

The Impact of Expense Ratios on Retirement Income

By Craig L. Israelsen, Ph.D.

Article Highlights

- Among all of the considerations to take into account when choosing a mutual fund or ETF, cost is the characteristic investors can distinctly control.
- For each additional 0.25% of cost, the average ending balance of a \$1 million retirement portfolio declines by roughly 5.9% and the average annual withdrawal declines by 3.7%.
- Simply reducing portfolio expense from 2.0% to 1.0% increases the amount available for withdrawals from a \$1 million portfolio by over \$20,000 each year for 25 years.

Retirement portfolios often contain mutual funds and/or exchange-traded funds (ETFs).

While individual securities (such as shares of stock in a publicly traded company or a bond issued by a company or government) do not have an annual expense ratio, mutual funds and ETFs always have an expense ratio. The annual expense ratio of a stock or bond mutual fund directly reduces the return of the investor, which reduces the amount of money that can be safely withdrawn during retirement. For example, if a mutual fund with a 100 basis point annual expense ratio (1%) reported a one-year return of 12.5%, the return would have been 13.5% with a no expense ratio. Thus, the goal of many investors—particularly retirees—is to build their retirement portfolio with mutual funds and/or exchange-traded funds that have low expense ratios. [One basis point equals 1/100th of a percentage point, so 100 basis points, or bps, is the same as 1.00%.]

Of course, a low expense ratio is not the only consideration when choosing a mutual fund or ETF. Funds that are selected by the retiree need to meet various other criteria as well: Does the fund provide adequate exposure to the desired asset class? Is the fund reasonably tax efficient? Is there stability in the management of the fund? Is the fund's risk/return profile within the upper quartile of its peer group? Overall, are the selected funds sufficiently different from each other so that the portfolio achieves a low overall correlation? Among all of these criteria (and there are certainly others), the one that investors can distinctly control is cost—we can



choose funds with low expense ratios.

This article examines the impact of mutual fund expense ratios on the amount of retirement income that is available to a retiree. In this analysis, the amount of money withdrawn from the portfolio each year was determined by the required minimum distribution (RMD)—the annual withdrawal those aged 70½ must make from their tax-deferred retirement accounts (e.g., traditional IRAs, 401(k) plans, etc.).

To evaluate the impact of portfolio fees (specifically the collective expense ratios of the funds in the portfolio plus a financial adviser fee, if applicable), a baseline low-cost retirement portfolio was needed. The baseline portfolio used in this analysis consisted of seven indexes. Of course, indexes do not have expense ratios—therefore a baseline expense ratio of 25 basis points (0.25%) was assumed. In the baseline scenario, no advisory fee was assumed—so the 25 basis points simply covered the collective expense ratio of the underlying funds. This simulates a do-it-yourself approach or a robo-advisory service being used by an individual investor.

The indexes used in the retirement portfolio in this analysis included the following: S&P 500 index, Russell 2000 index, MSCI EAFE (Europe, Australasia and the Far East) index, Dow Jones U.S. Select REIT index, S&P GSCI (Goldman Sachs Commodity Index), Barclays Capital U.S. Aggregate Bond index and 90-day U.S. Treasury bills. These indexes cover the major asset classes that portfolios typically contain: large-cap U.S. stock, small-cap U.S. stock, non-U.S.

stock, real estate, commodities, U.S. bonds and cash. Each asset class (i.e., index) was equally weighted at 14.29% and the portfolio was rebalanced at the end of each year.

The analysis of the impact that fees have was accomplished by evaluating the ending account balance of a seven-asset retirement portfolio. The portfolio began with a balance of \$1 million

and was studied over rolling 25-year periods. A 25-year period represents the length of retirement, from age 70 to age 95. Understandably, some retirement periods are shorter and some are longer. Twenty-five years was felt to be a reasonable estimate for this type of analysis. The first 25-year period was from 1970 to 1994. The second was from 1971 to 1995, and so on. There

were 23 rolling periods of 25-years in this study. As mentioned, the amount of money withdrawn from the portfolio each year was determined by the required minimum distribution for a tax-deferred retirement account. The annual performance of the portfolio was calculated by using the actual historical returns of the stated indexes. The average 25-year rolling return of the seven-index portfolio

Table 1. The Impact of Fees on Retirement Income: Not Adjusted for Inflation

The data below shows how a retiree’s portfolio would fare over an average 25-year period assuming a \$1 million starting balance allocated evenly among seven asset classes. The numbers are nominal, meaning they have not been adjusted for inflation.

