

Disappearing Act

Don't bother pumping up the equities in a retirement portfolio to make up for years of underfunding. That move could backfire. By Craig L. Israelsen

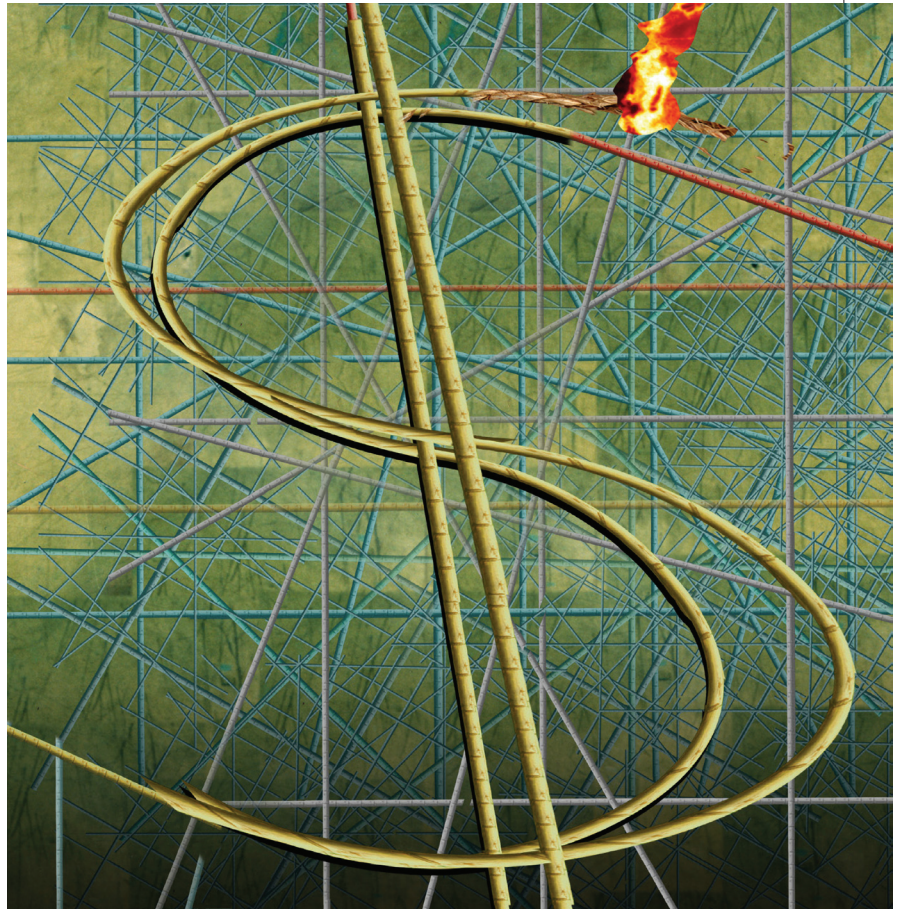
AN INVESTMENT PORTFOLIO SHOULD provide a modest return while exposing the investor to an age-appropriate level of risk (or volatility). What a portfolio can't do is make up for years of inadequate contributions (i.e., underfunding). When portfolios are put together with that inappropriate objective in mind, they eventually blow up, and it's not pretty.

In light of the recent market implosion, clients may be anxious to make up for lost time (and returns). When their needs in retirement are unrealistic, their portfolios cannot support them. However, the composition of their portfolios can mitigate the blow.

This article compares four different retirement portfolios: an all-bond portfolio, a typical two-asset balanced portfolio, a multi-asset portfolio and an all-stock portfolio. The performance of each portfolio is tested during the distribution phase of an investor's life cycle, when money is being withdrawn during retirement.

An investment portfolio typically comprises two broad asset classes: equity and fixed income. Other important asset classes are real estate and commodities. These are sometimes referred to as alternatives. In this article, alternatives will be treated as an "equity-like" asset.

Most portfolios represent a blend of individual asset classes. A common blend is 60% stock and 40% fixed income. This particular mix is referred to as a balanced fund (or balanced portfolio). The multi-asset portfolio consists of seven assets equally weighted (large U.S. stock, small U.S. stock, non-U.S. stock, real estate, commodities, bonds, cash). Today, building a portfolio with



only two assets is comparable to a diet of meat and potatoes. Since there are more asset classes than there were 40 years ago, a diversified portfolio should include more than two asset classes.

DIFFERENT PERSPECTIVES

Financial planners rightly think of the mechanics of distribution in terms of withdrawal rates and cost of living increases (COLAs). Individual investors think of retirement funding in dollar terms, such as "I need to withdraw \$40,000 each year from my retirement

account with a 3% annual increase." These are different perspectives. This analysis will take the investor's perspective to demonstrate what happens when an irresistible force (the annual income demands of a retiree) meets a movable object (an underfunded portfolio).

