A Granite Hill Investment Field Guide

Keeping Your Compass Pointed North: A Rebalancing Act

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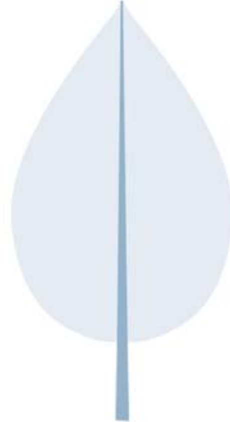

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When it comes to investing, it can be hard to keep your balance.

First, there are the uncontrollable winds of economic change shifting the market sands underneath your carefully constructed portfolio. As if that weren't enough, you can be blown off-course if you lose sight of your personal investment plans by panicking during bear markets or growing over-exuberant during bull markets.

Like a compass that adjusts as needed but can be relied upon to forever point to true north, your plan needs a flexible mechanism to maintain direction so you can reach whatever destination you've defined without exposing yourself to any more investment risk than is required.[1] That mechanism is called **REBALANCING**, and this field guide explores how to use it.

Rebalancing Triggers

In portfolio terms, over time, some of your assets will outperform while others will underperform. If you do nothing in response, your allocation will eventually drift away from your original targets — far enough away that you may eventually end up with a different portfolio than you planned: either too risky or too "safe" (i.e., lacking expected higher returns) for your situation.

The well-conceived portfolio you created to match your investment goals, risk tolerance and capacity, and unique situation took time and effort. Unless your personal circumstances have substantially changed, it makes sense for you to preserve that asset allocation you so carefully planned, since it accounts for much of your portfolio's expected return.[2] If costs and conditions warrant it (to be addressed further on), then it may be time to rebalance.

The Act of Rebalancing: An Introduction

If your portfolio is well diversified, groups of similar securities (asset classes) will perform differently over time. By design, individual asset classes will independently and unpredictably venture off on scouting trips to both lower and higher grounds. As their market prices rise and fall relative to one another, their adventures must be reined in, at least in terms of the proportions of them held within your portfolio.

So, to rebalance, you sell outperforming assets and buy underperforming assets. This moves your portfolio back to its original target allocation.

For a simplified illustration, say your portfolio began with 50 percent stocks and 50 percent bonds. During a bull market, the stocks outpaced the bonds, resulting in your portfolio ending up with 60 percent stocks and 40 percent bonds. To bring your allocation back in balance, you sell enough stocks and buy enough bonds (or inject new assets if available), until you're back to your planned 50/50 mix.

You can take the same actions for components within these broad asset classes, such as rebalancing between large-cap and small-cap

[1] See Granite Hill's Field Guide "Begin Your Journey with Stock-Bond Decisions" for further discussion.

[2] Gilbert L. Beebower , Gary P. Brinson, and L. Randolph Hood, "Determinants of Portfolio Performance," *Financial Analysts Journal* 42, no. 4 (July/August 1986): 15-29. Gilbert L. Beebower, Gary P. Brinson, and Brian D. Singer, "Determinants of Portfolio Performance II: An Update," Financial Analysts Journal 47, no. 3 (May/June 1991): 40.

stocks, value and growth stocks, and U.S. versus international stocks.

Why rebalance?

Why sell a portion of an outperforming asset group and acquire a larger share of an underperforming one, when gut reaction might suggest that selling previous winners may hinder your performance? Let's take a closer look.

First, your well-diversified portfolio will experience less overall volatility as extreme movements in allocations to one asset class can be moderated or offset by others. This results in a smoother course to your destination for your portfolio in aggregate. Studies have determined that rebalancing is an important factor in controlling risk and keeping you on this smoother course.

Now, about that future performance. Research on whether rebalanced portfolios actually improve returns is mixed due to different time periods studied and methodologies used. A Vanguard study concluded that rebalancing did not affect performance.[3] Another study, which monitored different frequency, calculated rebalancing efforts at a modest 0.62%.[4]

The take-home is that rebalancing is probably not a tool for pumping up your expected returns, but rather, it's expected to help you more effectively stay the course to capture those returns that you have targeted for within your disciplined investment plan.

