Asset Allocation Special Report

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Staying on Course: The Value of Rebalancing

Investing is the ultimate exercise in patience. The passage of time has historically delivered, on average, positive returns for major equity and bond markets, and over the year, the compounding of these returns has proven a tremendous creator of wealth.

But to realize these potential long-term benefits, one must endure the challenges posed by the short-term uncertainty inherent in securities markets. One such set of decisions involves transacting, including initiating positions; rebalancing to a targeted asset allocation; or selling assets to raise cash or begin decumulation. An undisciplined approach to trading decisions, particularly during volatile market conditions, can negatively impact performance and make for a difficult investing experience.

By exploring several alternate rules and their effectiveness in the context of history, we can suggest best practices for implementing investment portfolios. In our opinion, a disciplined approach to rebalancing portfolios annually can create additional return potential and lower volatility versus never rebalancing.

Portfolios Can Change With Time

For a long-term investor, patience and risk management are essentials. But it is also important to differentiate patience from inattention. Maintaining a mix of investments delivering returns and risks consistent with a client's needs requires timely adjustments, as many common occurrences within a portfolio serve to move it off its initial asset allocation.

Performance is one such natural influence. As assets rise or fall in value, their weights also change based on how they have performed relative to the portfolio. In other words, portfolios will see rising weights in asset classes that have outperformed, and falling weights in those that have underperformed. So, portfolios that are not rebalanced will typically be overweight assets with the strongest trailing performance. Often, these can be risky due to higher embedded expectations or richer valuations. Thus investors who don't rebalance may find themselves overexposed to rich asset classes and underexposed to cheap ones.

Additionally, behavioral biases can affect capital allocation. Given flows of new capital, investors must decide on an appropriate allocation. The fields of behavioral finance and prospect theory study these decisions, and hypothesize that, for psychological reasons, investors can have tendencies to make systematically irrational decisions[1]. Often, this can prompt investors to overweight asset classes that have outperformed recently in hope of continuing this outperformance. Alternatively, this can also lead to selling out of asset classes when their markets have declined. Emotional views of performance do not constitute well-reasoned investment opinions. Left unchecked, these decisions can affect allocations and potentially harm performance.

Finally, investors often elect to reinvest the income produced by a specific investment product back into that same product. This encourages greater savings, as reinvesting income within the portfolio can build value more effectively than simply distributing the income, or letting it sit in cash or short-duration fixed income that is easily withdrawn. However, this returns income to its native asset class rather than holistically deployed, and can skew weights toward classes with greater income-generation potential.

Rebalancing Can Harvest Value From Volatility

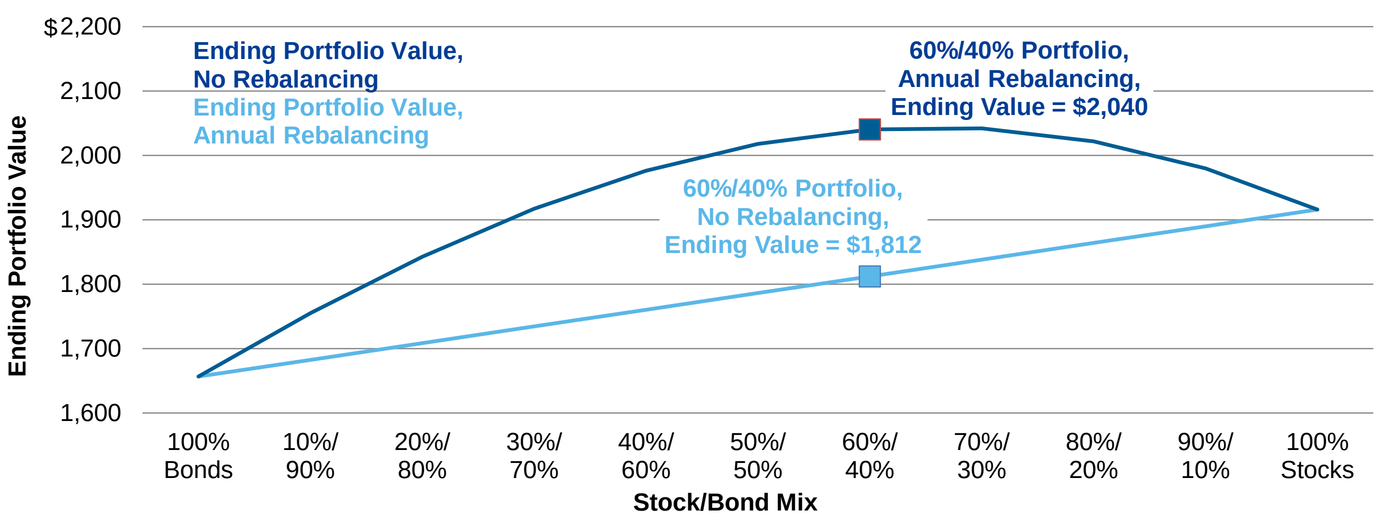
Investing is also a trade-off between risk and return. Bearing the risk of uncertain asset values helps create long-term growth of asset prices. In this manner, risk is viewed in a negative light, as more uncertain returns can, in adverse circumstances, equate to losses, and requires a reward to be such that investors are compensated.

