Oil Industry Laments Jones Act Centenary

Maritime statute skews shipping costs.

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

Data Sources for This Publication
USACE
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To discover more about the data sources used, click here.

Prohibition Era

This month marks the 100th anniversary of the Merchant Marine Act's passage into law on June 5, 1920. Oil producers and refiners won't be celebrating this milestone for the Prohibition-era legislation now known universally as the Jones Act. That's because the law requires waterborne shipments of goods between domestic ports to exclusively utilize U.S.-flag vessels. This frequently makes shipping crude oil or refined products along U.S. coastal or inland waterway routes more expensive than if the provisions didn't restrict competition. This note looks at how the Jones Act affects oil industry economics.

Expensive

The Merchant Marine Act is a federal statute regulating cabotage or coastal shipping. Section 27, better known as the Jones Act, requires all goods transported by water between U.S. ports to be carried in U.S.-flag ships constructed in the United States, subject to U.S. regulation, and owned and crewed by U.S. citizens and permanent residents. The act imposes cost and operational constraints on the oil industry when moving crude oil and refined products between U.S. ports. That's because U.S. law—especially employment law—regulates Jones Act vessels, increasing manning levels and crew cost. Vessels are also more expensive to build in the U.S., which has limited capacity with only two shipyards operating. The limited size of the U.S. merchant marine fleet raises freight costs when capacity is tight. These additional operating costs make a difference. For example, a tanker voyage from the U.S. Gulf Coast to New York (approximately 2,000 miles round trip) on a Jones Act tanker typically costs just as much or more per barrel as for a similar-size foreign vessel (300 thousand barrels) traveling from Northwest Europe to New York (approximately 3,400 miles round trip).

Unchanged

The Jones Act was designed to protect and strengthen the U.S. merchant marine industry to ensure that a reliable and serviceable fleet is available to carry needed imports and exports in time of war or national emergency and to service naval vessels. Arguably, that goal has been superseded by developments in international commerce, most notably containerization of goods traffic as well as the expansion of air transport. Nevertheless, the regulations have changed little over the past 100 years and consistently receive cross-party support in Congress, making it hard to conceive of their repeal. The laws can be circumvented in time of need by waivers issued by the Department of Homeland Security; this occurred most recently in September 2017 after Hurricane Sandy disrupted East Coast trade.

Scale of Shipments

The Jones Act affects all domestic movement of crude and refined products by water. That means shipments along the coasts and between the mainland and Alaska and Hawaii. Jones Act regulations also apply to inland waterways such as the Mississippi River system. The scale of these shipments is significant. Monthly data from the U.S. Army Corps of Engineers estimates monthly inland water shipments of petroleum products including crude oil averaged 2.8-3.0 million barrels/day between 2016 and 2019. For reference, these numbers represent an average 11%-14% of the Energy Information Administration's monthly estimate of total movements by pipeline, tanker, barge, and rail of crude oil and refined products between Petroleum Administration for Defense Districts over the same period. This comparison isn't apples to apples since the USACE doesn't break down crude and products and includes renewable fuels like ethanol and gas liquids, which aren't part of EIA petroleum tallies. The EIA data also doesn't cover the significant volume of intra-PADD movements. The data does, however, reflect the critical role that waterborne transportation plays in U.S. oil industry transportation.

Coastal Crude

Crude shipments by water are predominantly along coastal routes, headlined by tanker runs ferrying Alaska North Slope crude between the Port of Valdez, Alaska, and refineries in Washington state and California. Eleven of the 57 operating oceangoing Jones Act tankers in the fleet are used for the Alaska trade. Significant crude volumes are also regularly shipped from the Gulf Coast PADD 3 region to Atlantic Coast refineries in Pennsylvania and New Jersey (PADD 1), although these shipments compete head on with imports using less expensive nonflag vessels. During the shale era, there have been periods when the price spread between U.S. domestic benchmark West Texas Intermediate crude delivered to Cushing, Oklahoma, and imported crude at the East Coast priced against international equivalent Brent has narrowed to the point where it made sense to ship domestic barrels from the Gulf Coast to PADD 1 in Jones Act tankers or articulated tug barges.

