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Lower Brent/Cushing Premium Hasn't Hurt Exports

Brent/Houston relationship more important.

Morningstar Commodities Research
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U.S. Energy Information Administration
CME Group
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Exports Remain Buoyant

The premium of international benchmark Brent crude to its U.S. counterpart West Texas Intermediate delivered to Cushing, Oklahoma, has narrowed nearly 50% this year even as outright crude prices reached three-year highs in the third week of January before last week's tumble. The Brent premium to WTI averaged $6.05/barrel during the last four months of 2017 (after Hurricane Harvey), coinciding with a near doubling of crude exports from an average 776 thousand barrels/day between January and August 2017 to 1,358 mb/d from September through year-end, according to the Energy Information Administration. Many believed a narrower Brent premium this year would impede exports, but in fact EIA data shows exports averaged 1,361 mb/d between January 5 and February 9, 2018. This note looks at why the Brent premium has narrowed and why we believe crude exports have so far remained buoyant.

Brent Premium

The narrowing Brent premium is the result of greater strength in WTI prices, reflecting falling crude inventories at Cushing and strengthening Midwest demand for feedstock. A constraint on the 590 mb/d Keystone Pipeline from Western Canada has reduced flows from that system into Cushing by 20% since November (see our recent note "Can Rail Handle Canadian Crude?"). The December startup of the Plains/Valero 200 mb/d Diamond Pipeline from Cushing to Memphis increased Cushing outflows. Cushing crude stocks fell over the summer in 2017 but increased again after Harvey before resuming their decline in early November; since then, they have dropped 51% to 33 million barrels on Feb. 9, according to the EIA. The net result of falling inventories is an increase in demand for prompt crude at Cushing, reflected in a backwardated structure to CME/Nymex WTI futures where crude prices for immediate delivery are higher than for further out months.

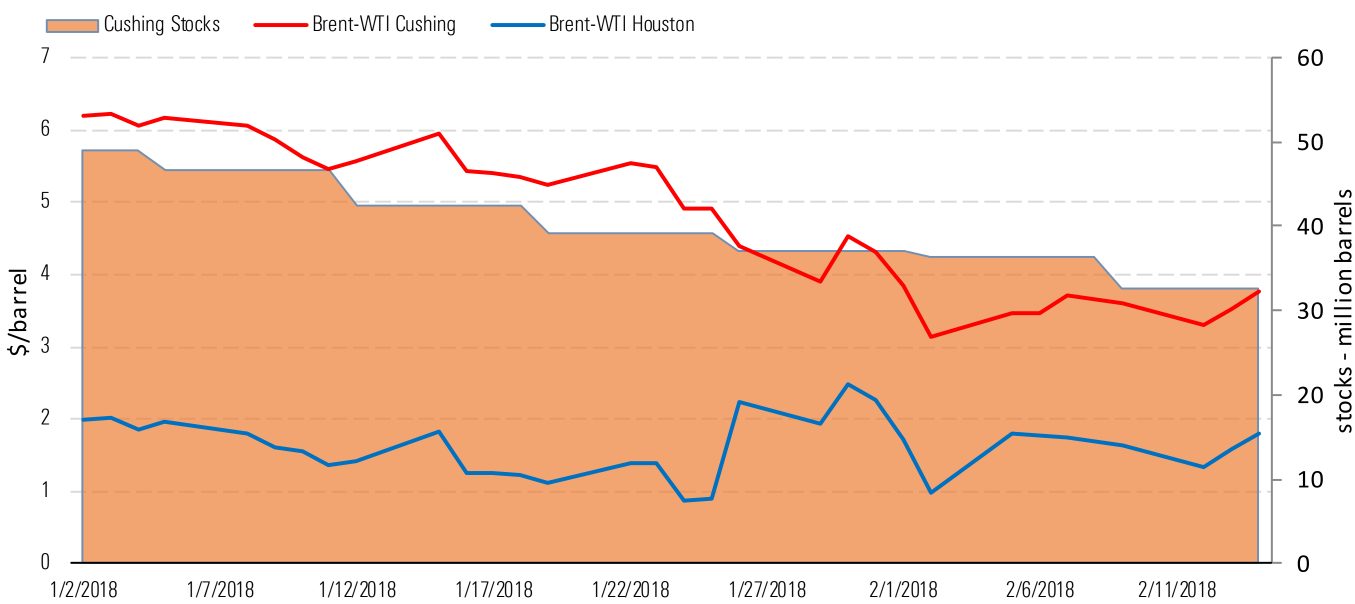
During the first eight months of 2017, the Brent premium averaged $2.80/barrel before Hurricane Harvey struck the Gulf Coast in late August, causing the loss of 20% of U.S. refining capacity and a consequent build in crude inventory that put downward pressure on WTI prices relative to Brent. The Brent premium pushed out over $6/barrel in September and averaged $6.05/barrel in the last four months of 2017. The premium peaked at $7.05/barrel on Dec. 26 and has fallen 47% since then to $3.76/barrel on Feb 14.

