

Frequently Asked Questions about CME Group Volatility Indexes

1. What is the origin of the new suite of Volatility Indexes (VIX) from CBOE and CME Group?

These new CME Group Volatility Indexes are based on the same methodology developed by the Chicago Board Options Exchange, Incorporated (CBOE) for the CBOE Volatility Index[®], or VIX[®]. In 1993, CBOE introduced the CBOE Volatility Index, and it quickly became the benchmark for stock market volatility; today it is often referred to as the investor's "fear gauge." CME Group plans to have the same VIX methodology applied to a variety of asset classes in order to offer expanded, effective ways to measure market expectations of near-term volatility in global benchmark markets.

The first four Indexes released are based on CME Group exchange' market data for the Corn and Soybean options on futures listed at CBOT; West Texas Intermediate (WTI) Crude Oil options on futures (American-style) listed at NYMEX and Gold options on futures listed at COMEX: :

First published in September 2009:

- CBOE/NYMEX Crude Oil (WTI) Volatility Index, or NYMEX Crude Oil (WTI) Volatility Index;
- CBOE/COMEX Gold Volatility Index, or COMEX Gold Volatility Index;

Available June 6, 2011:

- CBOE/CBOT Soybean Volatility Index, or Soybean Volatility Index
- CBOE/CBOT Corn Volatility Index, or Corn Volatility Index

2. How is the underlying index data distributed?

The underlying Volatility Index values for Corn, Soybeans, Crude Oil (WTI), and Gold will be disseminated every 15 seconds by CME Group through their Market Data Platform (MDP). In addition, these new Volatility Index values will be available on www.cmegroup.com/vix and via our quote vendor systems.

3. How are the new Volatility Indexes calculated?

The new Volatility Indexes are calculated by using real-time bid/ask quotes of at-the-money and out-of-the-money put and call options on futures. The Volatility Index methodology uses nearby and second nearby options with at least eight days left to expiration and then weights them to yield a constant, 30-day (60-day for gold) measure of the expected volatility of price of the underlying asset. More information on the general methodology and a sample calculation may be found in the CBOE VIX White Paper (linked at www.cmegroup.com/vix).

4. What do the Volatility Indexes measure?

The Volatility Indexes measure market expectations of near-term volatility as conveyed by options on futures contract. More specifically, they measure the expected implied volatility over the next 30 days (next 60 days for gold) by incorporating information from the volatility "skew" based on a wider range of strike prices rather than just at-the-money options. The index value has two decimal points and the tick size is in 0.01 increments.

The Volatility Indexes isolate the implied volatility components and provide a direct, more effective way to track volatility in the underlying asset class. Market participants can gain direct exposure to volatility and do not have to account for the price changes of the underlying asset, interest rates, and time to expiration as with other volatility trading strategies using other instruments.

5. What is the difference between the NYMEX Crude Oil (WTI) Volatility (OIV) and COMEX Gold Volatility Index (GVX) compared to the existing, similar Volatility Index Indexes on Crude Oil and Gold already published by CBOE?

The CBOE Crude Oil ETF Volatility Index (OVXSM) and CBOE Gold ETF Volatility Index (GVZSM) are based on the same VIX methodology. However, those indexes use exchange-traded fund options prices based on the United States Oil Fund, LP (USO) and the SPDR Gold Shares (GLD) respectively, as the basis for the calculations.

The CBOE/NYMEX Crude Oil (WTI) Volatility Index and the CBOE/COMEX Gold Volatility Index are based on options on Crude Oil (WTI) futures and COMEX Gold futures respectively. Because of their liquidity and depth, the indexes are able to offer effective, robust representations of market sentiment on near-term volatility, as well as more direct exposure to volatility of the underlying commodities. At the same time, the new indexes can also avoid the tracking error experienced by exchange-traded funds associated with contango or backwardation.

In addition, trading tools will be made available through futures and options contracts based on the new Volatility Indexes – enabling market participants to express a direct view on volatility in a cost-effective way.

6. Are historical Volatility Index values available?

Yes. Historical Volatility Index values have been calculated using CME Group exchanges' market data on Crude Oil, Gold, Corn, and Soybean options on futures listed at CME Group exchanges and are available at www.cmegroup.com/vix for back testing.