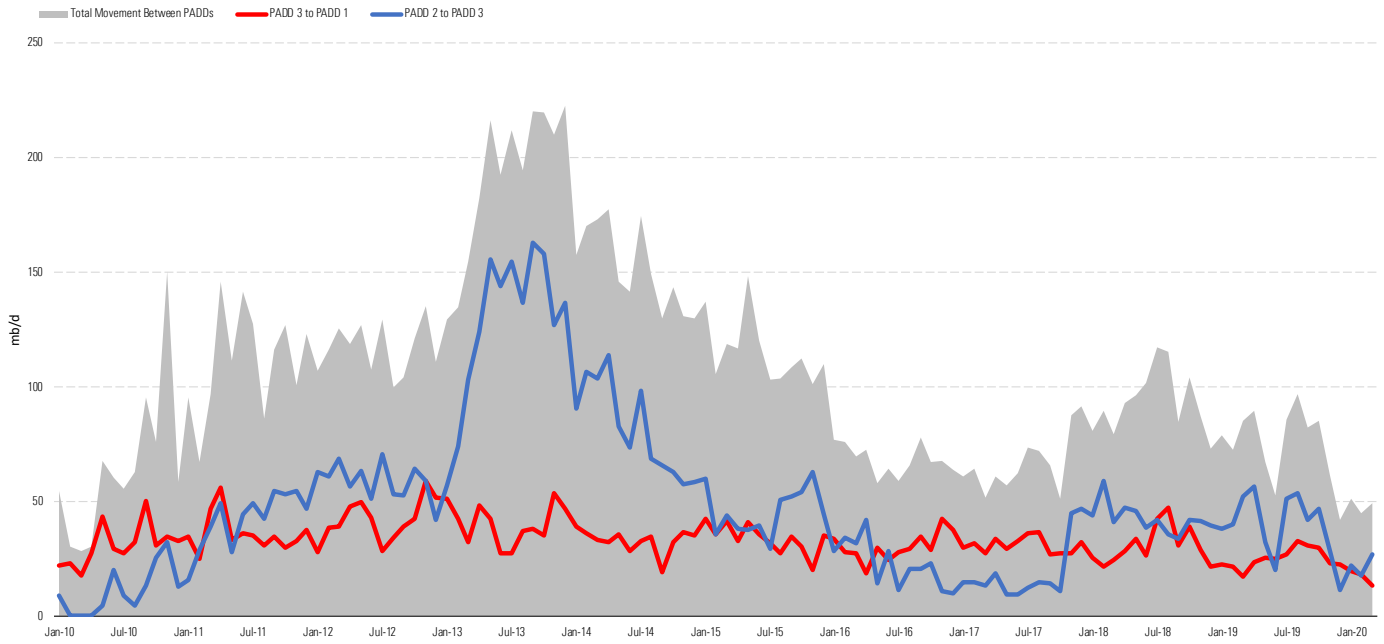
Mississippi

Another main artery seeing increased crude shipments in the shale era is the Mississippi River. During the first shale boom in 2013 and 2014, large volumes of crude were shipped by rail from North Dakota to Missouri ports for transfer to Mississippi barges destined for Gulf Coast refineries. These shipments made sense because lack of pipeline capacity out of the Williston Basin caused inland crude price discounts that justified the extra cost of rail and barge transport. Likewise, in recent years heavy crude from Western Canada was discounted because of pipeline congestion across the U.S.-Canada border, justifying an increase in rail shipments from Alberta to ports like Wood River, on the Illinois River, for transfer to barges to complete the journey down the Mississippi to the Gulf Coast.

