

Taking Retirement Withdrawals From a Fund Portfolio

By Charles Rotblut, CFA

Article Highlights

- Taking withdrawals evenly out of all funds or following a pro rata method did not significantly alter the results.
- Annual withdrawal amounts fluctuated and declined seven times in the rebalanced non-pro rata portfolio.
- It is possible to use a starting 15% withdrawal rate, but the size of withdrawals will peak early in retirement.

Retirees are commonly told they can safely withdraw 4% of their savings, adjusted for inflation, without running out of money.

Often this advice is presented with return data based on stock and bond market indexes. What is sometimes lacking, however, is an example of implementing the withdrawal strategy with a real-world portfolio.

Since I created a hypothetical portfolio for analyzing the effect of rebalancing (discussed in the article “Portfolio Rebalancing: Observations from 25 Years of Data,” April 2013 *AAII Journal*), I have the data to walk through the process and show where potential pitfalls may lie. The portfolios use actual funds that were available to investors over the time period studied, so the results presented should be close to what an investor could have actually realized on a pretax basis during the past 25 years. In other words, rather than relying on theory, these portfolios provide close to a real-world example.

Though I used mutual funds for my analysis, exchange-traded funds (ETFs) could be directly substituted without any significant changes. Investors holding individual stocks and bonds should group their holdings by asset class to follow the examples provided.

One change I made from the example shown in my April article was to incorporate an accelerating withdrawal rate. Each year, I increased the percentage withdrawn by the reported Consumer Price Index (CPI) for the year as an



inflation adjustment. Factoring in inflation raised the annual withdrawal rate from 4.00% of the portfolio's value at the end of 1988 to 7.65% of the portfolio's value at the end of 2012. The inflation escalator was included since retirees will need to increase the amount of their portfolio withdrawals to cover rising expenses.

The good news is that a person who retired at age 65 in 1988 and turned 90 in 2012 would not have in-

currred longevity risk—the risk of outliving one's savings—by adhering to the 4% withdrawal rate over that time period. This was the case even though AAIL's moderate portfolio allocation model, which uses a 70% allocation to stocks, was followed. The bad news is that the dollar size of the annual withdrawals did not increase every year and, if rebalancing is not employed, the allocation shifts to nearly 90% domestic stocks after 25 years.

The Mechanics of Adjusting Withdrawal Rates

The 4% rule recommends investors base their retirement withdrawal rates on the value of their portfolio at the start of retirement. In the analysis used for this article, the starting portfolio value is \$100,000. I chose this number for its ease of calculation and analysis. It can easily be scaled upward or downward. Plus, any cumulative dollar changes can be quickly estimated through simple multiplication. (A \$1 million portfolio would have had dollar amounts that were 10 times larger than the amounts shown in this article.)

The second part of the 4% rule advises increasing the withdrawal rate in accordance with the rate of inflation. For example, if the economy experiences 2% inflation during an investor's second year of retirement (assuming withdrawals are made at year-end), he would increase his withdrawal rate by 2%. The mathematical formula is: Current withdrawal rate $\times (1 + \text{rate of inflation})$. Using the 2% example, the equation would be: $0.04 \times (1 + 0.02) = 0.0408$, or 4.08%.

Therefore, in the second year of retirement, the investor will withdraw 4.08% of his existing savings. The withdrawal percentage for the third year of retirement would be based on the second year's higher withdrawal rate. Assuming inflation stays at 2% and using the formula in the paragraph above, the withdrawal rate in the third year would increase to 4.16%. The math is: $0.0408 \times (1 + 0.02) = 0.0416$, or 4.16%. In each subsequent year through the remainder of his life, the investor would continue to adjust the withdrawal rate upward using the same methodology.

Of course, we know that the rate of inflation never stays constant from year to year. Updated, and historical, information can be found for free at Econstats.com. This website is one of our favorites for economic statistics and contains a wealth of downloadable data. I specifically used the seasonally adjusted Consumer Price Index for all urban consumers (CPI-U). This data is located at www.econstats.com/bls/blsnea8.htm.

There are various measures of inflation and no single gauge precisely measures the impact of overall inflation on a consumer's expenses. But the CPI-U is a close overall measure and should serve as a useful basis for determining how much to increase your withdrawal rate. I would advise against using a "chained" inflation indicator, since it assumes consumers will change their preferences if the cost of one product becomes too high. While some goods and services can be easily swapped if prices rise too much (e.g., changing from brand name paper towels to store-brand towels), others cannot, particularly cer-

tain medications. I would also suggest caution before using a higher-than-reported rate of inflation since it can lead to a higher-than-sustainable rate of portfolio withdrawals. The bigger the assumed inflation rate in one year, the larger all withdrawals made in future years will be.

Portfolio Withdrawal Options

As previously noted, I used AAI's moderate portfolio allocation model as the basis for the analysis. This model is one of three we track on our website at www.aai.com/asset-allocation. The moderate asset allocation model uses a 70% allocation to domestic and international stocks and a 30% allocation to bonds.

I purposely chose to stick with this model instead of the conservative asset allocation model, which has a 50% allocation to stocks and 50% allocation to bonds, because of the large drop in bond yields that has occurred over the studied time period. Though investors should shift to a more conservative allocation in retirement than they followed in their working years, the performance of bond funds over the past 25 years will not be repeated over the next 25 years. Given the high level of uncertainty over bond yields, I decided to purposely limit their portfolio weighting.

