PERSPECTIVES

How Targeting Size, Value, and Profitability Can Improve Retirement Outcomes

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KEY TAKEAWAYS

- Broadly diversified equity portfolios with a moderate emphasis on size, value, and profitability can help increase retirement assets.
- This investment approach can also sustain retirement income longer and lead to larger bequests.
- The improvement can be achieved at little additional risk compared to market portfolios.

Many retirement investors hold equity portfolios that track broad market indices, either directly or through other investments such as target date funds. Despite their widespread popularity, market portfolios may leave money on the table. Core equity portfolios—low-cost, broadly diversified equity portfolios with a moderate emphasis on the size, value, and profitability premiums—can provide higher expected returns while controlling the risk of underperformance relative to the market.

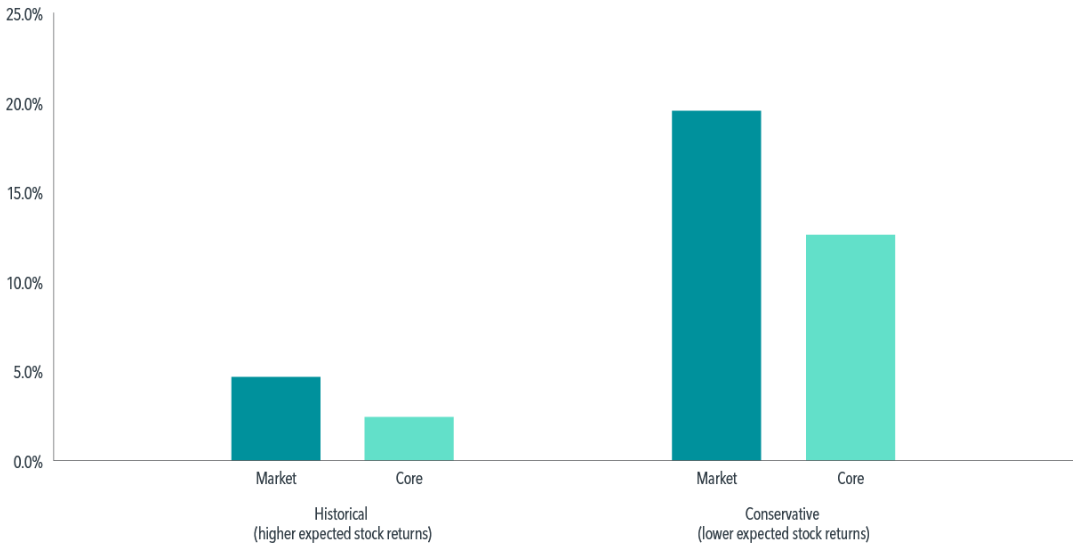
In new Dimensional research, we examine the benefits of core equity investing for retirement outcomes. The benefits start building up in the accumulation phase. Consider two investors who contribute to a retirement account from age 25 to 65 and follow a conventional target date glide path, with the equity portion invested either in a core portfolio or the broad market without any emphasis on the premiums. Our results show that an investor in the core portfolio will typically reach 65 with 15%–20% more assets than an investor in the plain market portfolio.

The observed benefits of core equity investing continue into retirement. Going back to our example, let's assume that both investors retire with a 50/50 split of stocks and bonds and spend a fixed amount every year. If future stock returns look like past returns, the probability of failure with either portfolio is low (see **Exhibit 1**), but the core portfolio still does better—and, as we show in the paper, also results in a higher average bequest. If future stock returns are lower than in the past, failure rates increase across the board, but so does the potential benefit of core equity, which reduces the average failure rate from 20% to 13%. Here, too, the cost of tracking a market index appears steep; the chance of running out of assets early jumps by 7 percentage points—nearly 54%.

Exhibit 1

Premium Rewards

Failure rates depending on premium exposure in the equity sleeve



The CRSP Deciles 1–10 Index is a proxy for the market portfolio, the Dimensional US Adjusted Market 1 Index is a proxy for the core portfolio, and five-year Treasury notes are a proxy for bond performance. Results are based on a portfolio with a 50/50 split between equities and fixed income. Failure probabilities are based on a 30-year retirement and a 4% spending rule. Simulation results are based on 100,000 sequences of 360 bootstrapped monthly returns adjusted using the US CPI. The average inflation-adjusted expected stock return is 8.1% under the historical return distribution and 5.0% under the conservative return distribution. The sample period runs from June 1927 to December 2022. See Methodology Appendix for details.

