
Reduced Appetite for Speculation Could Affect Crude Hedging

Interests of buyers and sellers aren't always aligned.

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Data Sources for This Publication

CFTC
EIA
CME Group
To discover more about the data sources used, [click here](#).

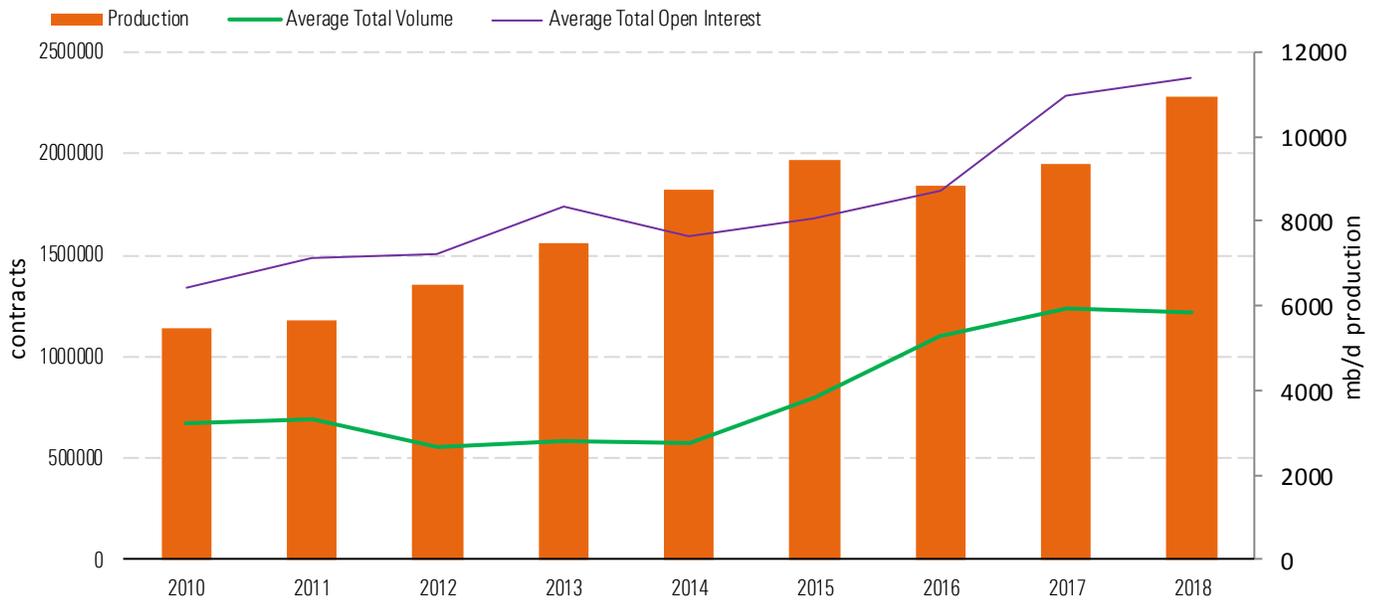
Recent Collapse

Given the doubling of domestic crude production between 2010 and 2018, the CME Nymex light crude futures contract has been an invaluable tool for producers. However, the interests of crude buyers and sellers aren't always aligned in futures markets, and participation by hedgers and speculators varies with market price and direction. The recent collapse of prices in the final quarter of 2018 caused some financial players to leave the market and has reduced the appetite for long speculative positions that are needed to offset producer hedges.

This note looks at changing trade volume in the CME Nymex crude futures contract during the shale era and discusses current drivers of futures market activity.

Production and Futures Volume

The shale revolution caused annual average daily domestic crude output to double from 5.5 million barrels/day in 2010 to 11.0 mmb/day in 2018, according to the U.S. Energy Information Administration. That doubling was matched by an 82% increase in annual average daily volume of CME Nymex light crude futures trading (total volume, all contracts) from 668,000/day in 2010 to 1.2 million/day in 2018. Over the same period, total open interest (outstanding contracts) increased 77% from 1.3 million contracts to 2.4 million (Exhibit 1). Since each contract is for 1,000 barrels of crude, the volume of paper oil traded on CME dwarfs the physical market, but the two are closely linked through the futures delivery mechanism and the use of prompt futures prices as the basis benchmark for most domestic crude transactions. The huge increase in shale crude production would therefore be expected to increase futures trading as producers seek to protect prices by selling futures.

