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Shanghai Crude Futures Lack Physical Participation
High volume and low open interest.

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Data Sources for This Publication
CME Group
ICE Futures
INE
To discover more about the data sources used, click here.

Largest U.S. Buyer

As the world's biggest net importer of crude, China became the largest buyer of U.S. exports during 2017 and is likely to do so again if the current trade war is resolved. Last year, 50% of Gulf Coast crude exports went to Asian markets largely outside of China, including South Korea, Japan, and India. These markets have no default futures exchange that provides transparent pricing and hedging. Fourteen months ago, the Shanghai International Energy Exchange (INE) launched its first internationally tradable sour crude (SC) futures contract. Since inception, the contract has seen heavy volumes traded but limited participation by physical hedgers. This note looks at SC crude futures and their relationship to the international market.

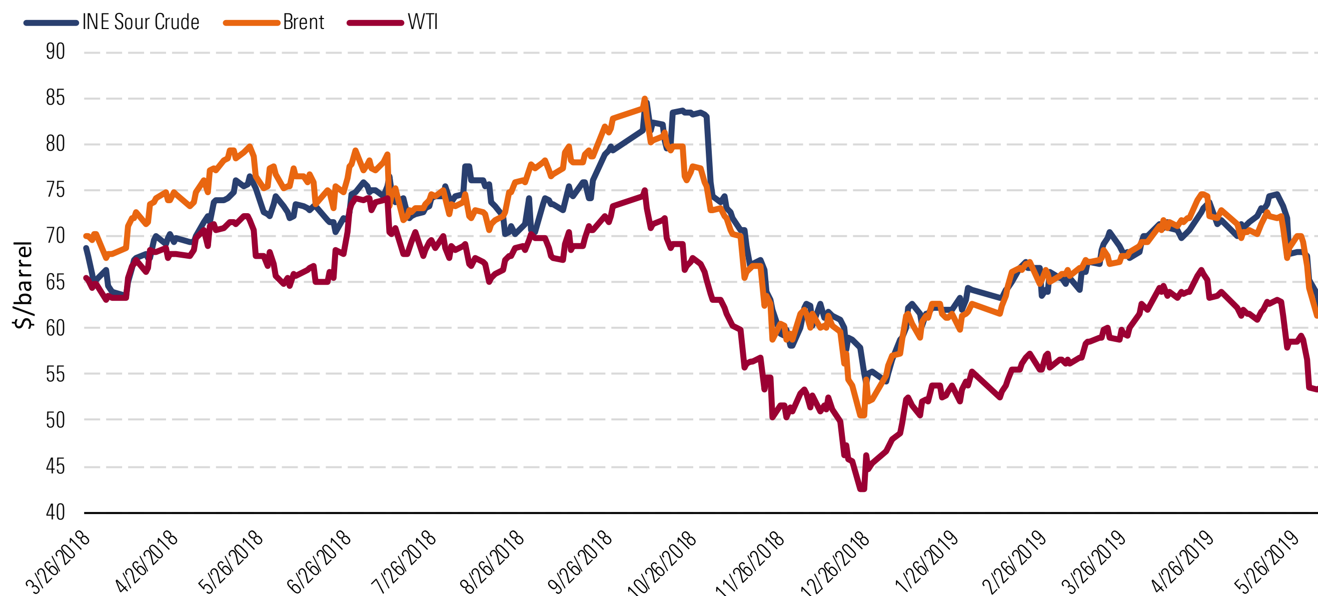
Shanghai Crude

The INE launched its crude futures contract on March 26, 2018, priced and traded in Chinese yuan (or RMB) per 1,000-barrel lot. The exchange lists 12 nearby delivery months followed by 12 quarterly contracts. Delivery contracts expire on the last trading day of the month prior to delivery, and delivery takes place during the subsequent five trading days. The INE defines the contract as medium sour crude with an API gravity of 32 degrees and 1.5% sulfur. Participants can deliver one of seven crude streams against SC. Six of the seven streams are Mideast grades (Dubai, Upper Zakum, Oman, Qatar Marine, Masila, and Basra Light) and one is Chinese (Shengli). Delivery prices are based on final settlement before expiry with a fixed premium of 5 RMB for lighter sweet Masila crude and a 5 RMB discount for heavier Iraqi Basrah Light and Shengli grades. Crudes can be delivered into designated bonded storage facilities distributed along the Chinese coast and treated as offshore for tax purposes (free of tariffs). Trading by non-Chinese parties is permitted through futures brokers, and margin calls can be settled in U.S. dollars.

