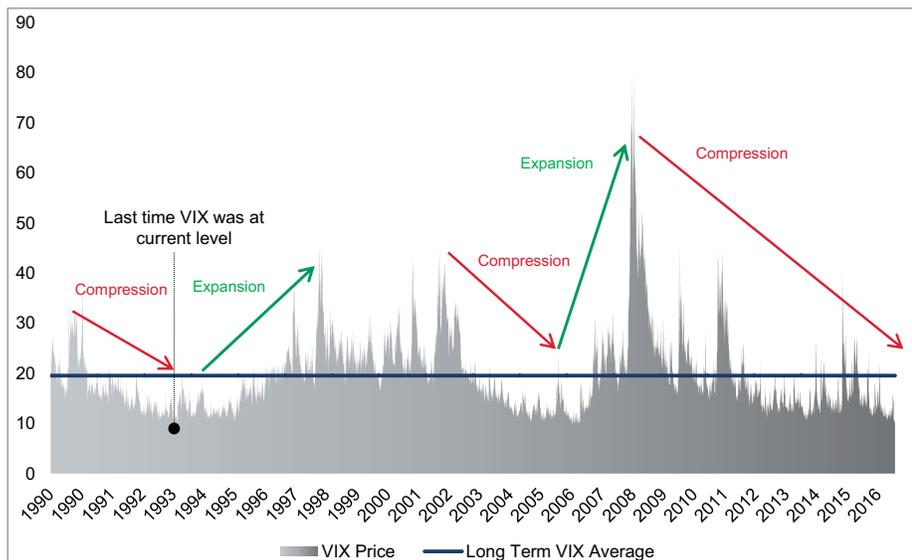


# Preparing for Volatility Expansion in Investor Portfolios

As advisors work to position client portfolios for market conditions which may lay ahead, a common question is how certain investments may perform in an expanding volatility environment—an important consideration given recent low levels of volatility—and historical patterns of reversion.

When looking at the long-term average of volatility, it's widely accepted that volatility tends to exhibit mean reversion traits. Using the VIX, a volatility index that represents the market's expectation of 30-day volatility, one can see these reversion tendencies.

## Daily VIX Price



Source: Bloomberg. Data from 1/1/1990-5/8/2017

At the time this article was written, only 3 days—out of 6,889 observed days of VIX prices—closed below the May 8, 2017 price of 9.77. Those days came during Christmas week in 1993. Following that time period, implied volatility expanded roughly over the next two and half years, taking the VIX above the long-term average where it would continue its upward climb before bouncing between 20 and 40 until 2004. After a period of compression, a similar pattern of expansion can be seen again from late 2006-2007 before the Financial Crisis pushed the VIX to all-time highs.



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## KEY TAKEAWAYS

- When looking at the long-term average of volatility, it's widely accepted that volatility tends to exhibit mean reversion traits.
- Since 2008, the trend has been primarily one of continued compression—minus a few pockets of volatility in 2010, 2011 and again in 2015.
- During periods of VIX expansion, low volatility strategies have historically outperformed.

This trend has pushed the one-year average VIX to a level below that observed in 84% of all other rolling one-year periods.

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It's true that the very calculation of the VIX implies that volatility levels are likely to stay low for at least the near term, and predicting exactly when the expansion will start is futile. With that said, only in the financial markets do people equate variance with risk. According to Merriam-Webster, investment-related "risk" is defined as the chance that an investment (such as a stock or commodity) will lose value. And, often times it is after market risks manifest themselves through loss that volatility spikes. Luckily, the purpose of proper portfolio construction is not dependent on the exact timing of these events, but rather an intuitive mission statement that may go something like this: "To position portfolios in such a manner to give the investor the greatest chance of prudently growing capital in accordance with the investor's goals and risk tolerances given a likely forward looking environment." In this case, the likely forward looking environment is one of expanding volatility, thus the question that started this piece is appropriate to examine.

