

THE OPTIMAL PORTFOLIO

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

THE POWER OF THE CAPITAL MARKETS

An incredible amount of wealth has been created via the world’s financial markets. Since 1926, investments in U.S. large company stocks have returned an average of 10.1% per year. One dollar invested has doubled in value, on average, every seven years. Long-term U.S. Government bonds have returned an average of 5.7% per year over the same period. Ten thousand dollars invested in a 60/40 balanced mix of large cap stocks and bonds at the start of 1926 would be worth more than \$18,000,000 today.

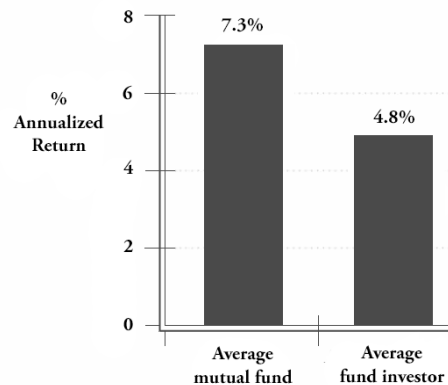
MOST INVESTORS DO NOT SUCCEED

Despite the markets’ powerful historical returns, most investors have fallen short. An insightful study conducted by Morningstar, Inc., revealed the majority of U.S. stock investors are not earning the returns afforded by capitalism and the capital markets. Over the 10 years from 2004 through 2013, while the average mutual fund returned 7.3% per year, the average investor in these funds earned a surprisingly low 4.8% per year.¹

WHY INVESTORS FAIL

Investment success requires conviction and discipline. Human nature, however, compels investors to seek comfort. Selling yesterday’s losers provides a false sense of security to those who take comfort in a portfolio holding only today’s winners. Basic human nature explains such behavior: investors believe what has done well recently will continue to do well in the future.

Investor returns from stock mutual funds 2004—2013



Source: Kinnel, Russel. "Mind the Gap 2014." February 2014. Morningstar, Inc.

In chasing returns, investors succumb to greed and fear, forsaking discipline and conviction. Fundamental to investment success, these qualities are abandoned precisely during the times they are needed most, thus dooming the majority of investors to failure.

Return-chasing behavior was rarely more evident than during the speculative bubble, and subsequent decline, of the late 1990’s and early 2000’s. Not wanting to miss out on growth stocks’ 30% annual returns, investors clamored to get in before it was too late. In January 2000 when the markets were hitting their frothy peaks, investors poured more money into U.S. stock mutual funds than at any other time in history. With the winds of past performance bolstering their confidence in future returns, investors enthusiastically committed in excess of \$50 billion to stock mutual funds during the month of January 2000.² Unfortunately, just as investors went “all in,” the winds changed. Over

the next two years, the S&P 500 Index fell more than 40%.

With losses mounting and patience thin, investors capitulated, withdrawing over \$80 billion from stock mutual funds in late 2002. The mass exodus from stocks signaled, in almost perfect reverse timing, the end of the stock market slide. Just a few months later, markets rebounded and in 2003 U.S. stocks finished up 32%. By bailing out at the bottom, investors missed the best returns.

Sound familiar? The dramatic market decline and subsequent meteoric rise characterizing the financial crisis of 2008-2009 reveal a similar tragedy. Investor behavior, once again, stands in stark contrast to the investment ideal of “buy low, sell high.”

THE IMPORTANCE OF A PLAN

The best chance of achieving superior results lies not in the constant struggle to outperform the market, but in formulating and adhering to an appropriate investment plan. A written investment plan that defines an investor’s goals, objectives and asset allocation is one of the most meaningful determinants of long-term success.

A clearly defined investment plan is the foundation on which to build an investment portfolio and serves as a blueprint to follow over time. Adherence to a sound investment plan shields against the short-term thinking that leads to destructive performance-chasing behavior.