An alternate view casts volatility with the potential to create value. Over the very long term, and under a disciplined rebalancing regime, recent work[2] describes how this volatility can be "harvested" to benefit the creation of wealth through rebalancing across overvalued and undervalued cross-sectional price differences over multiple periods. As an example, Exhibit 1

[1]See, for example, D. Kahneman and A. Tversky, "Prospect Theory: An Analysis of Decision Under Risk." *Econometrica* (March 1979).
[2]See P. Bouchey, V. Nemtchinov, A. Paulsen and D. Stein. "Volatility Harvesting: Why Does Diversifying and Rebalancing Create Portfolio Growth?" *Journal of Wealth Management* (Fall 2012).

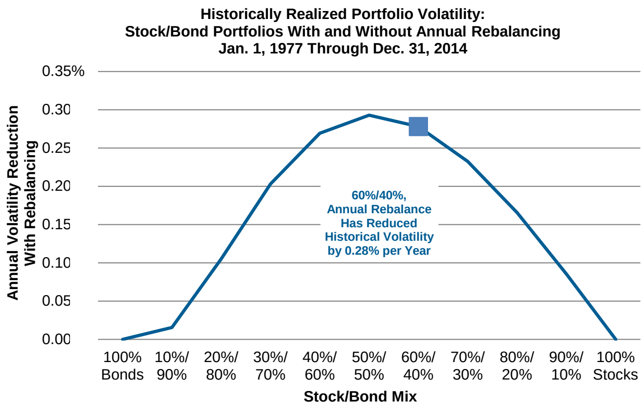
Exhibit 1: Regular Rebalancing Has Historically Bolstered Investment Returns

Ending Portfolio Value: Stock/Bond Portfolios With and Without Annual Rebalancing
Starting Value $100, Jan. 1, 1977 Through Dec. 31, 2014



Note: Returns for stocks are based on the S&P 500 Index, for bonds, the Barclays US Aggregate Bond Index.
Source: Bloomberg, Morgan Stanley Wealth Management GIC as of Dec. 31, 2014

Exhibit 2: Annual Rebalancing Has Muted Portfolio Volatility



Note: Returns for stocks are based on the S&P 500 Index, for bonds, the Barclays US Aggregate Bond Index.
Source: Bloomberg, Morgan Stanley Wealth Management GIC as of Dec. 31, 2014

shows two long-term constructions of domestic stock and bond portfolios of different mixes. Here, we compare the differences in value after 20-plus years and note that the rebalanced version has significantly outperformed the version that was not rebalanced. In addition, a 60% stocks/40% bonds portfolio rebalanced annually has outperformed a static 100% stock portfolio.

How can this modest amount of rebalancing create such significant value? In essence, rebalancing in this manner takes advantage of long-term effects of mean reversion. By lightening up on stocks after periods of significant outperformance, or topping off positions after periods of underperformance, this discipline helps take advantage of volatility to benefit from these swings. Note this does not require any insight over which asset class will outperform in any given period—only that a disciplined approach dictates a fixed mix of portfolio assets, as well as a set interval during which rebalancing takes place.

The benefits from rebalancing extended beyond improved returns. Rebalancing following declines in stocks by definition means buying more stocks. It would not be unreasonable to suppose that buying into corrections and bear markets would raise the volatility profile of a stock/bond portfolio. Historically, however, this has not been the case—annual rebalancing has actually suppressed portfolio volatility (see Exhibit 2).