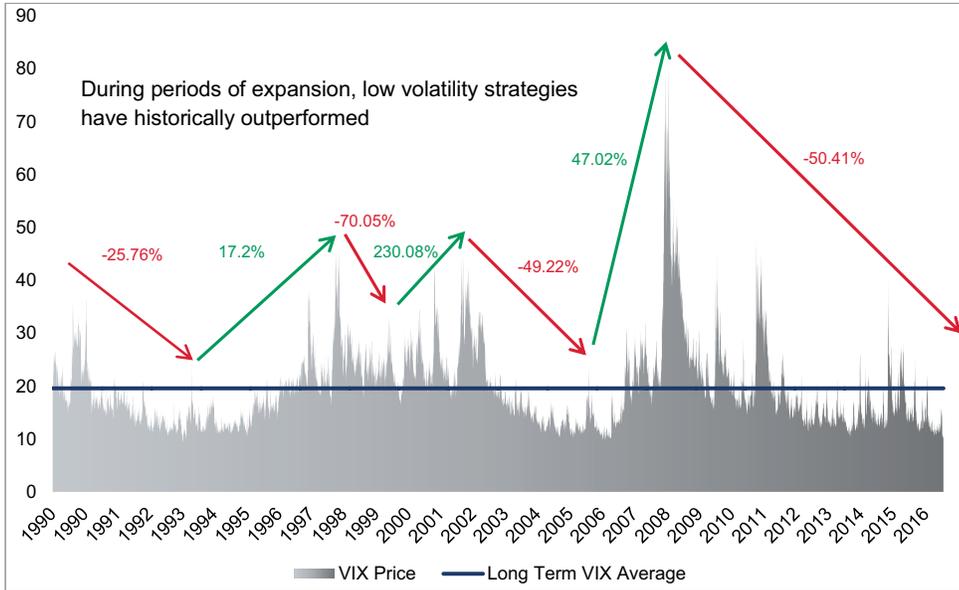
## How should low volatility strategies, such as the 361 Long/Short Equity Strategy, perform in an expanding volatility environment?

361's Long/Short Equity strategies, sub-advised by Analytic investors, pioneers of the research surrounding the low volatility anomaly, combine two return-generating ideas where they look at the investable universe through two separate lenses. One lens is solely focused on returns, while the other is solely focused on the stocks' risk profiles by using predicted betas. After risk controls for individual holdings and constraints are applied, the portfolio is optimized on predicted risk and return characteristics. The portfolios can be expected to have a net exposure of 70% over time, but with a beta much below what might be assumed, given that exposure level. In fact, the strategies have both targeted and realized betas of between 0.4-0.6, while attempting to match the return of the market over time.

When examining equity markets across quintiles of volatility, assuming CAPM holds, one would expect the lowest volatility stocks to underperform the highest volatility stocks. However, that is not what has been observed over time. Indeed, there is actually a relatively flat payoff to risk quintiles using simple averages, and that payoff falls off as you move across the curve to higher volatility stocks once you take into account that impact that volatility has on compounding.

The reason this is important background is twofold. First, generally these portfolios look to be 100% long the lower volatility stocks of a given market and 30% short the highest volatility stocks (Net 70% with a targeted beta of 0.4-0.6). Second, there are specific timeframes when high volatility stocks do outperform low volatility stocks. Those timeframes are generally during periods of volatility compression, or more appropriately, compression of implied volatility (VIX) associated with "risk on" environments like that observed in the U.S. for most of 2016. Conversely, during periods of a market's implied volatility expansion, high volatility stocks underperform, and at times significantly. The chart below examines domestic stocks and volatility using the VIX, and different quintiles of returns of the Russell 1000 grouped by volatility.

