

PDV *OBSERVATIONS*

A Quarterly Newsletter for PDV Clients and Friends

Oil Prices: Lower for Longer?

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Oil prices and stocks have pulled back hard following last year's huge rally, resulting in an indiscriminate bear market for the sector. The overwhelming consensus currently is that oil prices will remain lower for longer. We have a different view – this downtrend reflects transitory negative investor *sentiment* more than deteriorating business *fundamentals*. We expect oil prices will be considerably higher by the end of this year.

The pervasive narrative perpetuated by the bearish investment herd and echoed by the media is that the global oil glut stubbornly persists and the oil market is oversupplied. This means a) the amount of oil in storage (aka oil inventory) around the world is way above the 5-year average, and b) new supply exceeds current demand, with the excess added to the oil in storage. One of the most visible and oft-cited facts to back up this narrative is the growing US oil rig count in response to higher energy prices earlier this year. However, there are several problems with emphasizing US rig counts so heavily.

First, US oil rig data completely ignore what is happening to supply outside the US, which has been cut since beginning of 2017.

Second, adding rigs does not necessarily result in a corresponding and proportionate production hike. Rigs are added for all sorts of reasons besides imminent production. As just two examples, producers may drill wells to maintain leases, but wait before incurring the additional expense to produce (aka DUC's or drilled but uncompleted wells). Also, rigs may perform only limited drilling to delineate the energy potential of acreage intended for future development or sale.

Third, fracked wells' accelerated depletion (relative to offshore wells) and shorter shelf lives along with drastically reduced offshore drilling activity mean that US onshore oil supply needs to increase quite substantially just to maintain total US production levels.

To illustrate the above problems, let's look at how US rig count compared to US oil production during the current bear market. According to data from Baker Hughes, the record oil rig count hit 1,609 in October 2014. It then bottomed at 316 in May 2016, before rebounding to 756 as of September 8, 2017, or roughly 2.4x the bottom count.¹ However, according to the weekly supply estimates from US Energy Information Administration, US oil production since then has increased only about 11%.² When you consider that US fracked well productivity since 2014 has skyrocketed, that is a huge *disconnect* between two variables that the media and

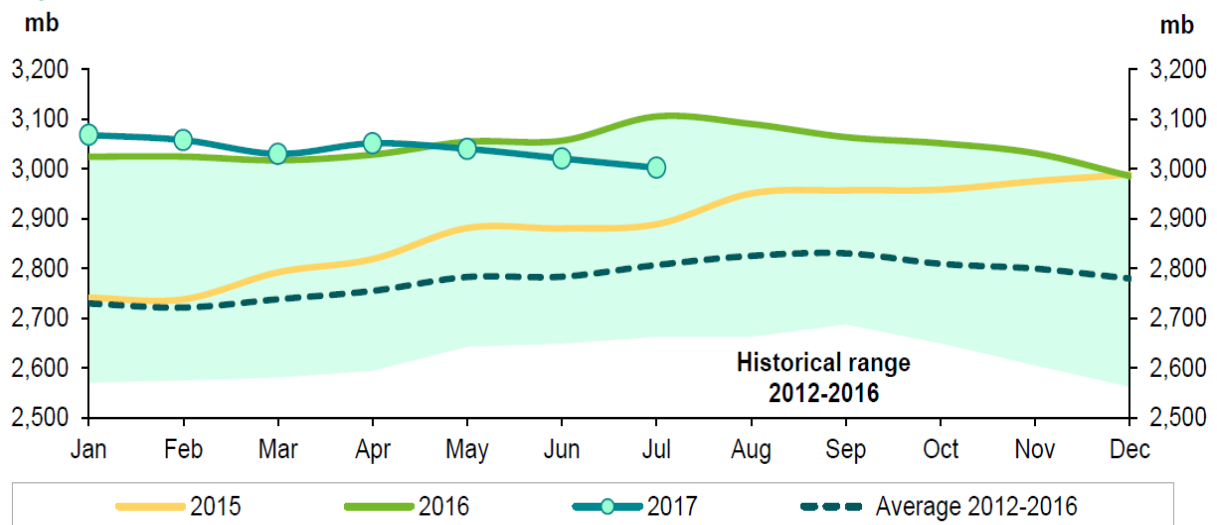
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bearish investment herd insist are significantly and temporally correlated!

To evaluate the bearish assertion that oil is in a glut, look at the graph below, which shows the oil inventories of countries belonging to The Organization for Economic Co-operation and Development (OECD) converging towards the 5-year average since start of 2017. While this graph is not directly representative of total global oil inventory levels because it excludes e.g. Saudi Arabia (SA), Russia and China, it does cover 35 countries including the US. Further, ample data show that both SA and Russia have been cutting production since beginning of this year per their agreement.