While perhaps surprising, this is intuitive considering that, in the absence of rebalancing, a portfolio can significantly stray from its initial allocation. We examined this phenomenon over recent history. We initiated a 60% stock/40% bond portfolio beginning in 1977, and let the portfolio grow with no rebalancing. As shown in Exhibit 3, this sample portfolio would have been both overweight equities—having an allocation greater than 60%—despite the fact that the asset class was generally more expensive than long-term history: the median forward price/ earnings ratio since 1977 is 16. Conversely, prior to market tops, the sample portfolio was generally underweight equities despite the asset class' attractive valuation. In each of these cases, rebalancing to establish an allocation closer to target would have had a meaningful benefit to performance.

Following periods in which an asset class meaningfully outperforms, portfolios will likely be overweight that asset. As a consequence, they will have strayed from the original allocation, which can change the portfolio's risk profile. Rebalancing back to the original allocation restored the original risk profile and reduced volatility across different stock/bond allocations historically. This annual rebalancing would have prevented a portfolio from being overweight equities or bonds at the end of a bull market, thus reducing volatility into a correction. It would have also restored the portfolio's allocation after a major correction, which would have helped returns.

Alternatives to Rebalancing Annually

So far, we have explored the potential benefits of rebalancing once per year, independent of market action. In this section, we explore alternative rules and see that simple rebalancing has been effective versus these other criteria.

Rebalancing annually has both harvested additional return from volatility of markets, as well as reduced realized volatility by maintaining a stable allocation and risk profile. A natural question is, if we rebalance more frequently, will these benefits be compounded? Exhibit 4 (see page 4) shows charts for realized value of stock/bond portfolios under monthly and quarterly, as well as annual rebalancing. Rebalancing quarterly has not shown a material improvement versus annual rebalancing, and rebalancing monthly has actually shown to be less effective historically. Intuitively, this result may relate to the fact that bull markets across the world have frequently spanned years, and by rebalancing too frequently, a portfolio might miss out on some of the compounding effects from growing equity exposure and positive returns over these longer periods. Provided that market

Exhibit 3: Without Rebalancing, Portfolios Have Been Overweight Equities at Market Tops

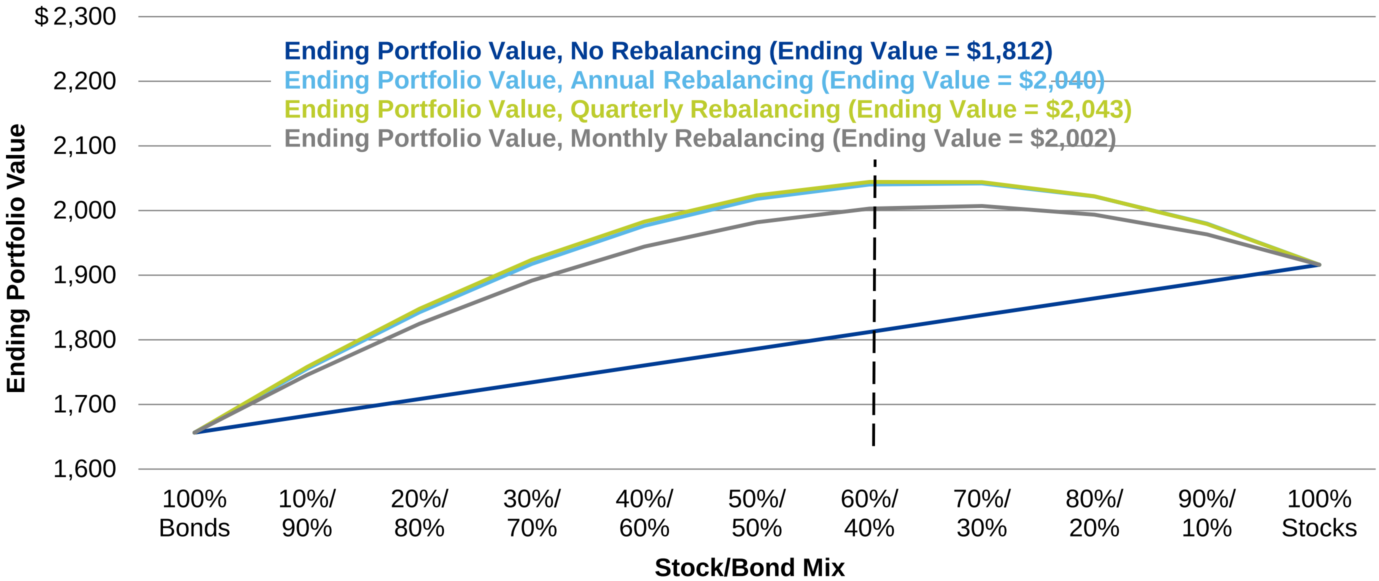
60% Equity/40% Bond Portfolio, Equity Allocation
and Price/Earnings Ratio, Select Market Tops and Bottoms
January 1977 Through June 2015