ASSET ALLOCATION

A critical element of an effective investment plan is a long-term, strategic asset allocation based on an investor’s unique circumstances. Because it is impossible to consistently and accurately predict which investment will provide the highest return in the short run, sensible investors diversify portfolios among various asset classes and commit to a long-term mix that is right for them. Once an

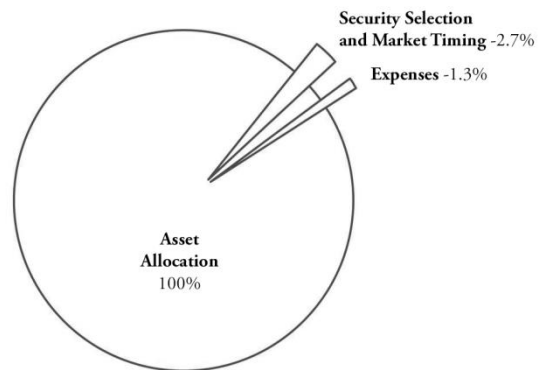
asset allocation is established, it should be altered due to a change in an investors’ personal situation, but never in response to the latest investment fad. Great care should be taken in determining the right asset allocation because it will have the largest impact on a portfolio’s long-term performance.

Investors spend most of their time agonizing over security selection and market timing, efforts which actually hurt their results.

In fact, a well-known study of 94 U.S. balanced mutual funds over ten years found that asset allocation explained more than 100% of the funds’ returns.³ Stock picking (“IBM or Intel?”) and market timing (“when do I get in and out?”) actually detracted from

performance, meaning returns would have been higher had fund managers not engaged in those efforts. The same holds true for individual investors, most of whom spend their energy agonizing over which stocks to buy and when to buy them, labors which are not only a waste of time, but are actually hurting them.

Asset allocation explains performance 1988—1998



Percentage to Total Fund Return Explained by Investment Activity, 94 US Balanced Mutual Funds. Source: Morningstar Principia and “Does Asset Allocation Policy Explain 40, 90, Or 100 Percent of Performance?” Ibbotson and Kaplan, Financial Analysts Journal, Jan/Feb 2000.

CORE ASSET CLASSES

Basic building blocks of a portfolio’s asset allocation include equities (stocks), fixed income (bonds), real estate and cash. Each of these core asset classes possesses valuable characteristics,

such as growth potential, income generation, inflation protection and capital preservation.

U.S. stocks, which are an ownership stake in corporate America, provide portfolio growth. No other asset class has amassed such an impressive record of long-term performance.⁴ Stocks have also provided good protection against inflation, although such protection is not always reliable over short time periods.

These core asset classes are the primary building blocks of a well-diversified portfolio.

International stocks share the same fundamental characteristics of U.S. stocks, with an important difference: foreign stocks often respond differently to the factors that influence stock returns around the globe (e.g., economic growth, interest rates, political events, currency fluctuations, etc.). These factors provide powerful diversification benefits for investment portfolios. Developed-country foreign stocks should provide long-term returns similar to U.S. stocks, while riskier emerging market stocks offer greater long-term return opportunities.

Bonds represent an ownership position in the public debt of a government, municipality or corporation. Bondholders expect to earn interest payments in exchange for their loan to the borrowing entity, in addition to the safe return of their principal upon maturity of the loan. Because bond investors possess a priority claim on a company’s assets in the event of bankruptcy, they assume less risk than do stock investors. Expected returns for bonds are, therefore, less than those of stocks.

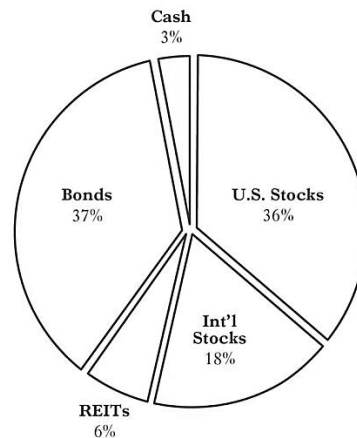
Bonds’ appeal, however, comes from the stability and income they provide, particularly during periods of stock market distress. Well-diversified portfolios include low-risk U.S. government and municipal bonds, high-quality international government bonds, as well as inflation-protected bonds, which guard against the loss of purchasing power due to inflation.

Real estate equity investments, via publicly-traded REITs (real estate investment trusts), represent

ownership in commercial and residential properties, warehouse facilities, and retail establishments. The return potential and risk characteristics of REITs fall somewhere between that of stocks and bonds. In offering investors bond-like cash flow streams and stock-like appreciation, real estate equities provide significant diversification benefits to investors. Investments in REITs can be made across both U.S. and international markets.

