

Incremental Diversification in Retirement Portfolios

A 50-Year Review from 1974-2023

Craig L. Israelsen, Ph.D.

April 2024

The performance of increasingly diversified 60/40 retirement portfolios over 26 rolling 25-year periods is reviewed in this article. The first rolling 25-year period was from 1974-1998, the second from 1975-1999, and so on. The 26th rolling 25-year period was from 1999-2023. The total time frame being examined is the 50-year period from January 1, 1974 to December 31, 2023.

Two methods of withdrawing money from a \$250,000 retirement portfolio were examined: (1) a first-year withdrawal of 5% of the starting balance (\$12,500) followed by a 3% COLA increase in the annual withdrawal in years 2-25, and (2) annual withdrawals based on the Required Minimum Distribution (RMD) from age 73 to 98. The first year RMD withdrawal rate was 3.77% and the 25th year was 12.82% (producing an average annual withdrawal rate of 6.96%).

Five retirement portfolio models were tested in this current analysis. Each of the five retirement portfolios had an overall 60% equity/40% fixed income mix. The “baseline” 60/40 model utilized 3 asset classes: a 60% allocation to large cap stock, 30% to bonds, and 10% to cash (see Table 1 on next page). The second portfolio (4-assets) split the equity allocation to 40% large cap stock and 20% small cap stock. **The fixed income portion for all five portfolios was held constant (30% bonds, 10% cash).**

The third portfolio (5 asset classes) split the equity allocation to 30% in large cap US stock, 15% in small cap US stock, and 15% in real estate. The fourth portfolio (6-asset) had a 25% allocation to large cap US stock, 15% to small US stock and real estate, and 5% to international stock. The final portfolio (7-asset) allocated 20% to large cap US stock, 15% to small cap and real estate, and 5% each to international stock and commodities. The annual returns for each asset class were based on seven major indexes (shown at the end of this article). Each portfolio was rebalanced annually.

Table 1 presents the results of the analysis assuming money was withdrawn from the five different retirement portfolios based on a 5% initial withdrawal rate followed by a 3% COLA in years 2-25. The portfolio with the highest ending balance in each rolling 25-year period (after 25 annual withdrawals) is highlighted in bright yellow. Recall that the starting balance in each 25-year period was \$250,000.

The 3-asset and 5-asset portfolios were the best performers in retirement distribution mode. However, the margin of “victory” was sometimes modest. The most recent 25-year period from 1999-2023 is highlighted with blue font. The 7-asset portfolio was the best performer among the five models in the most recent quarter century, and interestingly, the 3-asset portfolio failed (that is, ran out of money) in the final year (2023).

The **average** annual withdrawal in each rolling 25-year period under the “3% COLA” assumption was \$18,777. The withdrawal in year 1 was \$12,875 and the withdrawal in year 25 was \$26,172 (unless the portfolio failed). The dollar amount of each annual withdrawal was the same across each of the five retirement asset allocation models. This was the case (and will always be the case) when consistently imposing a pre-determined COLA increase in the annual withdrawal after the initial withdrawal.

Several observations from Table 1:

- 1) Each retirement model had their day being top dog. Clearly, the 3-asset and 5-asset models had the highest ending balance more often. However, the margin of victory was often fairly modest. All five retirement models produced stellar results—except for the least diversified 3-asset model in the most recent 25-year period (1999-2023).
- 2) From a starting balance of \$250,000 the ending balance after 25 years of withdrawals ranged from \$1.33 to \$1.43 million. Not only did each portfolio survive intact for 25 years (except the 3-asset portfolio in the most recent 25-year period) but the ending balance was higher than the starting balance 93% of the time. ***That is incredibly encouraging—and should be shared with clients.*** The largest ending balances were in the more distant rolling 25-year periods. Starting with the 25-year period from 1984-2008 the ending balances have been in decline. See Table 3 to gain insight into this steady downhill level of performance in each retirement portfolio. In short, the performance of each individual asset class has generally been in decline (as measured over rolling 25-year periods) beginning in 2008.
- 3) In the bottom row of Table 1 you will see the median 25-year annualized return (across 26 rolling 25-year periods) for each retirement model assuming a lump sum investment (the standard industry assumption). It's clear that using that standard assumption each model delivers comparable annualized performance of around 9+%. However, the analysis in this article is focused on performance when money is being withdrawn precisely because a lump sum investment is not affected by sequence-of-returns-risk (SORR), whereas retirement portfolios that are experiencing annual withdrawals are highly impacted by SORR.

