

# Ten Things You Should Know About Low-Volatility Investing

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**A**cademic evidence shows that low-volatility stock portfolios (LVPs) earn high risk-adjusted returns.<sup>1</sup> Several asset managers have created mutual funds that target this specific segment of the stock market.<sup>2</sup> MSCI launched a minimum volatility index in April 2008,<sup>3</sup> which was good timing with hindsight. This new low-volatility investment style is gaining momentum among institutional investors, especially since the experience of the financial crises. Based on my experience with low (or minimum) volatility research and actually running low volatility equity portfolios for our clients, I have summarized 10 important things potential investors should know about minimum volatility investing.<sup>4</sup>

1. The minimum volatility portfolio (MVP) exists only theoretically. In practice, the MVP can only be determined historically (ex post) for a specific sample and return frequency. Therefore, different LVPs co-exist, all aiming to reduce and minimize future volatility (ex ante). In general, most LVPs have high average exposures to low-volatility stocks and to low-beta stocks.<sup>5</sup>
2. LVPs achieve risk reduction of approximately 33%. Risk reduction varies between 20%–45% across historical samples and economic regimes. Interestingly, risk reduction is higher when market

volatility is higher. Because equity risk is the most important risk factor for most portfolios, LVPs provide a huge opportunity for significant downside risk reduction. This is achievable while maintaining full exposure to the equity risk premium in the long run.

3. LVPs are a relatively new phenomenon, but the first documented alphas were found in low-beta stocks as early as the 1970s. This low-beta anomaly was discovered many years before the size, valuation, and momentum effects were documented, and just a few years after the capital asset pricing model (CAPM) was developed.
4. LVPs' alpha is not the result of a magic formula but is instead driven by persistent behavioral effects causing markets to be inefficient. Explanations given in the growing literature for a structural alpha in low-risk stocks are 1) a focus on tracking error instead of total risk by an increasing number of market participants. From this perspective, low-risk stocks are high-risk and therefore unattractive. 2) Many investors are unwilling or not allowed to apply leverage in their portfolio. All else being equal, more balance sheet leverage leads to a higher expected equity return, and hence return-seeking investors tend to prefer stocks with high risk.

- 3) The lottery-ticket effect: A large number of risk-seeking investors buy volatile stocks to get rich quickly.
- 4) Attention bias: Stocks of companies in the news generate attention. This notice most often motivates investors to buy instead of to sell, because most investors own only a limited number of stocks and cannot easily sell a stock they do not own.
- 5) The winner's curse: With asymmetric information, the highest bidding buyer often pays more for a stock than its true intrinsic value. The winner's curse applies more to high-volatile stocks than to low-volatility stocks.
- 6. An LVP can be constructed based on varying degrees of dependence on estimated correlations with common risk factors. The approaches vary between sorting stocks on total return volatility (no correlation dependence) and estimating for each stock the joint sensitivity to 10 or more risk factors (full correlation dependence). In practice, hybrid approaches are commonplace—either by limiting the number of risk factors and/or by putting limits on the estimated betas. This is done to avoid the “maximizing errors” problem, which tends to produce inefficient portfolios that require a lot of turnover. Academic research suggests that both approaches tend to produce similar levels of risk reduction, with slightly better results for the approach with a low dependence on estimated correlations. Mutual fund data suggest that the currently available low-volatility products are all successful in significantly reducing downside risk.
- 6. LVPs can also outperform during bull markets. A common misconception is to think that LVPs' low-beta is a perfect prediction of future return. Thus if markets are expected to go up, then LVPs will underperform. In other words, the CAPM holds true. If this were the case, however, then LVPs would not contain alpha in the first place. This reasoning would further imply that every investor with a bullish view on equities in general should not buy into LVPs but prefer only high-beta cyclical stocks and every investor with a more bearish view should abandon equities altogether.
- 7. LVPs generate huge tracking errors of 6%–12% when compared to traditional market-capitalization weighted indices. But for other investment solutions that aim to reduce downside risk, such as put options, constant performance portfolio

insurance, or managed volatility, nobody calculates the tracking errors. To stretch this argument to the extreme, consider a stock which generates a certain 10% each year. For this stock, the tracking error is equal to equity volatility of approximately 20%, but who would care?

- 8. LVPs exhibit time-varying style exposures. LVPs had a value bias in 2006–2007, but turned to growth in 2008–2009. On average, value stocks tend to have lower risk; however, because risk of value stocks tends to increase during recessions, LVPs are sometimes tilted to growth stocks, especially around economic bad times. One could also say that value has a time-varying beta, which rises during bad times, such as recessions, and declines during good times.
- 9. LVPs tend to have somewhat higher correlation with bonds. Typically, when bond yields go down, low volatility stocks tend to outperform. This feature is particularly interesting for pension funds which aim to stabilize their coverage ratios. Because a falling bond yield tends to decrease the coverage ratio, an LVP could be used as an indirect hedge.
- 10. In contrast to better-known alphas, such as valuation and momentum, the alpha of LVPs is very difficult to arbitrage away. To catch the alpha in the low-volatility segment of the stock market, either the market capitalization benchmark should be completely abolished and ignored, or the strategic asset allocation framework should be adjusted and include a separate style allocation to LVPs.<sup>6</sup> The alpha of LVPs also differs from other alphas in that it is strong within large-cap stocks, stable across regions, and has become stronger over the last few decades. I therefore believe that low volatility is a strong and significant anomaly that will continue to generate superior returns for a long time to come.

## ENDNOTES

<sup>1</sup>For evidence see Black, Jensen, and Scholes [1972] and Fama and MacBeth [1973] during the pre-1969 period and Fama and French [1992], Falkenstein [1994], and Haugen and Baker [1991] during the 1963–1992 period. More recently, see Clarke et al. [2006], Baker, Bradley, and Wurgler [2011] for the most recent period. Blitz and van Vliet [2007] and Ang et al. [2009] show results also for international markets.

<sup>2</sup>Examples are Acadian, Analytics Investors, Robeco Asset Management, State Street, and Unigestion.

<sup>3</sup>MSCI also has a research paper that explains the methodology by Nielsen and Aylurusubramanian [2008]. Blitz and Vliet [2011] discuss how to benchmark low-volatility strategies.

<sup>4</sup>Paulais [2010] also shares experience on this topic.

<sup>5</sup>See Behr et al. [2008], who show how minimum volatility simply loads on a low volatile factor using a return-based style analysis.

<sup>6</sup>Black [1993] makes this argument that investors should tilt their portfolios to low-beta stocks by selling bonds and equity to maintain a similar risk level.

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