

# PORTFOLIO



## Still Seeking Stability

“Risky assets” aren’t so risky when they are part of a diversified portfolio designed to survive market volatility.  
By Craig L. Israelsen

When I first wrote about this topic three years ago (“Seeking Stability,” April 2008), I had no way of knowing that 2008 would become a watershed event that would test the mettle of investors and their portfolios. Now, exactly three years later, let’s revisit one of the most compelling issues in financial planning—building a distribution portfolio that both protects and prudently grows a retirement account for the duration of a retiree’s lifetime.

I discussed the basics of distribution portfolios last month (“Nest Egg Survival,” March 2011). This article builds on those ideas by demonstrating how incremental increases in a retirement portfolio’s level of diversification enhance the risk/return equation over the long term.

### WHY “ALL-IN-CASH” IS BAD

Building a resilient and stable retirement portfolio is, very simply, what every retiree wants. Let’s examine in greater depth one of these desired

attributes, namely stability. In order to achieve stability, clients may want to park their retirement portfolios entirely (or largely) in cash. This article may help you help them reconsider.

The obvious appeal of a 100% cash portfolio is that it has consistently positive nominal returns (before considering the impact of inflation). As a result, an all-cash portfolio has very low volatility of return (as measured by standard deviation). Over the 41-year period ending Dec. 31, 2010, an all-cash portfolio (as measured by Treasury bills) had an annualized return of 5.9% (assuming a single lump-sum investment at the start of 1970), a 3.33% standard deviation, a worst one-year nominal return of 0.1% and a worst-case three-year account value drawdown of 1.8% (in nominal terms).

By comparison, U.S. large-cap equity (as measured by the S&P 500 Index) had an annualized return of 10%, a standard deviation of 17.91%, a worst-case one-year loss of 37% (you guessed it, in 2008) and a worst-case

three-year total drawdown of -37.6%.

It’s that last number, a cumulative account value loss of 37.6% over a three-year period, that freaks people out. The solution, of course, is to build a diversified portfolio—even for retirees.

This study examines the impact of building a progressively more diverse retirement portfolio and the corresponding risk/return characteristics over the past 41 years (1970-2010). More important, this analysis examines various retirement portfolios over 17 separate 25-year rolling periods between 1970 and 2010. Examining rolling periods removes the begin date/end date bias.

Portfolio assets included in this analysis were large-cap U.S. equities, small-cap U.S. equities, non-U.S. equities, U.S. aggregate bonds, cash, real estate and commodities. The annual returns for each asset class over the 41-year period came from representative indexes.

### IN WITHDRAWAL MODE

This study focused on the performance of retirement portfolios that are in dis-

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## A NUMBERS GAME

Diversifying a portfolio by adding asset classes increases average internal rate of return, grows median ending account balance and often drops average worst-case three-year drawdown.

### Risk and Return of Retirement Portfolios in Distribution Mode: 1970–2010

Various Retirement Portfolio Asset Allocation Models  \$500,000 starting balance, 5% withdraw rate, 3% inflation rate of annual withdrawal	Single 41-Year Period (1970–2010)		17 Rolling 25-Year Periods Between 1970 and 2010		
	41-Year IRR (%)	Worst-Case 3-Year Portfolio Drawdown (%)	Average 25-Year IRR (%)	Median Ending Account Balance After 25 Years	Average Worst-Case 3-Year Drawdown (%)
One-Asset Portfolio 100% Cash	6.96	-64.9	6.93	813,583	-13.86
Equal-Weighted Two-Asset Portfolio 50% each: Cash & Bonds	7.74	-7.8	8.10	1,268,551	-2.33
Equal-Weighted Three-Asset Portfolio 33% each: Cash, Bonds, Large U.S. Stock	8.63	-10.6	9.89	2,491,868	-4.77
Equal-Weighted Four-Asset Portfolio 25% each: Cash, Bonds, Large U.S. Stock, Small U.S. Stock	9.39	-23.5	11.00	3,234,237	-5.06
Equal-Weighted Five-Asset Portfolio 20% each: Cash, Bonds, Large U.S. Stock, Small U.S. Stock, Non-U.S. Stock	9.67	-22.9	11.46	3,860,540	-9.44
Equal-Weighted Six-Asset Portfolio 16.7% each: Cash, Bonds, Large U.S. Stock, Small U.S. Stock, Non-U.S. Stock, REIT	10.03	-26.2	11.80	4,133,612	-5.84
Equal-Weighted Seven-Asset Portfolio 14.3% each: Cash, Bonds, Large U.S. Stock, Small U.S. Stock, Non-U.S. Stock, REIT, Commodities	10.77	-14.9	11.96	4,665,936	0.73
60/40 Allocation 60% Large U.S. Stock, 40% Bond	9.55	-21.9	11.58	4,222,247	-12.73

Source: Author calculations, using Morningstar data

tribution mode. A starting balance of \$500,000 was assumed, with an initial withdrawal at the end of the first year of 5% of the starting portfolio balance (in this case, \$25,000) and an annual increase in the withdrawal of 3% to

account for annual inflation. Thus, the second-year withdrawal in this analysis was \$25,750, the third-year withdrawal was \$26,523 and so forth.

As shown in “A Numbers Game,” (above), the first portfolio consisted

of 100% cash (T-bills). The 41-year internal rate of return (IRR) of the 100% cash portfolio was 7% with a worst-case three-year drawdown (or portfolio account value decline) of -64.9%. Three-year drawdown is a measure of total account value decline over a three-year period.

