



Portfolio Rebalancing - Less is More

In regards to an investor's portfolio, there are many factors that determine how the overall portfolio will perform and, ultimately, if the investment goals of the portfolio will be achieved. However, one variable that is often overlooked as a potential performance contributor or detractor is the frequency with which a portfolio is rebalanced. As portfolio asset classes and individual investments appreciate or depreciate, rebalancing is necessary for a portfolio to maintain its target asset allocation and risk level. We analyzed total and risk-adjusted returns for three simulated investment portfolios, with differing risk targets, to see how different rebalancing frequencies would affect each portfolio's performance¹.

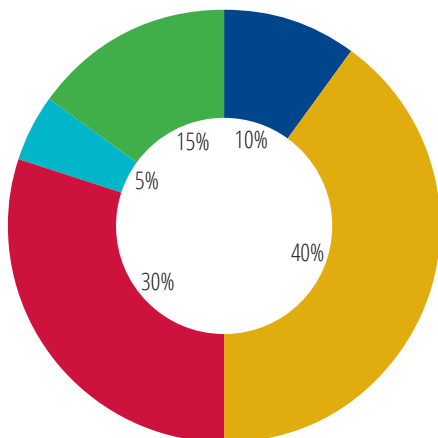
There are multiple ways to rebalance a portfolio but the two most common are the corridor approach and calendar year approach. The calendar approach rebalances the portfolio on specific dates, without regard to the portfolio allocations relative to their targets. The corridor approach sets specific tolerance bands for each asset class and when an asset class's weight deviates outside of the allotted range, the entire portfolio is rebalanced. This analysis focuses on the calendar year approach as GWCM-managed portfolios use

this method and direct cash flows to over and underweight investments, minimizing the need for set corridors.

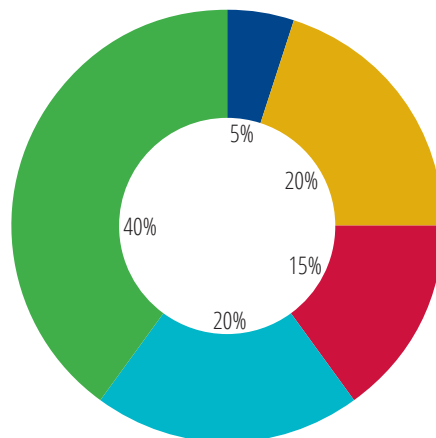
Our analysis demonstrated that quarterly rebalancing has been, on average, most favorable for investors in mutual fund portfolios in tax-preferenced accounts². On average, investors have been able to generate additional value on both a total return and a risk-adjusted return basis by allowing their portfolios more time to deviate from benchmark returns before rebalancing. In effect, we believe that too frequent rebalancing may cause investors to not give market rallies enough room to run, and ultimately weigh on investment returns. Please keep in mind, rebalancing does not ensure a profit and does not protect against loss in declining markets.

For this analysis, we looked at three different portfolios, ranging from conservative to aggressive allocations. In addition to the multiple portfolio approach, we also analyzed five-, ten-, fifteen-, and twenty-year rolling time periods. This approach helps us to better assess whether an optimal rebalancing frequency varies depending on the length of the time period in question.

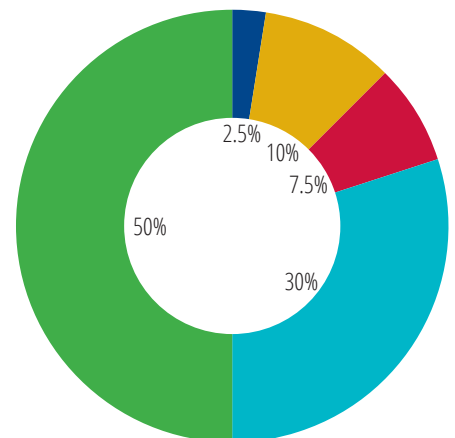
**CONSERVATIVE
20/80 PORTFOLIO**



**BALANCED
60/40 PORTFOLIO**



**AGGRESSIVE
80/20 PORTFOLIO**



US 30 Day T-Bill
 US Long-Term Government Bond
 US Long-Term Corporate Debt
 US Small Cap Stock
 US Large Cap Stock

