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Improving outcomes with low-volatility equity investing

Contrary to traditional finance theory, our research indicates stocks with low beta (volatility) often have higher returns than stocks with high beta.

We believe the opportunity in low-beta stocks is likely to persist as benchmark relative investing and aversion to leverage cause many managers to prefer high-beta stocks.

Using low-beta stocks in multi-asset portfolios may improve outcomes for investors.

While the U.S. stock market has recovered in value since the 2008 global financial crisis and gone on to reach new all-time highs, many equity investors have yet to recover from the damaging losses they incurred. They experienced lasting effects, both financially and psychologically. When the market was at its lows, many investors panicked and retreated to cash and fixed-income investments, and then did not participate fully in the recovery. With the trauma of 2008 still on their minds, they have added fresh experiences of high volatility, most recently in 2020. Now, many are looking for safer equity alternatives than traditional equity benchmarks. Investors want solutions that can pursue the equity risk premium, but with lower volatility and limited downside risk.

Accordingly, investors show greater interest in low-volatility equity investment approaches, which typically involve a low-beta stock selection strategy. This type of portfolio has the potential to satisfy the broad-based desire for a "better" way to invest in equities.

The beta anomaly

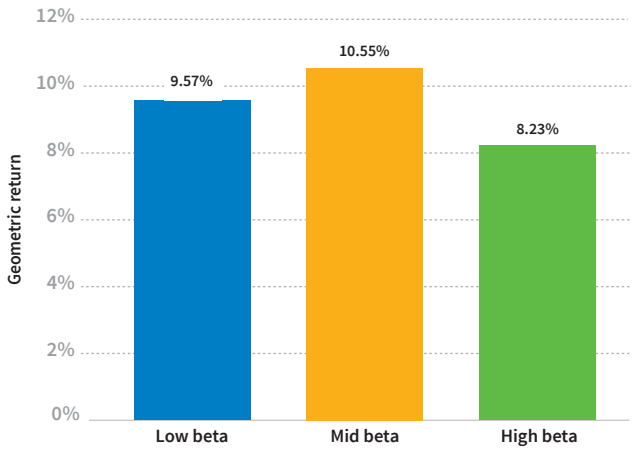
A cornerstone of traditional finance theory is the idea that assets with higher non-diversifiable risk will also have higher returns. However, many decades of empirical evidence suggest that this is untrue. Within the U.S. market, stocks with higher betas have not had higher returns than stocks with lower betas.

Our study analyzes the performance and risk characteristics of U.S. stocks starting in 1927 (through September 2020) and shows that low-beta stocks have delivered superior risk-adjusted performance. To illustrate the anomaly, we sort the U.S. equity universe into terciles based on beta, rebalanced monthly. Chart 1 displays the performance of the three beta terciles.

CHART 1

Since 1927, low-beta stocks have not had lower returns than high beta stocks

Geometric returns of beta terciles (1927–September 2020)



Geometric returns of cap-weighted beta terciles, U.S. large-cap stocks, 1927–2020. Prior to 1983: Betas calculated on trailing one year of daily data and returns from CRSP; 1983–September 2020: Betas from Axioma US4 risk model and returns from IDC. Past performance is not a guarantee or a reliable indicator of future results.

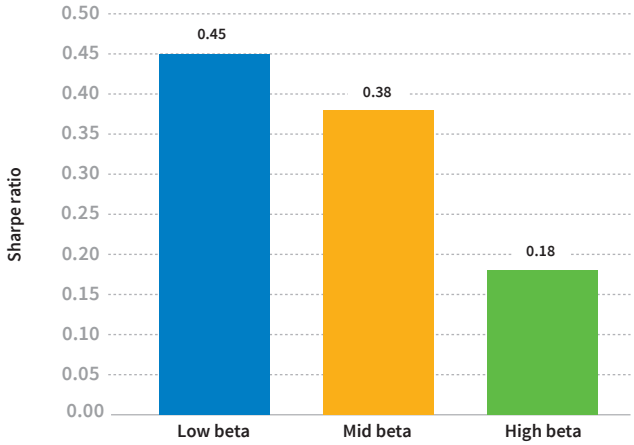
Sources: CRSP, IDC, Axioma.

Low-beta stocks have also had lower volatilities consistently across time. With that as the case, if we assume that the expected return of low-beta stocks is the same as that of high-beta stocks, then the risk-adjusted return of low-beta stocks must be superior to that of high-beta stocks. In fact, in our analysis we see that the low-beta tercile has a Sharpe ratio that is 110% higher than the high-beta tercile. Chart 2 displays the historical Sharpe ratios of the three beta terciles in our analysis.

CHART 2

Thanks to their low volatility, low-beta stocks have had better risk-adjusted returns

Sharpe ratios of beta terciles (1927–September 2020)



Geometric returns of cap-weighted beta terciles, U.S. large-cap stocks, 1927–2020. Prior to 1983: Betas are calculated on trailing one year of daily data and returns from CRSP; from 1983 to September 2020: Betas are from Axioma US4 risk model and returns from IDC. Past performance is not a guarantee or a reliable indicator of future results.

Sources: CRSP, IDC, Axioma.

The causes for the anomaly can be explained by several factors. First, there are behavioral biases at play. High-volatility stocks are more likely to have lottery-like payoff characteristics that some investors prefer. Second, high-volatility stocks tend to be younger firms whose growth is more speculative than proven, and investors tend to be overconfident in assessing their future growth prospects. Third, while attempting to pursue higher equity returns, many investors have an aversion to using leverage, or are restricted from using it. As a substitute, high-volatility stocks may be considered a form of protected leverage in that they offer the potential for higher upside without the risk of losing more than the initial capital.