Table 2 presents results using the RMD to determine each year's withdrawal. The first-year withdrawal rate was 3.77% (associated with age 73). The 25th year withdrawal rate was 12.82%. The RMD is clearly more demanding than a fixed annual COLA of 3% as observed by the much smaller average ending balances after 25 years of withdrawals (around \$550,000). This is due to an average annual withdrawal in the \$38,000 range (2x higher than average annual withdrawal if assuming the 3% COLA-based withdrawal in Table 1). However, as the RMD is a percentage-based method there was never a time when any retirement portfolio failed. This is the built-in virtue of a percentage-based method of withdrawing money from a retirement portfolio—such as the RMD.

If withdrawing money each year based on the RMD schedule (between the ages of 73-98) the 5-asset portfolio was clearly the best model—but again, the margin of victory was often not large. Any of the five models provided very acceptable outcomes for a retiree. In the most recent 25-year period from 1999-2023, the ending balances for each retirement model showed improvement from the prior 25-year period (1998-2022). Interestingly, the biggest improvement was in the 7-asset portfolio (from an ending balance of \$197,857 in 2022 to an ending balance of \$214,470 in 2023). The TOTAL amount of money withdrawn over each 25-year period when using the RMD was generally in excess of \$930,000—or nearly 4x more than the starting balance. An escalating RMD percentage each year is the reason why the TOTAL amount of money withdrawn in each 25-year period was roughly 2x higher than the COLA-based withdrawal results shown in Table 1.

Ultimately, financial advisors will need to consider the value of more--versus less--diversification in a retirement portfolio from an "***optic***" point of view. As the ending results are rather similar in Tables 1 and 2, a client would be well served in any of the models (from a historical point of view). But, if an advisor builds a portfolio with only three asset classes it's possible that a client might think "hey, I could do that myself". I suppose that same question could apply to a four-asset or five-asset portfolio. Understandably, building a portfolio is certainly not the only valuable service being provided by many advisors, but I think you get my "***optic***" point.

If we enter a secular period in which interest rates and inflation rates move higher, we could potentially experience returns more similar to the green-colored portion of Table 3. Asset classes that stand to improve the most under those conditions are international equities, cash, and commodities (as least based on historical patterns). In this case, a more diversified portfolio with five or more asset classes may be more advantageous compared to a less diversified portfolio. The performance of commodities, for example, is directly related to general inflation. They move together. In summary, the optics of a more diversified retirement portfolio are simply better than a less diversified portfolio--and performance is not sacrificed in any material way.

Table 1. Increasingly Diversified 60/40 Retirement Portfolios (5% Initial, 3% COLA)

Retirement Portfolio Survival Analysis: 26 Rolling 25-Year Periods from 1974-2023
\$250,000 retirement portfolio starting balance in each rolling 25-year period
 5% initial end-of-year withdrawal with 3% annual COLA in years 2-25

