

PORTFOLIO



Survival Test

If you have clients who have already retired, make sure their portfolios can absorb the most violent shocks.
By Craig L. Israelsen

Investing is a lifelong activity. Yet portfolios and, more broadly, asset allocation models, need to adjust over a client's life span: The portfolio an investor assembles as a 35-year-old is hardly appropriate for a 65-year-old client. It often falls to an advisor to ensure a post-retirement portfolio could handle the market's most violent swings.

One of the most difficult aspects of investing is determining how much risk to take in your portfolio at various stages of life. For instance, portfolio losses during the preretirement accumulation phase are easier to recover from than losses during the post-retirement distribution phase.

The mechanics of an investment portfolio are very different during the distribution phase. Losses are more difficult to recover from because withdrawals only serve to exacerbate the problem.

As shown in the Math of Recovery chart on page 66, a post-retirement distribution portfolio faces a

much steeper climb back to break even after a loss than does an accumulation (or buy-and-hold) portfolio. As shown by the shaded boxes, an accumulation portfolio only needs an average annual return of 7.7% to recover from a 20% loss within three years.

But a distribution portfolio, in which money is withdrawn each year, must generate at least a 16.5% average annual return over a three-year period to recover from the same loss. (This distribution portfolio assumes a starting balance of \$500,000, an initial withdrawal at the end of the first year of 5% – in this case, \$25,000 – and an annual 3% increase in the withdrawal amount.)

The conclusion is quite clear: When building a distribution portfolio for the post-retirement years, it is vitally important to avoid large losses. An investor's post-retirement portfolio must therefore be more loss resistant than the portfolio designed for the early accumulation years. But at the same time,

the retirement portfolio must be able to provide sufficient return to preserve and/or grow the portfolio's asset base.

How is this to be done? Examine the performance of various asset allocation models that could be employed to build retirement portfolios.

COMPARING SIX PORTFOLIOS

For this analysis, six asset allocation models in distribution mode were tested to simulate the experience of an investor in retirement, with money being withdrawn from the portfolio (in this case, at the end of each year).

As shown in the 15-Year Retirement Portfolio Survival Test chart on page 67, the asset allocation models were as follows:

- 100% cash (defined as a money-market mutual fund)
- 50% cash/50% bonds
- 60% large U.S. stock, 40% bonds
- 25% each in large U.S. stock, non-U.S. stock, bonds and cash
- A 12-asset diversified model
- 100% large U.S. stock

PORTFOLIO

The time frame of the analysis was the 15-year period from Jan. 1, 1998, to Dec. 31, 2012. The simulated retirement portfolios had a beginning balance of \$500,000, although the actual amount is immaterial – the only investor-controlled variables that matter in this analysis are the initial withdrawal rate and the annual cost of living adjustment.

The initial withdrawal rate was set at 5%, or \$25,000 at the end of the first year. The annual cost-of-living adjustment was 3% – so the second year’s withdrawal was \$25,750, the third year’s was \$26,523, and so on. (This analysis is not intended to endorse or discredit a 5% withdrawal rate.)

Additionally, all the multiasset portfolios were rebalanced back to their percentage allocations at the end of each year.

HOW THEY STACK UP

As shown in the chart, the 100% cash portfolio had a year-end account balance larger than the starting balance of \$500,000. After the third year, however, the portfolio’s annual ending balance was underwater, or below \$500,000 (as illustrated by the yellow shading). By Dec. 31, 2012, the account balance of the all-cash portfolio was \$223,941. Over the 15-year period, the internal rate of return – a way to measure the portfolio’s returns during a period of withdrawals – was 2.65%.

For a retiree hoping to fund a 25-year (or longer) retirement period, an all-cash asset allocation will likely not get the job done – particularly in a low interest rate environment like the current one.

The next portfolio was a 50% cash/50% bond model, with bond

performance represented by the Barclays Capital Aggregate Bond Index. As expected, it outperformed the all-cash portfolio, but was underwater beginning in 2004. The ending account balance in December 2012 was \$344,395. The 15-year internal rate of return improved to 4.15%.

Next was the classic 60/40 balanced portfolio: 60% U.S. large-cap stock (as defined by the S&P 500) and 40% U.S. bonds (using the Barclays bond index). This ubiquitous model was underwater at the end of 2002, resurfaced for several years, and then after 2008 again slipped below \$500,000. The ending account balance was \$433,566, reflecting an internal rate of return of 5.07%.

Also tested was a four-asset model, with 25% each in large-cap U.S. stock, non-U.S. stock (represented by the MSCI EAFE Index), U.S. bonds and cash. It underperformed compared with the 60/40 model and finished with an ending account balance of \$383,280 and an internal rate of return of 4.57% – just slightly ahead of the 50% bond/50% cash retirement portfolio.

The next portfolio was a multiasset portfolio consisting of equal allocations to 12 different asset classes (a concept I explain in my book, *7Twelve: A Diversified Investment Portfolio With a Plan*). This model includes 8.33% in each of the following categories: large-cap U.S. stock, mid-cap U.S. stock, small-cap value U.S. stock, developed non-U.S. stock, emerging markets non-U.S. stock, REITs, natural resources, commodities, U.S. bonds, TIPS, non-U.S. bonds and cash. This diversified retirement portfolio was slightly underwater on two occasions (1998 and 2002), but then resurfaced and finished the 15-year period with an ending balance of \$774,486, with an internal rate of return of 7.73%.