The beta anomaly results in a mispricing of securities, as behavioral biases often lead investors to bid up higher volatility stocks, leaving them vulnerable to underperformance when the speculative growth fails to meet expectations. Conversely, low-beta stocks tend to have lower-than-warranted valuations, increasing

the potential for outperformance when a positive catalyst emerges. We expect this mispricing to persist because most investment managers are unable to exploit this anomaly due to their focus on outperforming capitalization-weighted benchmarks and their aversion to employing leverage.

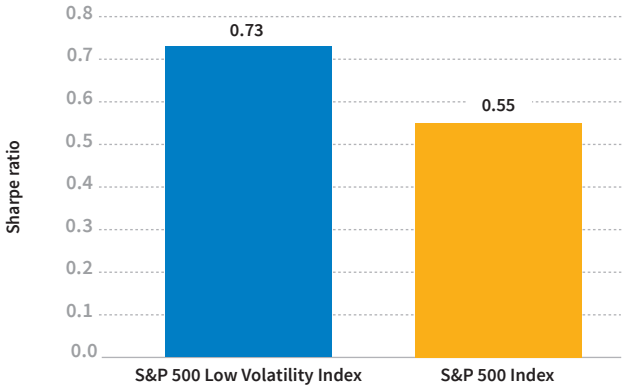
The growth of low-beta investment products

Over the past several years, the market has shown consistent interest and growth in low-volatility products. For example, in 2010 there was one low-volatility ETF product, while today there are well over 40, with assets totaling over $64 billion.[1] One of the most widely tracked low-volatility indices for U.S. equities is the S&P 500 Low Volatility Index. S&P launched this index in 2011 and had back-tested historical data going back to 1990.[2] Comparing the S&P 500 Low Volatility Index with the S&P 500 Index since 1990, we see similar improvement in risk-adjusted returns as demonstrated over our larger sample (see Chart 3).

CHART 3

S&P Low Volatility Index has had a 33% higher Sharpe ratio than the S&P 500

Sharpe ratio (1990–September 2020, monthly data)



Sources: S&P Global, Putnam Investments. Past performance is not a guarantee or a reliable indicator of future results. Indexes are unmanaged and do not incur expenses. You cannot invest directly in an index. The S&P 500 Low Volatility Index measures the performance of the 100 least volatile stocks in the S&P 500 Index.

Using low-beta stocks in multi-asset portfolios

Most investors are likely to hold a portfolio that contains multiple asset classes. With that as the case, it is logical to attempt to better understand how the use of low-volatility stocks can improve one's portfolio after factoring in the relationship to other assets, notably bonds. To illustrate possible scenarios, we first look at the historical return and volatility of an equally weighted stock-bond portfolio, using the broad S&P 500 Index as the stock allocation. Using data from 1990 to September 2020, the equally weighted stock-bond portfolio delivered an average annualized return of 8.58% with 7.37% volatility. Next, using the S&P 500 Low Volatility Index as the stock allocation, we calculate the allocations to stocks and bonds that would be needed to deliver the exact same volatility over this sample period. We find that an allocation of 62% low-volatility stocks and 38% bonds would have delivered the same 7.37% volatility, but the average annualized return would have been 9.23%, a 0.65% improvement (see Table 1).

TABLE 1

Using low-volatility stocks may result in higher allocations to stocks and improved returns for the same amount of risk

Portfolio return and risk (1990–September 2020, monthly data)

	50% S&P 500 Index / 50% U.S. bonds	62% S&P 500 Low Volatility Index / 38% U.S. bonds
Average annual return	8.58%	9.23%
Average annual volatility	7.37%	7.37%

Sources: S&P Global, Putnam Investments. U.S. bonds are represented by the ICE BofA 7-10 Year U.S. Treasury Index. Past performance is not a guarantee or a reliable indicator of future results. Indexes are unmanaged and do not incur expenses. You cannot invest directly in an index.

[1] Sources: Bloomberg, Citi Research. Total market cap is calculated by aggregating historical data for 43 individual low-volatility ETF products as published by Citi Research in the "U.S. ETF Guide" on January 9, 2019.

[2] S&P recently extended return history back to 1972. All information prior to its launch date is back-tested, based on the methodology that was in effect on the launch date (April 4, 2011). Back-tested performance, which is hypothetical and not actual performance, is subject to inherent limitations because it reflects application of index methodology and selection of index constituents in hindsight.

Though this exercise assumes perfect foresight, it is still useful in understanding the potential benefits of using low-volatility stocks in multi-asset portfolios. First, while maintaining the same level of risk, an investor can have a higher net allocation to stocks than would otherwise be possible. Second, given that same level of risk, investors may earn higher returns by using low-volatility stocks as the basis of an equity allocation.

Summary

Low-beta equity investing is a widely researched subject among academics and practitioners alike, and we have seen significant growth in low-volatility equity investing products. Our own study builds on much of that research by extending the historical time period to 1927, or more than 90 years. Also, despite increased interest in low-volatility products, we have confidence that the low-beta anomaly will persist due to behavioral and structural inefficiencies in the market. Additionally, the improved risk-adjusted returns historically observed for low-volatility stocks in isolation, translates even when combined with bonds, making them a great consideration for multi-asset portfolios.