

## CBOE'S VOLATILITY INDEX (VIX)

Over the last couple of years, a great deal of attention has been paid to the Chicago Board Options Exchange (CBOE) Volatility Index, or VIX for short. The VIX is a measure of the implied or expected volatility of S&P 500 options over the next 30 days. Unlike historical volatility, which is the measure of the underlying market's actual fluctuation over a defined period, implied volatility is the market's estimated future volatility and is reflected in the premiums paid for options.

Originally launched in 1993, the VIX underwent a change in calculation in September 2003. The "original" VIX, which is still tracked under the ticker VXO, was calculated using at-the-money put and call options on the S&P 100 index (OEX). Furthermore, the original VIX was based on prices of only eight at-the-money OEX puts and calls, as these were the most actively traded index options at the time.

By 2003, the S&P 500 index (SPX) option market was the most actively traded option market, while trading volume in OEX index options had fallen off significantly. Also, portfolio managers were using options more as a means of insuring their portfolios, specifically with out-of-the-money and at-the-money index puts. Therefore, the new VIX calculation includes put and call options with a wide range of strike prices, including those in-the-money, at-the-money and out-of-the-money.

### Investor "Fear Gauge"

The CBOE's VIX microsite ([www.cboe.com/micro/vix](http://www.cboe.com/micro/vix)) states that: "Since volatility often signifies financial turmoil, VIX is often referred to as the 'investor fear gauge.'"

One way to look at the VIX is as a measure of what investors are willing to pay to hedge their equity portfolios

using S&P 500 index options. As put options have become a popular method of hedging portfolios, a rise in the VIX is seen as a signal that investors are becoming increasingly worried about downside volatility in the market.

The buyer of a put option acquires the right (but not the obligation) to sell the underlying instrument—in this case, the S&P 500 index or an index exchange-traded fund (ETF) such as the S&P SPDR (SPY)—for a predetermined price during a

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specified period of time. If the option buyer exercises their right, the seller of the put is obligated to buy the underlying instrument from them at the agreed upon strike price, regardless of the current market price. As a hedging strategy, an investor would buy put options to offset the potential loss in their stock portfolio if they expected the market to decline. While the value of the investor's equity portfolio would more than likely fall with the overall market, the value of the put option would gain in value as the market fell.

### Using the VIX

The VIX is a measure that is watched closely by short-term investors and traders. Unlike many indicators that rely on historical data and look backward, the VIX is forward-looking and measures the volatility investors *expect* to see in the near future. However, there is much debate

as to how exactly an investor can use the VIX, and the degree to which its use is beneficial.

Many investors monitor the VIX because it provides useful information about investor sentiment. Like many other sentiment indicators, investors use the VIX to identify possible market turning points. However, also like most sentiment indicators, the VIX isn't good at identifying *exact* market tops and bottoms.