Graph 9 - 1: OECD's commercial oil stocks



Source: OPEC Monthly Oil Market Report 12 September 2017

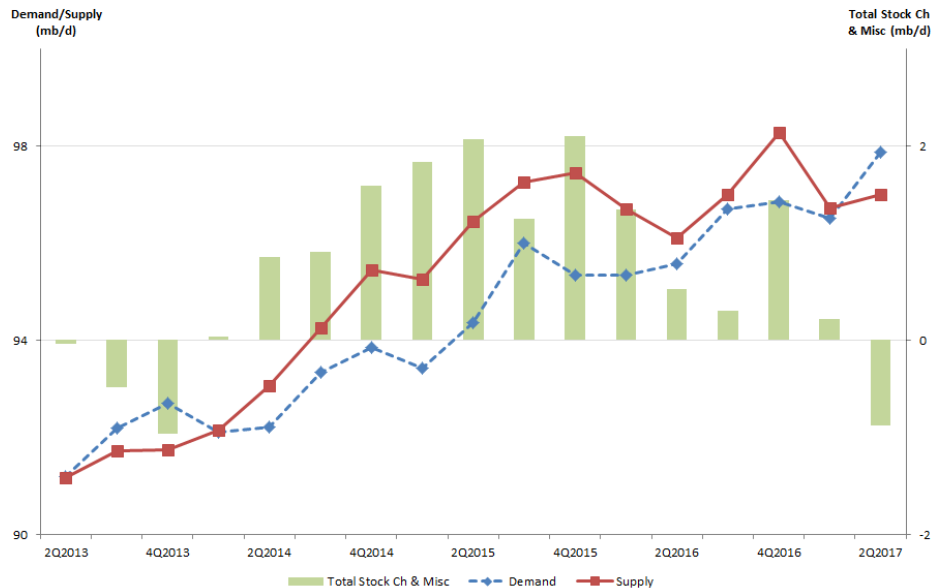
Also noteworthy is the September 2017 OPEC Monthly Oil Market Report, which reported that global oil supply in August 2017 averaged 96.75 mb/d, while the forecasted 4Q17 global oil demand is higher at 97.91 mb/d and 2018 global oil demand is anticipated to grow to 98.12 mb/d, a new record high.³ Based on OPEC's estimated non-OPEC supply of 65.3 mb/d for 2018 and assuming OPEC production remains at the current level of 32.8 mb/d, the market would be in deficit in 2018.

Separately, the graph on page 3, which is based on data from the International Energy Agency (IEA), shows that global oil inventories are being drawn down (*solid line dropping below broken line; inverted bar*). The IEA also noted in its September 2017 Oil Market Report that the OECD commercial stocks were unchanged in July when they normally increase, with the OECD product stocks just 35 mb above the 5-year average at the end of July and could soon fall to or below that average.⁴

Contrary to the pervasive bearish narrative, here are the facts. OECD countries' oil inventories are being drawn down towards the 5-year average. Now that OPEC and Russia have agreed to extend their agreement to maintain production cuts until March 2018 and are discussing a further extension of at least 3 months, global oil inventories will likely follow a similar downward trajectory. Based on the forecasted demand/supply mentioned above and assuming producers that agreed to

cut production remain committed, the global oil market will reach a healthy balance in the coming months. At that time, oil prices should be much higher on a fundamental basis.

Oil Demand/Supply Balance



Data source: IEA

So what accounts for the carnage in the oil markets since start of 2017? The financial market is confusing an oil market that is improving but more slowly than the impatient investment herd would like, with one that is not improving at all or getting worse. But there are several reasons why the rate of global oil inventory drawdown should accelerate for the rest of the year.

First, some OPEC members and Russia played games by boosting production in the months leading to their accord to cut production. That excess had to be first drawn down in the early part of the year, but has now been worked off.

