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Storage, Oil Backwardation, and Implications for MLPs

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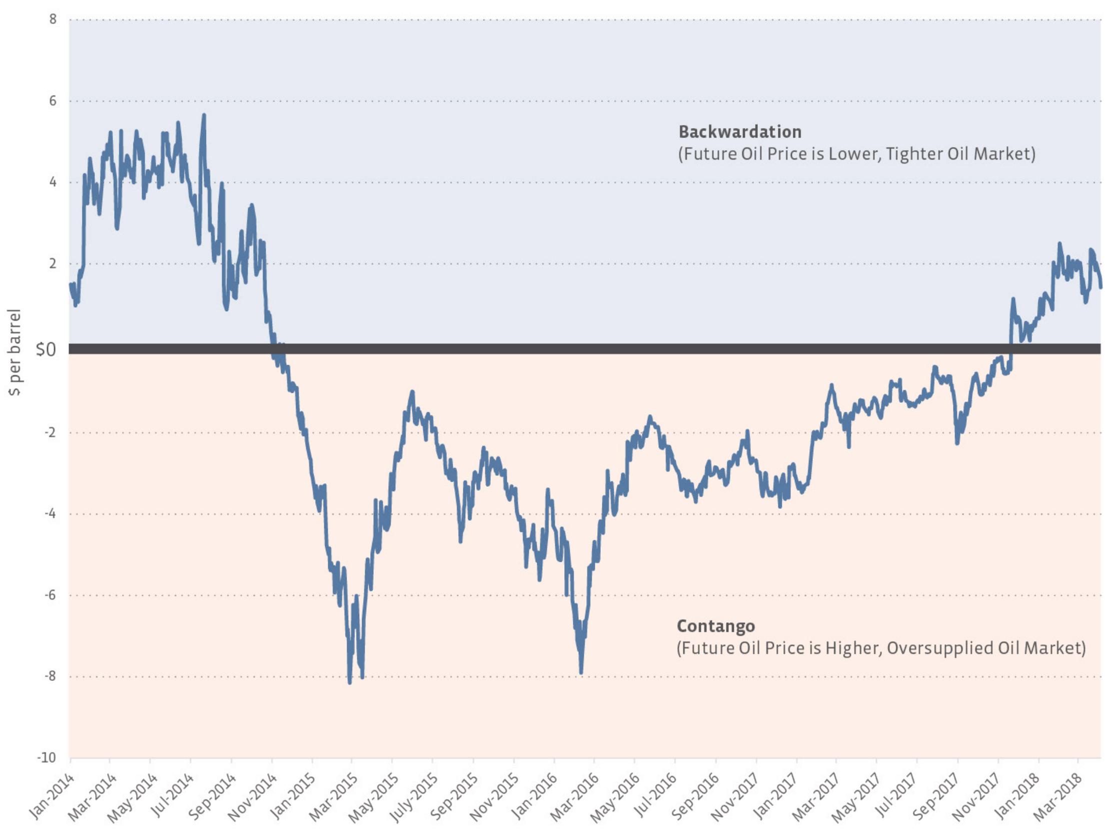
Storage assets are probably the most boring assets in the midstream space (please don't stop reading!). Something about storing a hydrocarbon is generally less exciting than processing hydrocarbons or transporting them. While storage assets are important, they are not often in the spotlight. However, with the shift in the oil curve from contango to backwardation, now seems like a good time to discuss storage and oil curve backwardation and the implications for MLPs with oil storage capacity.

What is Backwardation?

When the oil futures curve is in backwardation, the price of oil in the future is lower than today's price. When the curve is in contango, the future price is higher than today's price. Backwardation tends to indicate a tighter oil market or undersupply of crude, while contango tends to represent an oversupply. To look at backwardation and contango over time for this analysis, the price for the front-month (or first-month) futures contract is compared to the price for the contract five months in the future. For example, the May 2018 contract for West Texas Intermediate (WTI) crude is currently the front-month contract. This price is compared to the price of the October 2018 contract to gauge whether the market is in contango or backwardation. Specifically, we subtract the future price (October 2018) from the current price. Because the October 2018 price is lower than the May 2018 price, the difference between the two prices is positive, and the market is in backwardation. As you can see from the WTI contango/backwardation chart below, the WTI curve was largely in contango from the second half of 2014 until the second half of 2017, which aligned with the global crude glut.

