KARPUS INVESTMENT MANAGEMENT

COMMENTARY
August 2023

Insights regarding measurements of market volatility

In volatile times, one will often hear professional investors, financial news outlets, and investment analysts refer to something called the "VIX." Officially called the CBOE Volatility Index, the VIX measures expected market volatility.

It is not a tradeable security, but rather is an index that was created by the Chicago Board Options Exchange (CBOE) in 1993. The CBOE is a marketplace where investors can trade options contracts focusing on individual equities, indices, and interest rates.

The VIX itself is a futures-oriented index that attempts to measure sentiment regarding future market uncertainty. Futures are derivatives contracts that obligate parties to buy or sell an asset at a preset future date and price. Derivatives contracts are simply contracts that derive value from another individual or group of assets or an index.

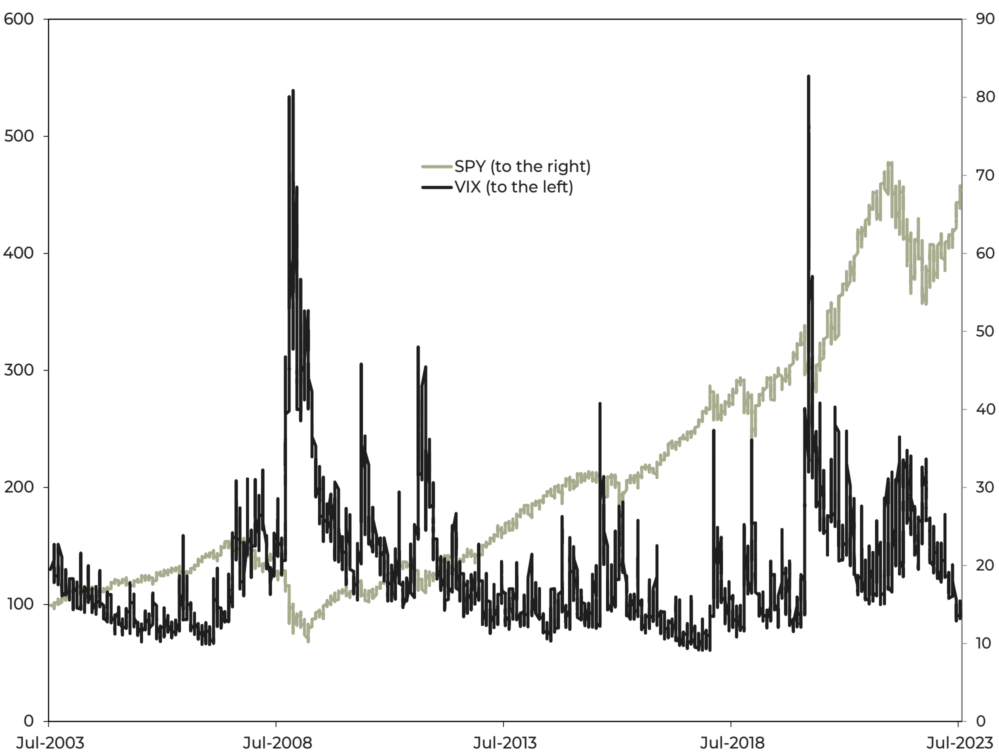
The VIX uses the prices of various 30-day options contracts of the S&P 500 Index (S&P 500) as an input to a mathematical formula that accounts for the risk-free rates (based on U.S. Treasury yield curve rates), calculates near and next-term variances, and uses those inputs to calculate volatility.

This all sounds complicated, but for investors one of the most helpful things about the VIX is to understand that, in a historical context, it is generally inversely related to the S&P 500 and helps investors to provide more context regarding market sentiment. For instance, Chart 1 illustrates VIX highs and SPDR S&P 500 ETF Trust (SPY) index lows for both 2008 and during COVID in 2020 (SPY is an exchange traded fund that represents all 500 stocks in the S&P 500).

Important to note is that the VIX reflects investor sentiment. One could certainly argue that the two preceding crises became apparent in terms of their market effects. However, all the VIX tells us is that investors became very interested in writing options for the 30-day future value of the S&P 500.

We can see this trend again taking place in October 2022, which marked the Russian invasion of Ukraine, decades high U.S. inflation, and a contentious U.S. mid-term election cycle.

Chart 1. CBOE Volatility Index (VIX) vs. SPDR S&P 500 ETF Trust (SPY)
(July 31, 2007 – July 31, 2023)



Bloomberg Finance, L.P.

Turning to the present day (August 11, 2023), one can see that the S&P 500 has steadily risen throughout the year, in part due to the so-called "Magnificent 7" (consisting of Apple, Microsoft, Alphabet, Amazon, Nvidia, Tesla and Meta Platforms). Given this, the VIX has performed largely as one could expect. However, one can also notice an increase in the VIX within the last 30 days. Some have speculated this is due to the rising 10-year U.S. Treasury yield, but there are likely numbers of factors that have an impact.

Investment professionals can use the VIX in a number of different ways, but it often serves to measure the need for defensiveness in portfolios. Options like puts (an options contract giving an owner the right, but not obligation, to sell a certain amount of an asset at a set price within a certain amount of time) can be one way investors could seek to build in that defensiveness.