As the Brent premium to WTI widened, overall crude prices were recovering from their 2017 low point on June 21 when WTI settled at $42.53/barrel and Brent at $44.82/barrel. By the end of 2017, WTI was up 42% to $60.42/barrel and Brent up 49% to $66.87/barrel. Prices continued to increase in the new year with WTI reaching over $66/barrel and Brent more than $70/barrel by Jan. 26 before falling 10% as part of the market correction in February. As we detailed in our recent year-end crude review ("OPEC Boost Lifts Crude, but Has It Risen Too Far Too Soon?"), the robust overall market in the latter half of 2017 reflected the positive impact of OPEC's production cuts and increased demand. This year's recent spurt and subsequent decline reflect a buildup and selloff of speculative long positions in crude futures as bullish hedge funds bet on higher prices then sold off in the face of higher U.S. production expectations and inflation concerns in equity markets.

Within this overall crude price volatility, the narrowing Brent premium to WTI this year spurred market speculation that U.S. crude exports would fall in tandem. This view is predicated on the assumption that U.S. exports depend on the relationship between WTI futures prices at Cushing and Brent prices in the international market. Our analysis of crude pricing in the Gulf Coast region suggests that this is not entirely the case because the relationship between WTI prices in Houston, on the Gulf Coast, and Brent is a more significant indicator for exports.

This conclusion is evidenced by the differential between prices for Brent and for WTI crude in Houston, which remained relatively steady this year even as the Brent premium to Cushing narrowed. Exhibit 1 shows the falling Brent premium to WTI (red line, left axis) and the Brent premium to Houston WTI (blue line, left axis). The Brent premium to Cushing is falling along with Cushing inventories (orange shaded area, right axis) while the Brent premium to Houston remained relatively flat at an average $1.61/barrel this year through Feb. 14.

