Fear of Negative Consequences
Low open interest in June 2020 WTI.

Morningstar Commodities Research
11 May 2020

Sandy Fielden
Director, Oil and Products Research
+1 512 431-8044
sandy.fielden@morningstar.com

Data Sources for This Publication
CME Group
CFTC

To discover more about the data sources used, click here.

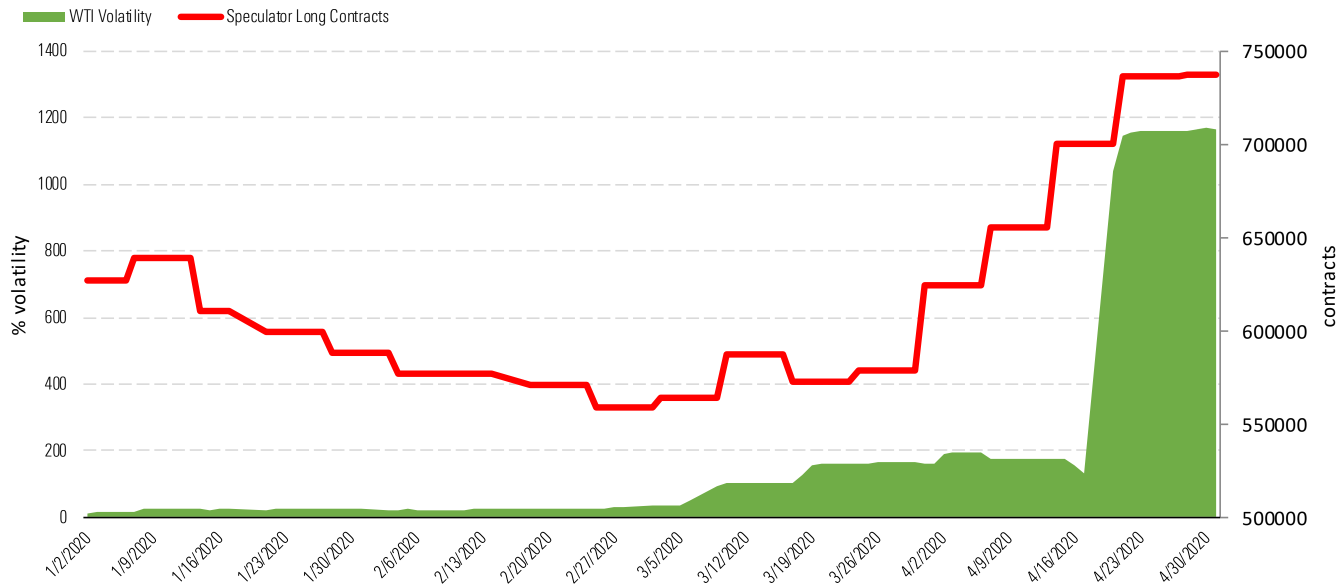
Shock Waves
May futures for the CME Nymex West Texas Intermediate contract for delivery at Cushing, Oklahoma, plunged nearly $56/barrel on April 20, the day before contract expiry. The settlement price at negative $37.63/barrel sent shock waves through North American crude markets. The reverberations of negative prices continue to plague benchmark U.S. crude futures with low open interest in the prompt June 2020 contract resulting from concerns about another squeeze event.

This note looks back at the events of April 20 and the ramifications of extreme market volatility.

Classic Squeeze
In an April 27 note, we described the WTI market squeeze caused by a lack of available storage capacity at the Cushing delivery point for the crude contract (see Crushing Cushing: Wider Impact of Negative Crude). Participants long May crude on April 20 found few takers to buy out their positions before expiration on April 21 and were unwilling or unable to acquire storage to hold the physical barrels that their contracts otherwise required them to accept for delivery. As a result, short speculators holding storage capacity stood by, watching and waiting as the trapped longs lowered asking prices to an unprecedented negative $37.63/barrel in a desperate attempt to draw bids that would get them out of the hole. Several participants, including retail investors in a vehicle sponsored by a Chinese bank, were caught on the wrong side of the trades, potentially losing millions of dollars in value.

