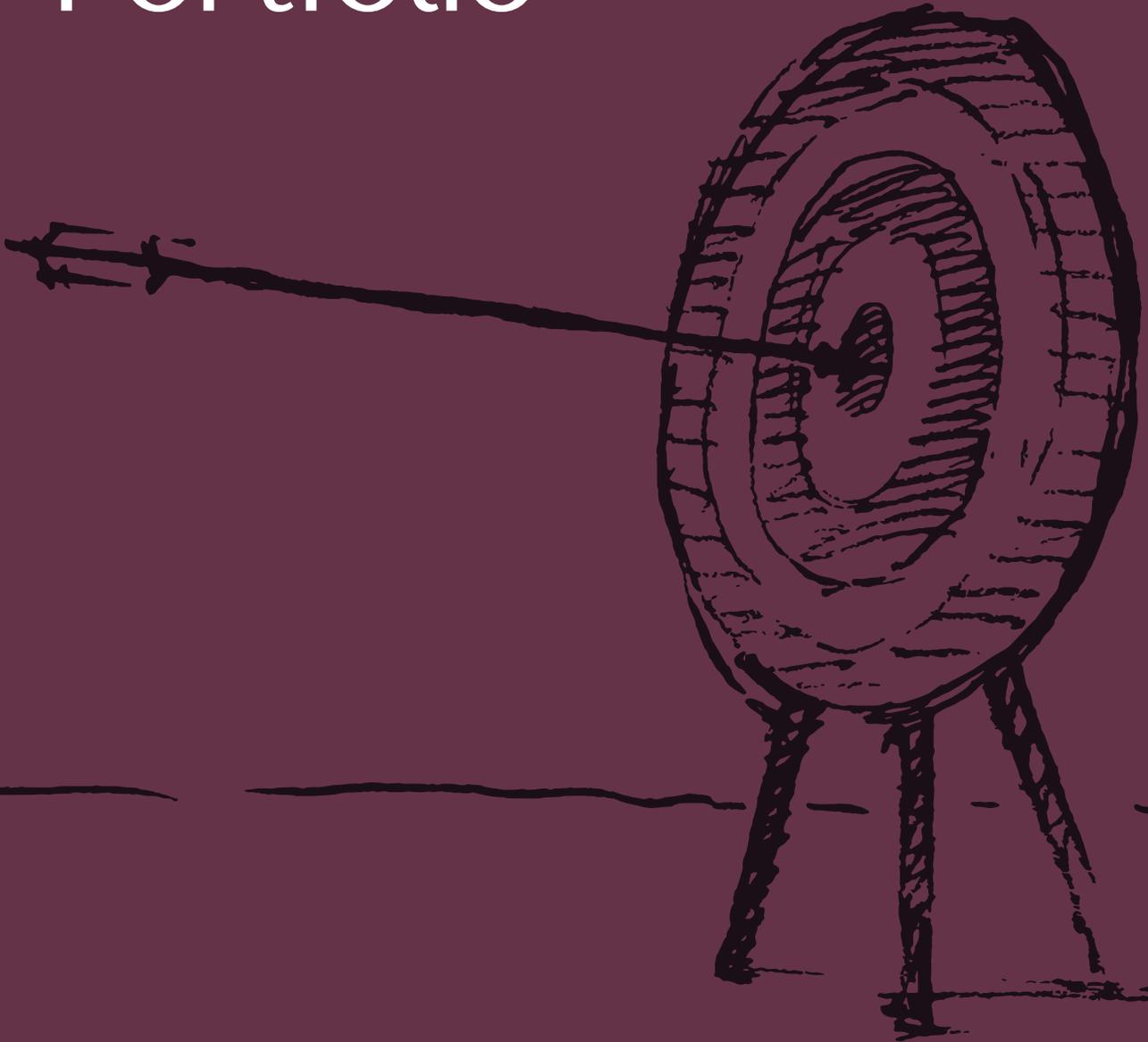


# The Optimal Portfolio



By focusing on what really matters, investors can achieve long-term success.