Annual withdrawals are taken in accordance with the Internal Revenue Service’s required minimum distributions (RMDs) over rolling 25-year periods from 1970 through 2016 (23 rolling periods in total). The numbers are nominal, meaning they have not been adjusted for inflation.

	Total Portfolio Cost*					
	25 bps (baseline)	50 bps	75 bps	100 bps	125 bps	150 bps
Nominal Average Ending Account Balance After 25 Years (\$)	2,908,946	2,739,515	2,579,580	2,428,629	2,286,177	2,151,765
Nominal Average Annual Withdrawal During Each 25-Year Period (\$)	164,553	158,407	152,511	146,853	141,426	136,218
Nominal Average Total Amount Withdrawn Over Each 25-Year Period (\$)	4,113,829	3,960,176	3,812,764	3,671,335	3,535,640	3,405,443

*Combination of overall portfolio expense ratio and adviser fees.

Sources: Raw data from Steele Systems Mutual Fund Expert; calculations by author.

Table 2. The Impact of Fees on Retirement Income: Adjusted for Inflation

Similar to Table 1, the data below shows how a retiree’s portfolio would fare over an average 25-year period assuming a \$1 million starting balance allocated evenly among seven asset classes. Unlike Table 1, the numbers *have been* adjusted for inflation.

The figures assume annual withdrawals were taken in accordance with the Internal Revenue Service’s required minimum distributions (RMDs) over rolling 25-year periods from 1970 through 2016 (23 rolling periods in total).

	Total Portfolio Cost*					
	25 bps (baseline)	50 bps	75 bps	100 bps	125 bps	150 bps
Inflation-Adjusted Average Ending Account Balance After 25 Years (\$)	1,063,299	1,001,102	942,407	887,022	834,770	785,479
Inflation-Adjusted Average Annual Withdrawal during each 25-Year Period (\$)	63,073	60,737	58,497	56,347	54,284	52,304
Inflation-Adjusted Average Total Amount Withdrawn over each 25-Year Period (\$)	1,576,820	1,518,437	1,462,420	1,408,669	1,357,091	1,307,597

*Combination of overall portfolio expense ratio and adviser fees.

Sources: Raw data from Steele Systems Mutual Fund Expert; calculations by author.

in this analysis was 10.4% (assuming a baseline portfolio expense ratio of 25 basis points).

Increasing Retirement Income

The ending account balance in the first 25-year period (from 1970–1994) was \$3,705,634. Recall that the starting balance was \$1 million. The total amount of money withdrawn (based on the RMD) during this particular 25-year period was \$4,603,449, which equated to an average annual withdrawal of \$184,138. These results assumed a total portfolio cost of 25 basis points.

Of course, that is only one particular 25-year period. There were 23 rolling 25-year periods between 1970 and 2016. A summary of the results for all 23 rolling 25-year periods is shown in Table 1 and the results are staggering. We observe that the average ending account balance was \$2,908,946, assuming total fees of 25 basis points. The average annual withdrawal based on the RMD was \$164,553 and the average total amount withdrawn over each of the rolling 25-year periods was \$4,113,829. (Table 2 shows the results after taking into account inflation).

