

## PriceVol™ Overview

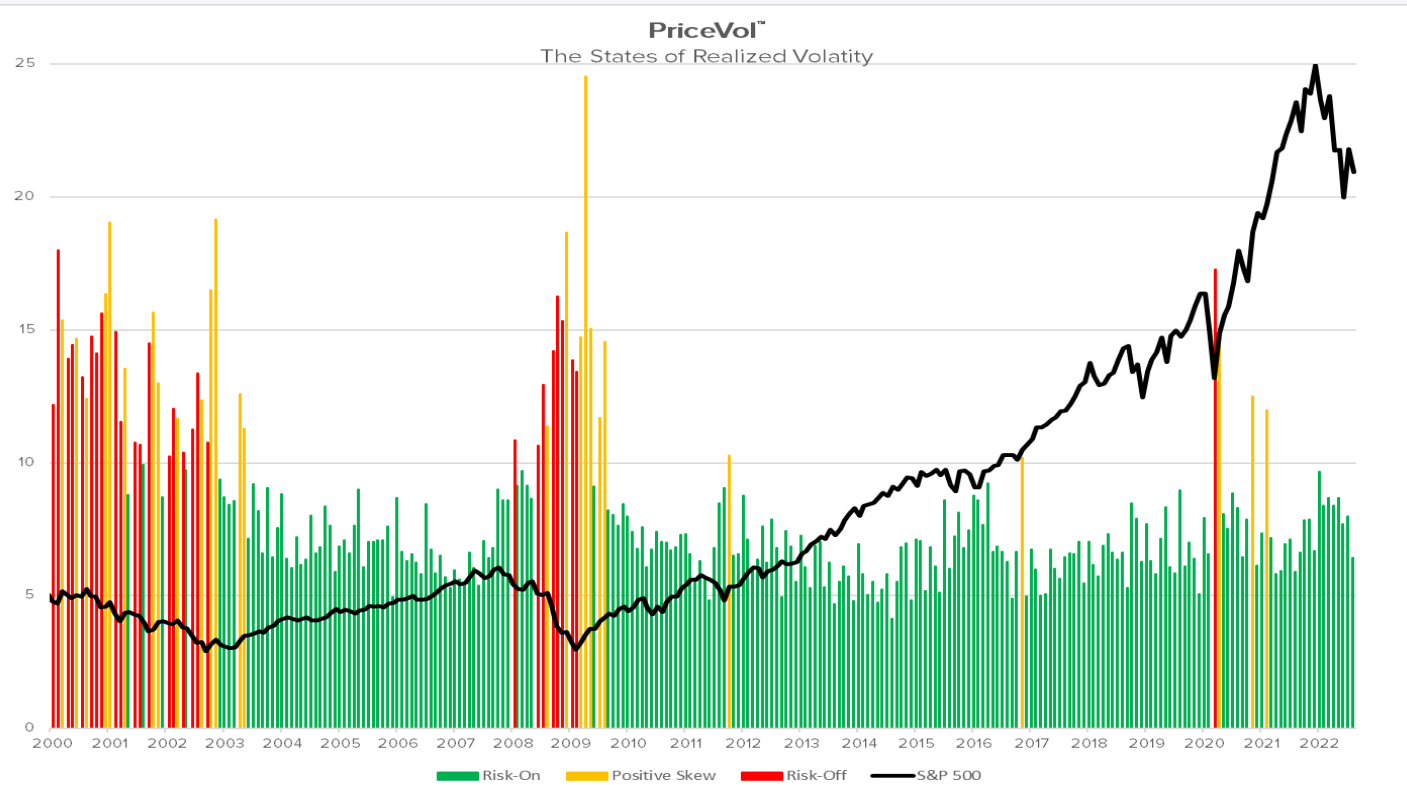
PriceVol™ is a proprietary measure of market risk developed by ASYMetric Investment Solutions. Engineered to provide what we feel is a more accurate measure of market volatility, PriceVol™ measures realized — or price — volatility of the market. PriceVol™ will never predict where volatility is headed, but it is designed to accurately measure the current level of market volatility. We believe measuring realized market volatility, using PriceVol™, is an improvement to the current standard of measuring implied market volatility.

## The State of Positive Skew

The state of **Positive Skew** is the least common state of realized volatility. It occurs when realized volatility is **high** and market returns are **positive**. Specifically, it occurs when PriceVol™ is above its Risk-Off threshold of 10 and market returns are positive.

