Building a tough, strong, resilient and stable retirement portfolio is, very simply, what every retiree wants to do. An attribute of particular importance to a retiree's portfolio is stability. It is the quest for stability that drives some clients' desire to allocate most or all of their retirement portfolio to cash.

The obvious appeal of a 100% cash portfolio is that it has consistently positive nominal returns—if you don't consider the impact of inflation. As a result, an all-cash portfolio has a very low volatility, as measured by standard deviation of return. Over the 38-year period ending Dec. 31, 2007, a portfolio of cash—as represented by three-month Treasury bills—had an annualized return of 6.27%, a 3.08% standard deviation and a worst one-year nominal return of 1.05%.

By comparison, U.S. large-cap equity, as measured by the S&P 500 Index, had an annualized return of 11.03%, a standard deviation of 16.61% and a worst-case one-year return of -26.47%. It's that last number—a loss of over 26% in one year—that really makes investors anxious. The solution to the stability-versus-returns dilemma, of course, is to build a diversified portfolio—even for retirees.

Creating Diversity

To examine the effects of different allocations on a retirement portfolio in withdrawal mode, I created progressively more diverse portfolios over the 38-year period from 1970 to 2007. Assets included in this analysis are large-cap U.S. equities, small-cap U.S. equities, non-U.S. equities, U.S. intermediate-term bonds, cash, real estate and commodities. The historical performance of U.S. large-cap equities is represented by the S&P 500 Index; U.S. small-cap equity performance is based on the Ibbotson Small Companies Index from 1970 to 1978 and the Russell 2000 Index from 1979 to 2007. Non-U.S. equity returns are taken from the Morgan Stanley Capital International Europe, Australia, Far East (EAFE) Index.

The historical performance of U.S. intermediate-term bonds is represented by the Ibbotson Intermediate Term Bond Index from 1970 to 1976 and the Lehman Brothers Intermediate Term Bond index from 1977 to 2007. Cash is represented by three-month Treasury Bills. Real estate is measured by the National Association of Real Estate Investment Trusts (NAREIT) Index (annual returns for 1970 and 1971 were regression-based estimates since the NAREIT Index didn't provide data until 1972). Finally, commodities are measured by the S&P GSCI Commodity Index. All raw data was obtained from Morningstar Principia.

In creating the portfolios, I assumed a starting balance of $500,000, with an initial withdrawal at the end of the first year of 5% of the starting portfolio balance—$25,000—and an annual increase of 3% to the withdrawal amount to account for inflation. So, the second-year withdrawal would be $25,750, the third-year withdrawal would be $26,523, etc.

Mixing It Up

As shown in "**Move Over Cash**," the first portfolio consists of 100% cash. The 38-year internal rate of return (IRR) of the 100% cash portfolio was 7.04% with a standard deviation of return of 3.08%. The IRR is slightly different from the 38-year average annualized return of 6.27% in a lump sum accumulation portfolio, because the IRR takes into account the annual withdrawals from the distribution portfolio.

Another metric, the worst-case one-year portfolio drawdown (the percentage change in portfolio account value from year-end to year-end) was -13.9%, which occurred in 2007. Unlike standard return data, the worst-case one-year portfolio drawdown takes into account the raw return of the portfolio as well as withdrawals from the portfolio.

This is the realistic measure to focus on when analyzing retirement portfolios. According to this metric, the all-cash portfolio lost value 53% of the time—or 20 out of the 38 years. In those 20 years, the average account value loss was -4.4%. In other words, the performance of cash is typically insufficient to replenish a retirement portfolio experiencing annual withdrawals.

Combining 50% bonds with 50% cash improved the IRR to 7.71%, with only a slight increase in standard deviation over the all-cash portfolio, 3.63% versus 3.08% respectively. But the worst-case one-year portfolio drawdown was reduced from -13.9% to -3.4%. Moreover, the percentage of years with a loss was cut to 24% and the average annual loss was reduced to -2.0%. As you can see in this example, using only standard deviation as the measure of portfolio volatility would have completely missed the benefit of adding a second asset to the portfolio. In short, standard deviation may hide more than it reveals.

Next, I added U.S. large-cap equities to the mix. An equally weighted three-asset portfolio of cash, bonds and large U.S. stock had a 38-year IRR of 8.69%, an improvement of roughly 100 basis points over the two-asset portfolio. The other measures were a mixed bag: standard deviation increased to 6.44%, worst-case portfolio drawdown was worse at -9.4%, but the frequency of loss decreased to 18%.

Weight Watchers

Let's skip to the seven-asset portfolio. This equal-weighted seven-asset portfolio is comprised of cash, bonds, large-cap U.S. equity, small-cap U.S. equity, non-U.S. equity, U.S. intermediate-term bonds, REITs and commodities—each asset with a portfolio weighting of 14.3%. This portfolio had the highest IRR (11.16%), the third smallest worst-case one-year drawdown (-10.2%), the third lowest frequency of loss (21%) and the second smallest average loss (-3.9%).

Also included in "Move Over Cash," are the following three additional portfolios: custom-weighted seven-asset, moderate (60% large U.S. equity/40% bond) and conservative (40% large U.S. equity/60% bond). The custom-weighted seven-asset portfolio generated a near- optimal blend of return and portfolio stability, as gauged by worst-case portfolio drawdown and frequency of loss. The equal-weighted seven-asset portfolio generated the highest IRR, but with a higher frequency of loss than the custom portfolio experienced (21% versus 16%).

Decoding Risk

The risk/reward combinations of all 10 portfolios are summarized in "**Stemming Losses**." Return is measured by the 38-year IRR, while risk is measured by the percentage of time that the portfolio lost value on a year-to-year basis—which I am suggesting is a more intuitive measure of risk than standard deviation of return.

Portfolio durability during retirement requires that a variety of assets be included in the mix. Customized blends will abound, which is fine. The core message is that cash alone will simply not get the job done. Even a conservative allocation two-asset portfolio—40% large-cap U.S. equity/60% bonds—represents a significant improvement over an all-cash portfolio, as seen by an increase in IRR of 228 basis points and a decrease in loss frequency from 53% to 21% (see "Move Over Cash"). Likewise, an equally weighted cash and bond portfolio produced a dramatic drop in the worst-case portfolio drawdown and in the frequency of loss, compared with the all-cash portfolio.

There is a lumber metaphor that applies here. A glue-laminated wood beam is much stronger than a solid wood beam of the same size precisely because the laminated beam comprises layers of wood with differing grain patterns. It is the diversity of the components that gives the "glulam" its strength. In like manner, the strength and durability of a retirement portfolio comes from adding diverse components.

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