The challenge with making annual withdrawals is to not disrupt overall portfolio allocations. Some investors choose to do this by taking portfolio income first and then supplementing from principal. Since both income and capital gains contribute to a portfolio's total return, I chose to focus on the entire portfolio's balance to fund withdrawals instead. I also assumed that all withdrawals occurred at the end of each calendar year. The simplicity of this approach lends itself well to spreadsheet modeling. It also makes determining the total amount that can be withdrawn easier.

In a real-world scenario, taxes are a consideration. A large withdrawal from a traditional individual retirement account (IRA) could require the payment of estimated taxes in the quarter the funds

are withdrawn. Spreading the account withdrawals over the course of the year would lessen the tax impact in any single quarter, though your overall annual tax bill would not change. A compromise would be to withdraw the funds from the stock and bond accounts, but allocate those dollars to a money market fund within the IRA. Then, money could be withdrawn as needed (e.g., on a monthly basis). This way, the withdrawal amount for the calendar year would not be at risk of market fluctuations. Plus, if you do not need to use the entire withdrawal, either because your income needs are met or because you are able to meet your required minimum withdrawal without taking the full withdrawal, you could apply the remaining balance to the following year's withdrawal amount. (For example, if you have \$1,000 left over in year 10 of retirement, the amount withdrawn from the portfolio in year 11 would be reduced by that \$1,000 balance.)

I should point out that there are instances when taking interest and portfolio income first makes sense. This would particularly be the case if you hold actual bonds instead of a bond fund, since taking interest income first would be preferable to selling the bonds. If you hold annuities, only take the income since the exit penalties for early withdrawals can be steep. Those of you holding bond funds instead of bonds should be aware that taking interest income first to fund withdrawals may require a greater attention to fluctuations in portfolio allocations, however. The last statement would apply to dividend-paying common and preferred stocks and stock funds, as well.

As far as how much to withdraw from each specific fund, I ran the numbers assuming withdrawals were spread evenly across all funds (the "non-pro rata" method) and assuming withdrawals were weighted by target allocation percentages (the "pro rata" method).

The non-pro rata methodology evenly divided withdrawals across all funds held by portfolio. Since the portfolio initially held four funds, I simply divided the annual withdrawal rate by

four. For example, say during the first year of retirement, the investor wanted to withdraw 4% from a \$100,000 portfolio holding four funds. The calculation would be $\$100,000 \times (0.04 \div 4)$. The math equates to \$1,000 being withdrawn from each fund. I chose this method for its simplicity. (The tables presented here assume the first withdrawal was made at the end of 1988 and factor in that year's return.)

An investor willing to do a little extra math could use the pro rata method instead. This method weights the withdrawal by the targeted allocation percentage. (If you hold more the one fund for a given asset class, group them together for purposes of calculating the asset class withdrawal amount.) For example, our model recommends a 30% weighting to bonds. Each year of retirement, the retiree would use the bond fund as the source for 30% of his overall withdrawal amount. For a \$100,000 portfolio, \$1,200 would be withdrawn from the bond fund during the first year of retirement. The math is: the portfolio balance $\times$ (withdrawal rate $\times$ target allocation) or $\$100,000 \times (0.04 \times 0.30) = \$1,200$.

You could also adjust the amount to withdraw from each fund as a method of annual rebalancing. This would involve withdrawing first from the funds furthest above their allocation targets. Doing this requires more math than the above two methods, but it is possible.

Table 1 summarizes the results for the non-pro rata and pro rata portfolios. The non-pro rata method did produce a slightly higher rate of return, a slightly greater amount of total withdrawals and slightly less volatility. It is also the easiest to calculate. This said, the decision comes down to personal preference. The non-pro rata portfolio is shown in Table 2 with rebalancing employed and in Table 3 with rebalancing not employed. Similar pro rata tables are included in the online version of this article on AAIL.com.

The Funds

I used index mutual funds from

Table 1. Comparison of Non-Pro Rata and Pro Rata Withdrawals

4% Withdrawals Made on Non-Pro Rata Basis		
Portfolio Strategy	No Rebalance	Rebalance at 5% Thresholds
Ending Portfolio Balance	\$203,464	\$203,767
Annualized Return (Post Withdrawals)	2.9%	2.9%
Total Return Standard Deviation	13.7%	12.1%
Total Withdrawal Amount	\$309,780	\$305,304
Standard Deviation of Withdrawals	14.3%	12.7%
Largest One-Year Decline in Withdrawals (2008)	(38.5%)	(31.7%)

4% Withdrawals Made on Pro Rata Basis		
Portfolio Strategy	No Rebalance	Rebalance at 5% Thresholds
Ending Portfolio Balance	\$202,574	\$200,885
Annualized Return (Post Withdrawals)	2.9%	2.8%
Total Return Standard Deviation	14.8%	12.2%
Total Withdrawal Amount	\$307,410	\$303,151
Standard Deviation of Withdrawals	15.4%	12.7%
Largest One-Year Decline in Withdrawals (2008)	(42.2%)	(32.0%)

All numbers are rounded.

