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VIX Futures: The Unfair Advantage

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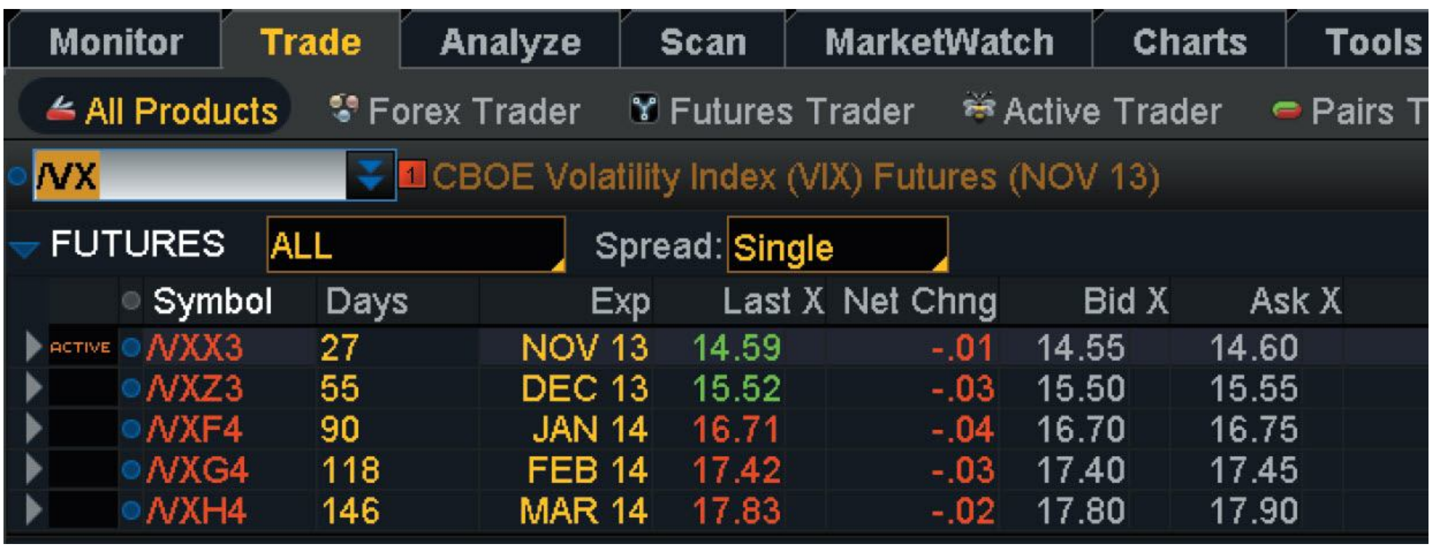
I was happy when **CBOE VIX** futures were added to TD Ameritrade's thinkorswim® platform. So, it's not running with the bulls in Pamplona. But I'm a trader and excitable. VIX futures on a retail-trading platform are a kind of game changer and can help to further level the playing field between retail and professional traders. With the VIX index, VIX options, the VVIX (volatility of the VIX), and now VIX futures, you can increase market awareness and make more informed trading decisions.

The Soup and the Nuts

In a word, SPX options drive the VIX. The VIX (or anticipation of what the VIX might be) drives VIX futures. VIX futures drive VIX options. And VIX options drive the VVIX.

The VIX measures the implied volatility ("vol") of the S&P 500 index (SPX) options. The VIX at 14.00 should be interpreted as 14%, and is the market's collective estimate of how much the price of the S&P 500 might move up or down over a succeeding 30 days. The VIX is calculated from the prices of **out-of-the-money** (OTM) SPX options. So when the prices of SPX options go up, say, because traders expect a price move upward, the VIX goes up. When the prices of SPX options go down, the VIX goes down. The VIX formula does a weighted average of the first two expirations of SPX options to arrive at a hypothetical constant 30-day-to-expiration volatility. Some investors only watch the VIX relative to the S&P 500. But that's only half the picture. VIX futures are the other half.

The symbol for VIX futures is /VX. On the Trade page of thinkorswim, you'll find the available futures out five or six expirations with different prices at each (Figure 1). When the prices of the further-expiration futures are higher, that's called "contango." When the prices of the further-expiration futures are lower, that's called "backwardation." In most financial-futures products, contango and backwardation are determined from the "cost of carry"—the cost incurred by owning the underlying stocks or bonds.



	Symbol	Days	Exp	Last X	Net Chng	Bid X	Ask X
ACTIVE	/VXX3	27	NOV 13	14.59	-.01	14.55	14.60
	/VXZ3	55	DEC 13	15.52	-.03	15.50	15.55
	/VXF4	90	JAN 14	16.71	-.04	16.70	16.75
	/VXG4	118	FEB 14	17.42	-.03	17.40	17.45
	/VXH4	146	MAR 14	17.83	-.02	17.80	17.90

DOUBLE-CLICK TO ENABLE ZOOMING.

FIGURE 1: VIX futures on thinkorswim's Trade page. *For illustrative purposes only.*

VIX futures don't have a cost to carry. Their contango, or backwardation, is determined by the market's anticipation of what vol might be. For example, if you're speculating on the VIX, don't just look at the VIX index. Look at VIX futures, too. Market uncertainty can create contango in VIX futures where expectation of future market vol exceeds the level of the VIX index.