Thus, for many investors, the most important benefit to rebalancing is the discipline it imposes.

Let's provide a couple of illustrations. Many investors and even their advisors abandoned their plans when stock returns, as represented by the S&P 500 Index, crashed 43% from January 2008 to February 2009. They panicked, sold their stocks and fled into cash … only to miss out on the ensuing 56% annualized return for the S&P 500 from March 2009 to April 2010. Meanwhile, intermediate Treasury bonds during this period returned 7.5%.

Likewise, in the euphoric 1996–1999 period, when stock and bond annual returns were respectively 26% and 5%, many investors not only allowed their stock allocations drift higher through inaction, but they grew exuberant and proactively added to their stock holdings thinking the party would never end — with disastrous consequences.

Rebalancing eliminates these behavioral mistakes by giving you a prescribed recipe to devotedly follow, instead of casting the lot of your portfolio to random fate and guesswork.

Challenges and decision factors

While rebalancing offers important benefits, there also are costs incurred during the trades, as well as other factors to be considered. Let's explore them.

Investment portfolio allocations are usually complex, incorporating various bond classes as well as various domestic and international stocks. Some investors, particularly those in retirement, may wish to include a safety net of inflation-protected income, set aside from rebalancing decisions.

Why the special case for retirees? Historically, equities have outperformed bonds over the

[3] Colleen M. Jaconetti, Francis M. Kinniry, Jr., Yan Zibering, "Best practices for portfolio rebalancing," *Vanguard research*, (July 2010): 12.

[4] Gobind Daryanani, "Opportunistic Rebalancing: A New Paradigm for Wealth Managers," *Journal of Financial Planning,* issue 1 (January 2008): 11.

long run by a significant amount. But they've also periodically exhibited extended periods of poor performance. This could leave retirees without their safety net if they rebalanced significant assets out of their income-producing bonds and into underperforming stocks. In the long run, the stocks are expected to recover and pull ahead, but unlike younger investors, retirees may not have the time horizon to comfortably await the return. In the meantime, not only would their interest income decline but their portfolio would shrink as equity values declined.[5]

For investors of all types, determining when and how to effectively rebalance requires careful consideration of portfolio performance monitoring, tax status, cash flow needs, financial goals and risk tolerance. Rebalancing also incurs transaction fees and potential capital gains in taxable accounts. Thus, while there are good reasons to rebalance, benefits must be weighed against these costs.

The Act of Rebalancing: A Closer Look

Finally, let's explore some additional rebalancing strategies, in light of some of the aforementioned considerations and costs.

Defining what are known as triggering bands can help investors decide when the costs of rebalancing may be justified. Most experts recommend rebalancing when asset group weightings move outside of a specified range of their target allocations. For example, a 10% threshold applied to a 30% allocation would create a range of +/- 3%, or a 27% to 33% triggering band. Monitoring these bands can occur anywhere from daily to annually. Annual rebalancing will incur fewer transaction costs than rebalancing more frequently, but it's likely to miss opportunities in volatile markets as well as overlook tax-loss harvesting possibilities.

Capital market conditions may be considered to navigate around obvious bubbles, but sometimes "obvious" can be hard to identify. Moreover, market timing, or trying to determine exactly when bubbles will burst is a path fraught with danger. Establishing trigger bands and a monitoring schedule that makes sense for your circumstances seems the preferred high road toward your long-range destination.

While some rebalancing costs are unavoidable, there also are several other strategies that most experts agree can help minimize the impact:

- Whenever possible, rebalance with new cash or, in retirement, withdrawals. Rather than selling over-weighted assets that have appreciated, use new cash to buy more under-weighted assets. This reduces transaction costs and the tax consequences. In retirement, as withdrawals are required, over-weighted assets can be sold to generate cash.
- Whenever possible, rebalance in your tax-deferred or tax-exempt accounts where capital gains are not realized.
- Incorporate tax management within taxable accounts, such as cost basis management, strategic loss harvesting, dividend management, gain/loss matching and similar considerations.