The lower correlation among these core asset classes makes them primary building blocks for a diversified portfolio. Correlation measures how the returns of two assets move relative to each other. Consider the stock of two companies: Umbrella Co. and Sunglasses, Inc. If shares of Umbrella Co. surge in the rainy months while shares of Sunglasses, Inc. decline, the two companies’ returns are said to be negatively correlated. The returns of Umbrella Co. would be positively correlated, however, with the returns of a company that produces rain coats. The work of Nobel Prize laureates Harry Markowitz, William Sharpe and Merton Miller demonstrated that combining such non-correlated asset classes in a diversified portfolio, such as the one below, results in higher returns with less risk as compared to non-diversified portfolios.

Diversified 60/40 Portfolio Example



ACTIVE vs. PASSIVE MANAGEMENT

Once a target asset allocation is established, investors must choose which investment vehicles to utilize in building their portfolio. Portfolios of stocks, bonds and funds are typically managed according to one of two general investment strategies: active or passive management.

Active management relies on stock-picking and market timing, and is based on the belief that market prices do not always reflect the true value of the underlying security. Active investors hope to outperform the market by purchasing undervalued securities and/or selling overvalued ones, over and over again, at the right time.

In contrast, passive management is a buy-and-hold approach that makes no attempt to pick “attractive” over “unattractive” securities or time the market. Passive management, commonly referred to as “indexing”, is based on the belief that markets are reasonably efficient. That is, prices reflect a security’s true value well enough that no one can consistently profit from superior insight, unique information or both. Investors pursuing passive strategies are ensured of earning the returns afforded by the capital markets.

Most investors would do well to consider passively-managed asset class (index) funds when building their portfolio, primarily because of the significant costs associated with playing the active game. When it comes to investing, you get what you *don’t* pay for.

LOWER COSTS ARE BETTER

Investment costs vary in form, but are always a direct subtraction from investors’ share of the returns. There are the explicit costs investors see, such as management fees in the form of fund expense ratios. The average stock mutual fund charges 1.2% per year for management services.⁵ This fee is deducted from a fund’s return before that net return ends up in an investor’s pocket.

Active managers defend these higher fees, arguing they are levied to pay for the teams of analysts and other gurus hired to try to beat the market.

Less transparent fees include transaction and trading costs, which can easily add another 0.50% to the annual bill for active management.⁶ Active

“The evidence is overwhelming: Over the long-run, active managers are not beating the market; the market is beating them.”

managers trade more frequently, as they attempt to take advantage of perceived security price anomalies and timing opportunities. Index funds trade less frequently, as they simply “buy the market.”

Another cost, hidden from view until tax time, takes the form of taxes owed on capital gains. Active investors tend to realize a higher amount of capital gains, resulting from frenetic turnover (trading), many of which are short-term in nature and subject to higher tax rates. These costs can further reduce the after-tax return of active strategies by 0.95% or more.⁷

Finally, most active fund managers hold cash to meet inevitable shareholder redemptions and to have “dry powder” to time the market. Cash balances in stock mutual funds cost fund shareholders, in the form of lost return, an average of 0.70% per year.⁸ Index funds hold no such cash.

In aggregate, these costs amount to a nearly 3% headwind in the face of active managers attempting to outperform the passive index. It proves a stiff headwind, indeed, as the vast majority of managers fail to succeed in overcoming the costs of active management.

SUPERIOR PERFORMANCE

Despite media headlines touting winners and Wall Street advertisements promoting outperformance, both winners and outperformance are in short supply in the investment game. The fact remains that the majority of “expert” managers fail not only to deliver returns that outperform the market, but to deliver performance that even matches the

market's return. The evidence is overwhelming: over the long-run, these active managers are not beating the market; the market is beating them.⁹

For the fifteen years ending December 2014, between 66% and 81% of actively-managed mutual funds underperformed their benchmarks, depending on style category (large value, mid growth, small blend, etc.).¹⁰ When index benchmarks handily beat the majority of actively managed stock mutual funds, it becomes clear investor success does not depend on stock-picking, timing or forecasting the future with accuracy. U.S. Bond managers fare even worse, with 84% to 97% of funds underperforming their fixed income benchmark over fifteen years.¹¹

It is not simply the mutual fund managers of the world, however, who are failing to beat the market. From 1988-2005, a basic 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.¹² Despite their resources to hire the most talented institutional managers, even the "smart money" fails to match benchmark returns.