The WTI Crude Curve Shifted into Backwardation in Late 2017 After Three Years in Contango



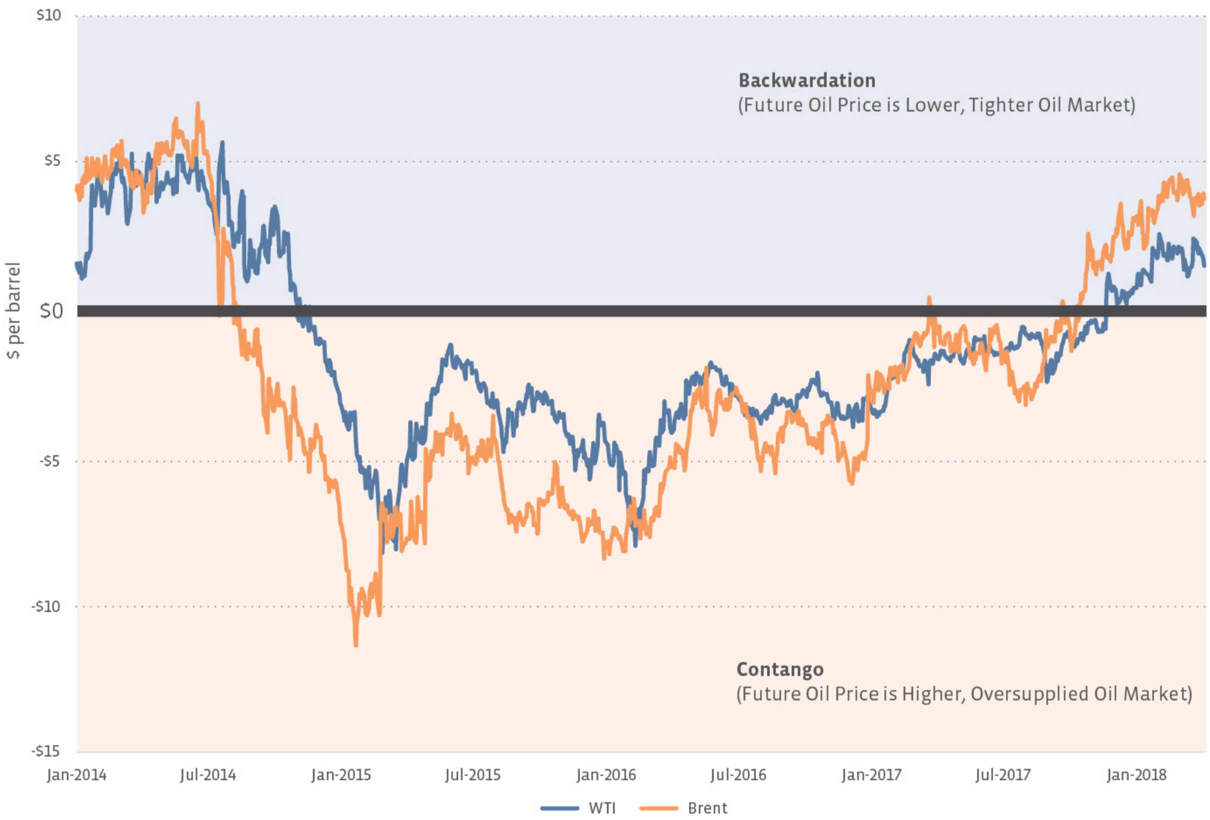
Note: Spread is represented by the difference between the generic 1st month contract and generic 6th month contract.
Source: Bloomberg as of April 5, 2018

Backwardation and Draining Inventories

Global crude inventories[1] have fallen by 130 million barrels from their peak in March 2017 to January 2018. Inventories have declined thanks largely to production cuts by OPEC and non-OPEC countries initiated in January 2017, as well as strong demand (which was up 1.6 million barrels per day or 1.7% in 2017). As global inventories have fallen, the Brent and WTI curves have shifted into backwardation. We show both benchmarks below, as Brent is the global benchmark while WTI is the US benchmark and more relevant to MLP's oil storage assets.