Various 60/40 Portfolios		3-Asset 60/40 Portfolio	4-Asset 60/40 Portfolio	5-Asset 60/40 Portfolio	6-Asset 60/40 Portfolio	7-Asset 60/40 Portfolio
26 Rolling 25-Year Periods Starting Account Balance \$250,000 5% initial withdrawal rate 3% annual cost of living adjustment (COLA) in years 2-25 <i>(Total withdrawal of \$469,413 in each 25-Year Period)</i>		60% Large Stock 30% Bonds 10% Cash	40% Large Stock 20% Small Stock 30% Bonds 10% Cash	30% Large Stock 15% Small Stock 15% Real Estate 30% Bonds 10% Cash	25% Large Stock 15% Small Stock 15% Real Estate 5% Intl Stock 30% Bonds 10% Cash	20% Large Stock 15% Small Stock 15% Real Estate 5% Intl Stock 5% Commodities 30% Bonds 10% Cash
Starting Year	Ending Year	Retirement Account Balance (\$) After 25 Years of Annual COLA Withdrawals (Highest Ending Balance highlighted in bright yellow)				
1974	1998	2,065,348	2,827,721	2,772,972	2,761,277	2,622,292
1975	1999	3,609,566	4,494,854	4,194,868	4,165,506	3,745,068
1976	2000	2,570,717	3,224,722	3,358,412	3,334,798	3,186,435
1977	2001	1,905,839	2,289,775	2,422,336	2,437,343	2,361,732
1978	2002	2,048,421	2,148,583	2,250,692	2,223,265	2,183,441
1979	2003	2,460,324	2,511,249	2,644,247	2,567,649	2,462,116
1980	2004	2,367,806	2,272,289	2,345,394	2,308,908	2,186,681
1981	2005	1,906,330	1,786,585	1,877,360	1,870,495	1,809,276
1982	2006	2,331,713	2,146,140	2,190,754	2,187,167	2,122,808
1983	2007	1,859,415	1,652,793	1,634,703	1,669,594	1,649,851
1984	2008	1,214,875	1,052,107	1,008,305	1,028,159	1,012,717
1985	2009	1,335,214	1,213,890	1,098,365	1,122,379	1,104,258
1986	2010	1,029,404	938,332	899,082	899,064	898,291
1987	2011	855,666	802,576	758,658	710,819	722,962
1988	2012	966,205	967,136	947,155	869,887	857,793
1989	2013	987,472	964,163	902,275	807,311	773,160
1990	2014	732,345	743,318	764,585	684,177	632,549
1991	2015	812,723	882,727	970,810	900,732	788,519
1992	2016	577,814	607,323	694,900	644,621	575,731
1993	2017	632,143	619,469	687,770	653,182	578,293
1994	2018	555,484	509,882	568,582	518,626	466,364
1995	2019	774,949	721,723	785,387	711,292	633,459
1996	2020	491,950	470,237	551,948	502,584	440,165
1997	2021	412,270	399,131	462,711	422,291	357,221
1998	2022	141,091	155,982	215,517	205,595	191,113
1999	2023	\$0 failed in year 25	\$82,502	\$206,711	\$200,211	\$218,532
Average Ending Retirement Account Balance in 25 th Year (across all 26 rolling 25-year periods)		\$1,332,503	\$1,403,277	\$1,431,327	\$1,400,267	\$1,330,032
Average Annual Withdrawal		\$18,777	\$18,777	\$18,777	\$18,777	\$18,777
Median 25-Year Rolling Return Across 26 Rolling 25-Year Periods (Assuming lump sum investment in year 1)		9.42%	9.20%	9.44%	9.10%	9.08%

Past performance does not guarantee future performance. Each portfolio was rebalanced annually.