As these studies show, the average active fund manager underperforms the return available to investors via a passive index. While somewhat sobering, this seems intuitive: as a group, investors are the market and hence achieve the market return. Absent costs, the return of the market is the average of those that beat the market and those that underperform the market. One would therefore expect investors as a group to underperform the market after management fees and investment costs.

After costs, the market "average" is not average in the typical sense. More akin to "par" in golf, the market return is far superior to the scorecard of most investors.

Despite their collective failure to outperform, a few active managers have outperformed the market over long time periods. In these rare cases,

the numbers who do are less than what one would expect by chance, rendering it nearly impossible to identify these winners in advance.

Winning managers, in fact, very rarely repeat their prior performance. Consider the results of the best-performing stock mutual funds over the ten years from 1983 to 1993: Of the top twenty funds in that period, sixteen failed to match the market return in the subsequent decade.¹³ Was their original success due to skill, or were they just lucky? It's hard to know.

Outperformance is exceedingly rare, fleeting, and, like the outcome of a coin flip, difficult to attribute to skill over luck.

Fortunately, an ability to predict the future is not required to be successful. If investors can simply resist the Wall Street hype surrounding yesterday's winning manager, they will minimize the risk of underperforming the market. After all, if roughly 80% of active managers can't beat the market, then tapping into the market's return via index funds will likely earn you a spot in the top 20% of all investors over time. That's good company.

Fortunately, an ability to predict the future isn't necessary to achieve investment success.

MORE THAN "JUST AN INDEX FUND"

Having minimized costs and the risk of underperformance by embracing index funds, sensible investors turn their attention to ensuring the lion's share of returns actually end up in their pocket. They do so by focusing on: 1) superior portfolio engineering, 2) ongoing tax management, and 3) disciplined rebalancing.

SUPERIOR PORTFOLIO ENGINEERING

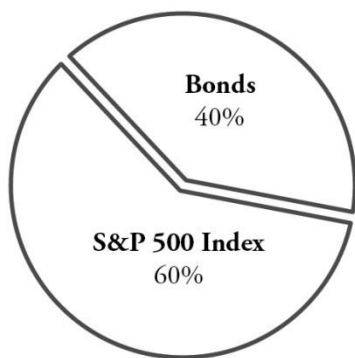
The first thing we want to do is engineer the smartest portfolio possible.

Using a series of four pie charts representing investor portfolios, we will show exactly how portfolios can be constructed to deliver high expected returns with less risk:

PORTFOLIO #1

We start with a very basic portfolio and call it Portfolio #1. A mix of 60% stocks and 40% bonds represented by the S&P 500 Index and Barclays Aggregate Bond Index, respectively, Portfolio #1 is similar to the way pension funds, college endowments and other large institutional investors have traditionally allocated their assets.¹⁴ The stocks provide growth while the bonds provide stability and income.

Portfolio #1



Portfolio #1

Annual Return 9.7%
Standard Deviation 10.0%

\$100,000 grew to \$6,441,000.
 January 1970 - December 2014.

Assumes monthly rebalancing.
 Source: Dimensional Fund Advisors; Vista Capital Partners, Inc.

A 60/40 mix is not the right allocation for every investor. Younger investors who are able to tolerate more risk may not need 40% of their portfolios in bonds. This 60/40 mix, however, happens to be the same portfolio we referenced earlier; the one that outperformed 75% of the nation’s largest and most sophisticated corporate pension plans from 1988 through 2004. This “simple” 60/40 portfolio, therefore, is a very high-standard portfolio. Hundreds of thousands of investors would be better off owning Portfolio #1 than their current mix of investments.

