

The VIX

By Bob Stephens

The VIX (VIX-X) is a measure of implied or expected future volatility as measured by the hypothetical buying of SP-100 (OEX-X) Put (SELL) and Call (BUY) options. It is a market consensus forecast of stock market volatility for the next 30 days.

It is constructed using the implied volatility of eight near-the-money (fairly valued) front (30 days forward) and back (30 days passed) OEX CALL and PUT options. Through this design the CBOE creates an artificial option index that represents the composite average of these eight highly traded options on the OEX. This index is always “on the money” or “fairly priced”. It always has one month (30 days) until expiration, so therefore it never expires. The moving window is continually updated intra-day so it always remains on price and 30 days from expiration. The intra-day updating is by the CBOE in real time using OEX bid/ask quotes.

It has been around since 1993 and the research has shown that the implied volatility of this artificially constructed option (the VIX) has been able to accurately predict subsequent stock market volatility. Option buyers are great at timing the market when it's trending. (Sound familiar?) They are right 80% of the time and wrong 20% of the time. Unfortunately this 20% represents the end of the trending periods. So they stink at determining the end of a trend.

When their collective wisdom tells us they are complacent and therefore the Vix registers low values, then it's time to look for a possible market pullback. On the other hand when the Vix registers high values (they're buying put options on those eight stocks as a form of downdraft insurance) you are usually at the end of a correction.

To view the VIX-X use a 20d EMA or Bollinger bands. You are looking for extremes either up or down; don't be concerned with the day-to-day noise. Remember there are no absolutes. Bullish sentiment can always become more bullish and bearish sentiment can always become more bearish. Bullish or bearish sentiment will continue to grow until the point at which it exhausts itself. That point of exhaustion marks the market top or bottom, but the level at which it is reached will vary with each move. This is commonly referred to as capitulation. VIX, the Put/Call Ratio and the Arms Index are the tools used to define these areas of capitulation.

Here's some additional follow-up on VIX taken from the www.OptionsSource.com website. They correlated the market's performance (OEX-X) to the VIX over eight years, 1/1/90 thru 10/10/97. The VIX has only been around since 1993, so the CBOE provided the data to synthesize the index back to January of 1990.

The VIX was viewed using Bollinger Bands set at 2 SD above and below a 21 day SMA (Rube defaults at 20 day but can be set to 21) on a TTTT chart. They counted the number of occasions when the VIX penetrated the upper and lower Bollinger bands. There were 125 breaks above the upper band (bullish) and 57 breaks below the bottom band (bearish). Remember the VIX is to be considered

a contrarian indicator.

After upper band breaks , the market experiences an immediate boost that lasts until about the seventh or eight day. Average market performance subsequent to lower band breaks takes a turn for the worst after ONE day and drops off sharply for the next four days before recovering. In fact, the amount of average underperformance for bearish signals (breaks below the lower Bollinger band) is slightly greater than the amount of outperformance for bullish signals (breaks above the upper Bollinger band) as measured by the respective performance of the OEX (SP100) The VIX and OEX are inversely correlated.

After 5 trading days the market is up 0.75% on average following bullish VIX signals and down 0.45% on average following bearish signals. This 1.2% variance or gap is the largest registered from any dichotomous (oppositely correlated) signals ever studied. In other words, compared to other studies with a similar number of signals, the results of this study have yielded a more pronounced difference between bullish and bearish signals.....Bob Stevens

CBOE Volatility Index - VIX™: One measure of the level of implied volatility in index options is CBOE's Volatility Index, known by its ticker symbol VIX. VIX, introduced by CBOE in 1993, measures the volatility of the U.S. equity market. It provides investors with up-to-the-minute market estimates of expected volatility by using real-time OEX index option bid/ask quotes. This index is calculated by taking a weighted average of the implied volatilities of eight OEX calls and puts. The chosen options have an average time to maturity of 30 days. Consequently, the VIX is intended to indicate the implied volatility of 30-day index options. It is used by some traders as a general indication of index option implied volatility. Implied volatility levels in index options change frequently and substantially. Consequently, when trading short-term index options, traders should forecast the index level, the time period, and the volatility level. Traders of long-term index options should also include a forecast of interest rates. (The volatility discussions above are excerpts from the book Trading Index Options by James B. Bittman. This book is available through our online bookstore.)

Implied Volatility: Implied volatilities are a measure of the relative cost of an option and are loosely based on the actual (historical) volatility of the underlying security. In essence, implied volatilities are driven by market expectations of the underlying stock. For example, let's look at a stable blue chip stock (A) and a newly issued technology stock (B), which are both priced at \$50 per share. If the price of an October 50 call option is \$2 for stock A and \$4 for stock B, speculators are anticipating that stock B's price will fluctuate more than stock A. As a result, the stock B option has a higher implied volatility.

To predict future market moves we must examine the implied volatilities for the underlying market. To make this approximation, we examine the options on a broad market index. In the June 1997 issue of The Option Advisor, we talked about the options on the S&P

100Index (OEX). OEX options account for over half of the volume of all index options traded in the U.S., making them by far the most liquid options available on the market. Therefore, the implied volatilities of OEX options are the most accurate measure of the broader market's volatility, and, consequently, will enhance our ability to more accurately predict future market movement.

The Chicago Board Options Exchange (CBOE) Market Volatility Index (ticker symbol VIX) reflects the implied volatilities of the underlying market. The VIX is a market consensus forecast of future stock market volatility over the next month. The VIX is constructed using the implied volatilities of eight near-the-money, front and back month OEX calls and puts to create a hypothetical option that is always at-the-money and has exactly one month until expiration. The implied volatility of this artificially constructed option (the VIX) has been shown to be an accurate predictor of subsequently realized stock market volatility. Since the VIX is relatively new (introduced in 1993), few analysts recognize the value it adds to sentiment analysis. The VIX's reaction to a short market pullback of a few hours or a few days is an excellent indicator of how market participants are currently reacting to the market and what they expect will follow. If market weakness is met with an increased demand for puts, the VIX will spike upwards. Such spikes are a telltale sign of fear in the market- a very healthy and bullish view for expectational analysts; speculators will tend to buy puts after they have sold out of their long positions. This often signals an end to short-term selling pressure. If the VIX does not increase on a pullback, it signals that the public is meeting the market downturn with complacency and has expectations of a quick recovery. In these cases, there is often more downside motion to follow. As such, the VIX plays a key role in our ability to predict future market performance.