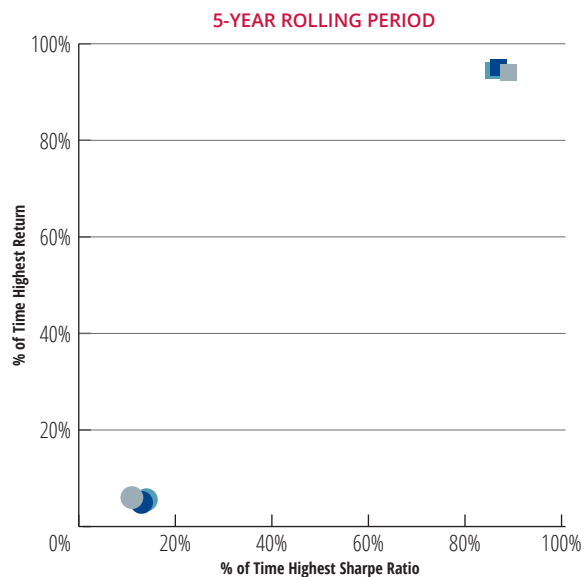
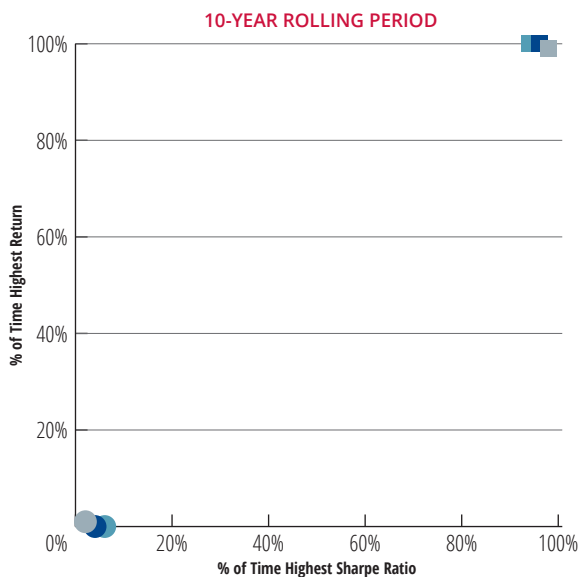
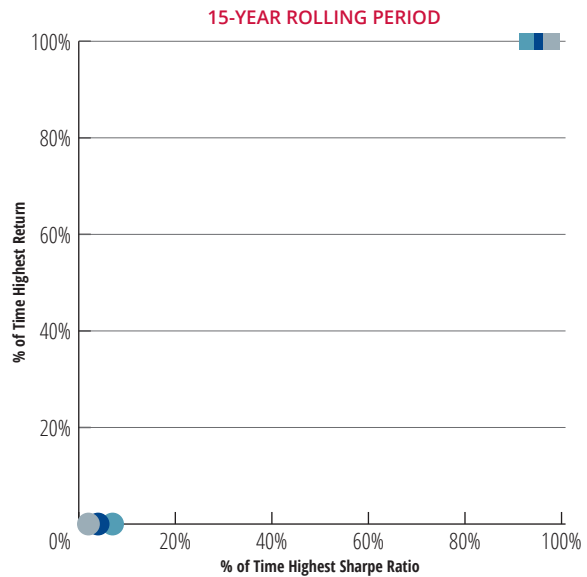
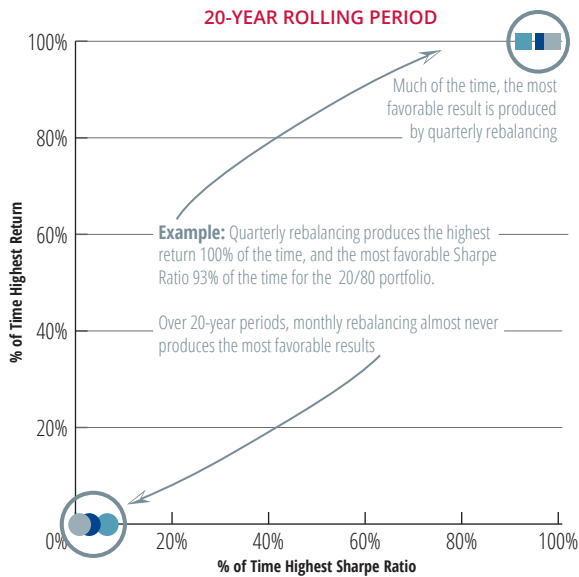
1 Portfolios were constructed using a mix of securities indices. Periods reflect rolling returns from the period from January 1, 1926 through December 31, 2015