## Periods of VIX Compression: Low Vol - High Vol\*

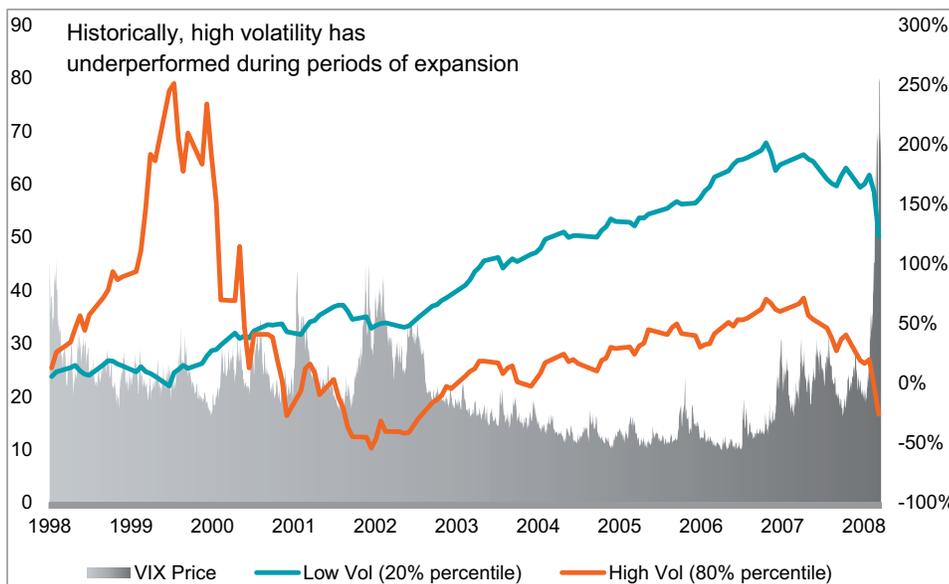


Source: Bloomberg.

\*Russell 1000 Low Volatility is represented by the bottom quintile and High Volatility is represented by the top quintile measured by standard deviation

The red arrows and corresponding numbers represent the low volatility minus high volatility spread during time periods of overall VIX compression, while the green arrows and corresponding numbers represent the same spread during time periods of VIX expansion. It's clear that low volatility stocks have historically performed better than high volatility stocks during periods of volatility expansion. To represent this further, the graph below compares cumulative returns for both low and high volatility stocks during "extreme" time periods. Here the graph examines the run up of tech stocks and subsequent collapse, as well as the financial crisis.

## Cumulative Return Low Volatility & High Volatility with VIX



Source: Bloomberg. Data from 9/1998-10/2008

This graph also demonstrates that when high volatility stocks vastly outperform low volatility stocks, it is during times of “risk on” environments that have historically been associated with a compressing VIX. Conversely, low volatility stocks outperform as investors seek relative safety during periods of fear and thus an environment with expanding VIX.

## **Conclusion**

It is not likely that volatility will remain at these low levels and investors need to prepare for a return to something resembling normality at some point in the not too distant future (and when that occurs, it will likely blow through “average” if history is any guide). Given investing is a forward-looking exercise, this means investors need to be thinking about how portfolios will perform when volatility does normalize (i.e., how best to include investments that benefit from an expanding volatility environment). While past performance is not indicative of future results, 361’s Long/Short Equity strategies may perform well given the structure of the stock compilation generally being long low volatility stocks while maintaining a short position in the higher volatility stocks. If expanding VIX levels do in fact occur and the historical pattern holds, which seems likely given the desire for investors to move to “safer” investment in the face of uncertainty, this positioning should be favorable.

**For more:**

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## About 361 Capital

361 Capital is an award-winning boutique asset manager focused on delivering an array of distinctive investment strategies to institutions, advisors and their clients. Founded in 2001, the Firm specializes in creating innovative portfolio solutions using behavioral-driven, quantitative methods designed to monetize behavioral biases and market factors in order to pursue consistent alpha for client portfolios.

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**Mean Reversion** is the theory suggesting that prices and returns eventually move back toward the mean or average. This mean or average can be the historical average of the price or return.

**Standard Deviation** is a statistical measurement of performance fluctuations. Generally, the higher the standard deviation, the greater the expected volatility of returns.

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May 2017