Period (month end)	Equity Allocation	Price/Earnings Ratio
Market Tops		
August 1987	63%	14.4
March 2000	74%	25.8
September 2007	65%	16.2
Market Bottoms		
Period (month end)	**Equity Allocation**	**Price/Earnings Ratio**
November 1987	54%	10.1
September 2002	55%	14.5
February 2009	45%	11.9

Note: Stocks are represented by the S&P 500 Index; bonds are represented by the Barclays US Aggregate Bond Index.
Source: Bloomberg, Morgan Stanley Wealth Management GIC as of June 30, 2015

Exhibit 4: Incremental Returns to More Frequent (Than Annual) Rebalancing Have Been Muted

Ending Portfolio Value: Stock/Bond Portfolios with Differing Rebalancing Horizons
Starting Value $100, Jan. 1, 1977 Through Dec. 31, 2014



Note: Stock returns are based on the S&P 500 Index, bonds returns, the Barclays US Aggregate Bond Index.
Source: Bloomberg, Morgan Stanley Wealth Management GIC as of Dec. 31, 2014

cycles do not shrink dramatically in duration, it stands to reason that the potential benefits of annual rebalancing should continue.

Another alternative involves "thresholds," or initiating rebalances because asset allocations stray too far from their targeted allocations as measured by a percentage difference (see Exhibit 5). Rebalancing whenever asset classes deviated from target allocations by 1% led to rebalancing much more frequently than annually. At the other extreme, rebalancing when a target was off by 7% led to much less frequent changes. Both approaches yielded results less favorable versus consistent annual rebalancing. Similarly, combining annual and threshold rules—rebalancing once a year, plus anytime allocation deviates above a certain threshold—yielded less favorable results than annual rebalancing alone (see Exhibit 6).

The nature of thresholds gives some indication why they might be less effective. Thresholds are based directly on price action, and as such are the equivalent of an implicit market-timing strategy. Rebalancing at a threshold assumes price action will reverse at or above where the disparity is met. If there is no reversal, the rebalance does not create value; if there is a reversal below, the threshold does not take effect. By contrast, annual (or other periodic) rebalances allow price movements to play out in between reallocations. In this manner they are not triggered by specific, targeted asset pricing movements.