2 Tax consequences, investment management fees and transaction costs were ignored for this analysis. Accounting for these factors would result in materially lower investment performance.



We focused on total and risk-adjusted returns to analyze which rebalancing frequency, monthly or quarterly generates the most favorable outcome. It is important to analyze risk-adjusted return in addition to total return, as one premise of rebalancing is to maintain a target risk level within the portfolio. The below charts represent, on the y-axis, the percent of time the rebalancing

frequency had the highest return and, on the x-axis, the percent of time the rebalancing frequency had the highest risk-adjusted return (as measured by the Sharpe Ratio³), for each rolling time period. The portfolios and rebalancing frequencies in the top right quadrant of the graph have the highest total, and risk adjusted return the highest percentage of the time.



- Monthly Rebalancing (20/80)
- Monthly Rebalancing (60/40)
- Monthly Rebalancing (60/40)
- Quarterly Rebalancing (20/80)
- Quarterly Rebalancing (60/40)
- Quarterly Rebalancing (60/40)

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Although data is gathered from reliable sources, the completeness or accuracy of the data shown cannot be guaranteed.

3 The Sharpe ratio is used to adjust total returns for the amount of risk taken. The Sharpe ratio is the unit of return realized per unit of risk taken, the higher the Sharpe ratio, the more favorable for investors.



The results show that quarterly rebalancing, on average, generates more favorable outcomes. More than anything, the key takeaway is that more frequent rebalancing does not, on average, improve performance. Rebalancing less frequently allows an investor's portfolio to have a higher allocation to outperforming asset classes. A concern with less frequent rebalancing is that you are exposing the portfolio

to greater risk. However, as the below table illustrates, the standard deviation, a measure of investment risk, does not vary significantly between the different rebalancing frequencies and confirms that investors are rewarded with higher total returns per unit of risk when portfolios are rebalanced quarterly rather than monthly.

REBALANCE FREQUENCY (ROLLING PERIOD) / ASSET ALLOCATION	AVERAGE TOTAL RETURN				AVERAGE STANDARD DEVIATION			
	20-YEAR	15-YEAR	10-YEAR	5-YEAR	20-YEAR	15-YEAR	10-YEAR	5-YEAR
Monthly Rebalancing (20/80)	7.09%	7.05%	7.02%	6.98%	6.70%	6.68%	6.72%	6.75%
Quarterly Rebalancing (20/80)	7.18%	7.15%	7.15%	7.12%	6.75%	6.73%	6.78%	6.81%
Monthly Rebalancing (60/40)	10.05%	9.87%	9.72%	9.44%	11.47%	11.65%	11.92%	12.16%
Quarterly Rebalancing (60/40)	10.22%	10.05%	9.92%	9.68%	11.52%	11.72%	12.00%	12.24%
Monthly Rebalancing (80/20)	11.43%	11.15%	10.92%	10.53%	14.75%	15.05%	15.45%	15.80%
Quarterly Rebalancing (80/20)	11.57%	11.31%	11.09%	10.73%	14.79%	15.10%	15.50%	15.85%

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From this analysis, we can conclude that more frequent rebalancing does not equate to better portfolio performance and, in fact, can even detract from long-term investment performance. An explanation for this result could be that markets have a momentum factor and have a tendency to trend. When an asset class is trending downward, the

portfolio's allocation to that asset class is decreased and when an asset is trending upward, more of the portfolio is allocated to that asset class. Each investor's situation and risk tolerance is different but to an extent, it is more advantageous for investors to give their portfolio room to ride trends in the markets.

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