Vanguard to limit the impact of active management, keep expenses to a minimum and to show close to real-world results. It is very possible for an investor to have mimicked these hypothetical portfolios and achieved similar results. Keep in mind that withdrawals made from a traditional IRA or a similar type of tax-deferred account would be taxed. The results shown here are on a pretax basis.

The specific target portfolio allocations are 20% in the Vanguard 500 Index fund (VFINX); 20% in the Vanguard Mid-Cap Index fund (VIMSX); 10% in the Vanguard Small-Cap Index fund (NAESX); 20% in the Vanguard Total International Stock Index fund (VGTSX), which invests in both developed and emerging market countries; and 30% in the Vanguard Total Bond Market Index fund (VBMFX).

The starting year of 1988 was chosen because that was the first year enough index funds were available to conduct the study. A 20% allocation to Vanguard International Value fund (VTRIX), an actively managed fund, was used through the end of 1996, when Vanguard Total International Stock

Index fund (VGTSX) was launched. A 30% allocation to the Vanguard Extended Market Index fund (VEXMX) was used from 1988 until 1998, when Vanguard Mid-Cap Index fund (VIMSX) became available. At the start of 1999, the VEXMX allocation was split between VIMSX (two-thirds) and Vanguard Small-Cap Index fund (NAESX) (one-third) to achieve the desired 20% mid-cap and 10% small-cap allocation.

Incorporating Periodic Rebalancing

To maintain the portfolio allocations and the benefits of diversification, the portfolios were rebalanced when a specific fund's allocation was more than five percentage points off target. The rebalancing occurred after the annual withdrawals were made. The rebalancing transactions occurred in 1992, 1996, 1998, 2002, 2003, 2006, 2008 and in 2010 for the non-pro rata portfolio (withdrawals spread evenly across all funds). The dates differed slightly for the pro rata portfolio (withdrawals weighted by allocation percentages): 1992, 1996, 1998, 2002, 2003, 2006, 2008 and 2009.

Table 2. Non-Pro Rata Post Annual Withdrawals With Rebalancing Employed

Annual withdrawals were taken evenly from each fund. The starting 4% withdrawal rate was adjusted each year for inflation. The portfolio was rebalanced only when the allocation to one or more funds was off target by five percentage points or more.

Year	Vanguard 500 Index (VFINX)	Vanguard Ext Mkt Index (VEXMX)	Vanguard Mid-Cap Index (VIMSX)	Vanguard Small-Cap Index (NAESX)	Vanguard Int'l Value (VTRIX)	Vanguard Total Int'l Stock Idx (VGTSX)	Vanguard Total Bond Idx (VBMFX)	Total Portfolio	Annual Withdrawal
Starting	\$20,000	\$30,000	—	—	\$20,000	—	\$30,000	\$100,000	—
1988	\$22,093	\$34,773	—	—	\$22,604	—	\$31,054	\$110,524	\$4,605
1989	\$27,599	\$41,730	—	—	\$27,053	—	\$33,868	\$130,249	\$5,688
1990	\$25,314	\$34,500	—	—	\$22,368	—	\$35,429	\$117,611	\$5,474
1991	\$31,277	\$47,251	—	—	\$22,907	—	\$39,144	\$140,580	\$6,749
1992	\$28,506	\$42,759	—	—	\$28,506	—	\$42,759	\$142,530	\$7,058
1993	\$29,332	\$46,961	—	—	\$35,205	—	\$44,905	\$156,403	\$7,973
1994	\$27,730	\$44,185	—	—	\$35,107	—	\$41,762	\$148,784	\$7,792
1995	\$35,754	\$56,758	—	—	\$36,133	—	\$46,994	\$175,640	\$9,441
1996	\$37,741	\$56,611	—	—	\$37,741	—	\$56,611	\$188,704	\$10,507
1997	\$47,298	\$68,750	—	—	—	\$34,479	\$58,986	\$209,514	\$11,876
1998	\$45,243	\$67,864	—	—	—	\$45,243	\$67,864	\$226,213	\$13,039
1999	\$51,855	—	\$49,514	\$24,655	—	\$55,858	\$64,427	\$246,309	\$14,604
2000	\$44,280	—	\$55,598	\$21,121	—	\$44,260	\$68,889	\$234,147	\$14,384
2001	\$36,298	—	\$52,661	\$19,117	—	\$32,681	\$72,038	\$212,796	\$13,294
2002	\$36,510	—	\$36,510	\$18,255	—	\$36,510	\$54,764	\$182,548	\$11,708
2003	\$43,294	—	\$43,294	\$21,647	—	\$43,294	\$64,941	\$216,470	\$14,180
2004	\$44,819	—	\$48,981	\$22,830	—	\$49,191	\$64,570	\$230,391	\$15,623
2005	\$43,674	—	\$52,521	\$21,227	—	\$53,567	\$62,837	\$233,826	\$16,416
2006	\$50,010	—	\$50,010	\$25,005	—	\$50,010	\$75,014	\$250,048	\$18,025
2007	\$48,939	—	\$49,255	\$21,528	—	\$54,006	\$76,439	\$250,168	\$18,829
2008	\$34,173	—	\$34,173	\$17,087	—	\$34,173	\$51,260	\$170,867	\$12,861
2009	\$40,126	—	\$44,817	\$20,158	—	\$43,624	\$51,200	\$199,924	\$15,502
2010	\$42,837	—	\$42,837	\$21,419	—	\$42,837	\$64,256	\$214,185	\$16,858
2011	\$40,492	—	\$38,744	\$17,630	—	\$33,411	\$65,925	\$196,203	\$15,944
2012	\$43,523	—	\$41,491	\$17,436	—	\$36,097	\$65,220	\$203,767	\$16,874
Ending Value	\$43,523	—	\$41,491	\$17,436	—	\$36,097	\$65,220	\$203,767	—
Ending Allocation	21.4%	—	20.4%	8.6%	—	17.7%	32.0%		
Annualized Return (Post Withdrawals)									2.9%
Total Return Standard Deviation									12.1%
Total Withdrawal Amount									\$305,304
Standard Deviation of Withdrawals									12.7%
Largest One-Year Decline in Withdrawals (2008)									(31.7%)