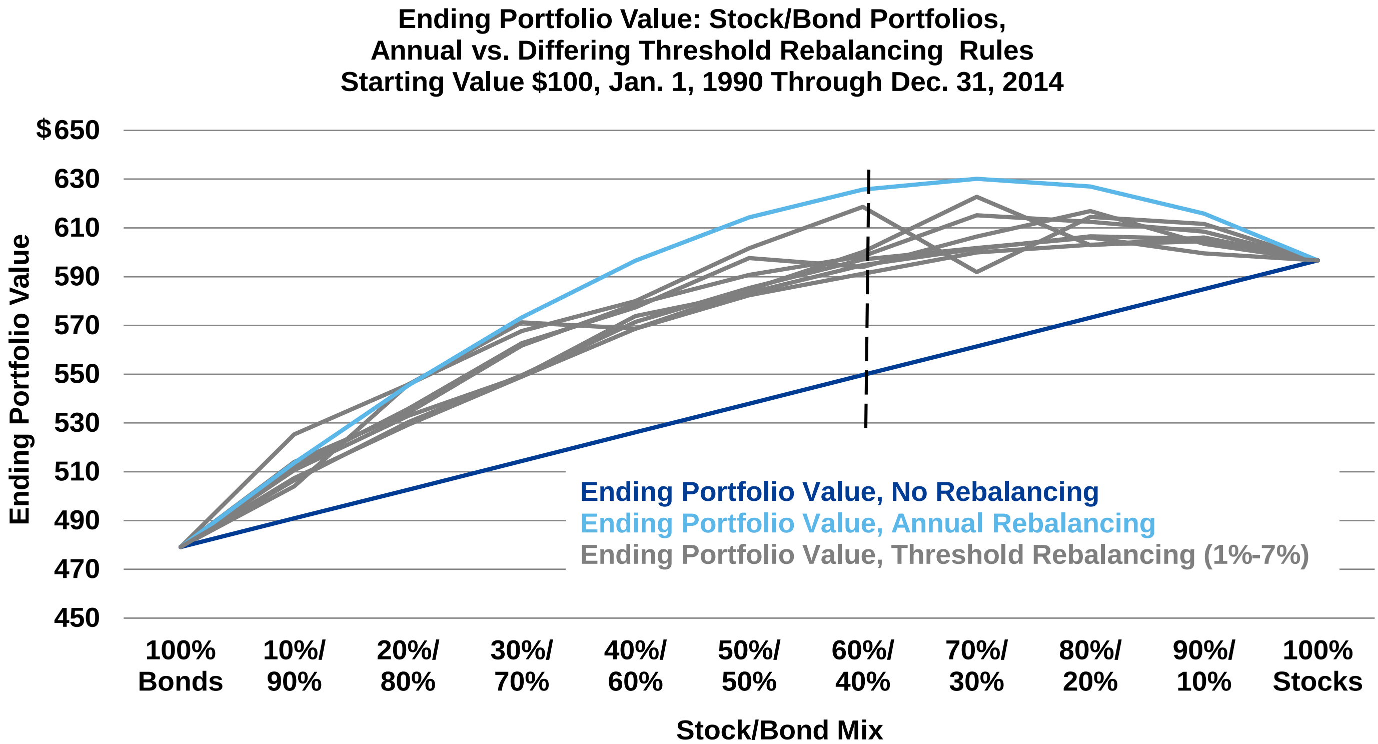
Rebalancing and Asset Allocation

We have discussed rebalancing in the context of simple US stock/bond portfolios. How does rebalancing affect more broadly diversified asset allocation portfolios? To examine this, we used simplified versions of GIC asset allocation models. We used long-term strategic allocations that approximate the current portfolios. We use four asset classes: ultrashort fixed income (Ryan Labs 3-Month Treasury Bill Index), US fixed income (Barclays US Aggregate Bond Index), and alternatives, which are split between hedged strategies (HFRX Global Hedge Fund Index) and real assets (split evenly between the FTSE NAREIT All Equity REITs Index and Dow Jones Commodities Index).

Echoing academic work[3], we found that, similar to our observation for stock/bond portfolios, rebalancing improved both the risk and return profile for broader asset allocation portfolios. As shown in Exhibit 7 (see page 6), rebalancing raised return and muted volatility across risk profiles, with the largest effect within the most broadly blended portfolios. In contrast, opportunistic growth had a more concentrated allocation (80% stocks, 20% alternatives), yielding a smaller magnitude of rebalancing and fewer opportunities to add value.

