

Shale Oil Propels U.S. Crude Export Increase

By Kunal Patel and Grant Strickler

Crude oil exports from the U.S. are rising, reaching 2.2 million barrels per day (mb/d) in June 2018, triple the 2016 average and the highest ever for the nation. More than 90 percent of crude exports this year have originated on the Gulf Coast, generating jobs, capital and income for ports in Houston and Corpus Christi.

Such exports were at a trickle before Congress lifted a federal crude oil export ban that had been in place since 1975. The change, which took effect in December 2015, allows U.S. producers to sell oil directly to the global market at a time when shale oil production is high and rising.

Shale Boom Impacts

U.S. crude oil production has grown steadily since 2008, reaching a record of more than 10 mb/d this year, with 12 mb/d expected by the end of 2019, according to the Energy Information Administration. Shale oil accounts for 99 percent of the production growth. Shale yields a light-sweet crude oil, requiring a simple refining configuration to produce gasoline and diesel.

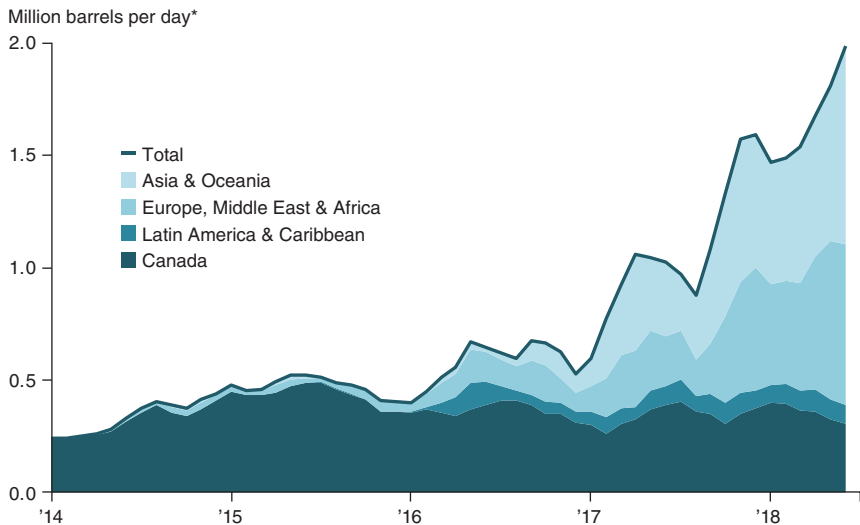
As domestic crude production declined in the 1990s and 2000s, U.S. refiners made significant investments in their refining capabilities to process imported heavy-sour crude, primarily from Venezuela and nearby Mexico and Canada. Heavy-sour crude, which is generally cheaper than light sweet, provided greater profitability for refiners.

Building Infrastructure

With the shale boom, there was a mismatch between the crude oil produced and domestic refining capabilities, creating a pricing distortion for domestic production. This mismatch is one reason Congress removed the export ban; rising domestic production likely also made energy security less relevant.

When Congress ended the ban, the infrastructure needed to export signifi-

CHART 1 U.S. Crude Oil Exports Rising at Accelerating Rate



*Three-month moving average.
SOURCE: Energy Information Administration.

cant volumes of crude oil was lacking. Midstream providers started investing in export-related infrastructure in the Houston and Corpus Christi regions in 2016. Exports from both ports increased, with the Port of Corpus Christi the first in the U.S. to partially load a very large crude carrier (VLCC), a type of vessel capable of transporting more than 2 million barrels of oil.

The Louisiana Offshore Oil Port, about 20 miles south of Louisiana's Port Fourchon, successfully fully loaded a VLCC last February and became the first U.S. port to do so. With improvements to export infrastructure and an increasing supply of light-sweet shale oil, U.S. exports are poised to continue expanding.

Before allowing exports, Congress permitted some small-scale exemptions—almost all (92 percent) destined for Canada. Now, 42 percent of U.S. oil exports go to Asia and Oceania; 34 percent to Europe, the Middle East and Africa; and 19 percent to Canada.

Constraining Factors

While the long-term outlook is bright for U.S. exports, infrastructure limits the near term. The Rapidan consulting group estimates current Gulf Coast export capacity at up to 3.0 mb/d, which could start constraining exports in as little as a year, assuming a reduction of transport bottlenecks in the oil-rich Permian Basin in West Texas and southeastern New Mexico.

Potential Chinese tariffs on U.S. crude exports could also be a limiting factor. However, assuming production growth continues and the construction of new export terminals is completed, other trading partners would likely emerge. The Intercontinental Exchange is looking to add a futures contract for crude delivered in Houston, making it easier for transport companies to purchase crude close to export infrastructure rather than having to source it from production areas in West Texas.