From 1970 through 2014, Portfolio #1 returned an average of 9.7% per year. \$100,000 invested in

1970 grew to \$6.4 million by the end of 2014. Over that period, the portfolio had a standard deviation of 10.0%. Standard deviation is a common measure of risk, quantifying the volatility of a portfolio’s expected return.

Standard deviation can be thought of in this way: assume we are planning a vacation to either Mexico or Montana and want to be assured of warm and sunny weather. If the average daily temperature in Mexico is 80 degrees with a standard deviation of 10 degrees, we can reasonably expect the temperature during our vacation to be somewhere between 70 degrees and 90 degrees. That information is helpful when packing for the trip and gives us confidence the weather is going to be sunny and warm. If the average daily temperature in Montana is also 80 degrees but has a standard deviation of 30 degrees, the range of expected temperatures widens to between 50 degrees and 110 degrees. If we don’t intend to pack our warm coats, we will prefer Mexico with its more predictable weather. In investing, greater predictability comes from lower volatility. For two portfolios with the same return, the one with the lower standard deviation is better.

Portfolio #1 is a high-standard portfolio, but can it be improved upon? Absolutely. We need a portfolio that can be expected to deliver returns above 9.7% with a standard deviation equal to or lower than 10.0%. Where do we start? We begin by engineering the portfolio towards statistically significant sources of return.

SMALL CAPS BEAT LARGE CAPS; VALUE TRUMPS GROWTH

What drives stock returns? A number of highly-respected academics have spent their entire careers conducting rigorous research into that very question. Their research concludes that over the past 80 years, investors have been rewarded for favoring value stocks over growth stocks and small company stocks over large company stocks. This “size and value effect” holds true across U.S., international and emerging markets.

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 and fewer financial resources. Large stocks are those whose success helped them grow into the large companies they are.

The reason small and value stocks provide higher returns? They are riskier. If the management of a small company or a value company went to the bank for a loan, it would be charged a higher rate of interest. This is because of the company's poor prospects, financial distress, or limited operating history. By charging a higher rate of interest, the bank compensates itself for higher risk. If that same management went to the public markets to raise capital—either through issuance of stock or bonds—investors should also demand a higher return. In fact, they do. Small cap stocks and value stocks have historically provided higher returns.¹⁵

Thought of in this context, risk is intuitively appealing: we are rewarded for taking risk across these size and value dimensions. Would we, as investors, want it any other way? What would happen if the smallest and riskiest stocks offered investors the lowest returns?

PORTFOLIO #2

Armed with this knowledge, we can add small cap stocks to Portfolio #1 in order to increase its expected return. If we simply make an arbitrary 50/50 split of the existing stock component into large cap and small cap stocks, we now have a portfolio mix of 30% large cap stocks (S&P 500), 30% small cap stocks and 40% bonds. We'll call this Portfolio #2.

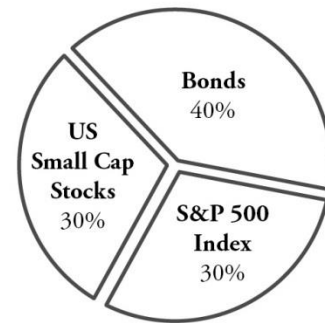
To represent small cap stocks, we use the CRSP 6-10, a measure of the smallest 50% of all publicly traded U.S. stocks. Instead of a portfolio pie with two slices—stocks and bonds—we now have a portfolio divided into three slices: large cap U.S. stocks, small cap U.S. stocks, and bonds.

Over the past 80 years, investors have been rewarded for favoring value stocks over growth stocks and small cap stocks over large cap stocks.

From 1970 through 2014 this combination of assets produced, on average, a 10.4% annual return. This is an improvement over Portfolio #1, which we already know to be a very good portfolio. One hundred thousand dollars invested in Portfolio #2 would have grown to \$8.5 million, delivering more than \$2,070,000 in additional return compared to Portfolio #1. The standard deviation, however, has also risen—to 11.2%.

Despite improving on Portfolio #1's return, we have increased the portfolio's risk profile. While this does not necessarily make Portfolio #2 an unappealing choice, it is not "optimal" from a risk/return standpoint. Remember, our goal in creating the Optimal Portfolio is to improve on Portfolio #1's return and reduce its risk.