Monthly EIA data for waterborne crude movements between PADDs shows the ebb and flow of monthly shipments between PADD 2 and PADD 3 as well as between PADD 3 and PADD 1 since 2010 (Exhibit 1). This data doesn't include inter-PADD movements such as the Alaska-California route or shipments along the Gulf Intracoastal Waterway that stretches from Texas to Alabama within PADD 3. The EIA data shows total crude shipments between all PADDs averaged 43 thousand b/d in 2010 before the oil shale era, then increased to a peak average 226 mb/d in 2014 before declining as pipelines were built out to

resolve crude congestion. In the past two years, increased shipments of Canadian crude and a narrower Brent/WTI spread have again encouraged more crude shipments between PADD 2 and PADD 3 as well as from PADD 3 to PADD 1.

Exhibit 1 Monthly U.S. Crude Movements Between PADDs



Source: EIA, Morningstar Commodities.

Refined Products

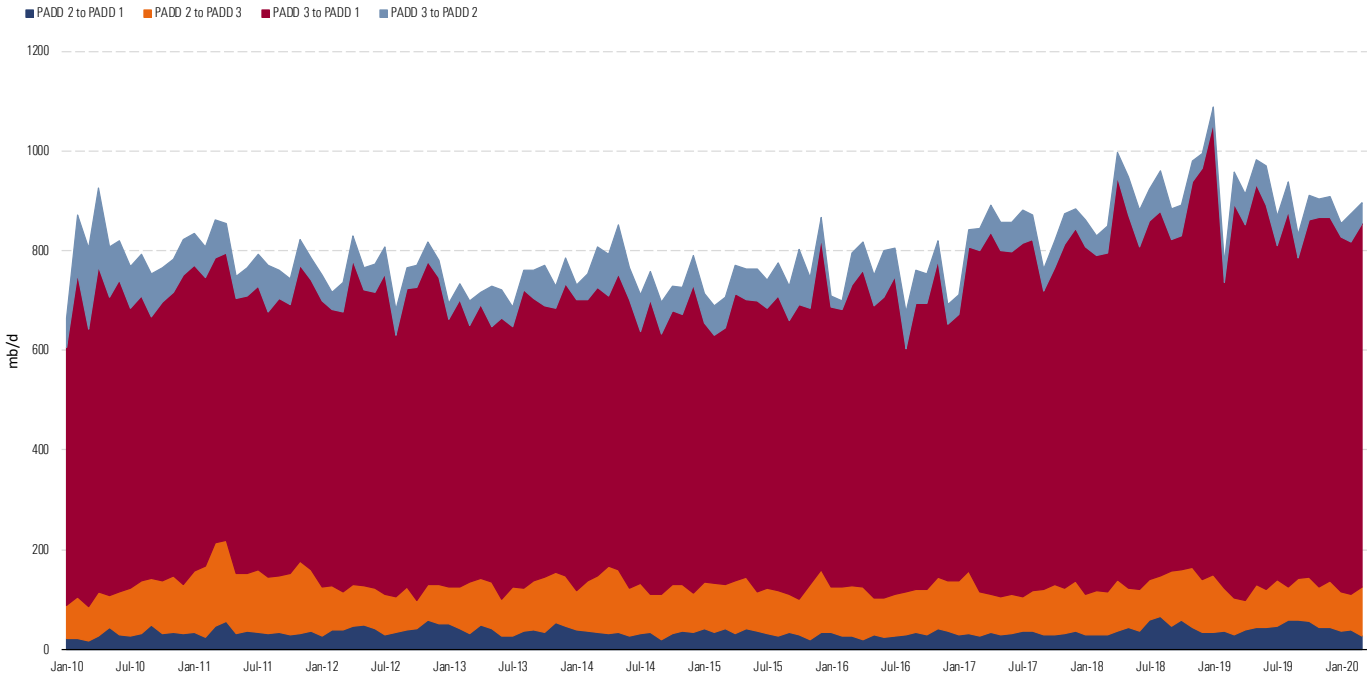
Refined product waterborne volumes are less volatile than crude since they predominantly reflect regular deliveries to final blending and distribution points that aren't subject to the growth spurts that characterize shale crude development. As with crude oil, pipelines are the low-cost preference to ship refined products over distance. Water shipment makes sense where there are no pipelines or when moving blending and feedstock components that aren't shipped in large enough quantities to justify a pipeline or for heavier products like fuel oil that don't move as easily by pipe. Since most U.S. refineries are located on or close to water, especially those along the Gulf Coast, the use of smaller Jones Act barges to move product between refineries along the coast or along river estuaries is highly convenient. Similar waterborne refined product barge movements occur up and down the West Coast between refineries in Los Angeles and San Francisco or Portland and Seattle, where there are few long-distance pipelines. These Gulf or West Coast intra-PADD movements don't show up in the EIA waterborne movement data. The same is true for barge shipments delivering product from New York Harbor up the East Coast to areas without pipeline access, such as Long Island and New England.