## About Vista

Vista Capital Partners is a fee-only investment advisor based in Portland, Oregon. We specialize in managing globally diversified portfolios which minimize costs and taxes for individual clients with more than \$2 million to invest.

We also want the benefits of our work to extend beyond the success of a portfolio—to the health, happiness and well-being of those we serve. Our mission is simple: to help our clients live happier and more prosperous lives.

## Contributors

We are a passionate team of financial advisors. Learn more about the contributors and our team at: [vistacp.com/our-team](http://vistacp.com/our-team).



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# The Optimal Portfolio

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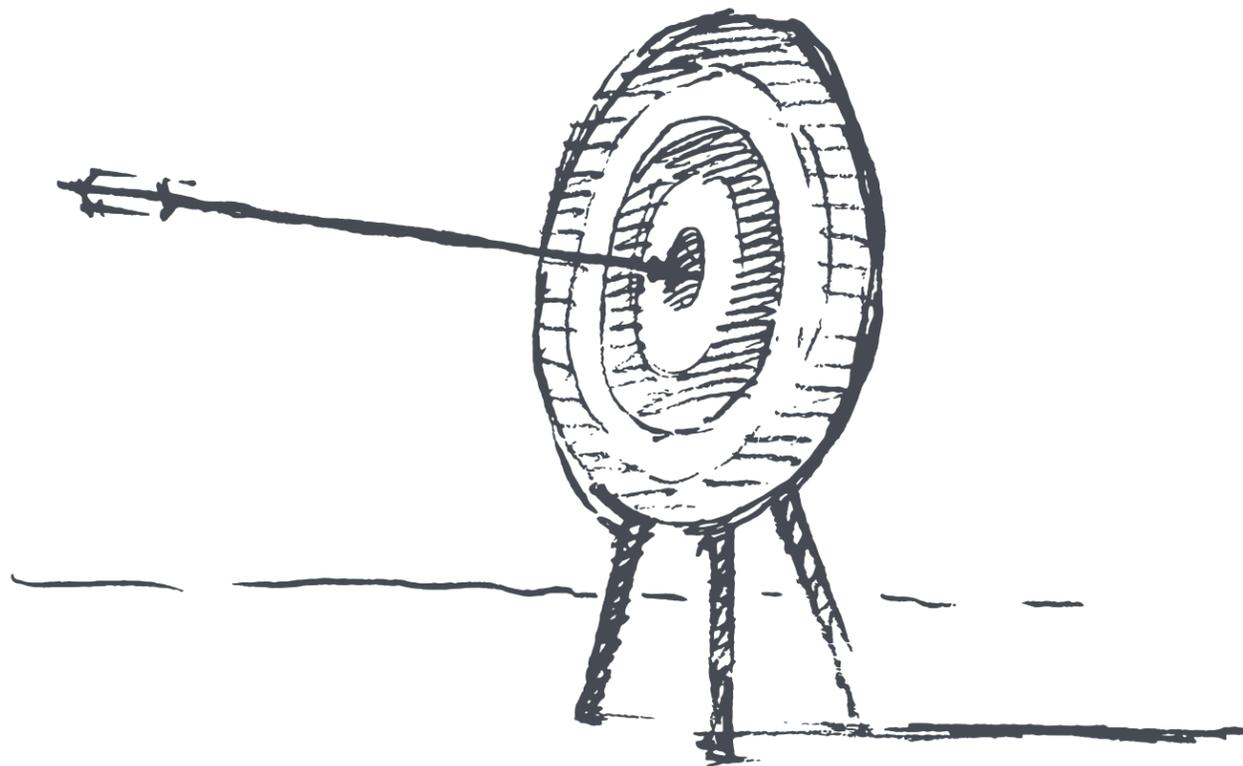
## Opportunity Awaits

An incredible amount of wealth has been created via the world's financial markets. Since 1926, U.S. large company stocks and U.S. government bonds have returned an average of 10.1% and 5.5%, respectively, per year. A sum of \$100,000 invested in a 60/40 balanced mix of large cap stocks and bonds at the start of 1926 would be worth more than \$22,000,000 today.