Exhibit 1 Brent Premiums to WTI Cushing and Houston With Cushing Crude Stocks



Source: CME Group, EIA, Morningstar

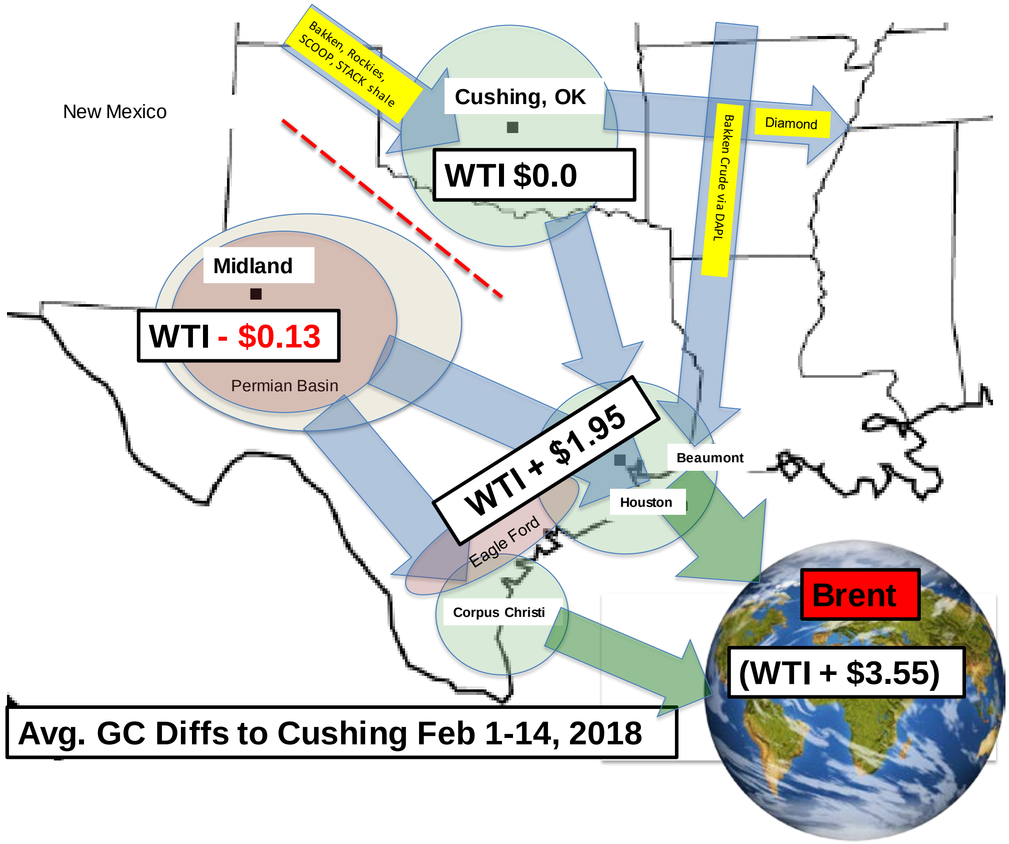
Complex Picture

Aside from the Brent premium to Cushing or Houston WTI, continued encouragement of U.S. exports has other moving parts in what is a complex picture. Exhibit 2 represents key price differentials and implied crude flows that underlie exports. The diagram shows February 1-14 average pricing at three key crude trading hubs expressed as differentials to the price at Cushing. These are the Midland, Texas, Permian Basin production hub, the Cushing Midwest trading hub, and the Gulf Coast market, represented by pricing for WTI at Houston (onshore) as well as international crude competitor Brent (the export market).

As we pointed out in a note at the end of last year ("Permian Makes and the World Takes"), growing shale crude production in the Permian Basin is not needed by domestic refiners and therefore has incentive to get to the Gulf Coast and export markets. Additional shale crude growth in the Rockies and the Anadarko SCOOP and STACK plays is shipped to Cushing, where it can add to the flow of Gulf Coast exports or be consumed by Midwest refiners. Since June 2017, shale crude from North Dakota can also flow direct to the Gulf Coast (Beaumont/Nederland, Texas) on the Dakota Access Pipeline.

If the Cushing market is short crude, then WTI Cushing should price at least $1/barrel higher than Midland to encourage more barrels to move from the Permian to the Midwest (tariffs are about $0.70/barrel). The slight February average Cushing premium to Midland ($0.13/barrel) is a disincentive to move WTI to Cushing (red dashed line in Exhibit 2). The narrow Midland discount likely reflects increased Permian demand to meet new shipper commitments on the Enterprise Midland-to-Sealy/Houston Pipeline with initial capacity of 350 mb/d, which began operations in late 2017 and has been ramping up since.

Exhibit 2 Gulf Coast Crude Differentials and Flows



Source: CME Group, Morningstar

The February average premium for WTI at Houston to WTI Cushing ($1.95/barrel) reflects the incentive to move crude from Cushing to the Gulf Coast market. That Houston premium is currently over $2/barrel lower than its average during December 2017 of $4.42/barrel. Pipeline tariffs between Cushing and Houston are about $3/barrel, making the decision to ship to Houston marginal. This lower current Houston premium to Cushing reflects stronger demand for crude at Cushing to feed Midwest refineries and the new Diamond Pipeline.

With no price incentive to ship to Cushing from the Permian and low incentive to ship from Cushing to the Gulf Coast, most incremental crude flows are between Midland and Houston. But with production in the Permian increasing rapidly according to EIA estimates, a surplus of crude supplies has built up at the Gulf Coast even as Cushing inventories have declined. Weekly EIA data shows a 19.7 million barrel crude build in the Gulf Coast region during the past month between Jan. 12 and Feb. 9, 2018. This buildup of crude is exerting downward pressure on Houston prices relative to Midland with that spread averaging only $2.08/barrel between Feb 1-14 compared to an average $4.02/barrel in December 2017.

Brent-Houston Key

As noted above, the Brent premium to Houston WTI remained steady throughout December 2017 (average $1.73/barrel), and January 2018 (average $1.67/barrel) as the Brent premium to Cushing narrowed. In our view, the Brent premium to WTI Houston is the key price that determines export incentive, since crude must get to the Gulf Coast before it can be shipped overseas. The Houston WTI price is therefore the marginal cost of an export barrel and the Brent premium to Houston determines whether that barrel can compete internationally. In a market where U.S. shale production is increasing rapidly, and domestic refiners are not consuming these incremental barrels, any narrowing of the Brent - Houston differential acts as a disincentive to exports and results in inventory builds at the Gulf Coast. Although export volumes have continued at the high levels seen last year the slightly narrower Brent premium to Houston WTI in February so far ($1.61/barrel) together with the large Gulf Coast inventory build, suggests the export incentive may be closing.

Market Battle

If (as expected) U.S. shale production continues to increase during 2018, then exports will flow and the Brent premium to Houston should widen to encourage overseas buyers as long as international demand holds up. In this market battle, shale exporters are supported by the OPEC/non-OPEC producer agreement to cut production, which hands them market share while the cartel protects higher prices. However, if international demand doesn't materialize to encourage export flows then inventory builds will weigh on overall crude prices.

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