Exhibit 1 U.S. Crude Production and Futures Volume and Open Interest

Source: EIA, CME Group, Morningstar.

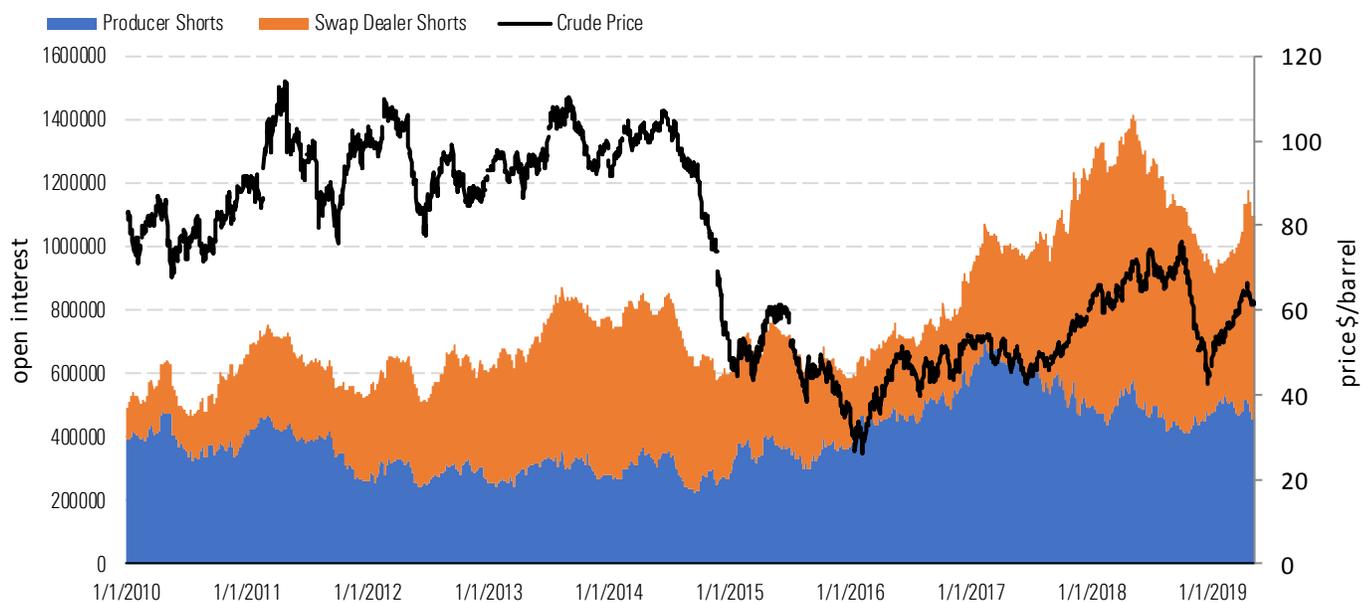
Hedging

An increase in hedging activity by producers is confirmed by data from weekly Commodity Futures Trading Commission Commitments of Traders reports. The reports are based on specific categories of trader and tally the number of open positions held by these groups. The two categories associated with hedging are physical producers and their financial market intermediaries or swap dealers. Producers and swap dealers typically sell futures contracts (short) to lock in future production at current prices. Exhibit 2 shows CoT open short positions held by producers and swap dealers since January 2010 (shaded areas, left axis). Annual average producer short hedges increased 22% between 2010 and 2018 and swap dealer hedges increasing more than fourfold over the same period. The shape of hedging activity roughly follows the total volume trend shown in Exhibit 1.