Second, SA cut *new* production, but increased exports from *existing* inventory into US, boosting US oil inventory. Because much of the oil data that investors monitor are focused on the more transparent and accessible US inventory, they missed the fact that the boost to US oil inventories was offset by the drawdown on SA's offshore inventory. SA has been cutting exports to US in recent months. According to data from the US Energy Information Administration as of September 13, 2017, the 4-week average US imports of crude oil from SA has been declining since early March 2017, with the 4-week average ended September 8, 2017 being 778,000 bpd, the third time this year it reached below 800,000 bpd (a level last seen in early 2015).⁵

Third, US oil production in the Gulf Coast region and oil imports were disrupted by Hurricane Harvey. Reuters reported that US oil output fell almost 8% due to the hurricane and oil imports to the Gulf Coast fell to levels not seen since the 1990s because of port closures.⁶ Although the resulting impact on US oil inventories was more than offset by the buildup caused by reduced

refining activity, the buildup is temporary as the refining industry has been recovering faster than expected. According to IHS Markit, only about 1.7 mb/d of Gulf Coast region refining capacity (roughly 9% of US total) remains offline or operating at reduced rates as of September 12, 2017, down from around 4.8 mb/d (about 27% of US total) at the peak of the flooding.⁷ Reconstruction activities in the aftermath of the hurricane should also boost oil demand in the months ahead.

Fourth, we are still in the midst of hurricane season, which has the potential to disrupt offshore US oil production again (according to the US Energy Information Administration, offshore oil production in the Gulf of Mexico accounts for 17% of total US oil production).⁸

Fifth, US oil rig counts recently have begun to drop in response to lagging oil prices.⁹

In the short run, commodities like oil will often trade more on *sentiment* than *fundamentals*. This temporary disconnect has been perpetuated by, among others, impatient hedge funds selling oil short via the derivatives market because they consider the rate of oil inventory drawdown too slow. Short positions in oil futures were near record highs back in June.¹⁰ While hedge funds have been cutting their short positions in Brent since July, their short positions in WTI remain significant as of September 5, 2017.¹¹ That means much of the selling has likely occurred already; any improvement in sentiment will cause these bearish positions to unwind, resulting in what is commonly known as a “short squeeze” and rising oil prices.

¹ “North America Rotary Rig Count (Jan 2000 - Current),” *Baker Hughes*, Sep. 8, 2017, <http://phx.corporate-ir.net/External.File?item=UGFyZW50SUQ9Njc5MjIzZfENoaWxkSUQ9Mzg4MzMwFR5cGU9MQ==&t=1>

² “Crude Oil Domestic Production,” *US Energy Information Administration*, Sep. 13, 2017, https://www.eia.gov/dnav/pet/xls/PET_SUM_SNDW_A_EPC0_FPF_MBBLPD_W.xls

³ “OPEC Monthly Oil Market Report 12 September 2017,” *OPEC*, Sep. 12, 2017, http://www.opec.org/opec_web/static_files_project/media/downloads/publications/MOMR%20September%202017.pdf

⁴ “Oil Market Report,” *International Energy Agency*, Sep. 13, 2017, <https://www.iea.org/media/omrreports/fullissues/2017-09-13.pdf>

⁵ “4 Week Avg U.S. Imports from Saudi Arabia of Crude Oil,” *US Energy Information Administration*, Sep. 13, 2017, https://www.eia.gov/dnav/pet/hist/LeafHandler.ashx?n=p&s=w_epc0_im0_nus-nsa_mbbld&f=4

⁶ Julia Simon, “Oil slides as Irma heads for Florida, threatening demand,” *Reuters*, Sep. 8, 2017, <https://www.reuters.com/article/us-global-oil/oil-prices-rise-on-sharp-drop-in-u-s-production-as-hurricanes-bite-idUSKCN1BJ06S>

⁷ “Hurricane Harvey Overview,” *IHS Markit*, Sep. 12, 2017, https://ihs.newshq.businesswire.com/sites/ihs.newshq.businesswire.com/files/press_release/additional/Hurricane_Harvey_Overview_Report_September_12_2017.pdf

⁸ “Gulf of Mexico Fact Sheet,” *US Energy Information Administration*, https://www.eia.gov/special/gulf_of_mexico/

⁹ “North America Rotary Rig Count (Jan 2000 - Current),” *Baker Hughes*, Sep. 22, 2017, <http://phx.corporate-ir.net/External.File?item=UGFyZW50SUQ9Njc5ODExfENoaWxkSUQ9Mzg5MDcwFR5cGU9MQ==&t=1>

¹⁰ Tom DiChristopher, “Oil prices may have finally hit bottom now that bullish hedge funds have thrown in the towel,” *CNBC*, Jun. 27, 2017, <https://www.cnbc.com/2017/06/27/oil-prices-may-have-finally-hit-bottom-as-hedge-funds-thrown-in-towel.html>

¹¹ John Kemp, “CFTC and ICE commitments of traders reports - Selected indicators,” *Reuters*, Sep. 5, 2017, <http://fingfx.thomsonreuters.com/gfx/ce/4/1408/1407/CFTC%20AND%20ICE%20COMMITMENTS%20OF%20TRADERS.pdf>