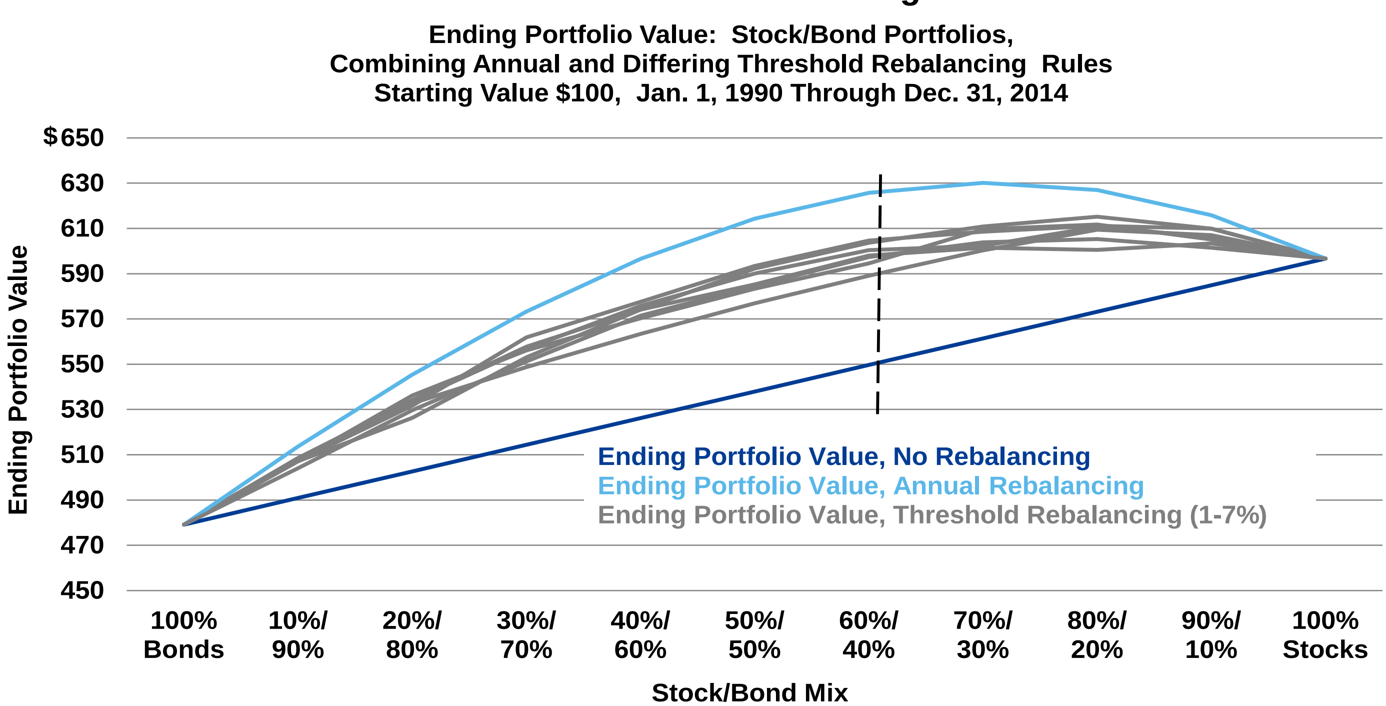
[3]See J. Mulvey, N. Lu, J. Sweemer. "Rebalancing Strategies for Multi-Period Asset Allocation," *Journal of Wealth Management* (Fall 2001).

Exhibit 5: Thresholds Have Been Less Effective, Both as a Stand-Alone Guideline …



Note: Stock returns are based on the S&P 500 Index, bonds returns, the Barclays US Aggregate Bond Index.
Source: Bloomberg, Morgan Stanley Wealth Management GIC as of Dec. 31, 2014

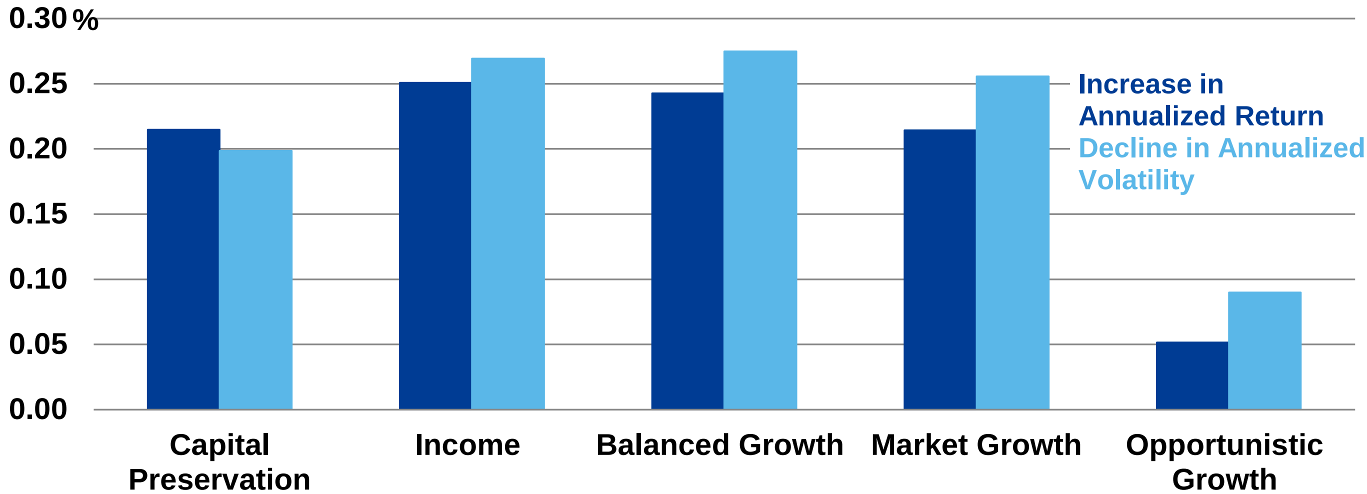
Exhibit 6: … or in Combination With Annual Rebalancing