Despite this, many investors fail to earn these returns. From 2006 through 2015, the total U.S. stock market rose 7.4% per year. During that time, however, the average U.S. stock mutual fund returned only 6.6% per year, and the average investor in those funds earned even less—just 5.8% per year.<sup>1</sup>

Such statistics highlight two major failures: (1) the inability of traditional “active” investing—characterized by stock-picking and market timing—to capture markets' generous returns and (2) investors' tendency to invest in what has done well recently and shun what has done poorly, despite clear evidence such behavior lowers their returns.

This paper seeks to outline a better way: to provide a framework for constructing and managing an optimal portfolio capable of delivering a successful investment experience for every investor.



## Chasing Returns: A Cautionary Tale

*In the late 1990s and early 2000s, U.S. stocks provided eye-popping returns of 30% per year or more, largely due to technology stocks. Believing such returns would continue, investors poured more money into U.S. stocks than at any other time in history. As markets were hitting their frothy peaks, investors added in excess of \$50 billion to U.S. stocks.<sup>9</sup>*

*Just as investors went “all in,” the winds changed. Over the next two years, the S&P 500 Index of U.S. stocks fell more than 40%.*

*How did investors react? With losses mounting and patience thin, they withdrew more than \$80 billion from U.S. stocks in late 2002. Ironically, this mass exodus from stocks signaled the end of the stock market slide. Just months later, markets rebounded and finished 2003 up 32%.*

*By selling out at the bottom, however, investors locked in their losses and missed out on the best returns.*

## What is the Optimal Portfolio?

The *Optimal* Portfolio is based on Nobel Prize-winning research and discipline—not hope, hype, market timing or stock picking. It is repeatable, reliable and offers investors their best chance of long-term financial success.

The Optimal Portfolio is built on three key principles: strategic asset allocation, intentional diversification and a passive, rather than active, approach to investing.

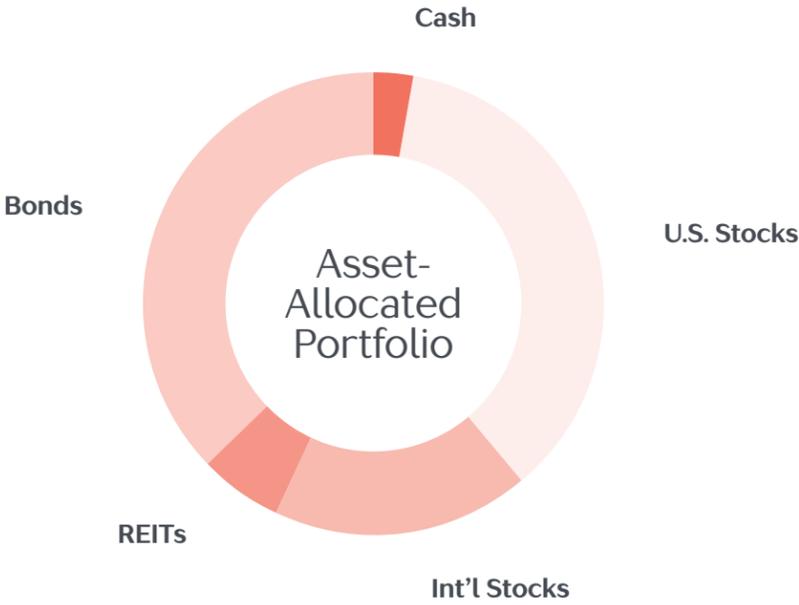
## Strategic Asset Allocation

Determining a long-term, strategic asset allocation based on an investor's unique circumstances is essential to effective investing. Asset allocation refers to the mix of assets, such as stocks, bonds or real estate, held in a portfolio. The word “strategic” refers to the long-term adherence to the target allocation, in contrast to tactical moves in response to short-term market events.

Effective allocation considers not just the return contribution of an asset class, but also how each asset class behaves relative to one another. Nobel Prize laureate Harry Markowitz noted that the combination of *non-correlated* asset classes—the returns of which do not move in lock step with each other—helps drive down portfolio risk without sacrificing expected return.