Portfolio #2



Portfolio #2

Annual Return 10.4%
Standard Deviation 11.2%

\$100,000 grew to \$8,513,000.
 January 1970 - December 2014.

Assumes monthly rebalancing.
 Source: Dimensional Fund Advisors; Vista Capital Partners, Inc.

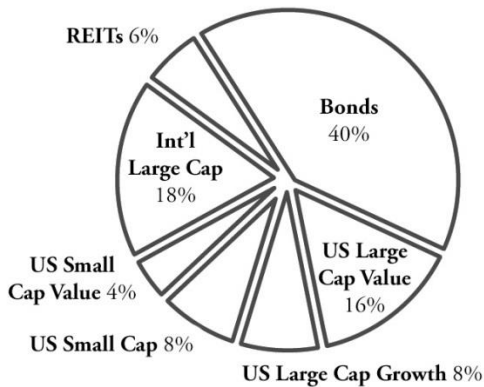
The Nobel prize-winning economists we referenced earlier concluded that a portfolio's expected return can be increased while reducing its expected risk by adding non-correlated asset classes, particularly if structured to capitalize on the "size and value" factors driving investment returns.

PORTFOLIO #3

In Portfolio #3, we introduce a value component and continue to fine-tune the existing allocation to small company stocks.

We start by introducing a value bias into the portfolio’s U.S. large cap and small cap allocations. We make sure our small caps include “micro” cap stocks, the smallest 4% of all publicly-traded companies in the U.S. Research shows these “smaller” small cap stocks tend to outperform their “larger” small cap peers over long-time periods, precisely because they are inherently riskier.¹⁶

Portfolio #3



Portfolio #3

Annual Return 10.9%
Standard Deviation 10.1%

\$100,000 grew to \$10,615,000.

January 1970 - December 2014.

Assumes monthly rebalancing.
 Source: Dimensional Fund Advisors; Vista Capital Partners, Inc.

To provide global economic diversification, we add international stocks to the portfolio. Finally, we add real estate—via publicly-traded real estate investment trusts (REITs)—the fundamental characteristics of which provide unique diversifying power for investor portfolios. We have now constructed a portfolio of 16% large cap value stocks, 8% large cap growth

stocks, 18% international stocks, 12% small cap stocks (including micro-cap and value stocks), 6% REITs and 40% bonds. We will call this diversified mix of assets Portfolio #3.

These asset classes represent an enormous opportunity most investors miss.

We find the expected return of Portfolio #3 has increased further to 10.9%. That’s more than 1.2%, per year, of

additional return compared to Portfolio #1. \$100,000 invested in Portfolio #3 would have grown to \$10.6 million, over \$4,100,000 more than Portfolio #1’s ending value. We also find that standard deviation, or risk, has fallen dramatically to 10.1%.

We have now created a portfolio, as we set out to, that has a higher expected return with similar or less risk than Portfolio #1. Portfolio #1 was itself a very high-standard portfolio, historically delivering higher returns than 75% of the largest, most sophisticated pension plan portfolios. Is Portfolio #3 the optimal portfolio? Not quite.

THE OPTIMAL PORTFOLIO

The next step in improving upon Portfolio #3 is to introduce the same size and value tilts, as applied to U.S. stocks, to the international holdings. This is accomplished by adding international small cap stocks, international small cap value stocks, and emerging market small cap value stocks. To the existing U.S. real estate allocation, we add international REITs. These asset classes are inherently risky on a stand-alone basis, but their low correlation to U.S. stocks help reduce total portfolio risk at the same time they help boost long-term returns.

The Optimal Portfolio introduces these new slices to the pie, harnessing the return and diversification benefits of less-correlated asset classes. These asset classes represent an opportunity most investors miss.