This analysis of various distribution portfolios is based on a \$400,000 balance at the start of retirement. The annual cost of living adjustment is 3%. There are four different withdrawal rates: 5%, 7.5%, 10% and 12%. The 5% withdrawal rate is associated with

SURVIVAL STATS

If retirees need to withdraw 12.5% from their portfolios annually, there is little chance their money will survive for 25 years.

Portfolio composition	Probability of retirement account surviving 25 years			
	\$400,000 starting balance 3% annual COLA			
	5% withdrawal rate	7.5% withdrawal rate	10% withdrawal rate	12.5% withdrawal rate
Simulation period consists of 15 25-year rolling periods: 1970-2008	\$20,000 annual withdrawal	\$30,000 annual withdrawal	\$40,000 annual withdrawal	\$50,000 annual withdrawal
100% U.S. bond	100%	80%	0%	0%
60% large U.S. stock/ 40% bond	100%	93%	60%	7%
Multi-asset	100%	100%	93%	20%
100% large U.S. stock	100%	80%	67%	47%

Indexes used in analysis:
 Large U.S. stock: S&P 500 Index
 Small U.S. stock: Ibbotson Small Companies Index 1970-1978, Russell 2000 Index 1979-2009
 Non-U.S. stock: MSCI EAFE Index
 Real estate: NAREIT Index 1970-1977, Dow Jones U.S. Select REIT Index 1978-2009
 Commodities: S&P Goldman Sachs Commodities Index
 U.S. bonds: Ibbotson Intermediate Term Govt. Bond Index 1970-72, Barclays Capital Intermediate Government Bond Index 1973-2009
 Cash: 3-month Treasury bill

Source: Author calculations using Morningstar data

a \$20,000 annual retirement income; the 7.5% rate with a \$30,000 annual retirement income; the 10% rate with a \$40,000 annual retirement income; and the 12.5% with a \$50,000 annual retirement income. These are unusually high withdrawal rates, but we are assuming that the cash flow demand of the retiree is the driving factor, not a safe withdrawal rate. No doubt, you've met prospective clients who think this way.

The study analyzes each portfolio's survival rate over the fifteen 25-year rolling periods between 1970 and 2008. Each of the four portfolios survived all fifteen 25-year periods, assuming a 5% withdrawal rate, or \$20,000 per year with a 3% COLA (see "Survival Stats," on page 98). If, however, the retiree initially withdraws \$30,000 (which equates to a 7.5% initial withdrawal rate), the survival rate of the all-bond portfolio and the all-stock portfolio slips to 80%. The 60% large U.S. stock/40% bond portfolio survived 93% of the time, while the

multi-asset portfolio survived all 15 historical 25-year periods in this scenario. The multi-asset portfolio consists of seven assets equally weighted (large U.S. stock, small U.S. stock, non-U.S. stock, real estate, commodities, bonds, cash).

We have our first glimpse of what an all-bond or all-stock retirement portfolio can't do—sustain a 7.5% withdrawal rate with a 100% probability of survival. If a retiree needs \$40,000 per year from a \$400,000 portfolio (a 10% initial withdrawal rate), the outcome is even uglier. The all-bond portfolio never survived any of the 15 historical 25-year periods. The 60/40 portfolio survived 60% of the time, and the all-stock portfolio survived 66% of the time. The multi-asset portfolio was the most durable portfolio, but it still only had a 93% success ratio.

A \$50,000 withdrawal each year (equivalent to a 12.5% withdrawal rate) crushed all four portfolios. Interestingly, the all-stock portfolio had a higher success rate than the multi-asset portfolio.

This is due to the erratic nature of an all-stock portfolio; when it's good, it's great and when it's bad, it's awful.

TIMING IS EVERYTHING

As shown in "The 5% Solution," on page 100, the all-stock portfolio has dramatically different ending account balances based on the particular 25-year period, given a 5% withdrawal rate. For example, over the period from 1970 to 1994, it ended with a \$1.7 million balance, whereas the period from 1975 to 1999 produced a \$13.7 million ending balance. The ending balances in the other three portfolios are much more consistent. An all-stock portfolio is extremely sensitive to the timing of returns, which makes it a poor choice for a retirement portfolio. Retirees should not be betting their retirement on the timing of returns.

The issue of timing is even more evident when the withdrawal rate is 10% (see "The 10% Solution," on page 100).