How important is asset allocation? For diversified portfolios, asset allocation matters a lot. One study compared the returns of diversified portfolios and concluded that asset allocation explained virtually 100% of their returns. Not only did traditional stock-picking and market timing not matter, but those efforts reduced the portfolios' returns.<sup>2</sup>

An example of a sensibly asset-allocated portfolio is shown below. The primary building blocks of a portfolio, each asset class contributes something valuable, such as growth potential, income generation, inflation protection and capital preservation.



### The Primary Building Blocks of a Portfolio

Asset Class	Characteristics
U.S. stocks	<ul style="list-style-type: none"> <li>• Ownership stake in corporate America</li> <li>• Portfolio growth</li> <li>• Long-term protection against inflation</li> </ul>
International stocks	<ul style="list-style-type: none"> <li>• Ownership in thousands of companies around the world</li> <li>• Portfolio growth</li> <li>• Exposure to multiple economies, industries and currencies</li> <li>• Powerful diversification benefits</li> </ul>
Real estate investment trusts (REITs)	<ul style="list-style-type: none"> <li>• Ownership in commercial and residential properties, warehouse facilities and retail establishments around the world</li> <li>• Stock-like growth and bond-like income</li> <li>• Diversification and inflation protection</li> </ul>
Bonds	<ul style="list-style-type: none"> <li>• Ownership of the public debt of a government, municipality or corporation</li> <li>• Generally lower risk and returns than stocks</li> <li>• Important source of portfolio stability during times of stock market distress</li> </ul>

## Intentional Diversification

### Broad Diversification Within Asset Classes

Within an asset class, portfolios can be diversified across economies, sectors, industries and security fundamentals such as size or price. Within these subcategories, investors can choose to hold just a subset of available securities or embrace broad diversification by owning most, if not all, securities available.

Why diversify broadly? Basic financial theory tells us we shouldn't be rewarded for taking the risk of owning a single security. This is because we can reduce such risks by owning other securities in the same industry, as well as securities in different economies or sectors.

For example, a hypothetical investor who owns only one stock, say Apple, can diversify some of her portfolio's company-specific risk by also owning the stock of Intel. If she wants to further diversify her portfolio away from stocks in the technology sector, she could buy shares of General Electric or Wal-Mart. Adding stocks across other sectors or in international economies can further diversify the portfolio while maintaining the return expectations provided by stocks as an asset class.

To put it simply, broad diversification allows investors to "embrace the haystack," rather than incur the extra risks and costs of searching for the needle within it.

### Intentional Diversification Across Risk Dimensions

What drives stock returns? Over the past 90+ years, research shows that investors have been rewarded for favoring "value" stocks over "growth" stocks and small company stocks over large company stocks.

*Value stocks* are low-priced companies that tend to have low-expected earnings growth, are poorly managed and/or are financially unhealthy. *Growth stocks* are high-priced, financially healthy companies with rosy prospects. *Small stocks* tend to be young companies with limited operating history, fewer customers and financial resources than *large stocks*.

It was in the early 1980s that researchers first began documenting the existence of a return premium associated with smaller, lower-priced stocks. Since then, these size and value risk dimensions of the stock market have continued to reward investors. While the S&P 500 Index has returned 11.8% per year since 1980, small cap and value stocks have returned 12.4% and 13.8%, respectively, per year. Small value stocks have delivered even more, growing by 15.7% per year.<sup>3</sup> And as 2013 Nobel laureate Eugene Fama and his colleague Ken French have shown, the return advantage for small and value stocks has held true across U.S., international and emerging markets, as well.