However, although shale crude production took off in 2011, big increases in hedging did not follow immediately but were delayed until 2016. One reason for the delay was that crude prices (black line, right axis in Exhibit 2) were high during the early shale years between 2011 and 2014. At around \$100/barrel, hedgers had less incentive to buy insurance in the futures market at a time when overall market perceptions were that future supply was finite and that prices would keep increasing. The price crash of 2015 caused by a glut of crude in world markets, dispelled the myth of peak oil supply and threatened the economics of shale producers. As producers weathered the price downturn and output and prices recovered in the latter half of 2016, hedging activity took off as they hurried to protect themselves and their financial backers against another bust.

A more recent price crash in the final quarter of 2018 led to a sharp decline in hedging, and producers waited until prices recovered in early 2019 before returning to the market with less confidence than before that prices would continue to rise amid a very fluid supply situation this year.

Exhibit 2 CME Nymex Crude Hedging and Prices



Source: CFTC, CME Group, Morningstar.

Long Speculators

If hedgers provide liquidity as sellers of futures contracts, speculators are generally the buyers on the other side of hedges. It follows that both groups must have incentives to participate for a futures market to work. Over the eight-year period from 2010 to 2018, CFTC data shows the volume of open positions held by long speculators (financial players buying and holding futures contracts) increased steadily (Exhibit 3). On an annual average basis, long speculator positions increased 250% from 285,000 each day in 2010 to 710,000 in 2018. This buildup was only slightly affected by the price crash in 2015 and was supported by the advent of OPEC production agreements at the end of 2016 and again at the end of 2018 signaling higher prices.

However, the price crash at the end of 2018 did have a severe impact on the longs—causing them to close out significant positions at that time, although they have been building again in 2019 to a lesser extent. The poor 2018 performance of several commodity hedge funds invested in oil caused them to close or withdraw investments from oil, dampening the bullish appetite for holding crude. A shortage of long speculators or buyers makes it more difficult for hedgers to sell futures, putting downward pressure on prices.

Exhibit 3 Crude Long Speculators



Source: CFTC, Morningstar.