In the runup to the squeeze, the futures market saw increased activity from financial participants, with the number of long speculator positions increasing 31% from 564 thousand on March 3—the Friday before the OPEC+ spat between Saudi Arabia and Russia caused oil prices to collapse—to 738 thousand on April 28, according to Commodity Futures Trading Commission weekly data. Although the CFTC doesn't detail who holds speculator positions, there was a parallel surge in investment in exchange-traded funds that track oil prices such as USO. These ETFs have attracted retail investors seeking exposure to low oil prices on the assumption they would bounce back once the coronavirus pandemic ends. The runup in speculator longs also mirrored a period of increased 21-day historical crude price volatility, a measure of the extent of daily price fluctuations (Exhibit 1).

Exhibit 1 WTI 21-Day Historic Volatility and Long Speculators 2020



Source: CME Group, CFTC, Morningstar.

Warning Sign

Increased investment by financial speculators laid the groundwork for the market squeeze as the May 2020 crude contract neared expiry on April 20. CME Group data for WTI trading volume indicates a warning sign was provided a month earlier when the April 2020 contract expired on March 20. That day saw the highest volume on expiration day in WTI history, with a total of 136,722 contracts trading hands—18% higher than the previous record set in March 2018 and 4 times the average volume on expiry day. The record volume on April expiration reflects a large number of contract holders anxious to avoid taking delivery. At the time, adequate storage was available to unwind speculative long positions, which wasn't the case a month later when the May contract expired.

Extreme Volatility

The period after the March 6 OPEC+ meeting broke up saw an increase in WTI prompt contract historic volatility above 150% as prices dropped rapidly in response to an anticipated supply surge. However, the one-day plunge in the May contract of $56/barrel between April 17 and April 20 pushed volatility to a level nearly 6 times the WTI futures contract previous high of 194% (Exhibit 2). Historic volatility on April 20 was 1,171%, or 39 standard deviations from the mean of prompt WTI volatility over the life of the contract since April 1983.

Exhibit 2 WTI Prompt Price and Historic Volatility Since May 2015

Source: CME Group, Morningstar.

High-Volume Showdown

The underlying cause of the extreme volatility in the expiring May contract was the absence of buyers willing to close out long positions held by speculators until prices fell into unprecedented negative territory. The squeeze was undoubtedly helped by the large number of financial speculators holding long positions without access to storage capacity. Where the April expiration on March 20 had seen record trade volume of 137 thousand contracts on expiry day, the day before the May contract expired another WTI record was set by an even higher volume of close to 248 thousand contracts changing hands—over 3 times the 72 thousand average for the day prior to expiration.