## Why Do Small & Value Stocks Provide Higher Returns?

*The reason small and value stocks have provided higher returns? While financial research offers no proof, a widely held belief is that these stocks are fundamentally riskier. Consider the small, unprofitable or otherwise distressed company that seeks bank financing. In seeking a bank loan, this company would understandably be charged a higher rate of interest than would a large, healthy, growing firm. By charging a higher rate of interest, the bank compensates itself for the borrowing company's higher risk profile.*

*If the same company instead sought equity, not debt financing through the issuance of stock, it would also need to compensate investors with relatively higher returns, just as the bank would demand. Stock investors are compensated by purchasing its stock at lower prices, which paves the way for higher returns. Indeed, lower-priced small cap and value stocks have historically provided investors higher returns.*

## A Passive Approach to Investing

Investing, as traditionally practiced, is based on a single belief: market prices are incorrect. As such, astute, motivated and hardworking professionals should be able to beat the market by actively identifying underpriced securities to buy and overpriced securities to sell, over and over again, at the right times.

In contrast, passive investing is a buy-and-hold approach that makes no attempt to pick attractive over unattractive securities or time the market. Proponents of passive investing believe markets are reasonably "efficient," which means market prices reflect the collective wisdom of all market participants. In an efficient market, it should be virtually impossible for any one investor or firm to consistently profit from superior insight or skill.

Investors who adopt a passive approach generally favor broad asset class, or index, funds when building their portfolios. These funds are very low cost—for example, Vanguard's Total U.S. Stock Market Index Fund charges just 0.04% for management per year, a tiny fraction of what the typical actively managed U.S. stock fund charges—enabling investors to reliably capture the lion's share of the markets' returns.

How do passive investors perform relative to active investors? Study after study concludes that active investors collectively underperform both passive investors and the markets in which they invest.

While somewhat sobering, this should be intuitive: collectively, investors are the market and thus earn the market return. After costs, investors as a group underperform the market. It is basic arithmetic. And since passive investors pay less to harness the market's return, they are more likely to outperform those who incur the higher costs (trading, management fees, etc.) of active investing.

### Active vs. Passive Investing

Active Investing	Passive Investing
Based on the belief that market prices do not reflect the true value of publicly traded securities	Based on the belief that markets are reasonably efficient; that is, all known information is reflected in prices that accurately approximate a security's true value
Relies on stock picking, fund picking, manager selection, market timing and other "tactical" moves	A buy-and-hold approach that makes no attempt to pick "attractive" over "unattractive" securities or time the market
Active investors hope to outperform the market	Passive investors expect to earn the market's return
Examples include actively managed mutual funds, separately managed accounts and hedge funds	Examples include index and asset class funds

### Active Managers Rarely Beat the Market

*Despite media headlines touting past winners and Wall Street advertisements promoting outperformance, both winners and outperformance are in short supply in the active investment game:*

- *For the 15 years ending December 2016, between 78% and 99% of actively managed mutual funds underperformed their benchmarks.<sup>10</sup>*
- *Over the same time period, between 69% and 97% of actively managed U.S. bond funds underperformed their fixed income benchmarks.<sup>11</sup>*
- *A simple 60/40 index mix of stocks and bonds outperformed 72% of the nation's largest corporate pension plan portfolios, run by the world's best and brightest investment minds.<sup>12</sup>*
- *Of the small number of managers who do beat their benchmarks, very few repeat that prior performance. Just 16% of the best-performing funds from 2007 to 2011 remained top performers in the subsequent five years.<sup>13</sup> This begs the question: was their earlier success due to skill or just luck?*

*The evidence is overwhelming: over the long run, active managers are not beating the market; the market is beating them.<sup>14</sup>*

### Creating the Optimal Portfolio

With a firm understanding of the benefits of strategic asset allocation, intentional diversification and the superiority of passive investing, investors can focus on building and maintaining an optimal portfolio.

Remember, the Optimal Portfolio is not based on anything that happened last quarter or last year. It is not based on what is expected to occur next quarter or next year. It is not based on hope, hype, stock picking or market timing. Rather, it is based on Nobel Prize-winning research and discipline. Most importantly, it is simple, repeatable and capable of delivering a successful experience for every investor.

Through a series of charts depicting different portfolio constructions, we will show exactly how we build the Optimal Portfolio.

## A Good Portfolio

We start with the Good Portfolio, a balanced mix of 60% stocks and 40% bonds represented by the S&P 500 Index and the Bloomberg Barclays Aggregate Bond Index, respectively.