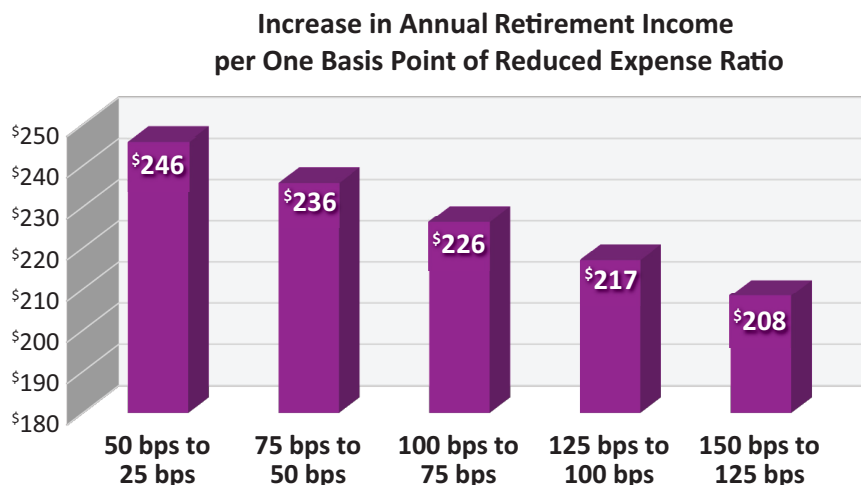
Next, we introduce a total fee level of 50 basis points (0.50%), which represents a combination of mutual fund expense ratios and advisory fees. The average ending balance drops by \$169,431 to \$2,739,515—a decline of 5.8%. The average annual withdrawal declined by \$6,146 to \$158,407—a 3.7% drop. Finally, the average total withdrawal declined by \$153,653 to \$3,960,176—also a 3.7% drop.

We see from this that moving from a 25 bps total portfolio cost to a 50 bps total portfolio cost (whether it was an increase in the expense ratios of the products being utilized in the portfolio, an increase in the advisory fee, or both) caused a 5.8% drop in the average ending balance of the retirement portfolio and a 3.7% decline in average amount withdrawn each year by the retiree.

In fact, if we do the math, these relationships hold all the way across the table. For each additional 25 basis points

Figure 1. The Impact of Reducing Expenses on Annual Retirement Income

For a retirement portfolio with a \$1 million starting balance and withdrawals taken in accordance with the required minimum distribution (RMD) rules, reducing annual expenses by one basis point (0.01%) increases the size of withdrawals by more than \$200 per year.



Sources: Raw data from Steele Systems Mutual Fund Expert; calculations by author.

of cost, the average ending balance of the retirement portfolio declines by roughly 5.9% and the average annual withdrawal from the portfolio declines by 3.7%.

In other words, if we move from a 25 bps portfolio cost to a 125 bps (1.25%) portfolio cost, the average ending balance declines by 21.4% and the average annual withdrawal declines by 14.1%. Said differently, if we are able to reduce the overall portfolio expense ratio from 1.25% (or 125 basis points) down to 0.25% (25 basis points) the average ending account balance after 25 years was 21.4% higher and the average amount withdrawn each year (across all 23 rolling 25-year periods) was higher by 14.1%.

Let me put this in more graphic terms: A retiree with a portfolio that had an expense ratio of 125 basis points withdrew an average of \$141,426 each year (based on the RMD). Had the portfolio expense ratio been 25 basis points (a reduction of 100 basis points) the average annual withdrawal would have been \$164,553—or an annual increase in annual retirement income of over

\$23,000. The asset allocation model did not change. The retiree utilized mutual funds and ETFs that covered the same asset classes. The RMD determined the annual withdrawals in both cases. The only change was that the retiree used mutual funds and/or ETFs with substantially lower expense ratios. In short, the retiree changed the one thing that they have a high degree of control over—cost.

At the most granular level, the value of reducing portfolio costs can be expressed “per basis point.” As shown in Figure 1, the increase in annual retirement income for a \$1 million portfolio is \$246 per basis point of expense ratio reduction when within the range of 50 to 25 basis points. That is, if a portfolio has an overall expense ratio of 50 basis points and the retiree is able to reduce the overall expense ratio by one basis point to 49 basis points (by using lower-cost funds), annual retirement income will increase by roughly \$246. A reduction from 50 to 40 basis points (0.40%) would increase annual retirement income by roughly \$2,460 (\$246 × 10).