When rebalancing was employed, I first took withdrawals out of the funds. I then multiplied the year's ending, post-withdrawal balance by the targeted allocation weight for each fund. In 1998, the non-pro rata portfolio had a post-withdrawal balance of \$226,213. Based on this, I adjusted the post-withdrawal

balance in the large-cap fund to \$45,243 by selling shares and reallocating the cash to the international and bond funds. With a target allocation of 20% for the large-cap portion, the math is: $\$226,213 \times 0.20 = \$45,243$. (Both the portfolio balance and the large-cap allocation numbers are rounded.) A similar equa-

tion was applied to the other funds to either increase or decrease the amounts invested in them.

Each fund in these portfolios represents a different asset class. If you hold multiple funds for a given asset class, group them together for purposes of rebalancing.

Table 3. Non-Pro Rata Post Annual Withdrawals Without Rebalancing

Annual withdrawals were taken evenly from each fund. The starting 4% withdrawal rate was adjusted each year for inflation.

Year	Vanguard 500 Index (VFINX)	Vanguard Ext Mkt Index (VEXMX)	Vanguard Mid-Cap Index (VIMSX)	Vanguard Small-Cap Index (NAESX)	Vanguard Int'l Value (VTRIX)	Vanguard Total Int'l Stock Idx (VGTSX)	Vanguard Total Bond Idx (VBMFX)	Total Portfolio	Annual Withdrawal
Starting	\$20,000	\$30,000	—	—	\$20,000	—	\$30,000	\$100,000	—
1988	\$22,093	\$34,773	—	—	\$22,604	—	\$31,054	\$110,524	\$4,605
1989	\$27,599	\$41,730	—	—	\$27,053	—	\$33,868	\$130,249	\$5,688
1990	\$25,314	\$34,500	—	—	\$22,368	—	\$35,429	\$117,611	\$5,474
1991	\$31,277	\$47,251	—	—	\$22,907	—	\$39,144	\$140,580	\$6,749
1992	\$31,833	\$51,377	—	—	\$19,145	—	\$40,174	\$142,530	\$7,058
1993	\$33,007	\$56,847	—	—	\$23,008	—	\$42,088	\$154,950	\$7,899
1994	\$31,475	\$53,923	—	—	\$22,296	—	\$39,048	\$146,741	\$7,685
1995	\$40,890	\$69,775	—	—	\$22,075	—	\$43,774	\$176,514	\$9,488
1996	\$47,582	\$79,424	—	—	\$21,667	—	\$42,678	\$191,351	\$10,655
1997	\$60,260	\$97,507	—	—	—	\$18,385	\$43,593	\$219,745	\$12,456
1998	\$74,101	\$102,221	—	—	—	\$17,823	\$43,903	\$238,047	\$13,721
1999	\$86,613	—	\$75,879	\$38,436	—	\$20,055	\$40,469	\$261,453	\$15,502
2000	\$75,666	—	\$86,512	\$34,312	—	\$13,824	\$41,978	\$252,293	\$15,498
2001	\$63,695	—	\$83,204	\$32,499	—	\$8,162	\$42,641	\$230,201	\$14,382
2002	\$47,179	—	\$68,642	\$23,585	—	\$4,523	\$43,755	\$187,685	\$12,037
2003	\$57,688	—	\$89,141	\$31,409	—	\$3,411	\$42,555	\$224,204	\$14,686
2004	\$60,616	—	\$104,016	\$34,390	—	\$854	\$41,091	\$240,967	\$16,340
2005	\$59,457	—	\$114,456	\$32,872	—	\$0	\$38,027	\$244,812	\$17,187
2006	\$64,109	—	\$125,371	\$33,372	—	\$0	\$35,004	\$257,856	\$18,588
2007	\$62,810	—	\$128,166	\$29,003	—	\$0	\$32,672	\$252,652	\$19,016
2008	\$36,636	—	\$71,640	\$15,620	—	\$0	\$31,400	\$155,295	\$11,688
2009	\$42,719	—	\$96,830	\$17,640	—	\$0	\$29,641	\$186,830	\$14,486
2010	\$44,991	—	\$117,386	\$18,432	—	\$0	\$27,446	\$208,254	\$16,391
2011	\$41,965	—	\$110,997	\$14,003	—	\$0	\$25,609	\$192,573	\$15,649
2012	\$44,391	—	\$124,322	\$12,317	—	\$0	\$22,434	\$203,464	\$16,849
Ending Value	\$44,391	—	\$124,322	\$12,317	—	\$0	\$22,434	\$203,464	—
Ending Allocation	21.8%	—	61.1%	6.1%	—	0.0%	11.0%		