PriceVol™ measured **Positive Skew** 10% of the time going back to 2000. It occurred 27 times out of 273 monthly readings. Although Positive Skew measures elevated levels of realized volatility, it occurred just 37% of the time in bear markets and 63% in bull markets (refer to the chart below). While this is statistically accurate, Positive Skew generally occurs around bear markets with a high number of occurrences around the transition from a bear to a bull market.

**Positive Skew** can potentially be used to differentiate between **good** and **bad** market volatility. Fifty-nine percent of the time after PriceVol™ registered Positive Skew the S&P 500® posted positive returns the following month, indicating that not all high volatility is bad. The ability to distinguish between the states of volatility and to identify Positive Skew is something we believe is unique to PriceVol™.



Live Measurement of PriceVol™ on the S&P500® began on 12/31/16 prior to that calculations were not made in real-time.

Source: ASYMetric and Bloomberg

## Positive Skew Characteristics

PriceVol™ increases as market volatility increases. The higher the market volatility, the higher the level of PriceVol™. PriceVol's level of granularity in measuring realized volatility allows us to examine different properties of volatility.

Mathematically, PriceVol™ measures dispersion, the returns of individual securities relative to the return of the market. If the difference between the price movements of the individual securities and market return is **high**, then dispersion, market volatility and PriceVol™ are all **high**.

PriceVol™ can be compared to states of matter: solid, liquid and gas. The price movements of the individual securities are the atoms. When market volatility is **high**, the price movements of the securities are like water atoms in a gaseous state (steam), spread out and fluctuating wildly.

**Positively Skewed PriceVol™** or **Positive Skew** is a unique state of realized volatility. It occurs when realized volatility is **high** and market returns are **positive**. Positive skew is depicted graphically in the two charts on the right.

Dispersion of Returns, the top graph, shows the price returns of all the securities of the S&P 500® Index as of April 30, 2009. Our first observation from the graph is that most of the returns are **positive**. The second observation is the **range of returns is wide**. The best performing stock was up roughly 178% and the worst down roughly -22%. The range between the best and worst performing stock is 200%. This is graphical representation of positively skewed PriceVol™ or realized market volatility.

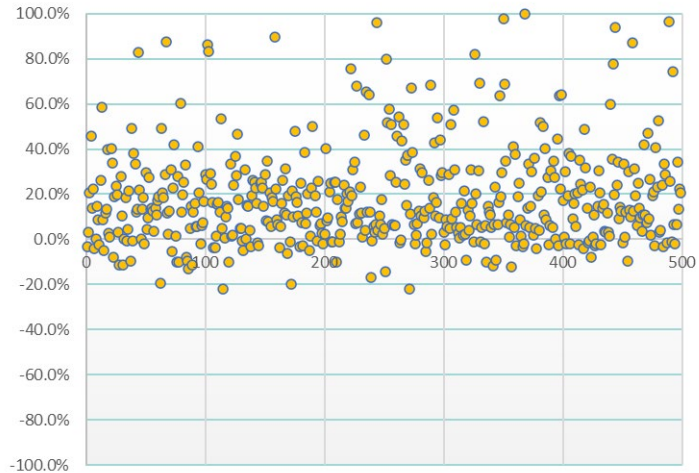
The Return Distribution graph, on the bottom right, takes another look at PriceVol™ when realized market volatility has a Positive Skew. This graph shows a normal distribution of returns. The same two observations hold true in this graph: (i) returns are generally **positive** and (ii) the **range of returns is wide**.

When PriceVol™ has a **Positive Skew** it is generally a good time to be **cautious**, as stock returns are volatile and unpredictable. Positive Skew generally occurs around bear markets.

*There is no guarantee the PriceVol indicator will be successful in finding bear and bull markets.*

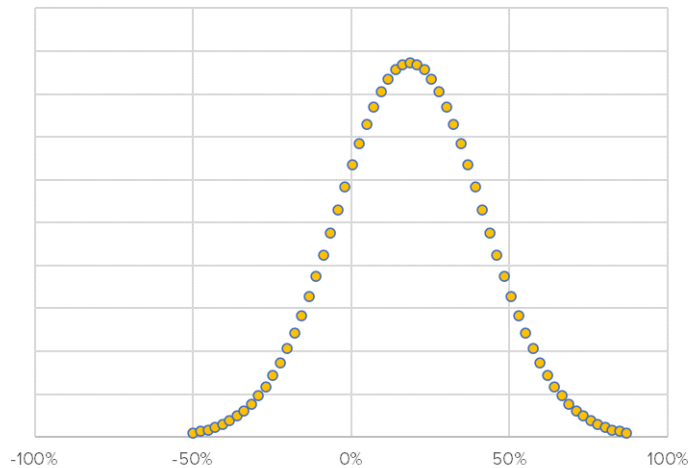
## Positive Skew

PriceVol™ Dispersion of Returns  
Positive Skew



PriceVol™ of the S&P500® on 4/30/2009\*

PriceVol™ Return Distribution  
Positive Skew



PriceVol™ of the S&P500® on 4/30/2009\*

## The States of PriceVol™

**Positive Skew** shares characteristics with the states of **high** and **low** realized volatility as measured by PriceVol™. Positive Skew occurred when realized volatility was **high** and market returns were **positive**. This blending of the states of realized volatility makes Positive Skew unique.