Rebalancing incurs real costs that can detract from returns. We can help investors define ranges within which investment components can acceptably drift, and adopt cost-saving

[5] William J. Bernstein, "The Investor's Manifesto: Preparing for Prosperity, Armageddon, and Everything in Between," Wiley, (2009): 168.

strategies during rebalancing, paying particular attention to tax-sensitive transactions. In helping you rebalance, we strive to maintain your plan considering your unique blend of goals, risk tolerances, cash flow and tax status.

No one knows where the capital markets will go next — and that's the point. In an uncertain world, build a well-defined, globally diversified strategy and manage your portfolio to maintain the particular risk and reward characteristics you have defined for it. Rebalancing, a crucial tool in this effort, keeps your compass pointed "up."

Appendix

To make illustrate these points more clear, the growth in wealth and allocations of a simple stock-bond portfolio are charted from January 1976 to February 2012. One portfolio is allowed to drift while the other is managed back to target allocations only when triggering bands exceeded. Over time the drifting portfolio's composition becomes more heavily weighted towards stocks. On average, the drifting allocation to stocks is 75%, 15% above the target allocation.

With stock returns compounding at 11.1%, significantly above bond returns compounding at 7.7%, the greater stock weight should increase the growth of $100k. It does, by a hair, but the losses after bubbles burst are steeper. Given that investors are twice as sensitive to losses as gains,[6] the risk reduction of disciplined rebalancing is a major benefit.

[6] Kahneman, D. & Tversky, A. (1979). Prospect Theory: An Analysis of Decision under Risk. *Econometrica* 47, 263-291.

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Disclosures

Although investors may form their expectations from the past, there is no assurance that future investment results will model historical performance.

Indexes are not available for direct investment. Their performance does not reflect the expenses associated with the management of an actual portfolio. Past performance is not a guarantee of future results.

Stocks offer a higher potential return as compensation for bearing higher risk. However, this premium is not a certainty, and investors should not expect to consistently receive higher returns from stocks. In fact, market history shows extended periods when stocks did not outperform bonds.

Diversification neither assures a profit nor guarantees against loss in a declining market.

A bond portfolio designed for income also carries significant risks, including default and term risk, call risk, and purchasing power (inflation) risk.

Stocks offer a higher potential return as compensation for bearing higher risk. However, this premium is not a certainty and investors should not expect to consistently receive higher returns from stocks. In fact, market history shows extended periods when stocks did not outperform bonds.

The returns and other characteristics of the allocation mixes contained in this presentation are based on model/back-tested simulations to demonstrate broad economic principles. They were achieved with the benefit of hindsight and do not represent actual investment performance. There are limitations inherent in model performance; it does not reflect trading in actual accounts and may not reflect the impact that economic and market factors may have had on Granite Hill's decision making if Granite Hill were managing actual client money.

Model performance is hypothetical and is for illustrative purposes only. Model performance shown includes reinvestment of dividends and other earnings but does not reflect the deduction of investment advisory fees or other expenses. Clients' investment returns would be reduced by the advisory fees and other expenses they would incur in the management of their accounts.

Simulations require simplifying assumptions which may cause misleading conclusions.

Maintaining a target risk exposure may not provide higher returns over long time periods.

Data Sources

Barclays Capital US Government Bond Index Intermediate: November 2008 - present: Barclays Capital US Government Bond Index Intermediate Total returns in USD. January 1973 - October 2008: Lehman Intermediate Government Bond Index Intermediate Maturity range 1-10 Years. Source: Barclays Capital Currency: USD. Barclays Capital data provided by Barclays Bank PLC.