THE PORTFOLIO

THE 5% SOLUTION

With a 5% initial withdrawal rate, an all-stock portfolio has dramatically different ending account balances based on the particular 25-year period.

25-year distribution period		Ending portfolio balance \$400,000 starting balance, 5% initial withdrawal rate (\$20,000 first year withdrawal), 3% annual COLA			
Start year	End year	100% stock/ 40% bond	60% large stock/ 40% bond	Multi-asset U.S. stock 40% bond	100% large U.S. stock
1970	1994	\$1,252,875	\$1,710,309	\$3,348,146	\$1,692,939
1971	1995	\$1,059,086	\$2,029,954	\$4,331,609	\$2,504,508
1972	1996	\$1,006,623	\$2,004,345	\$4,302,679	\$2,477,674
1973	1997	\$1,103,839	\$2,020,699	\$3,904,748	\$2,244,699
1974	1998	\$1,279,348	\$3,556,932	\$4,283,850	\$5,629,939
1975	1999	\$1,238,396	\$6,034,352	\$6,000,853	\$13,748,575
1976	2000	\$1,276,841	\$4,307,829	\$5,343,319	\$8,063,610
1977	2001	\$1,185,565	\$3,258,261	\$4,095,842	\$5,296,074
1978	2002	\$1,388,989	\$3,506,480	\$3,688,097	\$5,211,454
1979	2003	\$1,532,342	\$4,199,937	\$3,898,475	\$6,612,625
1980	2004	\$1,527,133	\$3,962,109	\$3,375,388	\$6,092,957
1981	2005	\$1,508,362	\$3,160,587	\$2,790,902	\$4,364,558
1982	2006	\$1,399,707	\$3,768,430	\$3,349,718	\$6,022,320
1983	2007	\$999,766	\$3,068,443	\$2,972,522	\$5,074,661
1984	2008	\$1,025,641	\$2,075,718	\$1,677,360	\$2,481,865

THE 10% SOLUTION

The multi-asset portfolio survived all but one 25-year distribution period under the heavy burden of a 10% withdrawal rate.

25-year distribution period		Ending portfolio balance \$400,000 starting balance, 10% initial withdrawal rate (\$40,000 first year withdrawal), 3% annual COLA			
Start year	End year	100% bond	60% large stock/ 40% bond	Multi-asset portfolio	100% large U.S. stock
1970	1994	0	0	0	0
1971	1995	0	0	\$605,207	0
1972	1996	0	0	\$392,699	0
1973	1997	0	0	\$32,711	0
1974	1998	0	0	\$823,458	0
1975	1999	0	\$1,416,937	\$2,518,740	\$6,062,775
1976	2000	0	\$247,490	\$1,999,429	\$1,929,271
1977	2001	0	0	\$1,320,034	\$497,890
1978	2002	0	\$689,099	\$1,292,284	\$1,953,040
1979	2003	0	\$1,273,964	\$1,267,984	\$2,997,349
1980	2004	0	\$1,195,423	\$696,559	\$2,624,582
1981	2005	0	\$613,708	\$162,148	\$1,158,706
1982	2006	0	\$1,286,258	\$718,037	\$2,825,268
1983	2007	0	\$719,847	\$483,407	\$2,148,075
1984	2008	0	\$350,458	\$30,229	\$850,817

The all-stock portfolio failed to survive the first five 25-year periods. Then, in the sixth 25-year period (1975-1999), the ending balance ballooned to over \$6 million. The cause is obvious. In 1973 and 1974, the S&P 500 suffered losses of 14.7% and 26.5%, respectively. A distribution portfolio that sustains losses early on will likely never recover, particularly when subjected to a high withdrawal rate. On the other hand, the multi-asset portfolio survived all but one 25-year distribution period under the heavy burden of a 10% withdrawal rate.

Building multi-asset distribution portfolios for retirees represents a more durable model than the simple two-asset balanced fund or an all-bond portfolio. But no portfolio, not even a multi-asset design, is capable of sustaining high withdrawal rates with a high probability of success. A retiree who needs \$40,000 in income from a \$400,000 nest egg in his or her first year of retirement is headed for trouble. Pushing a retirement portfolio past a 5% withdrawal rate begins to threaten its ability to sustain payouts for 25 years.

The solution is threefold: Properly fund retirement accounts, withdraw money at a sustainable rate, and use a multi-asset portfolio during retirement (and even the accumulation phase). The solution to retirement funding is not to ramp up the equity allocation in portfolios in an attempt to make up for years of underfunding. That dramatically increases timing risk—the risk of experiencing negative equity returns in the early years of a retirement distribution period. When that happens, retirement portfolios implode. **FP**

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