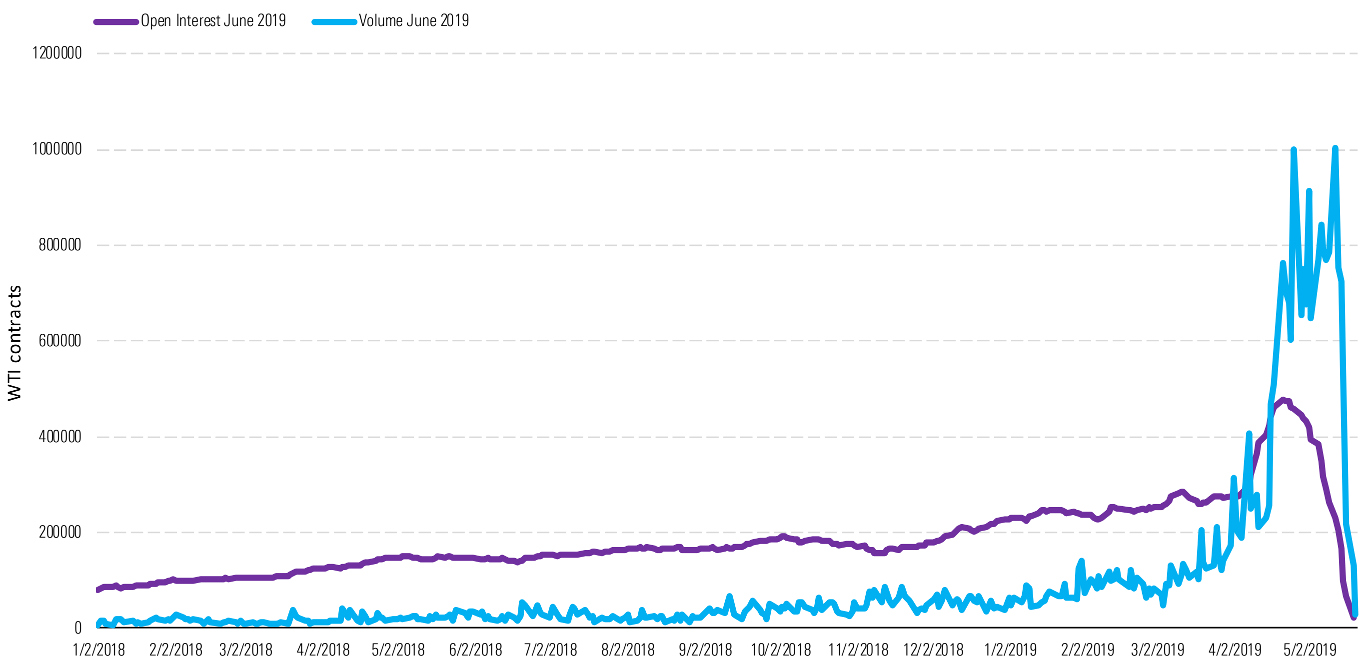
At the close of trading April 17, there were 108,593 open positions outstanding in the May contract with two days left before expiration. That was the second-largest open interest position ever for a prompt WTI contract two days prior to expiration. By the end of trading on the day of the squeeze, April 20, open interest had fallen by 95,549 contracts to 13,044. That decline in open interest suggests about 47,800 contracts were liquidated by matching buyers and sellers. An unknown number of those 47,800 contracts were longs closed out at negative prices, many at the final settlement price of negative $37.63/barrel.