S&P 500 Index: Total returns in USD, January 1990-Present: S&P 500 Index. The S&P Data are provided by Standard & Poor's Index Services Group January 1926-December 1989: S&P 500 Index. Ibbotson data courtesy of © Stocks, Bonds, Bills and Inflation Yearbook™, Ibbotson Associates, Chicago (annually updated works by Roger C. Ibbotson and Rex A. Sinquefield). Currency: USD. The S&P data are provided by Standard & Poor's Index Group.

Growth of $100k investment: drifting vs. rebalanced portfolio initially starting at 60% stocks / 40% bonds on January 1, 1976

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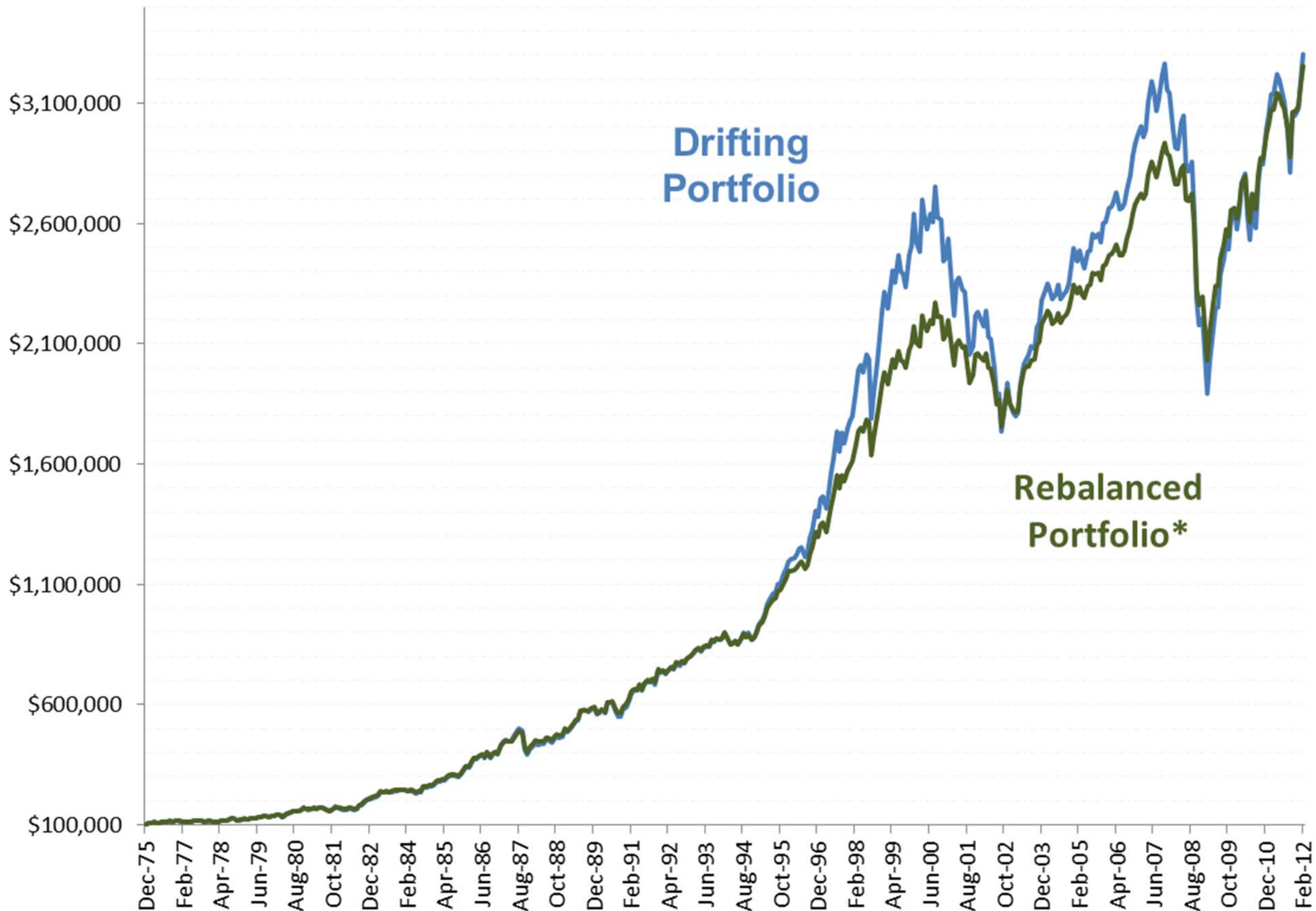

* When trigger bands of 5% breached with monthly monitoring.

