Doerschler & Associates
WEALTH MANAGEMENT

M Financial Group
M WEALTH

M INTELLIGENCE

UNDERSTANDING THE BENEFITS OF REBALANCING: AN M FINANCIAL STUDY

The benefits of rebalancing extend beyond maintaining a portfolio's risk profile. M's study showed that it improved portfolio efficiency by increasing risk-adjusted returns.

To evaluate the effectiveness of portfolio rebalancing, M Financial conducted a study comparing the outcomes of a rebalanced vs. a non-rebalanced portfolio over 30 years. We hypothesized that annual rebalancing would decrease a portfolio's standard deviation (a measurement of volatility of returns).

Both the rebalanced and non-rebalanced portfolios were constructed assuming a 60/40 stock bond allocation represented by the S&P 500 Total Return Index and the Bloomberg Barclays U.S. Aggregate Bond Total Return Index. The rebalanced portfolio maintained a 60/40 allocation during the period whereas the non-rebalanced portfolio allocation was allowed to fluctuate with the market.

OUR FINDINGS

M's research determined that over longer periods, such as 30 years, the rebalanced portfolio's standard deviation was significantly lower than the non-rebalanced portfolio. We also found that the compound annual growth rate (CAGR) of the rebalanced portfolio was slightly less than the non-rebalanced portfolio; however, the rebalanced portfolio had a higher Sharpe ratio (a measure of risk-adjusted returns).

When portfolios were evaluated over 10- and 20-year periods, the CAGR and standard deviation varied. In both cases, the rebalanced portfolios had a higher Sharpe ratio signifying greater portfolio efficiency.

Figure 1: A Comparison of Two 60/40 Portfolios Over Time

	REBALANCED PORTFOLIO		
Time Period	CAGR	Standard Deviation	Sharpe Ratio
30 Years	8.90%	10.52%	0.677
20 Years	7.90%	10.29%	0.595
10 Years	11.23%	7.68%	1.230

	NON-REBALANCED PORTFOLIO		
Time Period	CAGR	Standard Deviation	Sharpe Ratio
30 Years	9.29%	12.49%	0.601
20 Years	7.97%	10.58%	0.585
10 Years	12.71%	9.13%	1.197

Results illustrated in Figure 1 are for periods ending December 31, 2021.

RISK BUDGETING

We determined that the CAGR of the rebalanced portfolio was lower than the non-rebalanced portfolio over a 30-year period **(Figure 1)** because higher risk stocks, which tend to outperform lower risk bonds, are reduced back to their target allocation during rebalancing. While a lower CAGR could dissuade one from rebalancing, we believe that the question should not be whether to rebalance, but rather how to maximize returns based on an individual's risk tolerance.

The standard deviation for a non-rebalanced 60/40 portfolio over the past 30 years was 12.49% **(Figure 2)**. Assuming this risk level is appropriate, we solved for a stock allocation in a rebalanced portfolio using the same 30 years of data to equate to a 12.49% standard deviation. In this case, by increasing the stock allocation to 72%, we can generate higher returns while maintaining similar portfolio volatility.

Figure 2: Risk Budgeting Over 30 Years

	CAGR	Standard Deviation	Sharpe Ratio
Rebalanced 72/28	9.49%	12.49%	0.617
Non-Rebalanced 60/40	9.29%	12.49%	0.601

All results are for periods ending December 31, 2021.

Figure 3: A 50/50 Portfolio Over 30 Years

MANAGING CLIENT EXPECTATIONS

Because stocks generally outperform bonds, a non-rebalanced portfolio will typically stray from its initial target asset allocation over longer periods **(Figure 3)**. For example, a 50/50 stock bond allocation established in 1991 naturally shifts to a 82/18 allocation over 30 years as a result of market price changes. It's important to keep in mind that a portfolio with a 75% stock allocation will perform differently than one with a 50% stock allocation on a daily, monthly, or annual basis. This allocation shift not only exposes a client to greater risk than they may be comfortable with but can also jeopardize an individual's long-term financial goals. A higher stock allocation is compounded by the fact that it is typically more appropriate to reduce exposure to stocks as clients age and deplete their savings.

Regularly rebalancing portfolios to target allocations may offer greater portfolio control and can support a financial advisor in appropriately managing a client's risk tolerance, return expectations, and alignment with long-term financial goals.

CONCLUSION

M's study demonstrates that rebalancing can improve portfolio outcomes, as measured by risk-adjusted returns (i.e. Sharpe ratio). Our data also indicates that over the past 30 years, a rebalanced portfolio enabled investors to increase their stock exposure with similar risk, generating higher investment returns over time. Rebalancing can be an effective way to maintain or adjust asset allocation targets aligned with a client's risk tolerance and long-term financial objectives.

It is important to note that our study used indexes and it is not possible for individuals to invest directly in an index. Furthermore, only two indexes — the S&P 500 Total Return Index for stocks and the Bloomberg Barclays U.S. Aggregate Bond Total Return Index for bonds — were used. It is likely that a client portfolio would hold a broad range of sub-asset classes across diverse geographical locations.

In addition, M's study:

- did not account for implementation costs of either strategy (transaction fees, taxes, account fees, etc.)
- did not consider possible illiquidity or other impediments to rebalancing
- assumed no cash flows into or out of the portfolios
- reinvested all dividends and distributions

Appendix

Definitions

- **Sharpe Ratio** — The average return earned in excess of the risk-free rate per unit of volatility or total risk.
- **Standard Deviation** — A statistic that measures the dispersion of a dataset relative to its mean.
- **Compound Annual Growth Rate (CAGR)** — The average annual growth rate of an investment over a specified period of time longer than one year.

Calculation Methodology

CAGR was calculated using each year's returns and annualized based on the number of periods.

Standard Deviation was based on each year's returns and calculated for the period being studied.

Sharpe Ratio was calculated using the 3-month treasury rate of 1.78%.

Sources

Returns on the S&P 500 Total Return Index and the Bloomberg Barclays U.S. Aggregate Bond Total Return Index are based on the 2022 Dimensional Fund Advisors Matrix Book.

This piece was created by M Wealth's experts and produced by the marketing team.

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