Clearly, the importance of keeping

Table 3. Low-Cost Diversified Retirement Portfolios

The expense ratios below show the annual costs for a 12-asset-class portfolio using various mutual funds and exchange-traded funds (ETFs). The expense ratios exclude commission costs.

	12 Actively Managed Mutual Funds	12 ETFs From Various Fund Families	12 Vanguard Mutual Funds	12 Vanguard ETFs	12 Fidelity Mutual Funds	12 ETFs Available at Schwab
Portfolio Aggregate Annual Expense Ratio	54 bps	16 bps	22 bps	10 bps	40 bps	18 bps
15-Year Average Annualized Return (2002–2016)	7.71%	7.51%	7.88%	8.10%	8.09%	7.68%

Data source: Author.

portfolio costs down has never been more important. Here's the good news: Building a multi-asset retirement portfolio need not be expensive. To illustrate this, I have shown the aggregate expense ratio of a 12-asset-class model known as the 7Twelve Portfolio, which I designed, across several different fund providers.

As shown in Table 3, a diversified retirement portfolio can be built in a variety of ways for under 55 basis points (0.55%)—often well under that. If using actively managed mutual funds from various fund families, the cost is around 54 basis points (0.54%). If using various ETFs, it can be built for 16 basis points (0.16%). If using Vanguard ETFs, the aggregate portfolio cost is 10 basis points (0.10%).

Cost is clearly not what would stop investors or their advisers from building a multi-asset portfolio. Rather it is a decision to adopt a low-cost approach—which is easily facilitated by a number of large mutual fund families. Moreover, where you purchase the portfolio “ingredients” matters less than the actual asset allocation model that is employed. This is visibly demon-

strated by the similarity in the 15-year performance across the various 7Twelve models built with funds from different fund families. Again, the recipe (or asset allocation model) you choose to follow has the biggest impact on performance, not where you purchase the ingredients. (Using a different multi-asset allocation model would not change this fact; the illustration's findings would still show that the allocation chosen has a bigger impact on your returns than the funds you use to implement the model.)

What If You Reduced Your Portfolio Expense Ratio?

If you are currently using mutual funds in your retirement portfolio that have an average expense ratio of 100 basis points and are also paying a 100 bps advisory fee, you are incurring a total investment cost of 200 basis points (2.00%) per year. If you moved to ultra-low-cost ETFs, you could drop the expense ratio cost component down to 10 basis points. And if you could convince your adviser to lower his or her fee to 90 basis points (0.90%), your total

cost drops to 100 basis points (1.00%). (Note, if you are not working with an adviser, your costs would drop from 100 basis points to 10 basis points.)

What does that do for you? It increases your retirement account balance by more than \$520,000 over a period of 25 years for a portfolio with a starting value of \$1 million (and assuming the portfolio return is equal to the percentage amount withdrawn). It also increases the amount available for withdrawals by over \$20,000 each year for 25 years. In short, a reduction in portfolio expense ratio changes the quality of your financial situation dramatically.

The era of high cost funds is over. Lower advisory fees and lower-cost investment products—whether index funds, actively managed funds, or ETFs—is not simply the right path, it's the only viable path in a competitive and cost-centric world.

Retirees who reduce their portfolio costs by using lower-cost mutual funds and/or ETFs do themselves a huge favor. Lower-cost retirement portfolios will allow the retiree to withdraw more money each year. ▲

Craig L. Israelsen, Ph.D., teaches as an executive-in-residence in the Personal Financial Planning Program at Utah Valley University in Orem, Utah. He is also the developer of the 7Twelve Portfolio (www.7twelveportfolio.com) and the author of three books, including “7Twelve: A Diversified Investment Portfolio With a Plan” (John Wiley & Sons, 2010). Find out more about the author at www.aaii.com/authors/craig-israelsen. Israelsen will speak at the AAI Investor Conference this fall in Orlando, Florida; go to www.aaii.com/conference for details.