Annualized Return (Post Withdrawals)	2.9%
Total Return Standard Deviation	13.7%
Total Withdrawal Amount	\$309,780
Standard Deviation of Withdrawals	14.3%
Largest One-Year Decline in Withdrawals (2008)	(38.5%)

The Results

By limiting withdrawals to 4% of the portfolio's starting value and only adjusting the annual withdrawal percentage amount upward to account for changes in inflation, total savings rose. Over the past 25 years, the dollar value of the non-pro rata portfolio would

have grown to \$203,767 when rebalancing was employed and \$203,464 when rebalancing was not employed. The dollar value of the pro rata portfolio would have grown to \$200,885 when rebalancing was employed and \$202,574 when rebalancing was not employed. Regardless of which method was used, volatility was reduced when rebalancing

was employed.

The growth in the portfolio's value is significant because an investor who retired at age 65 in 1988 would have turned 90 in 2012. This means his chances of outliving his portfolio are extremely slim given current life expectancy rates, assuming he started out with enough savings to survive on the

inflation-adjusted 4% withdrawal rate. As I mentioned earlier in the article, the portfolio is scalable, so as long as the 4% withdrawal is followed, the ending balance should be proportionately the same.

Cash Flows Are Variable

The size of the annual withdrawals increased under both the pro rata and the non-pro rata methods, regardless of whether rebalancing was used or not. In the case of the rebalanced, non-pro rata portfolio, the withdrawal amount rose from \$4,605 at the end of 1988 to \$16,874 at the end of 2012. Solely looking at the starting and the ending values does not reveal the entire story, however.

The annual withdrawal amount decreased in size seven times for the rebalanced, non-pro rata portfolio (1990, 1994, 2000, 2001, 2002, 2008 and 2011). Even though the withdrawal rate rises every year to account for inflation, it is still a percentage of total portfolio value. If the portfolio falls more in value on a percentage basis than the withdrawal rate is increased by the rate of inflation, the dollar amount of that year's withdrawal will be lower. This is why price volatility is a consideration for retirees. The greater the fluctuation in annual returns, the greater the fluctuations in the annual withdrawal amounts will be. Many advisers suggest shifting to a more conservative allocation in retirement as a strategy for reducing this volatility.

An investor with enough money saved can buffer these fluctuations by keeping withdrawals stable during down years for the market. This is only possible if the size of the retirement portfolio is large enough to ensure that longevity risk is not a concern. Otherwise raising the withdrawal amounts early in retirement can cause financial problems later in life.

Varying withdrawal rates will be less of a concern for an investor with a large enough stream of more predictable cash flow. Social Security, pensions, bond ladders and annuities can assure a retiree a minimum level of cash flow, increasing his financial ability to tolerate periodic

annual variances in withdrawal rates.

Diversification Lost by Not Rebalancing

Allocation problems occurred when rebalancing was not employed. Not rebalancing caused the international stock allocation to be fully depleted by the 2005 withdrawals in the non-pro rata portfolio and by the 2008 withdrawals in the pro rata portfolio. The bond allocation was completely depleted in the pro rata portfolio by the 2009 withdrawals, though this was not the case in the non-pro rata portfolio.

In the year when the international fund's balance fell below its share of the annual withdrawal, I assumed a retiree would completely pull his investment out of the fund. I then proportionately adjusted the amounts to withdraw from the four remaining funds, less the amount withdrawn from the international fund. This increased the size of the withdrawals made from the remaining funds in subsequent years, which helps to explain why the bond fund ran out of money in the pro rata portfolio, but not the non-pro rata portfolio.

Bond fund investors should take note of this. If bond funds lag over the next decade or longer, they could pose allocation problems. Since the bond funds would underperform the portfolio's total return, as withdrawals increased in size, larger and larger amounts would be taken from a fund balance that was shrinking in relation to the rest of the portfolio. This is why using a pro rata weighting might compound the problem.

One solution would be to periodically rebalance. Regardless of whether the non-pro rata or the pro rata method was used, the benefits of diversification were preserved with periodic rebalancing. None of the five funds diminished to a point where their balances declined to \$0. Rather, the non-pro rata withdrawal portfolio ended 2012 with a post-withdrawal balance of \$36,097 in the Vanguard Total International Stock Index fund and the pro rata portfolio ended 2012 with a post-withdrawal balance of \$33,949 in the Vanguard Total International Stock Index fund.

What About Withdrawing More Than 4%?

Using the non-pro rata portfolio, I increased the initial withdrawal rate to see how high I could set it without running out of money after the final withdrawal was made in year 25. As was the case with the prior examples, the starting amount was adjusted upward to account for inflation. A starting withdrawal rate of 15% would have ensured that none of the five funds would have been fully depleted when rebalancing was employed. The portfolio's balance at the end of 2012 was just \$2,010, however. (When rebalancing was not used, 4% was the maximum withdrawal rate that could have been used without the international stock fund being fully depleted.)

Though a 15% withdrawal rate makes the 4% rule seem too conservative, a single number often does not always tell the full story. The annual withdrawal amount peaked in 1989, the second year of retirement, at \$18,869. It then proceeded to decline to a mere \$1,771 in 2012. This decline occurred because the withdrawal amounts in the early years of retirement were too large. Since the withdrawal amounts are based on a percentage of total assets withdrawn, as the portfolio shrank in size, so did the size of the annual withdrawals.