The specifications aren't that different from Dubai (30 API, 2.8% sulfur) or Oman (30 API, 1.6% sulfur) crude that are both referenced in pricing contracts for Mideast crudes delivered to Asia. The Dubai market is physical only, but there is a futures contract for Oman crude listed on the Dubai Mercantile Exchange since June 2007. Both ICE Brent and CME Nymex West Texas Intermediate—the dominant futures contracts in international markets—are for light sweet crude and as such are less suited for typical Chinese imports that are primarily medium sour and heavy. Two reasons lay behind China's launch of its own crude futures contract. The first is to fill a gap because the Asia region is the world's largest crude market yet lacks its own benchmark crude, reducing its influence on crude pricing. Second, China is anxious to list its own commodity futures in RMB to promote the use of the currency and expand the country's international trade profile.

The SC crude contract got off to a roaring start. Even though the first delivery month wasn't until September 2018, the daily total volume of SC traded had exceeded DME Oman by June 2018—making it the third most popular worldwide after Brent and WTI. By September 2018, there were over 30,000 participant accounts of which 15% were international investors. Since inception, prompt SC settlement prices have tracked fairly close to Brent and at a premium to WTI (Exhibit 1).

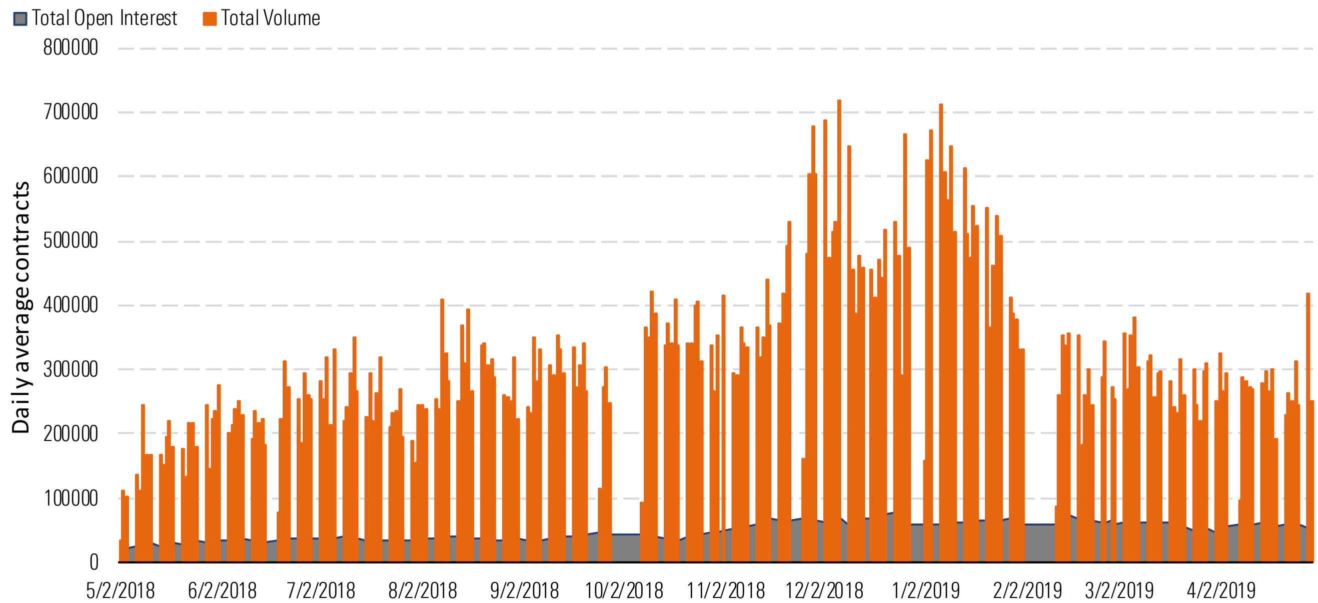
Exhibit 1 Daily Settlement Prices (USD)



Source: CME Group, ICE Futures, INE, Morningstar.