This portfolio is similar to the way pension funds, college endowments and other large institutional investors have traditionally allocated their assets.<sup>4</sup> The stocks provide growth, while the bonds provide stability and income.

Though a 60/40 mix is not the right allocation for every investor (investors who are willing and/or able to accept more risk may not need 40% of their portfolios in bonds), this “simple” 60/40 portfolio is a very high-standard one. Hundreds of thousands of investors would be better off owning this simple portfolio than their current mix.<sup>5</sup>

From 1970 through 2017, the Good Portfolio returned an average of 9.6% per year with a standard deviation of 9.8%. Standard deviation measures the risk level, or volatility, of a portfolio. For two portfolios with the same expected return, the one with the lower standard deviation is better.



**Annual Return: 9.6%**  
**Standard Deviation: 9.8%**  
**\$100,000 grew to \$8,070,000**

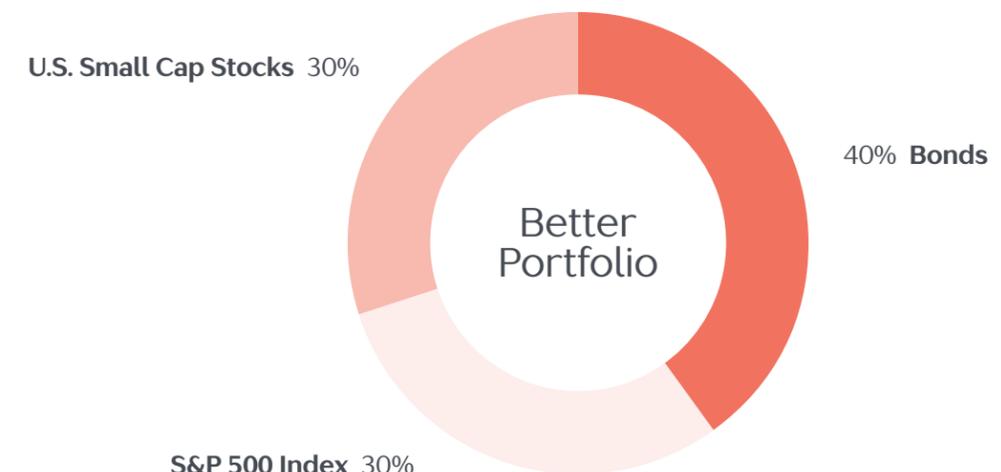
January 1970–December 2017. Assumes monthly rebalancing.  
Source: Dimensional Fund Advisors: Vista Capital Partners, Inc.

## A Better Portfolio

Armed with the knowledge that small cap stocks offer higher expected returns, we can add small stocks to create the Better Portfolio. If we simply make an arbitrary 50/50 split of a good portfolio’s stock component, we now have a mix of 30% large cap stocks (represented by the S&P 500), 30% small cap stocks (represented by the CRSP 6-10, the smallest 50% of all publicly traded U.S. stocks) and 40% bonds.

From 1970 through 2017, the Better Portfolio returned an average of 10.2% per year. A sum of \$100,000 invested in 1970 grew to \$10.4 million by the end of 2017, or \$2.3 million more than a good portfolio. The standard deviation, however, also rose—to 11.0%.

While the increased risk profile of the Better Portfolio may be appropriate for an investor willing to assume greater risk in pursuit of higher returns, it is not optimal. Remember, what we want to build is a portfolio capable of delivering higher returns with *the same or less risk* as the Good Portfolio.



**Annual Return: 10.2%**  
**Standard Deviation: 11.0%**  
**\$100,000 grew to \$10,427,000**

January 1970–December 2017. Assumes monthly rebalancing.  
Source: Dimensional Fund Advisors: Vista Capital Partners, Inc.

## The Optimal Portfolio

To improve on the Better Portfolio and create the Optimal Portfolio, we harness opportunities most investors miss.

