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# New Permian Pipelines Narrow Coastal Spreads

Declining exports threaten production economics.

**Morningstar Commodities Research**
3 September 2019

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

**Data Sources for This Publication**
EIA
CME Group

To discover more about the data sources used, click here.

## Traffic Jam Shifts

Although shale crude production has slowed lately, overall output is still rising and new pipelines to Corpus Christi have relieved congestion in the prolific West Texas and New Mexico Permian Basin, where we expect to see an uptick during the final quarter of 2019. Since U.S. refiners have had their fill of light shale crude, new production is largely headed to export markets. It follows that continued growth relies on overseas markets being ready to absorb more shale crude. That's by no means assured, given the current U.S.-China trade conflict and its impact on demand. So, the relief of pipeline congestion in West Texas could simply shift the recent crude traffic jam from the production region to the Gulf Coast if exports slow and inventories build. This note reviews recent changes in Permian price dynamics and the impact of falling exports going forward.

Last August, we described how pipeline congestion in the West Texas Permian Basin production region caused crude price discounting as shippers scrambled for limited takeaway pipeline space (see The Permian Triangle: Midland Discounts Encourage Exports). Now the tables are turned as new capacity has opened between the Permian and Corpus Christi (see Christi Corpus Christi Constraints Threaten Crude Exports). As we detail below, with over a million barrels a day of new takeaway coming on line, shippers in the Midland, Texas, producing region have bid up prices for benchmark West Texas Intermediate to secure enough crude to meet their shipper commitments. While this is potentially good news for producers getting higher prices for their output in Midland, it doesn't bode so well for crude exports because a narrower premium for international benchmark Brent crude over WTI in Houston reduces the arbitrage window for U.S. crudes into European and Asian markets.

## Permian Triangle

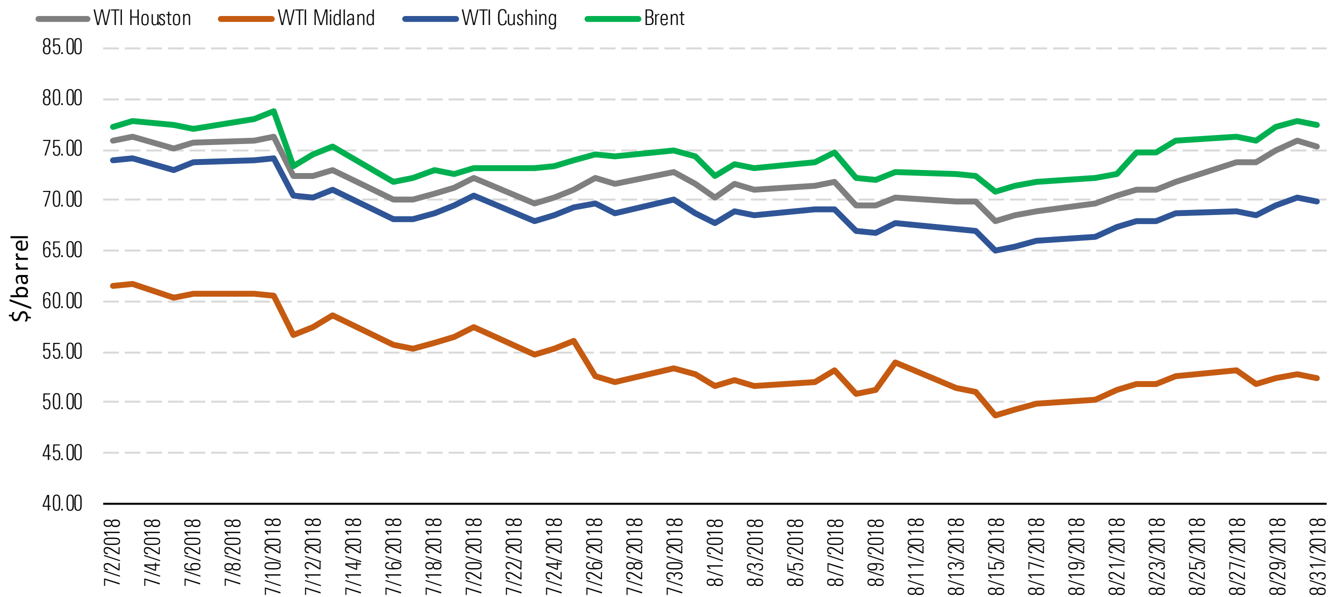
We use the term *Permian triangle* to describe WTI crude price dynamics among the three market hubs at the Midland Permian producing region, the Midwest trading and refining center at Cushing, Oklahoma, and the Texas Gulf Coast refining and export region centered in Houston. Trunk line pipes connect these market hubs so that crude can flow from Midland to Cushing or the Gulf Coast and between Cushing and the Gulf Coast. WTI price spreads among the three hubs determine the direction and volume of flows—out of the Permian basin to refineries in the Midwest, to refineries or overseas markets at the Gulf Coast, or between Cushing and the Gulf Coast.