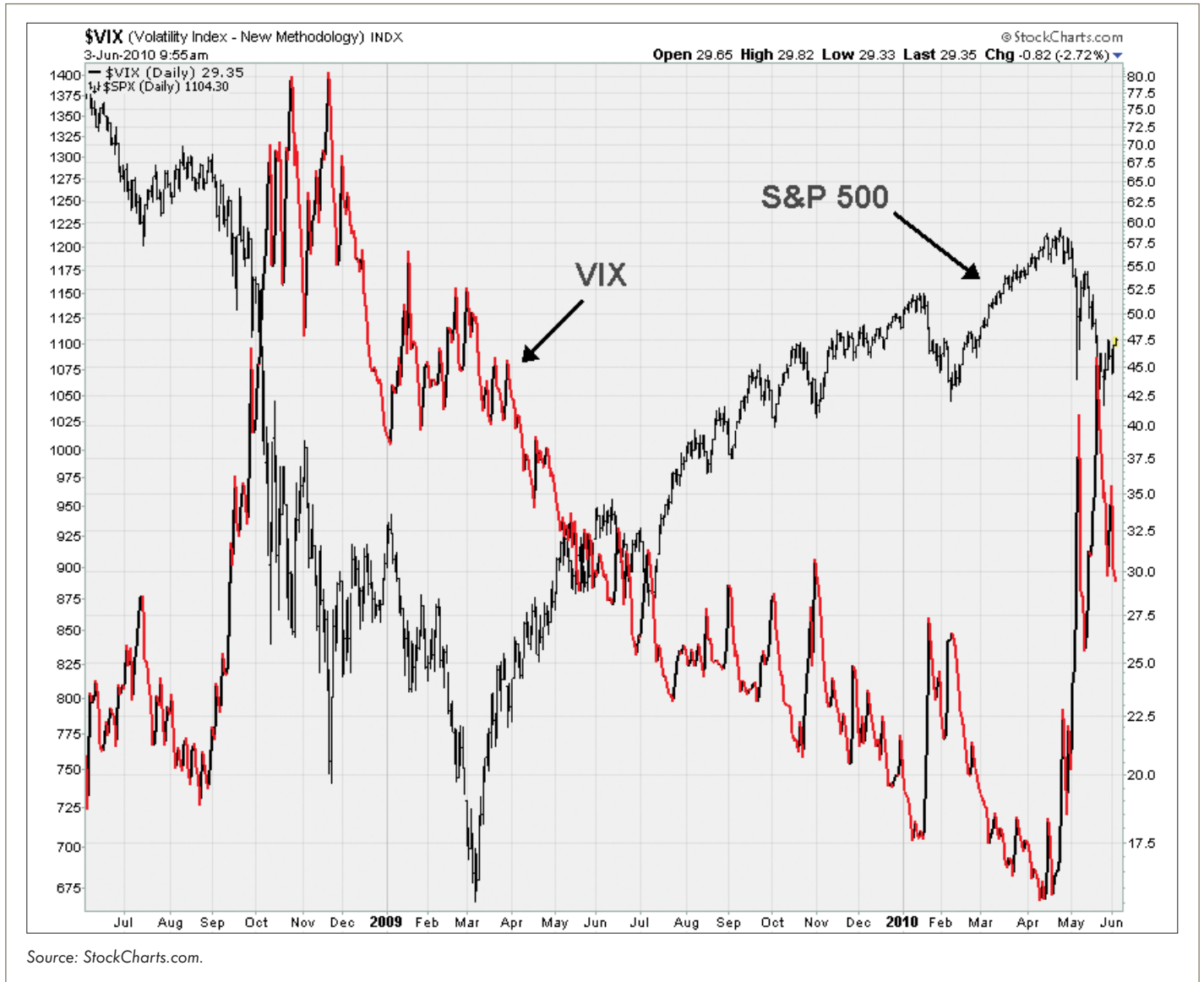
However, over much of its history, there has been an inverse relationship between the VIX and the S&P 500 index—high levels of the VIX have *generally* indicated market bottoms and low levels have signaled market tops. But it appears that the relationship between the VIX and the S&P 500 did weaken during the 2008 market downturn.

Investors found out that many long-standing market maxims broke down in the face of the financial shocks that rocked the market in 2008 and into 2009. Figure 1 highlights these breakdowns. At the far left of the chart, we see the VIX and S&P 500 acting as almost perfect mirrors to each other. In June and July 2008 the VIX rose nearly 50% while the S&P dropped nearly 13%.

In late August, the VIX started its sharp climb to historic levels, eventually peaking at 89.53 on an intraday level on October 24, 2008. During this same time, the S&P lost nearly a third of its value. Past history had shown that extreme levels in the VIX indicated market reversals. While the S&P 500 did rally 18% in the seven days following the October 24 high in the VIX, the index reversed course and continued its decline even while the VIX fell dramatically from its October and November highs. When the market eventually did find its footing in early March 2009, the VIX was nearly 50% off its October and November 2008 highs.

Then, in September and October of

Figure 1. Comparing the VIX to the S&P 500



last year, the S&P 500 hit successive intermediate highs even while the VIX was matching previous highs or reaching new ones.

### Conclusion

Seeing how the apparent relationship between the VIX and the S&P 500 has deteriorated over the last

couple of years, I would be hesitant to use this measure as a timing mechanism.

Recent history has shown that the market can continue to fall even as the VIX is dropping dramatically (or continue to rise when the VIX indicator is hitting new near-term highs). If you have your mind set on buying

when you see the VIX hitting intermediate-term highs, at a minimum you may want to wait for a market pullback.

Like all indicators, the VIX is only one piece of the puzzle. It is best to use it along with other market measures and wait for confirmation from multiple sources before acting. ☐