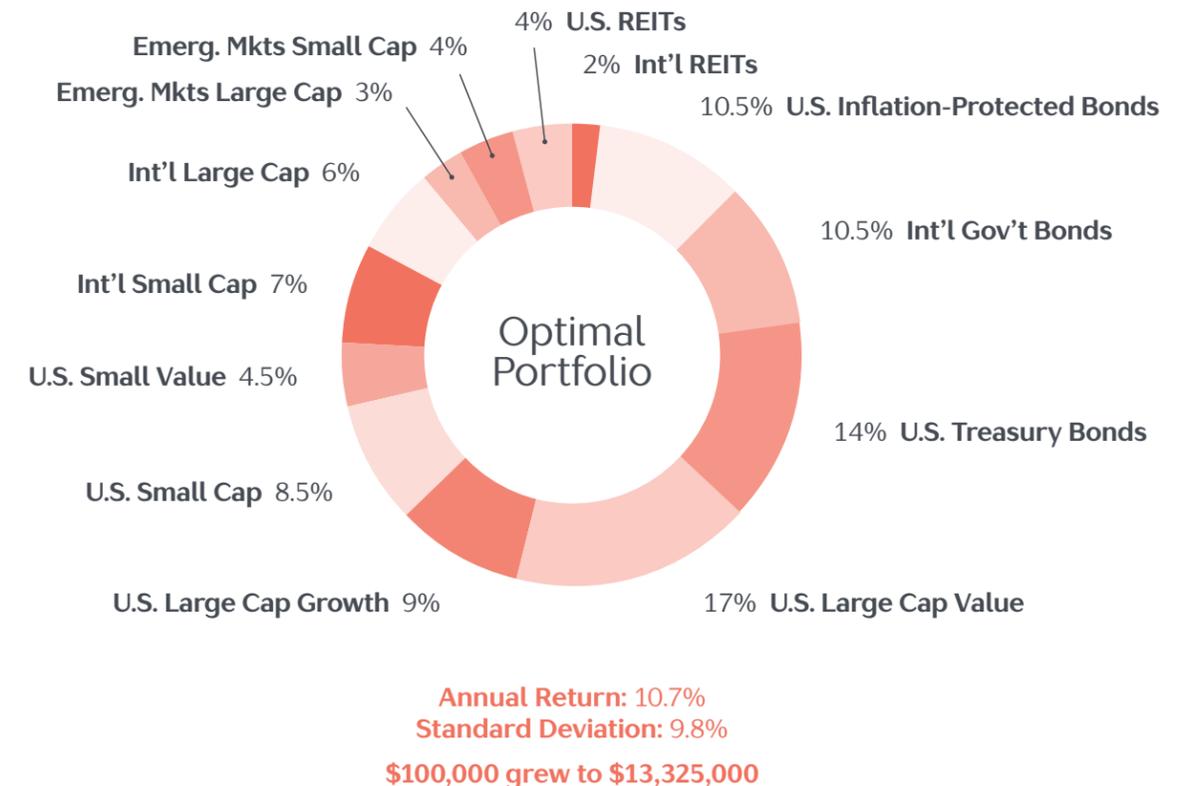
To do this, we:

1. Add international stocks, both in developed and emerging markets, to provide global economic diversification.
2. Incorporate the diversifying power of real estate—via publicly traded real estate investment trusts (REITs)—in both U.S. and international markets.
3. Tilt the portfolio's stock holdings toward low-priced value stocks, the expected returns of which are higher than growth stocks.
4. Introduce small cap stocks into both the international developed and emerging markets. While these slices of the portfolio are inherently risky on a stand-alone basis, their low correlation to U.S. stocks helps reduce the total portfolio's standard deviation, or risk.
5. Improve the bond allocation by favoring only the safest bonds—primarily U.S. Treasury and high-quality international government bonds—over riskier corporate bonds.
6. Protect against the corrosive effects of inflation by adding Treasury Inflation-Protected Securities (TIPS), the interest and principal of which adjust for changes in the Consumer Price Index (CPI).
7. “Add back” risk. Because we have increased the quality and safety of the bond allocation, the portfolio's standard deviation has fallen dramatically. As a result, we can add back risk by reducing bonds from 40% to 35%, using the extra 5% to take risk where we expect to be adequately compensated for it: in stocks.