Finally, I simulated an all-stock portfolio, with a 100% allocation to large-cap U.S. stock (or the S&P 500). A 100% stock allocation is rarely recommended as a retirement portfolio, but I

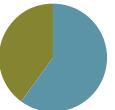
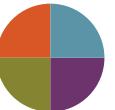
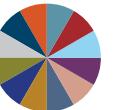
MATH OF RECOVERY

Portfolio Loss	Required Average Annualized Percentage Return To Restore Original Portfolio Balance After a Loss*				
	Post-Retirement Distribution Portfolio				
	Within 1 Year	Within 2 Years	Within 3 Years	Within 4 Years	Within 5 Years
-5%	16.8	11.1	9.3	8.4	8.0
-10%	23.7	14.4	11.5	10.1	9.4
-15%	31.4	18.0	13.9	12.0	10.9
-20%	40.2	22.0	16.5	14.0	12.5
-25%	50.2	26.4	19.4	16.1	14.3
-30%	61.8	31.3	22.6	18.5	16.2
-35%	75.3	36.9	26.1	21.2	18.4
Portfolio Loss	Preretirement Accumulation Portfolio				
	Within 1 Year	Within 2 Years	Within 3 Years	Within 4 Years	Within 5 Years
-5%	5.3	2.6	1.7	1.3	1.0
-10%	11.1	5.4	3.6	2.7	2.1
-15%	17.6	8.5	5.6	4.1	3.3
-20%	25.0	11.8	7.7	5.7	4.6
-25%	33.3	15.5	10.1	7.5	5.9
-30%	42.9	19.5	12.6	9.3	7.4
-35%	53.8	24.0	15.4	11.4	9.0

* Distribution portfolio assumptions: First year withdrawal of 5%, 3% increase in annual cash withdrawals. Source: Author calculations

15-YEAR RETIREMENT PORTFOLIO SURVIVAL TEST (1998–2012)

\$500,000 starting balance on Jan. 1, 1998; 5% initial withdrawal; 3% annual cost of living adjustment

Retirement Portfolio Asset Allocation Model		1-Asset Portfolio Very Conservative	2-Asset Portfolio* Conservative	2-Asset Portfolio* Traditional	4-Asset Portfolio* Moderate	12-Asset Portfolio* Moderately Aggressive	1-Asset Portfolio Very Aggressive
		100% Cash	Cash and Bonds (50% in each)	U.S. Stock and Bonds (60% Stock, 40% Bonds)	Large Stock, Non-U.S. Stock, Bonds, Cash (25% each)	12 Asset 7Twelve Model (8.33% each)	100% Large U.S. Stock
Calendar Year	Annual Cash Withdrawal (3% annual increase)						
Year-End Account Balances							
1998	\$25,000	501,686	509,721	579,825	554,431	486,828	618,371
1999	\$25,750	501,063	494,179	621,113	597,807	539,079	718,608
2000	\$26,523	506,053	511,504	585,618	560,180	549,034	622,278
2001	\$27,318	499,806	516,088	536,682	501,836	512,587	521,468
2002	\$28,138	479,927	518,024	457,490	440,688	480,451	380,955
2003	\$28,982	455,249	501,790	511,447	488,494	581,625	459,256
2004	\$29,851	430,439	485,335	523,226	500,943	655,070	478,522
2005	\$30,747	412,642	467,533	513,043	499,916	704,029	471,029
2006	\$31,669	401,122	457,154	538,153	530,619	779,044	513,783
2007	\$32,619	389,130	451,943	537,513	534,488	834,496	507,474
2008	\$33,598	366,316	443,802	392,112	400,619	595,479	287,622
2009	\$34,606	333,660	418,607	425,255	424,434	709,174	328,696
2010	\$35,644	298,223	396,037	440,515	422,466	776,374	342,486
2011	\$36,713	261,644	374,837	423,955	383,783	731,850	312,239
2012	\$37,815	223,941	344,395	433,566	383,280	774,486	324,447
% Internal Rate of Return		2.65	4.15	5.07	4.57	7.73	3.93

*The multiasset portfolios were rebalanced at the start of each year.

Areas shaded in yellow indicate account is below the initial balance.

Source: Lipper Investment View, author calculations

included it to provide a point of reference because the S&P 500 is used so commonly as a performance benchmark. The first two years were terrific, but then it began to falter, and by 2002 it was underwater. The account balance resurfaced for two years (2006 and 2007) only to plunge in 2008. In the end, the account balance was \$324,447. Its internal rate of return of 3.93% was even below that of a 50% bond/50% cash retirement portfolio.

This analysis clearly demonstrates that diversification is a valuable port-

folio construction guideline for distribution portfolios during the post-retirement years. Said more plainly: Diversification makes just as much sense during the post-retirement period as it does during the preretirement accumulation years.

If the last 15 years are any sort of indicator of the future, building broadly diversified retirement portfolios is prudent, logical and beneficial. Simply diversifying among two asset classes (stocks and bonds) is insufficient. The good news is this: With an

ever expanding array of mutual funds and ETFs that represent all manner of asset classes, it's never been easier to build diversified portfolios. **FP**

Craig L. Israelsen, Ph.D., a *Financial Planning* contributing writer in Springville, Utah, is an associate professor at Brigham Young University. He is also the author of *7Twelve: A Diversified Investment Portfolio With a Plan*.

CEQUIZ GO TO FINANCIAL-PLANNING.COM TO TAKE THE CE QUIZ ONLINE