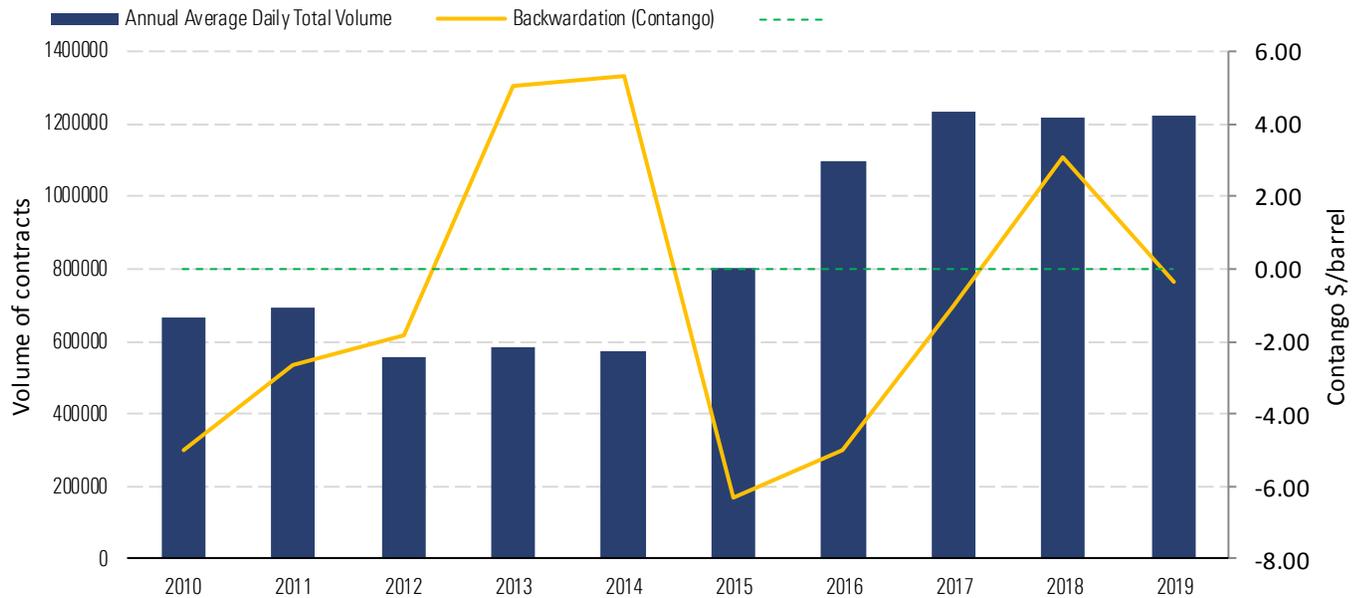
Backwardation and Contango

Although futures volumes have increased with crude production since the advent of shale, the rate of futures growth has varied with prompt oil price as well as with producer and speculator sentiment about the direction of prices.

To understand the impact of future price direction, we looked at the spread between prices for nearby delivery and prices for delivery 12 months into the future—known as backwardation and contango. If this spread is positive (prices in the future are lower than prices today) the futures market is in backwardation. If the spread is negative (prices today are lower than prices in the future) the market is in contango. Most theories of commodity futures markets assume a natural contango because of the cost of carry or storage. However, oil markets are frequently in backwardation when a shortage of prompt supply increases nearby prices versus outer months. As markets move from backwardation to contango, long speculators profit from the rising value of further out futures contracts.

We calculated contango and backwardation by subtracting prices for delivery 12 months into the future from the prompt month. We then calculated the annual average of those daily results to provide a broad indicator of whether the market was in backwardation (positive value) or contango (negative).

Comparing this indicator to average annual crude futures volumes shows a similar relationship to that of outright price but one that can be more insightful as we'll explain. Exhibit 4 shows the backwardation and contango indicator (yellow line and dashed green zero-line, right axis) as well as the annual average volume of futures trades between 2010 and 2018 (blue bars, left axis).



Source: CME Group, Morningstar.

High crude prices and a perception that the market was undersupplied before 2014 meant the market signal moving the structure from contango in 2010 to backwardation in 2013 and 2014 did not encourage significant growth in speculative futures trading volumes. Overall volume didn't grow at this time because hedgers had no incentive to sell futures since they were confident prices would remain high. The lack of hedgers selling meant fewer contracts for speculators to buy. In contrast, the strong move from contango to backwardation between 2015 and 2018 provided another opportunity for long speculators to buy and hold in hopes of a price recovery. This time the transition coincided with hedgers anxious to protect their production pricing after the 2015 crash, by selling futures. In this circumstance, the common interest of hedgers and speculators lay behind the big growth of futures volumes between 2015 and 2017, continuing into 2018, until the price crash during the final quarter that caused a futures sell-off.

Recent Trading

Overall CME crude trading volumes have been relatively flat between January and April 2019, averaging 1.2 million contracts/day. The one-year market structure dipped into contango between November 2018 and early March 2019 but has returned to backwardation since. These moves reflect the 40% price fall in the final quarter of 2018 and recovery since January. The price recovery this year has increased hedging and speculator activity but not on the scale of 2017 and 2018. That's because market sentiment is very unsettled this year considering unresolved geopolitical issues (Iran, Venezuela, and China). So, despite continued growth in domestic crude output, futures market volumes haven't increased in step and prices are driven by day-to-day noise rather than longer-term market trends. Without these longer-term trends, it remains unclear whether bullish financial speculators will return to the market in strength.

Unable or Unwilling?

Over the past eight years, CME Nymex light crude futures have responded to the growth of domestic production with increased trading volume. A liquid hedging venue for shale producers has proved critical to satisfy drilling investors that returns can be protected. A strong appetite for exposure to rising oil prices has provided a ready flow of speculative buyers to match hedging sales. The CME futures market remains the hub of price activity in the domestic market even as new contracts are launched to increase the focus on the Gulf Coast export market in Houston. However, the poor performance of commodity funds in 2018 and the closure of some firms since inject a note of caution into the discussion as production and hedging requirements continue to grow—in case the financial community proves unable or unwilling to play its part in the future. ■■■

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