So how much could you withdraw without diminishing the annual amounts late in life? Five percent seemed to be close to the upper limit. The annual withdrawal amount would have risen from \$5,756 at the end of 1988 to \$14,607 at the end of 2012. The maximum amount of \$17,969 would have been realized in 2007.

Other studies have also pegged an inflation-adjusted 4% withdrawal rate as the safe maximum level a retiree can withdraw from his portfolio and not run out of money before his death. A study that looked at withdrawal rates from 1926 through 1995 concluded this withdrawal rate had between a 95% and 98% success rate over a 30-year period for a portfolio with at least a 50% al-

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A New Fund and Suggested Allocation for the Model Fund Portfolio

By James B. Cloonan

The market continues strong, with all the indexes (except the NASDAQ Composite) reaching new highs.

The Model Fund Portfolio lags the S&P 500 index on a year-to-date basis. It is up 10.0% versus 10.6% for Vanguard 500 Index fund (VFINX).

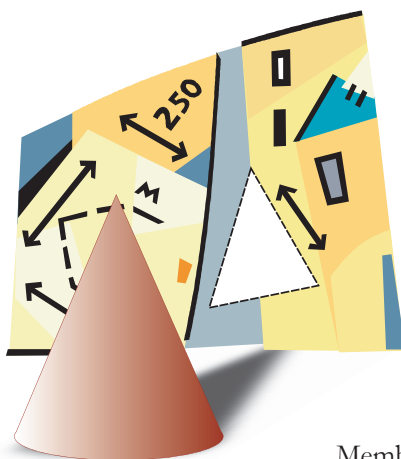
The portfolio continues to outperform over the long term, and on June 30 it will see its 10th birthday. The Model Fund Portfolio performance history can be seen in Figure 1 and Table 3.

Portfolio Change

Table 1 shows the current holdings for the Model Fund Portfolio. We are replacing CGM Realty fund (CGMRX) with Vanguard REIT Index fund (VNQ), an exchange-traded fund (ETF), as shown in Table 2.

For years, CGM Realty fund outperformed the general real estate investment trust (REIT) market. As it has grown, it has become close to an index fund, but still charges fees similar to an actively managed fund. Its expense ratio is 0.88% versus 0.10% for Vanguard REIT Index fund, and its return is not making up the difference. Vanguard REIT Index fund also has the tradability and tax control advantages of an ETF.

If you are investing in the portfolio



and are near a long-term capital gains date, you can defer the change, as there is not likely to be a significant difference over the short term.

Adding Risk Control

Members have asked if I felt the portfolio is diversified enough to make up the entire holdings for an investor, and I have said yes. For the individual investor who does not want to be involved in individual stock holdings, I feel the portfolio would be suitable as a complete portfolio, but only

Figure 1. Model Fund Portfolio vs. Benchmark (through 3/31/13)