Stocks are represented by S&P 500 index & bonds by Barclays US Government Intermediate Bond Index.

See Disclosures on page 5.

Stock and bond allocations: Drifting vs. Rebalanced portfolios

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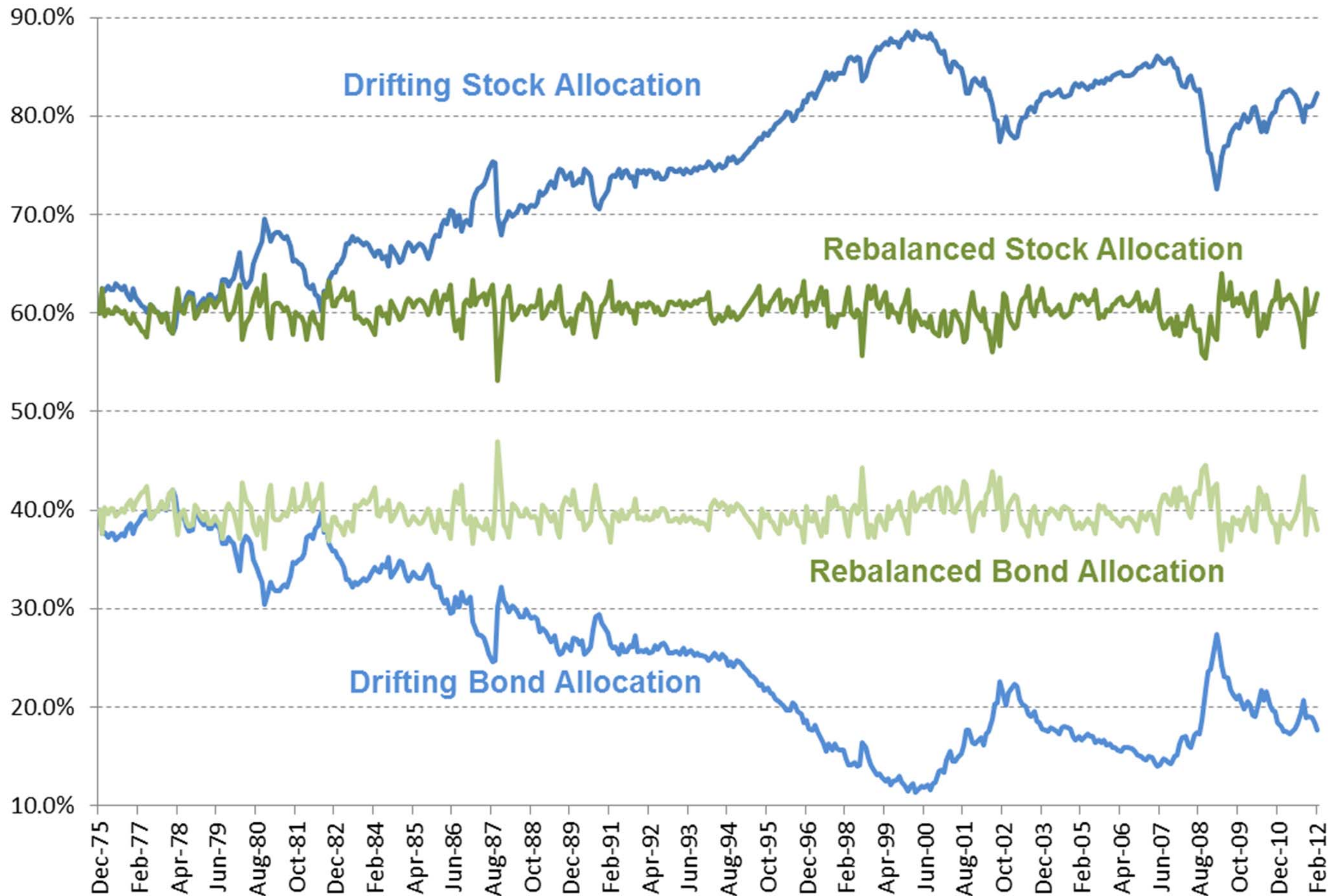