7. Why does the COMEX Gold Volatility Index measure expected volatility over the next 60 days instead of the next 30 days?

Options on Gold futures are listed for February, April, June, August, October and December. Though serials are listed for a period of two months for additional months - January, March, May, July, September and November -- they are very illiquid and are not used in the calculation. This leaves a 60-day gap between the nearby and second nearby options. CBOE modified the original VIX methodology to accommodate for this change, making it a volatility measure for 60 days vs. 30 days, to ensure an efficient, representative volatility measure.

8. Will tradable instruments based on the Volatility Indexes calculated by CBOE on CME Group asset classes be listed?

Volatility Index futures for NYMEX Crude Oil (WTI) and COMEX Gold have been listed since October 2010. Options on Volatility Index futures for NYMEX Crude Oil (WTI) and COMEX Gold have been listed since January 2011.

9. Why are the Corn and Soybean Volatility Indexes disseminated from 9:45 a.m. (Chicago Time/CT) instead of 9:30 a.m. when the underlying options markets open?

Both the electronic and open outcry markets for Corn and Soybean options open at 9:30 a.m. CT. Many option strikes do not have the robust quotes needed for the Volatility Index calculation right after market open, in that either they are not being quoted or have very wide bid-ask spreads. CME Group made the decision to start dissemination of the Corn and Soybean Volatility Index values at 9:45 a.m. Chicago Time, 15 minutes after the opening of the underlying markets.

WTI Crude Oil VIX and Gold VIX are disseminated at the opening of open outcry market because their options are traded continuously without a halt on the CME Globex electronic trading platform. When the Open Outcry market opens, they have instant access to active quotes from the electronic option markets.

10. Are serial options used in the calculation of the Corn and the Soybean Volatility Indexes?

Yes, serial options are used in the Volatility Index calculations for Corn and Soybeans. Although serial options are not as liquid as standard options, the CBOE VIX methodology uses bid/ask options quotes, not the actual options trade price, as inputs in the calculation. As long as the underlying options are actively quoted and reflect the current market condition, the use of serial options should not skew the Volatility Index values.

A second consideration for using serial options in the Index calculations is to maintain Corn and Soybean Volatility Indexes as valid measures of short-term, constant-maturity implied volatility – which is consistent with how marketplace views other Volatility Indexes that apply the VIX methodology to other asset classes today. If serial options are removed from the calculations, two-to three-month gaps can be seen between standard options. As a result, the time horizon of the volatility index would be a medium-term measure of volatility rather than a short-term measure. This would have significant implications to hedgers of short-term volatility. Furthermore, empirical evidence shows that longer-term Corn and Soybean Volatility Indexes are less robust than ones applying the short-term VIX methodology.

11. Who may I contact for more information?

CBOT Corn and Soybean Volatility Indexes

For questions on the methodology of the CBOT Corn and Soybean Volatility Indexes, contact:

Renyuan (Randy) Shao, Renyuan.Shao@cmegroup.com, 312 648 3795

For questions on applications and potential futures and options products to be listed on the CBOT Corn and Soybean Volatility Indexes, contact:

Ankita Roy, Ankita.Roy@cmegroup.com, 312 930 3237

NYMEX Crude Oil (WTI) and COMEX Gold Volatility Indexes

methodology of the NYMEX Crude Oil (WTI) or the COMEX Gold Volatility Indexes, contact:

Bob Biolsi, Bob.Biolsi@cmegroup.com, 212 299 2610

For questions on tradable futures and options that are listed on the NYMEX Crude Oil (WTI) Volatility Index, contact:

Alexandra Siff, Alexandra.Siff@cmegroup.com, 212 299 2368

For questions on tradable futures and options that are listed on the COMEX Gold Volatility Index, contact:

Patricia Cauley, Patricia.Cauley@cmegroup.com, 212 299 2346

Historical Data Access

For questions on accessing historical market data for the Volatility Indexes, contact the following representative from Information Products Management team:

Timothy St. George, Timothy.St.George@cmegroup.com, 312 466 4357

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