However, as the VIX (and thus perceived future volatility) increases, the cost to buy those defensive options can also increase due to increased demand (more investors buying more puts). Analysis of the VIX is a worthwhile addition to investors' daily process and can drive a multitude of investment strategies.

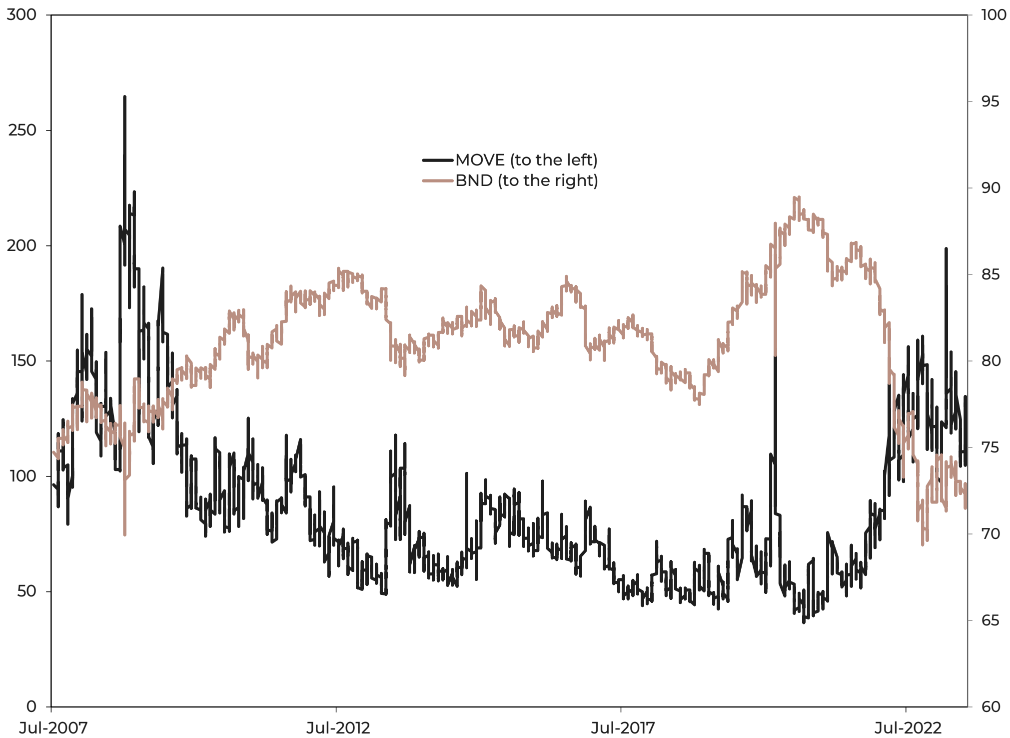
Rochester, NY
183 Sully's Trail
Pittsford, New York 14534
Phone: 585 586 4680
Fax: 585 586 4315

www.karpus.com

Naples, FL
1415 Panther Lane
Naples, Florida 34109
Phone: 239 591 6615

Of note, there is a similar measure to the VIX that seeks to measure volatility in the bond market. It is called the ICE BofA MOVE Index (MOVE Index) and was created by Harley Bassman in the 1990s while working at Merrill Lynch. Similar to the VIX, one can also see the inverse relationship between the MOVE Index and the Vanguard Total Bond Market ETF (BND), which is an exchange traded fund that seeks to track the performance of the Bloomberg Aggregate Bond Index.

Chart 2. ICE BofA MOVE Index (MOVE) vs. Vanguard Total Bond Market ETF (BND)
(July 31, 2007 – July 31, 2023)



Bloomberg Finance, L.P.

In Chart 2, one can see how the MOVE Index rose sharply during the financial crisis in 2008, the initial phases of the COVID-19 pandemic, and has been affected by the Federal Reserve's interest rate hikes since 2022.

It is essential to understand that the VIX and MOVE indices are just two of many tools that investment professionals use to analyze risk.

Sources: Bloomberg Finance, L.P., Chicago Board of Options Exchange, Commodities Futures Trading Commission, Finextra.com, Reuters.

Index definitions: The Chicago Board of Options Exchange VIX Index is a financial benchmark designed to be an up-to-the-minute market estimate of the expected volatility of the S&P 500 Index, and is calculated by using the midpoint of real-time S&P 500 Index (SPX) option bid/ask quotes as of 12/31/2022. The S&P 500 Index is widely regarded as the best single gauge of large-cap U.S. equities and serves as the foundation for a wide range of investment products. The index includes 500 leading companies and captures approximately 80% coverage of available market capitalizations as of 12/31/2022. The ICE BofA MOVE Index measures U.S. bond market volatility by tracking a basket of OTC options on U.S. interest rate swaps. The Index tracks implied normal yield volatility of a yield curve weighted basket of at-the-money one month options on the 2-year, 5-year, 10-year, and 30-year constant maturity interest rate swaps as of 12/31/2022. Data provided by Bloomberg Finance, L.P.

KARPUS INVESTMENT MANAGEMENT

Contacts

Information/Queries

Rochester, NY
183 Sully's Trail
Pittsford, NY 14534
Phone: 585 586 4680
Fax: 585 586 4315

Naples, FL
1415 Panther Lane
Naples, Florida 34109
Phone: 239 591 6615

Website

www.karpus.com

Important Notice