### High Vol Characteristics

PriceVol™ classifies market volatility as **high** when dispersion of returns are high and market returns are **negative**. Positive Skew exhibited **high dispersion** of returns in common with high realized volatility.

**Positive Skew** had **greater dispersion** and higher absolute levels of PriceVol™ than periods of high realized volatility. Positive Skew had a range of 200% between best and worst performing securities. High Volatility had a range of 158% between best and worst performing securities (refer to charts on right).

### Low Vol Characteristics

PriceVol™ classifies market volatility as **low** when dispersion of returns are low and average returns are **positive**. Positive Skew exhibited **positive average returns** in common with low realized volatility.

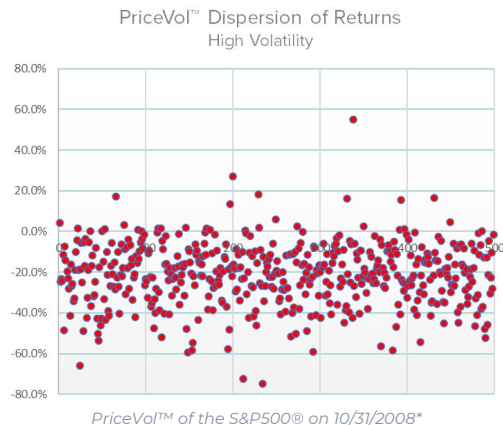
**Positive Skew** had **higher average returns** than periods of low realized volatility. The average return of the securities in the S&P 500® was 18.6% during the period of maximum Positive Skew. The average return of the securities of the S&P 500® during period of minimum PriceVol was 4.2% (refer to charts on right).

### Positive Skew Summary

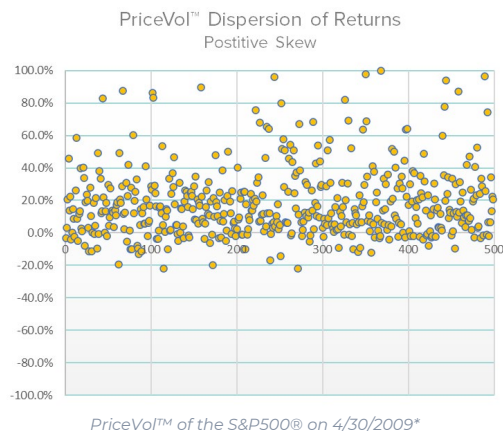
**Positive Skew** is a unique state of realized volatility because of its distinct characteristics: **high volatility** coupled with **positive average returns**. High levels of PriceVol™, whether positively or negatively skewed, were generally experienced during periods of heightened uncertainty and indicative of elevated market risk. Highly volatile markets can reverse direction rapidly making them dangerous and unpredictable.

*There is no guarantee the PriceVol indicator will be successful in finding bear and bull markets.*

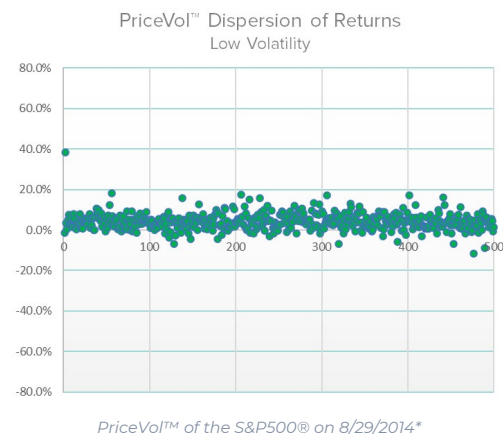
## High Volatility



## Positive Skew



## Low Volatility



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*Past performance is not an indicator of future results.*

*\* Data represents the 30-day returns of the S&P 500 Index constituents through the end date shown under the graph. The periods presented in this report were selected as they represent historical periods where Positive Skew, High Volatility and Low Volatility were most evident in the returns of the S&P 500 constituents as calculated by PriceVol™.*