The last step in optimizing the risk/return profile of the portfolio is to improve its bond allocation. Thus far we have been content to hold a broad market index of intermediate-term bonds. This is not a bad choice—after all, it is a diversified mix

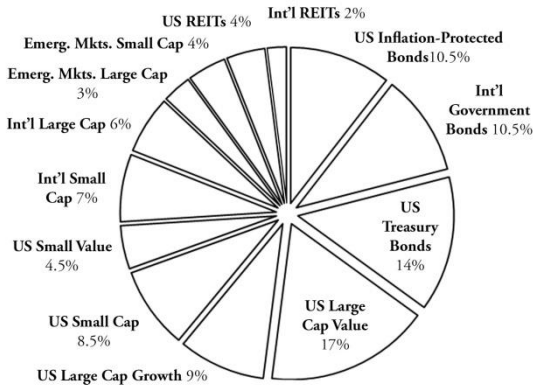
of U.S. Treasury, agency, corporate, mortgage and high-yield bonds. But it's not an *optimal* choice, particularly after we examine why we own bonds in the first place.

We invest in bonds first and foremost to preserve capital. Yes, bonds provide income and help reduce portfolio volatility, but the primary reason to own bonds is for disaster protection in the event of a worst-case scenario. For this reason, only the safest of bonds will do.

The primary reason to own bonds is for disaster protection in the event of a worst-case scenario.

U.S. Treasury bonds provide an unparalleled level of protection. During the extreme market pessimism of the Great Depression, when \$1 in 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 portfolio protection.

The Optimal Portfolio



The Optimal Portfolio
Annual Return 11.0%
Standard Deviation 10.0%
\$100,000 grew to \$10,857,000.
 January 1970 - December 2014.

Assumes monthly rebalancing. Pie chart percentages does not add up to 100 due to rounding. Source: Dimensional Fund Advisors; Vista Capital Partners, Inc.

Having minimized default risk by favoring Treasury over corporate bonds, we turn our attention to inflation risk.

To protect against the corrosive effects of inflation, we add Treasury Inflation-protected Securities (TIPS). The interest and principal value of these bonds is adjusted for inflation, as measured by the Consumer Price Index (CPI). What's more, TIPS are not perfectly correlated with regular (nominal) Treasury bonds, further enhancing portfolio diversification.

As you would expect from a safer bond allocation, the portfolio's overall standard deviation—or risk—falls dramatically. We can therefore reduce our portfolio's allocation to bonds from 40% to 35%, using this 5% to take risk where we expect to be adequately compensated for it: in stocks.

The Optimal Portfolio has returned 11.0% per year, on average, with 10.0% standard deviation. \$100,000 invested in the Optimal Portfolio in 1970 would have grown to nearly \$10.9 million, about \$4.4 million more than the ending value of Portfolio #1. Through superior portfolio engineering, we have constructed a portfolio capable of delivering higher returns with similar risk.

MINIMIZING TAXES

With the Optimal Portfolio asset allocation firmly established, we turn our attention to minimizing the impact of taxes.

To maximize after-tax returns, great care should be taken first to determine the proper asset *location* (not to be confused with asset allocation) for each asset. Asset location refers to the concept of placing the most highly taxed assets in tax-deferred accounts, while putting more lightly taxed assets in taxable accounts.

Bonds and REITs, whose payouts can be taxed at rates of up to 39.6%, are stashed in tax-deferred accounts whenever possible. This strategy often permits owning higher-yielding taxable bonds in IRAs and 401(k)s instead of municipal bonds in taxable accounts (municipal bonds have

historically yielded 20% less than Treasury bonds). When bonds must be held in taxable accounts, municipal bonds are a good option for high earners since their low default rates give them risk characteristics similar to those of Treasury bonds and they're tax-free. Stocks, whose capital gains and dividends can be taxed at a federal rate up to 23.8%, are invested in taxable accounts.

While anyone can structure their portfolio in such a manner, relatively few do. A 2004 Federal Reserve survey revealed Americans invest their taxable accounts and tax-deferred accounts almost identically, with about 65% of each devoted to stocks.¹⁷ 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%.¹⁸

Once the asset location decision has been made, an ongoing commitment to low turnover (trading) keeps realized gains—and their tax impact—to a minimum. This is just another way to ensure more of the available return ends up in an investor's pocket.

DISCIPLINED REBALANCING

The foundation for investment success has been built once the Optimal Portfolio is invested. At this point, the ongoing monitoring and portfolio management process begins.

Since the performance of the specific asset classes will vary over time, the portfolio's asset mix will drift from its target allocation. Rebalancing is the process of adjusting an investment portfolio's composition to maintain the desired asset mix.

