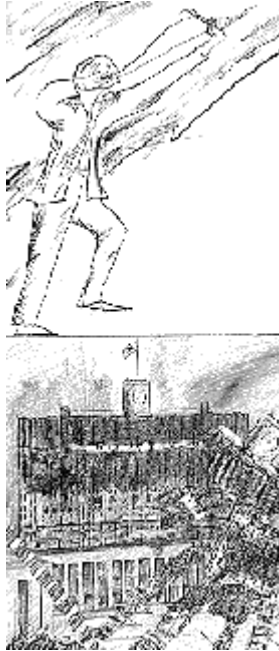


# The Volatility Index

---

by David C. Stendahl

---



*David Stendahl explains the volatility index (VIX), which measures volatility based on the implied values of eight Standard & Poor's 100 (OEX) options from which the weighted volatility index is derived when combined.*

**T**he volatility index (VIX) is a measurement of the market's volatility. It specifically measures volatility based on the implied values of eight Standard & Poor's 100 (OEX) options that when combined calculate the weighted volatility index. The Chicago Board of Options Exchange (CBOE) has been using this index for five years and has only recently made it publicly available.

## THE BASICS

In its basic form, the VIX can help to determine if OEX options are undervalued or overvalued. Nothing frustrates an option trader more than accurately predicting the market's direction, only to lose money buying an overvalued option. Even if the market moves in the trader's direction, he can still lose money if the option was overvalued when purchased. The premium of the option declines in value simply due to supply and demand factors. Unfortunately, many option traders spend more time analyzing the market's direction than they do pricing the specific option. Time constraints and a lack of computer power make it virtually impossible for the independent trader to price an option accurately.

The VIX overcomes those drawbacks by allowing traders access to a real-time assessment of the market's volatility. Any broker with access to a quote machine can bring up a current valuation of the index. To make money in the options market, traders must be aware that volatility direction is just as important as price direction. Simply, if traders ignore the market's volatility, they are dramatically stacking the odds

against themselves.

### **INTERPRETATION**

I use daily data for the volatility index from data vendor Dial Data. I then plot 20-day Bollinger bands around the data to help quantify the level of the market's volatility. Bollinger bands are simply two standard deviations using a lookback period of 20 days, plotted above and below the 20-day moving average. This is not a foolproof valuation method, but it does offer traders a method by which to measure the market's volatility on a real-time basis.

When used with Bollinger bands, the VIX ([Figure 1](#)) is easy to understand and gauge. The VIX moves between the upper and lower bands, stopping periodically at the 20-day moving average for support or resistance. When the index is near the upper band, option prices are considered to be overvalued. This should be considered a selling opportunity. However, when the index is near the lower band, options are considered to be undervalued or at least fairly priced.

An option trader should consider situations such as these to be buying opportunities. Other popular technical tools, such as Gerald Appel's moving average convergence/divergence (MACD) and J. Welles Wilder's relative strength index (RSI), offer traders further insight into the market's valuation.

### **TRADING EXAMPLE**

A trading situation occurred in September 1993, when Boris Yeltsin was fighting with the Russian parliament. Those of us who had put options at the time made a profit not only because the market fell in value, but more so because the market's volatility increased. Options quickly became overvalued as speculators bid them up above normal levels. The VIX moved into overvalued territory, presenting traders with a perfect selling opportunity.

In this case, the volatility worked like a rubber band on the options, causing them to prematurely stretch or increase in value. When market conditions push options to these levels, sell. At a minimum, traders should recognize these areas as poor buying opportunities.

### **OPTION SCREENING DEVICE**

The VIX can also be used as a screening indicator. A conservative trader might choose to go long the OEX options market only if the VIX is close to the lower band. This will prevent traders from jumping on board every trading opportunity regardless of price. A quick look at the VIX should advise most traders when to pass on a trading situation and wait for a better opportunity. The bottom line is that the risk/reward ratio is always against you when options are in overvalued territory.

The better strategy is to wait for the options market to stabilize before blindly jumping into an unprofitable trade. Most investors who trade the long side of the market lose simply because they do not correctly price their options. The VIX offers OEX traders a potent real-time pricing model without having to rely on massive computer power.

During the 1993 trading year, it was easier to make money trading puts than calls. Calls that looked attractive from a chart basis were usually overvalued. The reverse occurred in trading puts; the options were often fairly valued when technical indicators pointed to the downside. Although the VIX is still relatively new to the trading community, it has become an important component of my trading programs,

and it could become equally important in yours.

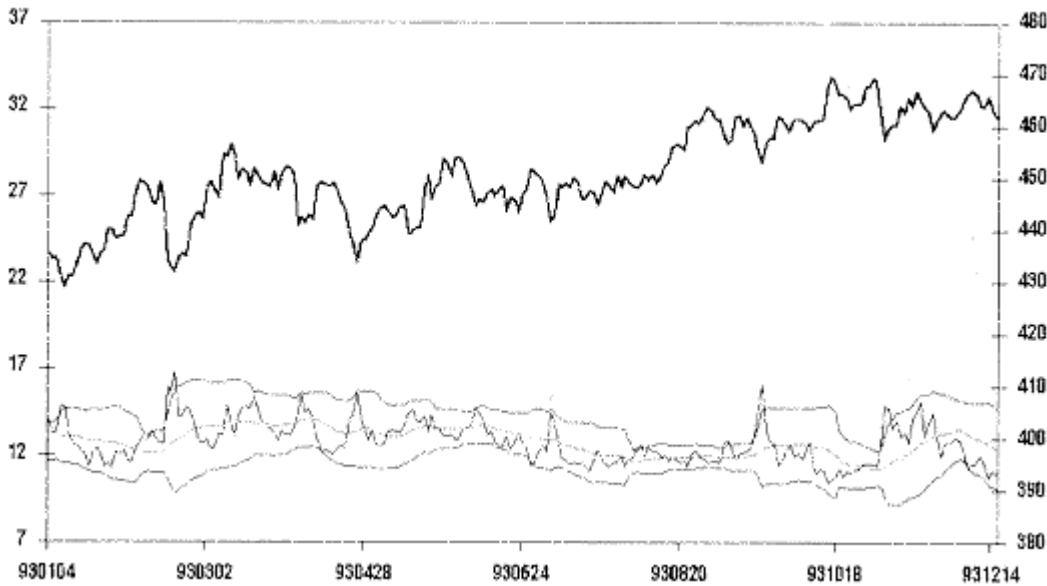
*David C. Stendahl, the president and chief options analyst of The OEX Trader Inc., an option advisory service that specifically trades OEX Stock Index options.*

Appel, Gerald [1985]. *The Moving Average Convergence-Divergence Trading Method*, Advanced Version, Scientific Investment System.

Bollinger, John [1992]. "Using Bollinger bands," *Technical Analysis of STOCKS & COMMODITIES*, Volume 10: February.

Wilder, J. Welles [1978]. *New Concepts in Technical Trading System*, Trend Research.

Wilmott, Paul, Jeff Dewynne and Sam Howison [1993]. *Option Pricing: Mathematical Models and Computations*, Oxford Financial Press.



**FIGURE 1: VOLATILITY INDEX AND BOLLINGER BANDS.** Notice how the market tended to reverse direction when the volatility index reached the upper band.