From 1970 through 2017, the Optimal Portfolio returned an average of 10.7% per year, with a standard deviation of 9.8%. A sum of \$100,000 invested in an optimal portfolio in 1970 would have grown to more than \$13.3 million by the end of 2017, roughly \$5.2 million more than the ending value of a good portfolio—with the same amount of risk.

## The Value of Safe Bonds

The primary role of bonds is to provide safety and capital preservation during times of extreme stock market stress. U.S. Treasury bonds have historically provided an unparalleled level of protection. During the extreme market pessimism of the Great Depression, when \$1 in small cap stocks turned into ten cents, Treasury bonds not only preserved their value, but increased by 20%. High-quality international government bonds, hedged to mitigate currency risk, provide similar levels of portfolio protection.



January 1970–December 2017. Assumes monthly rebalancing.  
 Source: Dimensional Fund Advisors: Vista Capital Partners, Inc.

## Maintaining the Optimal Portfolio

With the Optimal Portfolio built, the important work of monitoring and maintaining it begins.

### Disciplined Rebalancing

Daily changes in market prices will cause the Optimal Portfolio to immediately drift from its initial construction. *Rebalancing* is the process of adjusting the portfolio's composition—paring back what has increased in relative value to add to what's fallen in relative value—to maintain the desired asset mix.

While simple in concept, rebalancing can be incredibly difficult in practice. Consider the prospect of selling safe bonds and adding to value stocks, international stocks or REITs, the prices of which had fallen between 40% and 70% during the Global Financial Crisis. At a time when headlines warned of a looming depression, disciplined rebalancing required selling bonds—the only part of the portfolio to hold its value—and adding more money to those parts of the portfolio that had fallen the most.

Used primarily to control portfolio risk, rebalancing may also serve to increase investment returns—since, by definition, it requires selling an appreciated asset class and buying an asset class that has fallen in relative value. Certainly, rebalancing during the Global Financial Crisis allowed disciplined investors to be invested in the correct (target) amount of stocks when stocks stopped falling in early 2009 and suddenly began surging in value.

Disciplined rebalancing is effective, efficient and makes sense: it controls risk and helps investors stay the course, allowing them to earn attractive long-term returns.<sup>6</sup>

### Minimizing Taxes

While using passive index and asset class funds helps minimize portfolio turnover, investors should consider the proper asset *location* (not to be confused with asset allocation) for each investment in their portfolio.

*Asset location* refers to the concept of placing the most highly taxed assets in tax-deferred accounts, while putting lower taxed assets in taxable accounts.

## Impact of Asset Allocation on Minimizing Taxes

Asset	Tax Rate	Ideal Asset Location
Bonds, REITs	Up to 40.8%	Tax-deferred accounts
Stocks	Up to 23.8%	Taxable account
Small cap and value stocks	Up to 23.8%	Tax-free accounts

While anyone can structure their portfolio in such a manner, relatively few do. A 2004 Federal Reserve survey revealed that Americans invest their taxable and tax-deferred accounts almost identically, with about 65% of each devoted to stocks.<sup>7</sup>

Investors who do this leave a lot on the table. According to Carnegie Mellon Finance Professor Robert Dammon, allocating assets to the wrong type of account can reduce a portfolio's ending value by more than 20%.<sup>8</sup>

## A Proven Investment Approach

The Optimal Portfolio approach is capable of delivering a successful investment experience for every investor. Based on a philosophy that is fundamentally different, it replaces short-term emotion with the discipline and reason to make thoughtful, rational choices.

Sensible investors embrace this approach by:

- Building an appropriate and goals-based mix of non-correlated asset classes.
- Diversifying broadly within each asset class to reliably capture return while minimizing individual security risk.
- Diversifying intentionally with the higher-expected returns of smaller, low-priced stocks around the globe.
- Using passively managed, low-cost asset class and index funds to ensure superior long-term performance.
- Committing to a disciplined rebalancing process that manages risk and shields against buying high and selling low.
- Minimizing taxes through asset location.

By focusing on what matters, investors can have a successful long-term investment experience.

## Endnotes

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