Table 2. Increasingly Diversified 60/40 Retirement Portfolios (RMD)

Retirement Portfolio Survival Analysis: 26 Rolling 25-Year Periods from 1974-2023
\$250,000 retirement portfolio starting balance in each rolling 25-year period
 Annual Withdrawals based on RMD from age 73-98

Various 60/40 Portfolios		3-Asset 60/40 Portfolio	4-Asset 60/40 Portfolio	5-Asset 60/40 Portfolio	6-Asset 60/40 Portfolio	7-Asset 60/40 Portfolio
26 Rolling 25-Year Periods						
Starting Account Balance \$250,000						
Annual Withdrawal based on the RMD from age 73-98						
		60% Large Stock 30% Bonds 10% Cash	40% Large Stock 20% Small Stock 30% Bonds 10% Cash	30% Large Stock 15% Small Stock 15% Real Estate 30% Bonds 10% Cash	25% Large Stock 15% Small Stock 15% Real Estate 5% Intl Stock 30% Bonds 10% Cash	20% Large Stock 15% Small Stock 15% Real Estate 5% Intl Stock 5% Commodities 30% Bonds 10% Cash
Starting Year	Ending Year	Retirement Account Balance (\$) After 25 Years of Annual RMD Withdrawals (Highest Ending Balance highlighted in bright yellow)				
1974	1998	1,025,696	1,143,145	1,080,234	1,064,486	996,056
1975	1999	1,348,915	1,481,568	1,344,275	1,326,414	1,207,561
1976	2000	1,037,434	1,127,208	1,122,131	1,105,209	1,062,459
1977	2001	810,836	862,056	874,050	863,811	833,099
1978	2002	731,981	730,613	755,531	740,580	731,953
1979	2003	836,429	836,434	867,527	843,827	821,109
1980	2004	798,574	776,119	805,786	792,233	768,312
1981	2005	677,049	650,602	686,213	680,702	673,480
1982	2006	755,580	719,357	756,640	753,482	740,698
1983	2007	640,902	597,395	607,828	613,166	614,525
1984	2008	413,651	384,796	384,750	386,063	385,107
1985	2009	451,916	431,992	420,510	422,792	420,154
1986	2010	397,015	388,997	395,771	392,446	392,364
1987	2011	351,324	347,341	356,143	342,553	344,368
1988	2012	375,105	381,685	396,106	377,519	372,917
1989	2013	399,445	405,059	401,649	379,050	366,408
1990	2014	353,364	360,987	381,502	360,041	338,780
1991	2015	349,059	364,026	397,240	378,671	343,449
1992	2016	304,016	315,089	344,186	328,763	302,854
1993	2017	327,090	327,304	347,089	335,276	306,936
1994	2018	287,822	278,856	296,083	281,505	259,050
1995	2019	355,973	343,391	359,963	339,662	310,055
1996	2020	313,855	308,276	317,271	301,118	270,942
1997	2021	320,160	309,695	322,064	305,480	275,252
1998	2022	212,638	208,271	216,178	208,470	197,857
1999	2023	\$210,736	\$214,250	\$230,494	\$222,353	\$214,470
Average Ending Retirement Account Balance in 25 th Year (across all 26 rolling 25-year periods)		\$541,791	\$549,789	\$556,431	\$544,064	\$521,162
Average Annual RMD Withdrawal		\$38,488	\$38,668	\$38,641	\$38,300	\$37,409

Past performance does not guarantee future performance. Each portfolio was rebalanced annually.

Table 3. Rolling 25-Year Annualized Returns from 1974-2023 for Each Individual Asset Class
Consumer Price Index and Federal Discount Rate also Included