The futures curve for Brent crude shifted from contango to backwardation in early September. WTI shortly followed, shifting into backwardation in late November as shown below. With the oil curve in backwardation, oil is worth less in the future than it is today, and there's no *financial incentive* to store oil. In other words, crude traders can't store oil and sell it forward to make a profit, so inventories will typically decrease.

Brent and WTI Flipped from Contango to Backwardation in 2H17

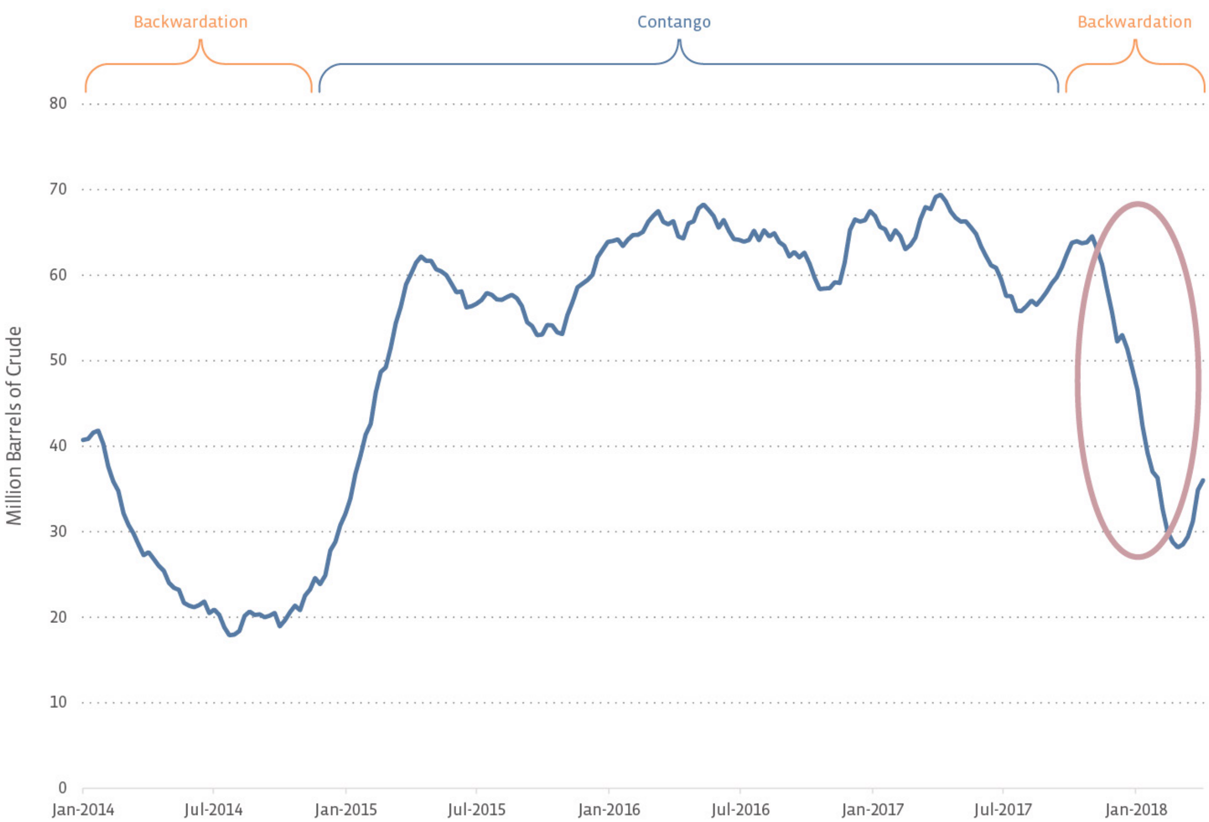


Note: Spread is represented by the difference between the generic 1st month contract and generic 6th month contract.
Source: Bloomberg as of April 5, 2018

1 // We use the International Energy Agency's total OECD crude inventories here, which is the metric typically cited for global crude inventories.