## Last Year

A year ago, price dynamics favored crude deliveries from Midland to the Gulf Coast over deliveries to Cushing, but both routes were congested by a lack of pipeline capacity even as crude flowed

uninterrupted between Cushing and the Gulf Coast. Exhibit 1 shows WTI prices at each hub during July and August 2018. The Midland congestion caused sellers to discount WTI in the producing region (orange line) with prices lower than Houston (gray line) by an average $17.76/barrel over the two-month period and lower than Cushing (blue line) by an average $15.01/barrel, according to CME Group data. Higher prices for WTI in Houston than at Cushing encouraged flows south to the Gulf Coast. At the Gulf Coast, WTI exports were encouraged by an average $2.40/barrel Brent premium over WTI Houston (green line). While producers without pipeline capacity out of the basin suffered steep discounts, those able to get crude to the coast could realize a premium in the export market. Put another way, crude pricing encouraged crude flows to the Gulf Coast and the export market, but congestion in Midland prevented flows and reduced prices in the production basin.

**Exhibit 1** WTI Crude Prices at Midland, Houston, and Cushing and Brent, July and August 2018




Source: CME Group.

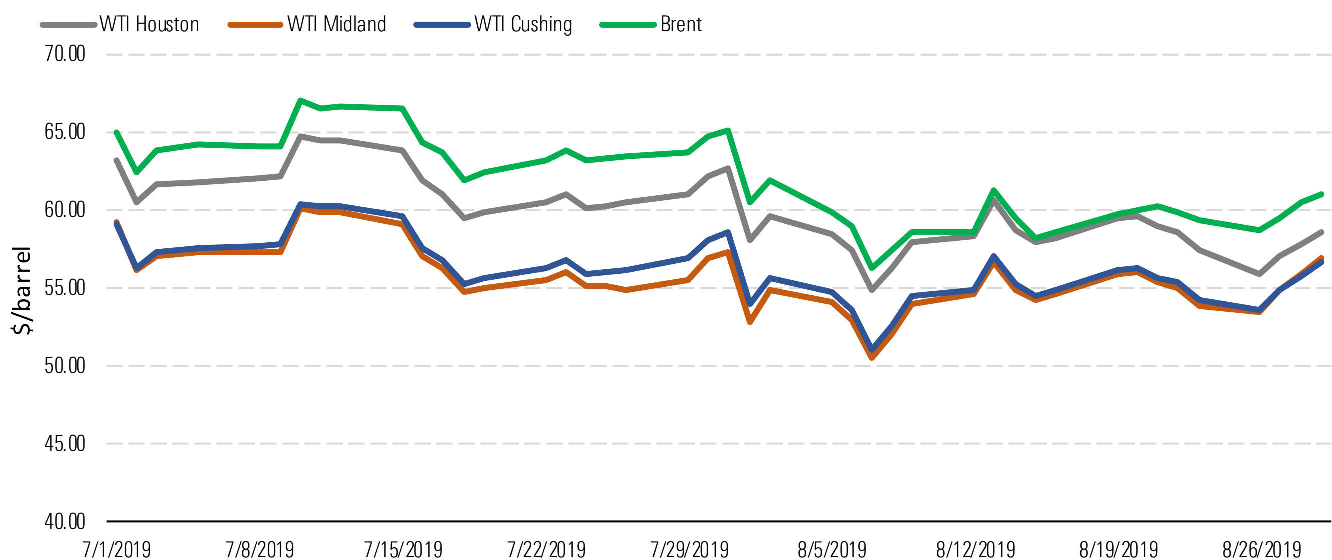
## Congestion Relief

This year, price dynamics in the Permian triangle changed again as Midland congestion has been relieved by new pipeline capacity out of the basin. Exhibit 2 shows price dynamics in July and August this year. Midland WTI prices (orange line) have rebounded from an average $17.76/barrel under Houston (gray line) last July and August to just $4.33/barrel over the same period this year. The Midland discount to Cushing WTI (blue line) has narrowed from around $15/barrel last July and August to an average $0.51/barrel this year. The new dynamic reflects shippers bidding up Midland prices to secure enough crude to meet their takeaway commitments on new pipelines to Corpus Christi. The pressure to meet those commitments—which would otherwise invoke take-or-pay clauses in their contracts—made it uneconomic to ship crude from Midland to Cushing during August, with the production hub even trading at a premium to the Cushing market at times. Instead, more crude headed to the Gulf Coast from

Midland, and there was an average $3.82/barrel incentive to ship crude from Cushing to Houston that more than covered pipeline tariffs.

However, the Gulf Coast market is less promising for WTI producers than last year because the export premium for Brent (green line) over Houston WTI (gray line) narrowed from an average $2.40/barrel last year to just $1.91/barrel this July and August and at times traded at less than $0.50/barrel. A lower Brent premium reduces the export incentive and closes the window altogether if it falls below $1/barrel, because WTI Houston then becomes uncompetitive in Asia and Europe, after taking freight costs into account.