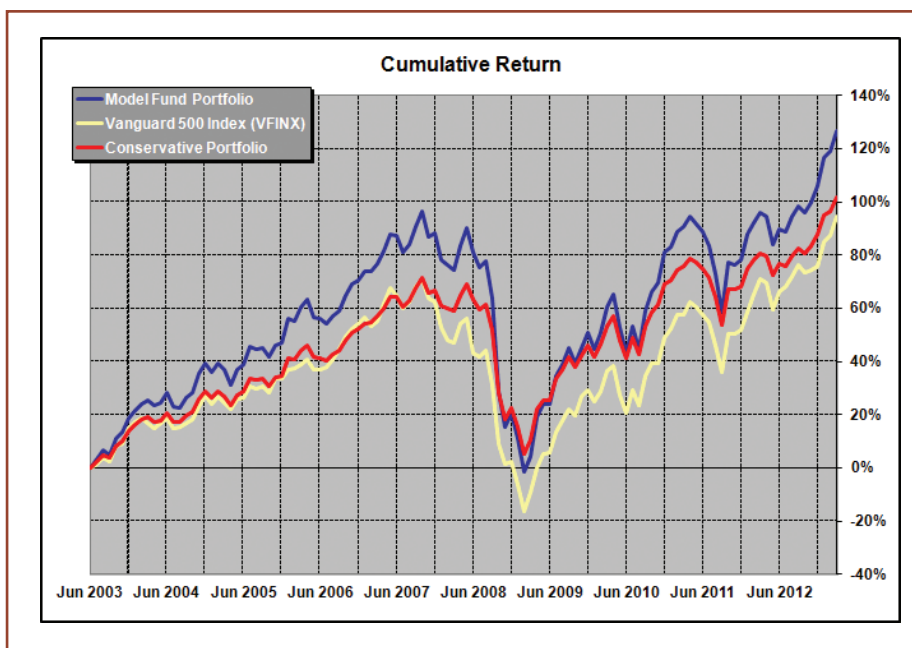


Table 1. Model Fund Portfolio

Type	Fund (Ticker)	Market Cap Size	YTD Return (%)	Annual Return (%)				Fund Assets (\$ Mil)	Exp Ratio (%)	Std Dev (36 Mo. Ann'l) (%)	Worst 3-Yr Cal Period (%)
				1-Yr	3-Yr	5-Yr	Since 6/30/03				
MF	Aston/Fairpointe Mid Cap N (CHTTX)	Large-Cap	14.9	18.3	12.4	9.9	11.2	1,858.7	1.11	20.7	(7.9)
MF	Fidelity Capital & Income (FAGIX)	na*	3.7	12.0	9.7	11.2	9.7	9,986.8	0.77	9.4	(7.2)
MF	FMI Common Stock (FMIMX)**	Mid-Cap	10.2	10.3	12.5	11.2	11.2	1,187.5	1.20	15.1	(3.0)
ETF	Guggenheim S&P 500 Equal Weight (RSP)	Large-Cap	12.4	17.0	13.7	8.5	9.5	4,305.5	0.40	16.7	(11.4)
ETF	Guggenheim S&P MidCap 400 Pure Val (RFV)	Mid-Cap	15.5	20.3	11.9	9.1	na	57.7	0.40	19.8	(4.3)
ETF	Guggenheim S&P SmallCap 600 Pure Val (RZV)	Small-Cap	10.2	17.3	9.8	9.2	na	83.3	0.38	23.9	(7.9)
ETF	Vanguard REIT Index (VNQ)***	Large-Cap	8.1	14.9	17.2	7.3	na	18,245.2	0.10	16.8	(11.9)
ETF	WisdomTree Emerg Mkts SmallCap Div (DGS)	Small-Cap	5.4	10.6	8.3	7.0	na	1,474.1	0.64	19.8	7.8
MF	Yacktman Focused (YAFFX)	Giant-Cap	12.1	16.1	12.4	14.4	11.1	7,183.7	1.25	11.4	(2.8)
Average of Funds in Actual Model Fund Portfolio†			10.3	15.2	12.0	9.8	10.6	4,931.4	0.69	17.0	(5.4)
Actual Fund Portfolio Performance††			10.0	15.5	12.2	5.4	8.8			15.7	(6.4)
Optional Investment:											
ETF	iShares Barclays 1-3 Year Treasury (SHY)		0.1	0.5	1.1	1.6	3.6	7,481.0	0.15	0.6	1.3
Conservative Portfolio (75% Fund Portfolio/25% SHY)			7.5	11.7	9.6	4.9	7.5			11.8	(2.6)
Comparison:											
MF	Vanguard 500 Index (VFINX)	Giant-Cap	10.6	13.8	12.5	5.7	7.1	26,947.4	0.17	14.8	(8.4)

*Distressed securities - stock and bond.
**Closed to new investors. If you are not a current shareholder, simply use the other eight funds to form your portfolio.
***New to the portfolio. Added 4/1/2013.
†A simple average of the funds in the current Model Fund Portfolio.
††Performance of actual portfolio since inception (June 2003) including reinvested dividends.
Source: Morningstar, Inc. Data as of 3/31/2013.

Table 2. Transactions

Fund	Reason
Buy	
Vanguard REIT Index (VNQ)	
Sell	
CGM Realty (CGMRX)	expense ratio too high for a fund of its size

as their complete *stock* portfolio.

I believe that individuals should maintain a risk-free or very low risk portion of their portfolio. I tend to have an aggressive attitude toward investing, which I will expand on later. But we have always included the Barclays 1-3 Year Treasury fund (SHY) as an optional investment for controlling portfolio risk. We will now track a Conservative Portfolio that includes this bond ETF for illustration purposes and also as an

Table 3. Model Fund Portfolio Annual Performance

	Average Annual Return (%)			Cumulative Return of \$10,000 (\$)		
	Model Fund Portfolio	Conservative Portfolio*	Vanguard 500 Index (VFINX)	Model Fund Portfolio	Conservative Portfolio*	Vanguard 500 Index (VFINX)
2003**	18.6	13.9	15.0	11,858	11,388	11,503
2004	17.7	13.3	10.8	13,955	12,905	12,742
2005	5.4	4.5	4.8	14,711	13,486	13,350
2006	16.1	13.0	15.6	17,086	15,243	15,436
2007	10.2	9.5	5.4	18,820	16,696	16,267
2008	(35.9)	(26.4)	(37.0)	12,071	12,281	10,245
2009	24.9	19.0	26.5	15,080	14,609	12,959
2010	20.3	16.0	14.9	18,136	16,941	14,892
2011	(1.7)	(0.7)	2.0	17,827	16,825	15,186
2012	15.5	11.6	15.8	20,597	18,783	17,589
2013 YTD	10.0	7.5	10.6	22,663	20,191	19,449
Since Incep***	8.8	7.5	7.1	22,663	20,191	19,449

*Seventy-five percent Model Fund Portfolio and 25% Barclays 1-3 Year Treasury fund (SHY).
**June 30 to December 31, 2003.
***Portfolio was started on June 30, 2003.
Source: Morningstar, Inc. Data as of 3/31/2013.