Used primarily to control portfolio risk, rebalancing also serves to increase investment returns by selling high and buying low since, by definition, it requires selling an appreciated asset class and buying an asset class that has fallen in relative value.

Rebalancing might best be illustrated by an example: On January 1, 1998 an investor, Mary, builds a very basic portfolio of only two asset classes. The portfolio's long-term target allocation is 60% stocks and 40% bonds. By the end of 1999, assuming no rebalancing has taken place, the portfolio's allocation has drifted to 72% stocks and 28% bonds due to stocks' strong performance during the period.

For a moderately conservative investor like Mary, this may prove an unacceptable shift in asset mix. Her portfolio is now more risky than initially constructed: it has more exposure to stock market risk and less stability in the form of bonds.

Allocating assets to the wrong type of account can reduce a portfolio's ending value by more than 20%.

To return the portfolio to its initial target allocation, a disciplined rebalancing strategy would dictate selling 12% of the stock

allocation and reinvesting it in the bond allocation, effectively re-aligning the asset weights back to the initial 60/40 target.

The alternative to rebalancing is, quite simply, to do nothing. A buy-and-hold investor purchases an initial portfolio and, regardless of whether the market is up or down, never alters that mix. Over time, a portfolio that is never rebalanced will become skewed towards the highest-returning asset class (like stocks). Over a 30-year period, a portfolio originally allocated 60% to stocks and 40% to bonds—and never rebalanced—would drift to a 90% stock, 10% bond mix. This portfolio, while expected to return more than the 60/40 portfolio, will also fluctuate more greatly. If Mary had the ability and willingness to accept the higher risk of this portfolio, she should have invested it accordingly in the first place.

Most investors pursue neither a buy-and-hold strategy nor one based on disciplined rebalancing. Believing what has done well in the recent past will continue to do so in the future, investors load up on the in-favor asset class. The notion of rebalancing and actually *selling* stocks in 1999 was not one embraced by many investors. Accordingly, Mary likely *added* to her stock positions in 1999, further increasing the portion

of risky assets in the portfolio at the point of maximum optimism in the market.

More recent times are no different. In March of 2009, with the U.S. stock market down nearly 60% from its peak and the headlines warning of more pain to come, investors fled stocks at a record pace. Rather than rebalance (pare back bonds and add to stocks), as a disciplined asset allocation and rebalancing approach called for, investors did the opposite, unloading stocks and piling into cash, bonds and other perceived safe havens. Unfortunately for them, the stock market soon took off—without their money in it—soaring more than 50% in the subsequent six months.

Undisciplined, emotional decisions such as these take an enormous toll on a portfolio’s long-term returns. Successful investors resist, at whatever the cost, the pressure to engage in such moves. They instead adhere to a disciplined rebalancing strategy that discourages them from abandoning logical, appropriate investment plans at precisely the wrong time. Disciplined rebalancing is effective, efficient and makes sense: it controls risk, helps investors stay the course, and—over the long run—enhances investment returns.¹⁹

A PROVEN INVESTMENT APPROACH

We should make clear that the Optimal Portfolio is not based on anything that happened last year or last quarter. It is not based on anything that is expected to happen next quarter or next year. It is based on Nobel prize-winning research and discipline; not hope, market timing or stock picking.

The Optimal Portfolio is based on Nobel Prize-winning research; not hope, luck or timing.

The Optimal Portfolio approach is fundamentally different than that pursued by the vast majority of investors. It replaces short-term emotion with the discipline and reason to make careful, rational choices.

Best of all, it is repeatable and requires no advance knowledge of what investments will be “hot” in the near future.

Sensible investors embrace the Optimal Portfolio

approach by:

- Drafting a written investment plan tailored to their circumstances
- Building an appropriate and goals-based mix of non-correlated asset classes
- Adopting an asset allocation built around statistically significant sources of return
- Using passively-managed, low-cost index funds to ensure superior long-term performance
- Paying attention to asset location, low turnover and minimizing taxes
- Committing to a disciplined rebalancing process that manages risk, enhances returns and shields against emotional decision making

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

Vista Capital Partners, Inc. 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. Call us at 503-772-9500 or visit www.vistacp.com.

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