Of course, these benefits come at the cost of tracking error relative to the market, something that market indexing avoids by definition. However, our results show that, when it comes to avoiding tracking error, the cure may be worse than the disease. The study finds that market indexing results in initial retirement assets that are 15% lower on average relative to the core approach. Would you give up an expected 15% of your retirement assets to avoid all tracking error?

Retirement investing involves long investment horizons, which improve the reliability of capturing the premiums and magnify the effect of higher expected returns. This makes core equity investing an attractive, practical alternative to market indexing—one that can put retirement investors in a stronger position to reach their goals.

We consider a hypothetical investor who retires at age 65 and spends until age 95 according to a 4% spending rule. Retirement spending is 4% of the initial balance at retirement. Spending remains constant in inflation-adjusted terms through retirement. The investor withdraws the spending amount at the beginning of each month. The balance then evolves according to portfolio returns. If the balance amount hits zero, we treat this as a failure.

All the returns used in the simulations are inflation-adjusted using the US CPI.

Portfolio returns are based on a constant, 50/50 split between stocks and bonds. The market portfolio is proxied by the CRSP Deciles 1–10 Index, while the core portfolio is proxied by Dimensional US Adjusted Market 1 Index. Five-year Treasury notes proxy for bond performance. The sample period runs from June 1927 to December 2022.

For each simulated retirement, we draw 30-year (360-month) return histories from our sample. We use block bootstrap with a mean block size of 10 years (120 months) to sample inflation-adjusted annual returns.

We bootstrap returns from the historical distribution and a conservative distribution. The conservative distribution is obtained by subtracting 1.65 times the standard error (1.65 x 1.89% = 3.1%) of the average stock return from the historical average (8.1%). This is equivalent to assuming that the long-run inflation-adjusted equity return is 5.0%, which corresponds to the fifth percentile of the estimated distribution of the average historical return.

The projections or other information generated by bootstrapped samples regarding the likelihood of various investment outcomes are hypothetical in nature, do not reflect actual investment results, and are not guarantees of future results. Results will vary with each use and over time.

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Dimensional US Adjusted Market 1 Index.

June 1927–December 1974: Dimensional US Adjusted Market 1 Index composition: Targets all the securities in the eligible market with an emphasis on companies with smaller capitalization and lower relative price. The eligible market is composed of securities of US companies traded on the NYSE, NYSE MKT (formerly AMEX), and Nasdaq Global Market. Exclusions: non-US companies, REITs, UITs, and investment companies. Source: CRSP and Compustat.

January 1975–present: Dimensional US Adjusted Market 1 Index composition: Targets all the securities in the eligible market with an emphasis on companies with smaller capitalization, lower relative price, and higher profitability, excluding those with the lowest profitability and highest relative price within the small cap universe. The index also excludes those companies with the highest asset growth within the small cap universe. Profitability is defined as operating income before depreciation and amortization minus interest expense divided by book equity. Asset growth is defined as change in total assets from the prior fiscal year to current fiscal year. The eligible market is composed of securities of US companies traded on the NYSE, NYSE MKT (formerly AMEX), and Nasdaq Global Market. Exclusions: non-US companies, REITs, UITs, and investment companies. Source: CRSP and Compustat.

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Risks

Investments involve risks. The investment return and principal value of an investment may fluctuate so that an investor's shares, when redeemed, may be worth more or less than their original value. Past performance, including simulated performance, is not a guarantee of future results. There is no guarantee strategies will be successful.

Indices are not available for direct investment; therefore, their performance does not reflect the expenses associated with the management of an actual portfolio.

Diversification does not eliminate the risk of market loss.

CRSP data provided by the Center for Research in Security Prices, University of Chicago. Five-year US Treasury returns sourced from Morningstar. Dimensional US Adjusted Market 1 Index compiled by Dimensional. Inflation adjustments are based on the US CPI, sourced from the Bureau of Labor Statistics.

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