Note: Stock returns are based on the S&P 500 Index, bonds returns, the Barclays US Aggregate Bond Index.
Source: Bloomberg, Morgan Stanley Wealth Management GIC as of Dec. 31, 2014

Exhibit 7: Rebalancing Has Demonstrated Value Within Asset Allocation Portfolios

Sample Asset Allocation Portfolios:
Historical Risk and Return Benefits, Annual Versus No Rebalancing
Jan. 1, 1998 Through Dec. 31, 2014



Note: Capital Preservation portfolio is 27% stocks, 51% bonds, 15% ultrashort and 7% alternatives; Income portfolio is 42% stocks, 38% bonds, 10% ultrashort and 10% alternatives; Balanced Growth portfolio is, 5% ultrashort and 14% alternatives; Market Growth portfolio is 61% bonds, 21% bonds, 5% ultrashort and 14% alternatives; and Opportunistic Growth portfolio is 80% and 20% bonds. Returns for stocks are based on the S&P 500 Index, for bonds, the Barclays US Aggregate Bond Index, for ultrashort, Ryan Labs 3-Month Treasury Bill Index; and alternatives, the HFRX Global Hedge Fund Index
Source: Bloomberg, Morgan Stanley Wealth Management GIC as of Dec. 31, 2014

Other Rebalancing Situations

Regular rebalancing has been shown to help portfolio performance. There are selective other circumstances, however, where rebalancing has had the opportunity to create value.

Tactical Investment Opportunities. The Global Investment Committee (GIC) often suggests trades specifically for tactically oriented portfolios. These trades take effect when the GIC believes there is an opportunity within markets likely to play out over the tactical horizon, which we define as the next 12 to 18 months; this is in contrast to rebalancing, which mechanically sells recent winners and buys recent losers to bring a portfolio allocation back to its target. In these situations, there is a timely element, which necessitates action prior to the next annually scheduled rebalance. Turnover (and its associated costs) is a critical consideration for the GIC in recommending a trade—if the level of conviction is such that the trade remains attractive even in consideration of these costs, the GIC may initiate such a trade. Investors preferring not to engage in such opportunities may invest using asset allocation models constructed for our strategic horizon of seven years.

Tax-Loss Harvesting. The Internal Revenue Service allows for certain transactions that realize a capital loss to provide a tax deduction, against which capital gains or income may be offset. In certain situations, investors can trade out of securities that have realized a loss, and replace them with securities providing a similar (though not identical) exposure. After an acceptable period of time (typically 30 days), a position in the original security may be reinitiated while preserving the tax benefit.

Liquidity Needs. As with investing, life can present the unexpected. Many of these surprises can create the need for unforeseen funding from one's investment portfolio. In case it becomes necessary to withdraw funds, from an investment perspective, it is optimal to pull from the most liquid, shortest-duration assets (typically cash or ultrashort income). In situations where the most liquid holdings are insufficient, there may be a requirement to liquidate a longer-term asset. In these cases, we typically recommend selling assets that are overweight relative to targeted asset allocation, to help reposition the portfolio in a manner consistent with advised allocation.

Conclusion: Invest with Patience and Discipline

Our work has shown that a disciplined approach to rebalancing portfolios annually can create additional return and lower volatility versus never rebalancing or rebalancing during different time periods. While investing for the long term requires patience, a disciplined approach to rebalancing can help create value beyond the cyclical trends of the market.

A successful investing experience blends the ability to be patient and keep a long-term focus on goals while using discipline to maintain an appropriately allocated portfolio. Staying on course is paramount; but beyond asset allocation, there are many resources to aid in the other aspects of portfolio construction. When choosing specific investments, Morgan Stanley Wealth Management offers guidance in selecting managers, as well as individual stocks and bonds. At a higher level, Financial Advisors can form relationships with clients to better understand their financial needs and goals. This would encourage portfolio construction that is consistent with client goals, yet maintains acceptable levels of risk. ■

Glossary

PRICE/EARNINGS RATIO (P/E) This value ratio of a company's current share price compared to its per-share earnings.

VOLATILITY This is a statistical measure of the dispersion of returns for a given security or market index. Volatility can either be measured by using the standard deviation or variance between returns from that same security or market index. Commonly, the higher the volatility, the riskier the security.

Index Definitions

BARCLAYS US AGGREGATE BOND INDEX This index tracks dollar-denominated investment grade fixed rate bonds. These include US Treasuries, US-government-related, securitized and corporate securities.