Back in late 2008, when the VIX spiked higher due to market fear, VIX futures were in backwardation, indicating there might be less vol in coming months. Investors who don't want to trade the VIX may use VIX futures to anticipate higher or lower vol in the near term, and adjust strategies accordingly.

Connecting the Dots

Retail traders can't trade the VIX itself, so they often speculate using VIX options. But you can't look at VIX options alone. When you're looking at the VIX options on the Trade page, you'll see expirations out roughly to six months (Figure 2). VIX options are European-style and cash-settled, with Wednesday expirations 30 days prior to the third Friday of the calendar month following the expiration of VIX options. (To see the VIX settlement value, use the symbol "VRO.") Confusing, so it's a good thing the expirations are clearly labeled for you in the option chain of each series itself.

Sometimes VIX option prices don't make sense relative to the VIX. Why? Because of the golden rule of market making—price options off your hedge. As market makers buy and sell options, they hedge trades to avoid directional (**delta**) risk. If you make markets in VIX options, and you can't trade the VIX itself, what's your hedge? Bingo—VIX futures.

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FIGURE 2: VIX options come from the VIX futures, not the popular index itself. *For illustrative purposes only.*

That's why VIX options look at the prices of VIX futures to determine pre-expiration value, not the VIX index. And that's why seeing VIX futures easily is exciting. thinkorswim is one of the few retail trading platforms to offer VIX futures—which help to make VIX option pricing more transparent. Here's how.

Recently, the VIX was 14.25. The 16 put with 19 days to expiration was trading for 1.70, and the 16 put with 54 days to expiration was trading for 1.55. Aren't options at the same strike with more days to expiration supposed to have a higher value than options with fewer days to expiration? Yes, if you're looking at equity options. VIX options in a particular expiration are priced off the VIX futures with the same expiration. If you're looking at March VIX options, those are priced off March VIX futures. And because of the contango or backwardation in VIX futures, the VIX options may look mispriced if all you're looking at is the spot VIX.

While the VIX was at 14.25, the VIX futures that expired in 19 days were 15.00, and the futures that expired in 54 days were 16.10. Because the VIX futures with 54 days to expiration were trading higher than the futures with 19 days, the VIX puts with 54 days to expiration were trading lower (1.55) than those with 19 days (1.70).

The Knee Bone, Shin Bone, and VVIX

Without VIX futures, it's hard to make sense of VIX option prices. Seeing the price of the VIX futures that have the same expiration as the VIX options, you can tell which VIX options are considered **in the money** (ITM) and **out of the money** (OTM). This helps determine the strike prices you choose for VIX option strategies.

Just as SPX drives the VIX, you can plug VIX options into the same formula to get the overall volatility of the VVIX. If the VVIX is low, the market anticipates that vol specifically, and the VIX might not experience large changes up or down in the weeks following. If the VVIX is high, the market anticipates larger VIX price changes. A VVIX chart will show it oscillating up and down, with some mean reversion, like the VIX itself. While some traders might use the VVIX as an indicator for future VIX price changes, and/or corresponding price changes in the S&P 500 you could use it as a measure of the amount of VIX options premium, and consider whether credit or debit strategies might be preferable.

Think about the S&P 500. If the S&P 500 has been rallying and pushes the VIX lower, a contrarian trader might believe the VIX is due to bounce. Two bullish strategies to consider might be a **short put** or a **long-call vertical**.

Take a look at the VVIX as an indication of whether VIX option premiums are relatively high or low. If the VVIX is high, a bullish VIX strategy might be a short OTM put. If the VVIX is low, a bullish strategy might be a long VIX **at-the-money** (ATM) call vertical whose debit is relatively low compared to high VVIX markets.

Then look at the /VX futures prices to determine which VIX options are ITM, OTM, or ATM, and choose the strikes for your strategy accordingly should you decide to proceed. Overall, this has been a simple example. But it shows how a basic knowledge of VIX, VIX futures, VIX options, and VVIX interact, which might make volatility-strategy selection potentially simpler and more straightforward.

IMX: The Other Sentiment Index

If the VIX is the de facto sentiment index for gauging market fear and complacency through the options market, what would be a great complement to that? How about measuring portfolio activity of millions of your peers. The Investor Movement Index (IMX) does just that. In a word, the IMX is a sentiment indicator of sorts that uses real portfolios of over six million clients to give you a better idea of what investors are actually doing, versus what they're thinking of doing.

For illustrative purposes only.

While the IMX doesn't predict anything like market direction, it's useful when viewed over time in suggesting bullish and bearish sentiment by retail investors. It's often been said that it's the "big money" that moves the markets. But let's face it. We as retail traders don't invest like the institutions do. The IMX gives you a truer sense of what a real human investor is thinking.

To access IMX, just type in $IMX in any symbol box on thinkorswim, or go to tdameritrade.com/IMX (http://tdameritrade.com/IMX) for more info, monthly commentary, and to sign up for email alerts.

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