The inventory trend at Cushing, Oklahoma[2] provides a helpful example. As shown below, inventories at Cushing plummeted from 63 million barrels in mid-November to just 28 million barrels in early March (circled) — a 55% decline. Cushing inventories in early March were at lows not seen since late 2014. For full context, Cushing inventories were also impacted in recent months by reduced volumes on Keystone XL following a November leak and the startup of the Diamond Pipeline from Cushing to Memphis in late 2017. Backwardation wasn't the only factor leading to the draining inventories, but backwardation may keep inventories from building back up to the 50-60 million barrel level seen while the oil curve was in contango.

Cushing Inventories Remained High In Contango Environment, Declined With Shift to Backwardation



Source: Energy Information Administration, April 11, 2018

To be clear, there are still operational and commercial reasons to store oil, but the backwardated curve arguably reduces demand for storage that doesn't support those pursuits. As such, spot storage capacity (uncommitted storage available for short-term use) will typically be underutilized when the oil curve is backwardated, and inventories tend to move out of storage, as we've seen at Cushing.

2// Cushing is the delivery point for the NYMEX West Texas Intermediate crude contract and a prominent oil storage hub.

Implications for MLPs

While inventories tend to decline with the curve in backwardation, MLP investors shouldn't panic, just as they shouldn't get overly excited when the curve flips into contango. Storage contracts often cover multi-year periods (ranging 2-5 years) with customers agreeing to pay a fixed fee to access a certain amount of storage over the period of the contract. For example, as of year-end 2017, Magellan Midstream Partners' (MMP) storage contracts had an average remaining life of two years.

All that said, as we've discussed with pipeline contracts, even long-term contracts have an end point. Re-contracting can be more challenging when the oil curve is in backwardation. If a customer was primarily using storage to make a profit by selling oil forward, the customer may not want any storage capacity in a backwardated market. Customers may push for lower rates and a shorter contract period in a backwardated market. Additionally, if an MLP has storage capacity in an area with other storage options, rates could be pressured by increased competition as utilization decreases. Going back to the Cushing example, with inventories down almost 35 million barrels, there's likely idle capacity available at Cushing that has increased competition and pressured spot storage rates.

Re-contracting risk will vary by the storage asset and the service it provides (storage at an oil hub vs. storage at an export terminal vs. storage that supports a refinery). In discussing its Caribbean storage facilities, Buckeye Partners (BPL) noted on its 4Q17 earnings call that declines in crude and petroleum product inventories, which have reduced overall storage utilization, have made re-contracting more challenging. That said, management pointed to historical success in maintaining high storage utilization during periods of backwardation. The management of Plains All American (PAA) indicated on their 4Q17 earnings call that they were not seeing pressure on their storage rates at Cushing with the curve in backwardation given the operational orientation of their storage assets and their long-term commitments. Specifically, PAA's management cited their ability to receive or deliver to fourteen different pipelines as an operational advantage.

The Upside of Backwardation: A Stronger Crude Market

It's easy to jump to the conclusion that backwardation is bad for MLPs, but it's important to remember that backwardation is indicative of a tighter crude market. A tighter crude market is supportive for crude prices, which supports growing production in the US of both crude and natural gas (think associated gas, which is gas produced from oil wells). Growing production of oil and natural gas is positive for MLPs as volume-driven businesses. Setting aside MLP growth implications, a stronger crude market may also give investors more comfort around investing in energy and MLPs.

Bottom Line

While a backwardated crude market tends to lower storage utilization and makes re-contracting storage more challenging, it's important to remember that backwardation is an indicator of a tighter crude market. We would speculate that given the choice many MLP management teams would prefer backwardation and a stronger crude environment to contango and the incremental benefits for oil storage capacity.

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