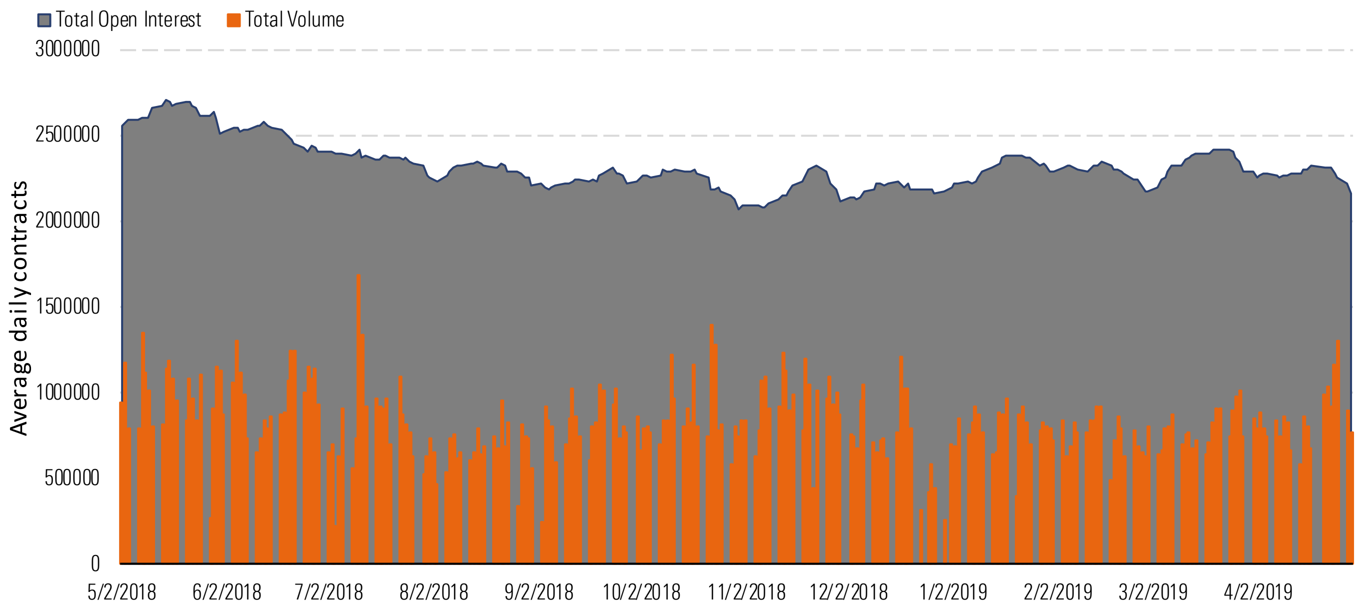
While the high volume of SC trading has attracted attention, lower open interest numbers diminish the utility of the INE crude contract compared with international rivals. Because locals who buy and sell rapidly in search of a quick return do most SC trading, the number of participants holding contracts over longer periods is smaller than for DME Oman, Brent, or WTI. Exhibits 2 and 3 show the total daily volume (gray shading) and total daily open interest in INE SC and Brent ICE crude contracts between the start of May 2018 through the end of April 2019. The SC daily volume averaged 320,000 contracts over the period and open interest averaged 49,000 or 15% of the volume. Over the same period Brent ICE daily volume averaged 0.8 million contracts and open interest averaged 2.3 million or nearly three times the volume. For comparison, DME Oman daily volumes averaged 4,836 contracts in the same period with open interest averaging 12,000 or 2.48 times volume and WTI Nymex averaged volume of 1.2 million and open interest of 2.2 million or 1.8 times volume.

Exhibit 2 INE SC Futures Total Volume and Open Interest



Source: INE, Morningstar.

Exhibit 3 Brent ICE Futures Total Volume and Open Interest



Source: ICE Futures, Morningstar.

The low ratio of SC open interest to volume indicates that more trading is by speculative rather than physical market participants. Physical players are typically crude producers and refiners using the exchange for hedging, whereas speculators are local financial investors. The relative absence of physical

players means that trade is dominated by local participants and somewhat disconnected from the international crude market. Connectivity to international oil prices is further diminished by the added exchange rate risk from the contract being traded in RMB. That can cause unexpected fluctuation due to currency volatility and make international participants wary of exchange control limits.

The INE contract has other disadvantages relative to its western competitors. The trading calendar is markedly different from CME and ICE with two trading sessions each day instead of one continuous session and extended holiday periods at the Spring Festival and October Golden Week. When prices are changing rapidly in international markets, participants exposed to that risk are helpless when the exchange isn't open. For example, when Brent prices fell rapidly in October 2018, the INE exchange was closed for Golden week—causing a sharp drop on reopening. Since the first SC contract expired in August 2018, trading has concentrated in contracts at the end of the prompt quarter rather than the prompt month. Trading on ICE and CME is more evenly spread around the front six delivery months, making it easier to roll positions prior to expiration. The delivery period is also relatively tight compared with WTI that gives physical players a month to arrange for delivery after the contract expires. Only providing five days after expiration restricts delivery geography and flexibility.

U.S. Exporters

While the U.S. exports growing volumes of crude to Asia, the SC contract doesn't make sense currently as a risk management tool. Most exports out of the Gulf Coast are being priced against Brent, making ICE the most logical choice for risk management. Both Brent and WTI are light sweet crudes so they typically would have quality price differentials to a sour crude like SC that make it unsuitable for a hedge. There are growing opportunities for U.S. producers to export medium sour Gulf of Mexico crude to Asia, and these could use the INE but probably prefer to use over-the-counter sour crude contracts like the ICE Argus Sour Crude Index.

Chinese Future?

Without question, growing Chinese demand for crude in the next decade represents the best opportunity for expanding U.S. crude sales. Assuming the current trade dispute is resolved, we expect China to again become the largest buyer of Gulf Coast crude. As the dominant crude buyer in Asia, China can expect to have more influence over pricing—just as the U.S. export expansion has changed the focus of crude pricing to the Gulf Coast. So while the current setup of INE crude futures makes it unattractive to international players, the contract could evolve into a more influential benchmark as Chinese refiners become more significant buyers in the world market.

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