**Exhibit 2** WTI Crude Prices at Midland, Houston, and Cushing and Brent, July and August 2019



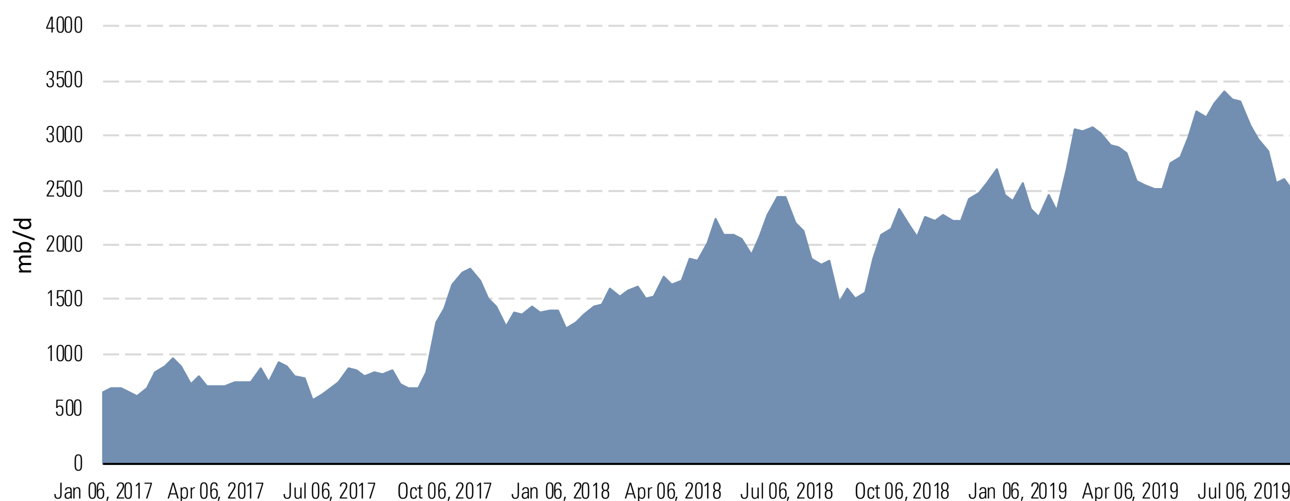

Source: CME Group.

## Exports Falling

Total U.S. crude export volumes fell 22% from a four-week average 3.3 million barrels a day at the end of June to 2.6 mmb/d as of Aug. 23, according to the Energy Information Administration. It isn't entirely clear what's behind the recent drop in overseas shipments; unrestricted crude exports have only been permitted since December 2015 and only taken off since January 2017, so we don't have years of comparison data to analyze. Although the overall trend since the start of 2017 has been upward, there is plenty of volatility in the numbers (Exhibit 3). The decline since the end of June could be the result of higher U.S. refinery demand, which typically peaks in July and August. But a narrowing Brent premium to WTI Houston is a contributing factor to the export decline since it reduces the competitiveness of domestic crude. In the international market, prices for Brent crude have come under pressure in the past month from concerns about the impact on world demand of the U.S.-China trade dispute. The concern is that the crude demand growth engine in Asian economies could stutter in the face of a tariff war.

Although China imposed tariffs on U.S. crude imports starting in September, we believe this will just divert U.S. crude to other Asian markets. The bigger story is that worldwide demand-side concerns have overcome positive supply signals provided by sanctions on Iran and Venezuela and OPEC's production agreement.

**Exhibit 3** U.S. Crude Exports Since January 2017, Four-Week Average




Source: EIA.

### Opposing Sentiments

The Gulf Coast WTI market is caught between opposing sentiments. Domestic prices have rallied versus Brent in response to reduced congestion in the Permian; at the same time, Brent has come under demand-side pressure internationally. As a result, the Brent premium over WTI has narrowed and made exports less competitive. If the Brent premium narrows further and remains that way for long, then shale crude will accumulate in storage at the Gulf Coast unless it is discounted to clear in international markets. Higher inventories in turn put downward pressure on WTI prices versus Brent and, unless overseas demand picks up, results in lower overall crude prices. The danger then, as we pointed out in August (Is The Second Shale Crude Boom Ending?), is that crude prices fall quickly below $55/barrel and reduce the incentive for new drilling in the Permian and other shale basins, bringing an end to the second shale crude boom that began in September 2016.

### Stranded

Of more concern in the short term is the added pressure on prices at the Gulf Coast that will result from an export slump. Higher crude volumes are now headed to Corpus Christi on new pipelines and can only find a home in the export market. If Gulf Coast WTI prices aren't competitive in international markets, then limited storage and refining capacity in Corpus Christi will leave these barrels stranded onshore

and backing up incoming supply from the Permian. That situation would accelerate price discounting at the Gulf Coast and threaten production economics sooner rather than later. M

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**For More Information**

+1 800 546-9646 North America
+44 20 3194 1455 Europe
commoditydata-sales@morningstar.com

22 West Washington Street
Chicago, IL 60602 USA

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