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Drifting portfolios outperform those rebalanced when stock returns exceed bonds but underperform during stock declines.

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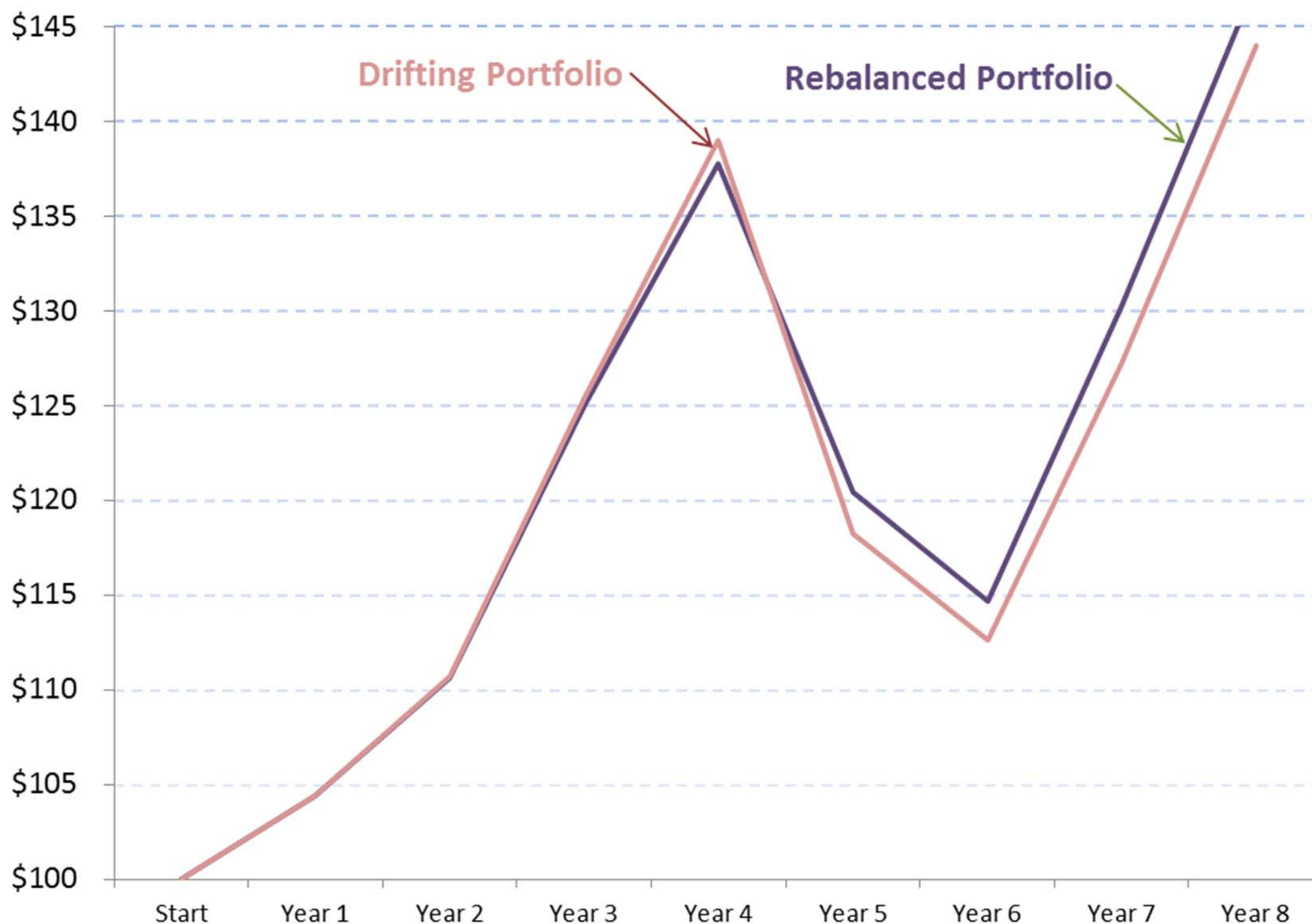