Rolling 25-Year Annualized Returns (assuming lump sum investment)	Large US Equity	Small US Equity	Non-US Equity	US Bonds	Cash	Real Estate	Commodities	CPI	Fed Disc Rate
1974-1998	14.95%	16.75%	12.69%	9.46%	6.89%	13.60%	7.18%	5.20%	6.83%
1975-1999	17.26%	18.70%	14.98%	9.18%	6.77%	14.58%	7.22%	4.82%	6.70%
1976-2000	15.35%	16.56%	12.90%	9.33%	6.77%	15.01%	9.80%	4.68%	6.68%
1977-2001	13.78%	14.58%	11.70%	9.05%	6.70%	13.77%	8.67%	4.54%	6.59%
1978-2002	12.99%	12.51%	10.19%	9.35%	6.55%	13.01%	9.45%	4.37%	6.42%
1979-2003	13.84%	13.31%	10.39%	9.47%	6.30%	13.94%	9.08%	4.09%	6.20%
1980-2004	13.54%	12.45%	11.00%	9.57%	5.95%	13.43%	8.50%	3.70%	5.89%
1981-2005	12.48%	11.19%	10.66%	9.56%	5.62%	12.72%	9.03%	3.35%	5.59%
1982-2006	13.37%	11.85%	11.80%	9.48%	5.26%	13.36%	9.46%	3.10%	5.31%
1983-2007	12.73%	10.79%	12.36%	8.54%	5.02%	11.64%	10.22%	3.11%	5.10%
1984-2008	9.77%	7.87%	8.90%	8.41%	4.73%	8.23%	6.86%	2.96%	4.85%
1985-2009	10.54%	9.24%	9.80%	8.05%	4.36%	8.45%	7.35%	2.91%	4.52%
1986-2010	9.94%	9.10%	8.18%	7.46%	4.06%	9.26%	7.31%	2.82%	4.24%
1987-2011	9.28%	8.68%	5.38%	7.18%	3.82%	8.86%	7.18%	2.90%	4.02%
1988-2012	9.71%	9.74%	5.12%	7.24%	3.59%	9.85%	6.27%	2.79%	3.82%
1989-2013	10.27%	10.20%	4.94%	6.83%	3.33%	9.20%	5.18%	2.67%	3.60%
1990-2014	9.62%	9.75%	4.31%	6.49%	3.01%	10.30%	2.17%	2.52%	3.35%
1991-2015	9.82%	10.50%	5.39%	6.15%	2.71%	11.68%	-0.47%	2.31%	3.11%
1992-2016	9.15%	9.69%	4.95%	5.63%	2.51%	11.02%	0.21%	2.27%	2.93%
1993-2017	9.69%	9.54%	6.45%	5.48%	2.41%	10.55%	0.26%	2.23%	2.86%
1994-2018	9.07%	8.28%	4.63%	5.09%	2.37%	9.74%	0.20%	2.20%	2.84%
1995-2019	10.22%	9.35%	5.15%	5.57%	2.28%	10.54%	0.64%	2.18%	2.81%
1996-2020	9.56%	9.05%	5.02%	5.16%	2.08%	9.51%	-1.18%	2.14%	2.63%
1997-2021	9.76%	8.99%	5.22%	4.94%	1.88%	9.79%	-0.99%	2.28%	2.44%
1998-2022	7.64%	7.13%	4.50%	3.97%	1.76%	7.70%	0.54%	2.47%	2.32%
1999-2023	7.56%	7.91%	4.43%	3.85%	1.77%	9.07%	2.15%	2.54%	2.33%
Average thru 2007	14.03%	13.87%	11.87%	9.30%	6.18%	13.51%	8.86%	4.10%	6.13%
Average from 2008	9.47%	9.06%	5.77%	6.09%	2.92%	9.61%	2.73%	2.51%	3.29%

Indexes used in calculation of 50-year performance (1974-2023)

Raw data source: Steele Systems Mutual Fund Software

Retirement Portfolio Asset Class	Index Used to Represent Asset Class
Large US Stock	S&P 500 TR Index
Small Cap US Stock	Ibbotson Small Stock Index 1974-1978 Russell 2000 TR Index 1979-2023
Non-US Developed Stock	MSCI EAFE NR Index
Real Estate	NAREIT Equity REIT Index 1974-1977 Dow Jones US Select REIT TR Index 1978-2023
Commodities	S&P Goldman Sachs Commodity Index (GSCI)
US Bonds	Ibbotson Intermediate-term Government Bond Index 1974-1975 Bloomberg US Aggregate Bond TR Index 1976-2023
Cash	90 Day US Treasury Bill