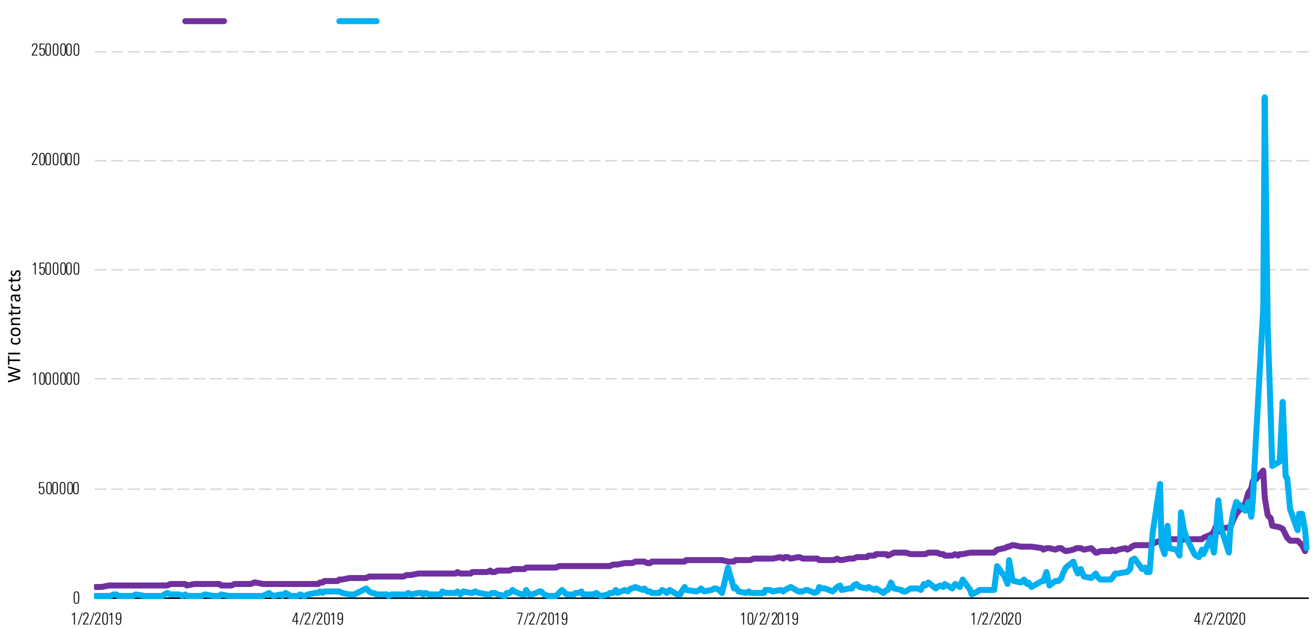
June Shift

Up until April 20, open interest in June 2020 delivery crude futures built steadily to 582,000 contracts. The build followed the typical pattern in the period before a delivery contract becomes prompt as more speculators move out of the expiring contract into the next delivery period to avoid taking delivery. The sudden price plunge on April 20 spooked speculators to get out of the June contract for fear that negative prices might follow the May expiration into June. On April 21, the final day of May trading, the June contract saw record volume of just under 2.3 million contracts with 122 thousand open positions liquidated. This marked the start of a mass exodus from the June contract, leaving it relatively illiquid since.

Exhibit 3 shows June 2020 volume and open interest in the bottom panel and volume and open interest for the same contract in 2019 in the top panel. The June 2019 chart shows a typical pattern where open interest builds slowly in the last six months before expiry, peaking shortly after the contract became prompt in the last week of April. Most of the volume traded in the June 2019 contract occurred during the final month before expiration, with volume dropping sharply in the last few days of trading. In contrast, the June 2020 contract has extreme peaks of volume and open interest in response to the pressures around the squeeze event on April 20 and an open interest flight immediately after negative prices spooked the market.

Exhibit 3 WTI Volume and Open Interest for June 2019 and June 2020 Contracts





Source: CME Group, Morningstar.

Consequences

Concern that prompt June WTI futures would suffer the same fate as the May contract, resulting in another squeeze with more negative prices, lies behind the exodus of open interest since April 21. Several brokers warned clients to limit exposure to the prompt contract. On April 28, S&P Global instructed clients following GSCI—the most popular market commodity index—to roll all positions out of June crude into July because of the decline in June open interest and the threat of negative prices.

With traders holding less open interest than usual in the June 2020 WTI contract, it is now vulnerable to increased volatility and speculation. A lower number of long-term position holders also suggests reduced hedging by physical players. Therefore, the forward structure of the crude market is distorted, with volume and open interest moving to further out contracts. And as we explained in our April 27 note (Crushing Cushing: Wider Impact of Negative Crude), there is a wider impact on the U.S. domestic crude market when prompt CME Nymex WTI futures prices are buffeted by unusual volatility because of links to physical pricing through the calendar month average mechanism.

The WTI futures market should self-heal through the balancing of supply and demand. Announced rapid shut-ins by producers since the April 20 negative price event indicate this is happening already. The concern is that fear of negative consequences will permanently reduce prompt month contract liquidity, undermining the role of delivery in converging WTI physical and futures markets. M

About Morningstar® Commodities Research™

Morningstar Commodities Research provides independent, fundamental research differentiated by a consistent focus on the competitive dynamics in worldwide commodities markets. This joint effort between Morningstar's Research and Commodities & Energy groups leverages the expertise of Morningstar's 23 energy, utilities, basic materials, and commodities analysts as well as Morningstar's extensive data platform. Morningstar Commodities Research initially will focus on North American power and natural gas markets with plans to expand coverage of other markets worldwide.

Morningstar, Inc. is a leading provider of independent investment research in North America, Europe, Australia, and Asia. The company offers an extensive line of products and services for individuals, financial advisors, and institutions. Morningstar's Commodities & Energy group provides superior quality market data and analytical products for energy data management systems, financial and agricultural data management, historical analysis, trading, risk management, and forecasting.

For More Information

+1 800 546-9646 North America
+44 20 3194 1455 Europe
commoditydata-sales@morningstar.com

MORNINGSTAR®

22 West Washington Street
Chicago, IL 60602 USA