- When stock returns exceed bonds in a portfolio 60% stocks & 40% bonds (Years 1-4):
  - Stock allocations in a drifting portfolio increase relative to rebalanced portfolios.
  - Bond allocations decrease in a drifting portfolio relative to rebalanced portfolios.
  - Why? Rebalancing sells stocks that have risen in value and buys bonds with the proceeds.

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Allocations of drifting vs. rebalanced portfolios

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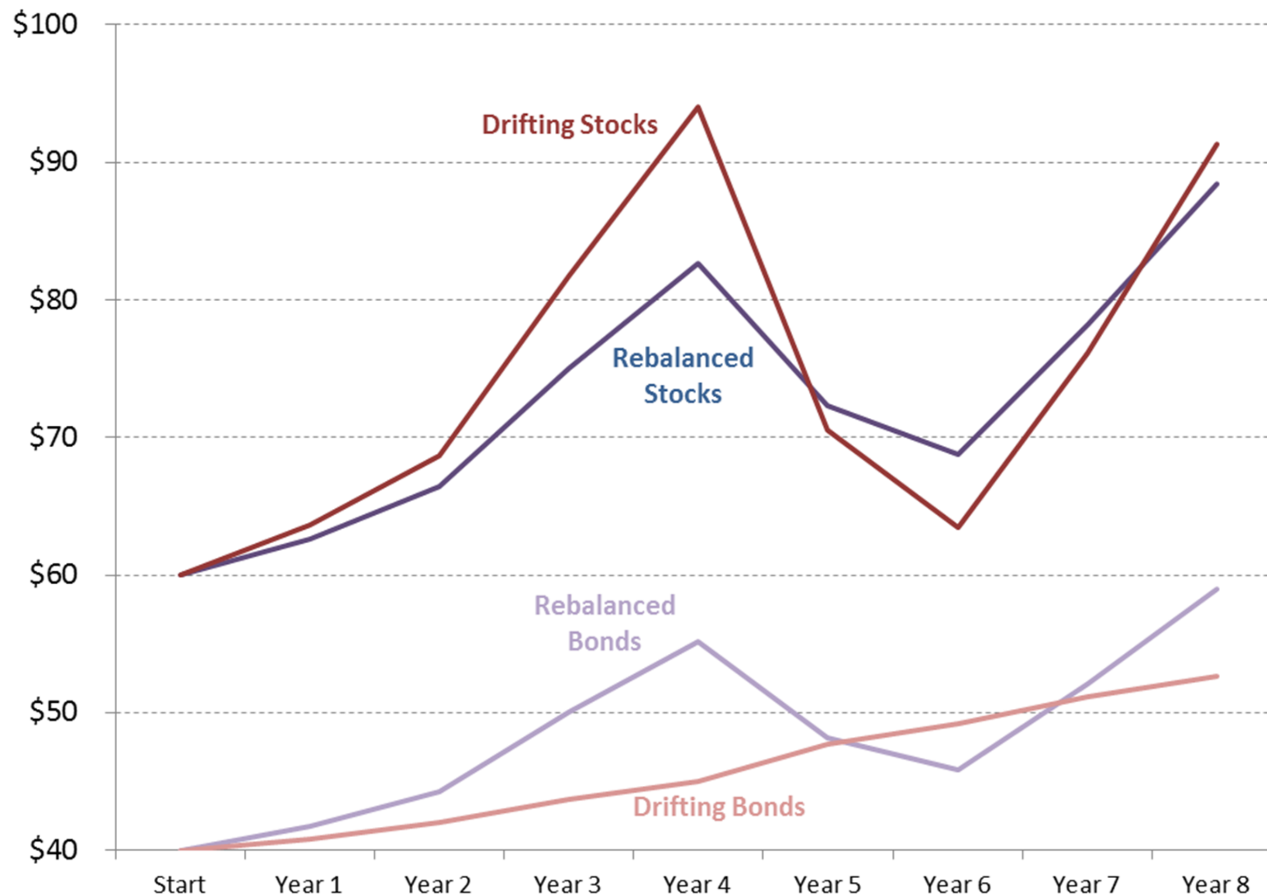
When stock returns fall sharply relative to bonds (Years 5-6):