DOW JONES-UBS COMMODITY INDEX This index is a broadly diversified index that allows investors to track commodity futures through a single, simple measure.

FTSE NAREIT ALL EQUITY REITS INDEX This is a free-float adjusted, market-capitalization-weighted index of US equity real estate investment trusts.

HFRX GLOBAL HEDGE FUND INDEX Designed to be representative of the overall composition of the hedge fund universe. It is comprised of all eligible hedge fund strategies; including but not limited to convertible arbitrage, distressed securities, equity hedge, equity market neutral, event driven, macro, merger arbitrage, and relative value arbitrage.

MSCI ALL COUNTRY WORLD INDEX This is a free-float-adjusted, market capitalization index that is designed to measure equity market performance in the global developed and emerging markets.

RYAN LABS 3-MONTH TREASURY BILL INDEX This index calculates the simple return of three-month US Treasury bills.

S&P 500 INDEX Regarded as the best single gauge of the US equities market, this capitalization-weighted index includes a representative sample of 500 leading companies in leading industries in the US economy.

Risk Considerations

Rebalancing does not protect against a loss in declining financial markets. There may be a potential tax implication with a rebalancing strategy. Investors should consult with their tax advisor before implementing such a strategy.

Equity securities may fluctuate in response to news on companies, industries, market conditions and general economic environment.

Bonds are subject to interest rate risk. When interest rates rise, bond prices fall; generally the longer a bond's maturity, the more sensitive it is to this risk. Bonds may also be subject to call risk, which is the risk that the issuer will redeem the debt at its option, fully or partially, before the scheduled maturity date. The market value of debt instruments may fluctuate, and proceeds from sales prior to maturity may be more or less than the amount originally invested or the maturity value due to changes in market conditions or changes in the credit quality of the issuer. Bonds are subject to the credit risk of the issuer. This is the risk that the issuer might be unable to make interest and/or principal payments on a timely basis. Bonds are also subject to reinvestment risk, which is the risk that principal and/or interest payments from a given investment may be reinvested at a lower interest rate.

Duration, the most commonly used measure of bond risk, quantifies the effect of changes in interest rates on the price of a bond or bond portfolio. The longer the duration, the more sensitive the bond or portfolio would be to changes in interest rates. Generally, if interest rates rise, bond prices fall and vice versa. Longer-term bonds carry a longer or higher duration than shorter-term bonds; as such, they would be affected by changing interest rates for a greater period of time if interest rates were to increase. Consequently, the price of a long-term bond would drop significantly as compared to the price of a short-term bond.

Growth investing does not guarantee a profit or eliminate risk. The stocks of these companies can have relatively high valuations. Because of these high valuations, an investment in a growth stock can be more risky than an investment in a company with more modest growth expectations.

Value investing does not guarantee a profit or eliminate risk. Not all companies whose stocks are considered to be value stocks are able to turn their business around or successfully employ corrective strategies which would result in stock prices that do not rise as initially expected.

Alternative investments which may be referenced in this report, including private equity funds, real estate funds, hedge funds, managed futures funds, and funds of hedge funds, private equity, and managed futures funds, are speculative and entail significant risks that can include losses due to leveraging or other speculative investment practices, lack of liquidity, volatility of returns, restrictions on transferring interests in a fund, potential lack of diversification, absence and/or delay of information regarding valuations and pricing, complex tax structures and delays in tax reporting, less regulation and higher fees than mutual funds and risks associated with the operations, personnel and processes of the advisor.

Investing in commodities entails significant risks. Commodity prices may be affected by a variety of factors at any time, including but not limited to, (i) changes in supply and demand relationships, (ii) governmental programs and policies, (iii) national and international political and economic events, war and terrorist events, (iv) changes in interest and exchange rates, (v) trading activities in commodities and related contracts, (vi) pestilence, technological change and weather, and (vii) the price volatility of a commodity. In addition, the commodities markets are subject to temporary distortions or other disruptions due to various factors, including lack of liquidity, participation of speculators and government intervention.

REITs investing risks are similar to those associated with direct investments in real estate: property value fluctuations, lack of liquidity, limited diversification and sensitivity to economic factors such as interest rate changes and market recessions.

Asset allocation and diversification do not assure a profit or protect against loss in declining financial markets.

The **indices** are unmanaged. An investor cannot invest directly in an index. They are shown for illustrative purposes only and do not represent the performance of any specific investment.

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