Model Fund Portfolio: Selection Rationale

First Methodology

The fund selection rationale consists of two distinct approaches. The first approach is to select actively managed funds where the managers have shown a long-term ability to outperform the market after allowing for additional portfolio risk, regardless of the sector invested in. A fund must have the following characteristics to be considered for the Model Fund Portfolio:

1. It must be a pure no-load fund. Short-term holding penalties are allowed if paid to the fund and not the manager.
2. It must have been active for 10 years. However, exceptions are possible.
3. It must have outperformed the S&P 500 index over the past five-year and 10-year periods.
4. In its worst three-year (calendar) period, it must not have had a loss; or, in particularly difficult market periods, its loss must have been substantially less than that of the S&P 500 index.
5. Its expense ratio must not be above 1.25%. Lower ratios will increase desirability.
6. Fund assets must not be over \$10 billion. Some exceptions are permitted, depending on fund objectives.
7. It must currently be open to individual investors, with a minimum investment of \$25,000 or less.

The above rules apply to new fund selections. Funds will not automatically be eliminated if they later violate the rules without considering other factors.

Second Methodology

The second methodology selects investment approaches that have provided excess returns or reduced

portfolio risk to investors over the long term and then searches for the best traditional fund or exchange-traded fund (ETF) in that area. Factors to be considered are:

1. The liquidity of the fund.
2. The resources of the management company, in the case of ETFs.
3. The investment returns and risk over as long a term as possible, given the newness of so many ETFs.
4. Selection of areas with demonstrated long-term excess returns: value stocks, small-cap stocks, real estate and special areas where individuals cannot easily invest. An example of a fund in a special area would be Fidelity Capital & Income fund (FAGIX), which invests in distressed securities.

Portfolio Management Notes

- The Model Fund Portfolio is meant to be a portfolio, and we suggest you invest in the entire portfolio on an equal investment basis—that is, invest equal dollar amounts in each fund initially.
- If a fund is closed, create your portfolio from the remaining funds.
- You may make adjustments based on your non-fund holdings. For example, if you have partnership or individual holdings in investment real estate (not personal housing), you may reduce or eliminate any REIT funds.
- There is no need to rebalance on a regular basis. Rebalancing can be accomplished when there are portfolio changes or if one holding gets way out of line. We will notify you of any rebalancing in the Model Fund Portfolio.

approach to creating a complete portfolio that is less volatile than the all-stock fund portfolio. You will see this portfolio added to Figure 1 and Table 1.

The Conservative Portfolio is weighted 75% with the Model Fund Portfolio and 25% with Barclays 1-3 Year Treasury fund. There are many who would say that is not very conservative, but I feel it is conservative enough for all except very nervous investors or those well into retirement. That brings me to two opinions I have about risk.

First, I believe in a barbell approach, where risk control is best accomplished with a combination of aggressive and very, very safe investments. I would

never buy bonds other than short-term bonds, and I prefer Treasuries because they are even safer. Longer-term bonds behave like stocks in some recessions (2007–2008) and opposite of stocks in others (1930s). So they may or may not provide protection. Only T-bills or short-term Treasuries will hedge equities effectively, and this extreme safety allows a more aggressive approach on the equity side.

The second opinion has to do with my belief that the best defense is a good offense. Many advisers feel the opposite way, and it has to do with risk perception. I pointed this out in my Model Portfolios column in the April *AAIL*

Journal (available at AAIL.com). Looking at Figure 1 here, you can see that the Model Fund Portfolio is more volatile than the Vanguard 500 Index fund, but it recovered just as fast from the last market downturn. And because of the higher return, the Model Fund Portfolio has a higher terminal wealth. As long as an investor does not risk losing everything and does not panic and sell at bottoms, then over the long term higher returns will provide the best protection for one's wealth. Figure 1 also shows what I mean by a good offense being the best defense. The Conservative Portfolio did not fall as much percentage-wise in the collapse, but because of lower previous

returns, the investor is less well off. Of course, it would be a different picture if the investment began in 2007. So aggressiveness is only for long-term investors.

It is important, however, to have enough in a safe investment so that you can meet emergency needs without selling equities at a market bottom. A risk-free allocation also helps offset the panic that can set in when a period like 2007–2008 occurs.

We can examine the Conservative Portfolio over time and see how much it reduces volatility and at what cost to

the portfolio's return.

Outlook

So far the market has maintained its recovery. Every little stutter seems to be taken as an opportunity to get in, and there is considerable money on the sidelines.

It would be highly unusual if there was not a pullback along the way. The market does not seem to be overpriced, although many pundits are making a bearish case. They are basing their

opinion on various interpretations of fundamentals as well as external factors such as ongoing debt problems in Europe, saber-rattling in North Korea and the lack of anything positive coming out of Washington.

The “Sell in May and go away” crowd should be speaking up now, and I have heard “April is the new May” as well. As usual, we will take the wait-and-see approach.

The next Model Fund Portfolio column will be in the August *AAIL Journal*. Check AAIL.com for updates. ▲

James B. Cloonan is founder and chairman of AAIL.

Portfolio Strategies

(continued from page 32)

location to stocks. Notably, a 3% rate appeared to be the maximum for retirees allocating 75% or 100% to bonds. See “Retirement Savings: Choosing a Withdrawal Rate That Is Sustainable” in the February 1998 *AAIL Journal* for

the results of this study; a PDF of the article is available on AAIL.com.

Keep in mind that my analysis here is based on what has happened over the past 25 years. Though the portfolios provide examples of how to manage a fund

portfolio in retirement, they reveal pitfalls as well. Perhaps the biggest lessons are that following the 4% withdrawal rule is a key to avoiding longevity risk, but it can result in withdrawal amounts that do not increase every year. ▲

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