- The drifting portfolio's higher stock allocation falls more, sharply reducing wealth.
- The value of rebalanced bond allocation declines as bonds are sold to purchase stocks which have declined in value.



Stock allocations are represented by S&P500 index.

Bond allocations are represented by Barclays US Government Intermediate Bond Index.

See Disclosures on page 5.

Rebalancing vs. drifting calculations

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Rebalancing via Sale of Relatively Outperforming Stocksnd Purchase of Relatively Underperforming Asset

	Start	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8
Returns									
Stocks		6%	8%	19%	15%	-25%	-10%	20%	20%
Bonds		2%	3%	4%	3%	6%	3%	4%	3%
Before rebalancing									
Stocks	$60.00	$63.60	$67.65	$79.01	$86.28	$62.01	$65.04	$82.56	$93.78
Bonds	$40.00	$40.80	$43.01	$46.04	$51.52	$58.43	$49.62	$47.70	$53.66
Total	$100.00	$104.40	$110.66	$125.05	$137.81	$120.44	$114.66	$130.25	$147.45
Stocks	60%	61%	61%	63%	63%	51%	57%	63%	64%
Bonds	40%	39%	39%	37%	37%	49%	43%	37%	36%
Rebalancing Transactions									
Stocks Purchase/(Sale)		($0.96)	($1.25)	($3.98)	($3.60)	$10.25	$3.76	($4.40)	($5.31)
Bonds Purchase/(Sale)		$0.96	$1.25	$3.98	$3.60	($10.25)	($3.76)	$4.40	$5.31
After rebalancing									
Rebalanced Stocks	$60.00	$62.64	$66.40	$75.03	$82.68	$72.27	$68.80	$78.15	$88.47
Rebalanced Bonds	$40.00	$41.76	$44.27	$50.02	$55.12	$48.18	$45.86	$52.10	$58.98
Rebalanced Portfolio	$100.00	$104.40	$110.66	$125.05	$137.81	$120.44	$114.66	$130.25	$147.45
Rebalanced Stocks		60%	60%	60%	60%	60%	60%	60%	60%
Rebalanced Bonds		40%	40%	40%	40%	40%	40%	40%	40%
Drifting Allocation									
Drifting Stocks	$60.00	$63.60	$68.69	$81.74	$94.00	$70.50	$63.45	$76.14	$91.37
Drifting Bonds	$40.00	$40.80	$42.02	$43.70	$45.02	$47.72	$49.15	$51.11	$52.65
Drifting Portfolio	$100.00	$104.40	$110.71	$125.44	$139.02	$118.22	$112.60	$127.25	$144.02
Rebalanced Stocks	60%	61%	62%	65%	68%	60%	56%	60%	63%
Rebalanced Bonds	40%	39%	38%	35%	32%	40%	44%	40%	37%
Rebalanced - Drifting Allocation		**$0.00**	**($0.05)**	**($0.39)**	**($1.21)**	**$2.23**	**$2.06**	**$3.00**	**$3.43**