The bulk of waterborne inter-PADD refined product shipments visible in the EIA reports is between the Gulf Coast and PADD 1 (red shading in Exhibit 2). These averaged about 600 mb/d for the past decade but increased to 740 mb/d in 2019 after a fire shut down the Philadelphia Energy Solutions refinery,

causing additional demand. We describe above how crude is shipped by Jones Act vessels from the Gulf Coast to PADD 1 refineries with volumes fluctuating with freight economics. As we've previously detailed (see our April 2019 note February Shutdown Threatens PADD 1 Product Supply), the East Coast PADD 1 region is net short of product and needs to source more than 60% of supply from outside. The majority of that deficit is met via the 2.5 mmb/d Colonial pipeline from Texas, but the balance comes from Jones Act shipments from the Gulf Coast or imports. The majority of the Jones Act movements into PADD 1 from the Gulf are to Florida, which has limited connections to Gulf Coast refineries by pipeline and is a short-haul trip where U.S. flag vessels compete well against imports.

Aside from that East Coast route, the rest of inter-PADD product shipments by water are primarily along the Mississippi River system. These include barge shipments from refineries in PADD 2 to the Gulf Coast (orange shading in Exhibit 2) and in the opposite direction from the Gulf to the Midwest (gray shading). There are also smaller barge movements shipping refined product along the Ohio River from PADD 2 to PADD 1 (blue shading).

Exhibit 2 Refined Product Movement Between PADDs



Source: CME Group, EIA, Morningstar Commodities.

Refiners Affected

Whatever the route and whether it's crude or refined products, each of these shipments incurs additional cost because of the Jones Act regulation. That sometimes gives an advantage to international competitors, such as those shipping crude or refined product into PADD 1, which can compete from Northwest Europe or Canada against closer-by Gulf Coast refiners because their freight cost is lower.

Refiners are affected by added shipping costs, in particular on the East Coast, where refining economics were weakened in the shale era by higher freight charges to access cheaper domestic crude. Jones Act costs encourage Gulf Coast refiners to export refined products rather than supply domestic markets accessible by water where they don't compete on a level playing field. In one specific case, the yet-to-be-completed Limetree Bay refinery in St. Croix, U.S. Virgin Islands (see our September 2019 note Limetree Bay Restart Can Help East Coast Product Balance), the viability of the project investment hinges on an earlier Jones Act waiver that facilitates supply to the East Coast.

Cemented

It seems clear to us that after 100 years, the Jones Act is cemented into the U.S. oil industry's operating environment. That's certainly enough time to learn to live with the rules. But these shipping regulations have garnered close attention in the shale era as they frustrated the relief of massive congestion in the crude distribution system. Of course, the desire to build out new pipelines to get shale production (both liquids and gas) to market has met even greater resistance from politicians and voters that adds to the industry's regulatory burden. At least that resistance is largely based on environmental and NIMBY concerns that resonate with voters. The Jones Act addressed century-old issues that most voters aren't even aware of, let alone concerned about.

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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