IRR is the more correct measure of performance when analyzing portfolios in withdrawal mode. For example, an all-cash portfolio with a single lump-sum investment and no subsequent withdrawals had a 41-year average annualized return of 5.9%. The same all-cash portfolio in distribution mode has a 41-year IRR of 7%.

The drawdown of -64.9% in the all-cash retirement portfolio occurred between 2007 and 2010. Put differently, the account balance in an all-cash portfolio at the end of 2010 was 64.9% lower than it was at the end of 2007. Frankly it is amazing that an all-cash distribution portfolio was still intact after 41 years, though by the end of 2010 the account balance was dwindling.

More instructive than the results over a single 41-year period (1970–2010) are the results over rolling 25-year periods—of which there were 17 between 1970 and 2010. The first 25-year period was from Jan. 1, 1970, to Dec. 31, 1994. The second 25-year period was from Jan. 1, 1971, to Dec. 31, 1995. The last 25-year period was from Jan. 1, 1986, to Dec. 31, 2010.

The last three columns in “A Numbers Game” report the average IRR over 17 rolling 25-year periods for a series of progressively diversified retirement portfolios. The chart also reports the median ending account balance and the average worst-case three-year portfolio drawdown in each portfolio across the rolling periods. An all-cash retirement portfolio had an average 25-year IRR of 6.9%, a median ending account balance of

\$813,583 and an average worst-case three-year drawdown of -13.9%.

#### **ADDING ASSETS**

Adding bonds and cash together (in an equally weighted portfolio) improved the average 25-year IRR to 8.1%, increased the median ending account balance to \$1.27 million and improved the average worst-case three-year drawdown to -2.33%. Thus, a 50/50 cash/bond portfolio is a better retirement portfolio than an all-cash portfolio by every measure as determined by the performance of seventeen 25-year rolling periods.

Next, U.S. large-cap equities were added to the portfolio. An equally weighted three-asset portfolio (cash, bonds, large U.S. equity) had an average 25-year IRR of 9.9%, a median ending account balance of nearly \$2.5 million

Too often, the very asset classes that add significant value to a portfolio (such as commodities and real estate) are excluded because they are perceived as being “too risky.” Such an assessment is myopic because it is based on the evaluation of that particular asset by itself in isolation. That’s not how portfolio ingredients should be evaluated. Rather, portfolio ingredients should be evaluated holistically in terms of how they help or hurt the overall portfolio.

For example, consider what happens when adding real estate—that is, when moving from the five-asset portfolio to the six-asset portfolio. Including real estate increased the average 25-year IRR from 11.5% to 11.8% and reduced the average worst-case three-year drawdown from -9.4% to -5.8%. That doesn’t look and feel like a risky asset when

included. As has been shown, an all-cash retirement portfolio will not get the job done unless the retiree has an enormous nest egg. That isn’t likely given the fact that the average 401(k) account balance for 65-year olds is approximately \$58,000, according to the Employee Benefit Research Institute.

This analysis has demonstrated the durability and loss minimizing attributes of an equally weighted, multi-asset retirement portfolio. You may choose a different weighting scheme based on the needs of the client. The main objective when building retirement portfolios is to utilize a sufficient number of assets so as to tap into a diversification “premium.”

Forty years ago, the 60% stock/40% bond “balanced” model made a lot of sense. Today it doesn’t. We now have access to a wide variety of investable

## **The worst three-year drawdown in an all-cash distribution portfolio was -64.9%, occurring between 2007 and 2010.**

and an average worst case three-year drawdown of -4.8%. By adding an equity asset to the retirement portfolio, the median ending account balance nearly doubled in comparison to the 50/50 cash/bond portfolio. The amount of increased drawdown risk increased from -2.3% to -4.8%—a relatively small price to pay for a doubling in ending account value after 25 years.

Let’s skip to the seven-asset portfolio. Each asset in this equal-weighted portfolio had a portfolio weighting of 14.3%. The seven-asset portfolio had the highest 41-year IRR of 10.8% as well as the highest average IRR over the seventeen 25-year periods of 12%. Its worst-case three-year drawdown over the entire 41-year period was -14.9%. Interestingly it was the only portfolio to have an average worst-case drawdown that was positive (0.7%) over the 17 rolling 25-year periods.

evaluated in terms of its contribution to the overall portfolio’s performance.

When adding commodities (moving from the six-asset to the seven-asset portfolio), we see the same effect—performance is enhanced and risk is reduced over the seventeen 25-year rolling periods. The average 25-year IRR bumped up to 12%, and the average worst-case three-year drawdown was actually positive at 0.7%, as mentioned earlier.

Also included in “A Numbers Game” (at the bottom) is the classic balanced model consisting of 60% large U.S. equity and 40% bonds. The seven-asset retirement portfolio outperformed the 60/40 model in every risk and performance measurement.

#### **WHY DIVERSIFY?**

Portfolio durability during retirement requires that a variety of assets be

asset classes through increasingly specific mutual funds and exchange-traded funds.

The challenge today is prudently choosing and utilizing a sufficiently wide variety of asset classes so as to create a truly diversified and stable portfolio—whether it’s for the accumulation phase or the distribution phase of life. This study provides a straight-forward asset allocation recipe to do exactly that. **FP**

**Craig L. Israelsen, PhD, is an associate professor at Brigham Young University. He is the designer of the 7Twelve Portfolio ([www.7TwelvePortfolio.com](http://www.7TwelvePortfolio.com)) and author of *7Twelve: A Diversified Investment Portfolio with a Plan*.**

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