

U.S. Shale is Back and the Crude Migration to the East Resumes

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What a Difference a Year Makes

At the end of 2014, Saudi Arabia, with its OPEC partners, opted to lift crude oil production and pursue greater market share in the face of rising U.S. shale production and the expected removal of sanctions on Iran. By the end of 2015, crude oil prices had tumbled under \$40, Saudi and Iraqi production had risen by 1.5 million b/d, a nuclear deal was indeed struck, and Iran was gearing up to raise exports. U.S. shale producers had worked furiously to cut costs and stay in business, but their production had finally crested and was declining. Ironically, in this market of low oil prices and falling U.S. production, the U.S. government lifted the ban on crude oil exports.

Then a Quick Course Correction

The low prices of 2015 persisted in 2016 and led Saudi Arabia and OPEC to reverse course, concluding a historic production deal that included Russia, cutting crude oil production by close to 1.5 million b/d. Crude oil prices rose a bit and stabilized around \$50 as 2017 began.

Resource Plenty

Developments in the oil markets from the end of 2014 to the end of 2016 were dramatic, especially in terms of price, but with OPEC back in the role of swing producer there is a sense that these two years were little more than a discreet episode in the long history of the oil markets. That is not, however, an accurate interpretation. The U.S. shale boom, the OPEC response, the unshackling of Iran, the investment in Iraq, and the ensuing period of low oil prices have revealed more clearly than ever the resource plenty that defines the oil markets. At the same time, the ongoing effort to mitigate air pollution locally and climate change globally are continuing to pull renewable fuels into power generation and making transportation more energy efficient, albeit perhaps not for the moment in the U.S. This means the expansion of global oil demand is slowing. Peak demand is an overstatement, but slowing demand growth is a certainty.

There are two implications of ample supply and weak demand growth. The first is that oil will stay relatively inexpensive absent a significant geopolitical event or events. Consuming countries will hang on to oil even if the pace of demand growth is slowing. Oil's place in the energy mix is a more secure than it was at \$100 per barrel. The second is that oil investment will cluster in the sweetest spots with investment dollars pooling in the regions where costs are lowest. In short, oil will be an affordable source of energy that still requires waterborne transport between key production and consuming regions.

This is true not only for crude oil, but also for refined petroleum products. With modest demand growth and tremendous refining capacity across the globe, refining profit margins will remain under pressure. This means petroleum products will be made in the most efficient refineries in the regions with marginal crude price advantages, such as the United States and the Arab Gulf. The U.S. has become and will remain a significant petroleum product exporter. Arab Gulf product exports are likely to grow. Even Asian countries may see their petroleum product exports grow.

Impact on Waterborne Flows

At a high level, crude oil flows will continue to shift from West to East as North America produces more crude oil and Asia does not. The story of crude oil imports being pushed out of the U.S. (and even Europe) is well known. With the lifting of the U.S. crude export ban and the slow expansion of pipeline capacity from Alberta, North America's exports can only grow, not only backing out crude from the Atlantic Basin, but also encouraging flows to other regions. If not for a bit of vertical integration in U.S. refining, one could literally see the end of Middle Eastern exports to the United States.

How much crude 'from' the U.S.

The potential for higher U.S. crude exports complicates any estimate of crude oil flows backed out of the U.S. In 2016, the U.S. imported 7.875 million b/d of crude, according to the Energy Information Administration.¹ Crude oil exports averaged 520,000 b/d, but have been as high as 1.0 million b/d in early 2017. If we hold exports constant at 1.0 million b/d, then, given expected increases in U.S. crude oil production, crude oil imports can easily fall by 2.0 million b/d by 2025.² The combination of exports and avoided imports means as much as 3.0 million b/d of crude oil will flow away from the U.S.

Higher Canadian crude exports will gradually be added to that as adequate pipeline capacity is built. By 2025, expansion of the TransMountain pipeline and the construction of either Keystone XL or Energy East will bring more crude oil to coastal ports. The more likely pipeline route is Keystone XL because it would carry Canadian crude to the U.S. Gulf Coast refineries, contributing further to the backing out of crude imports described above. Exporting additional barrels beyond the U.S. Gulf Coast is likely, but will remain a relatively small volume given the questionable economics of producing and transporting Oil Sands output longer distances.

Where Do Latin American Crudes Go

As U.S. imports fall, the sources of remaining imports will change. Exports from Mexico will rise as Mexico's energy reforms attract foreign investment and lift production. Given the proximity of U.S. refineries, U.S. imports from Mexico should rise by at least 200,000 b/d by 2025. The rest of Latin America may not fare so well. Latin American production will rise enough to increase the flow to Asia perhaps by as much as 600,000 b/d, but is unlikely to target the amply-supplied U.S. market. Latin American flows to Asia are an additional volume leaving the Western Hemisphere. In sum the combined volume of backed out imports or additional exports from the Western hemisphere should be on the order of 3.6 to 4.0 million b/d by 2025. That represents a minimum of 2 additional tanker departures per day. Note, there are some very aggressive U.S. production estimates that hint at even bigger outgoing flows.

Asia with a Target on its Back

As barrels are diverted away from the Western Hemisphere, more African, Latin American and even North American crude will head East, looking for a market in Asia. The obvious question is how much can be absorbed there and what happens to the traditional suppliers in the Arab Gulf? Asia's net crude imports can easily rise by 3.0 million b/d by 2025. With crude oil sources other than the Arab Gulf sending at least 2.0 million b/d, this leaves only 1.0 million b/d of Asian market share for the Arab Gulf producers. Over 10 years, this is quite a small volume of annual growth, underscoring greater competition for the Asian market, which will encourage even softer crude oil prices.

In sum, after a market hiatus in U.S. shale growth, recovering oil prices have led to new estimates for U.S. growth, indicating the resumption or acceleration of crude oil's migration to Asia. Latin America, Africa, CIS, and the Middle East are all looking to Asia to absorb their plentiful supplies of crude oil. Asia certainly will grow its crude appetite, but within a global market of ample supply chasing modest demand. In the meantime, greater volumes of waterborne petroleum products and liquefied natural gas will add to the transport of energy by sea.

¹ Petroleum Supply Monthly, multiple issues or EIA database
<https://www.eia.gov/petroleum/data.cfm>

² Note, a VLCC tanker can hold about 2 million barrels, so this would impact one tanker per day. If a long-haul tanker voyage is 6 to 8 weeks, then the change in direction for tanker traffic would amount to anywhere from 42 to 57 tankers per day rerouted away from the U.S. by 2025. US exports of 1.0 million b/d would reroute another 21 to 28 tankers by 2025.