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MACROCOSM

Is Oil Priced to Perfection Again?

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Earth to oil! Permian running out of pipes. Inventories correcting. OPEC cuts extended.

Reports indicate that OPEC members and non-members will likely opt to *extend their production cuts into 2018, at the OPEC meeting in Vienna later this month. Last November we were about the only strategists who weren't surprised when they put the cuts in place through mid-2017 (see "Trump and the Art of an OPEC Deal" November 28, 2016). But we have little choice but to face the fact that we are surprised that, after that decision, crude didn't march directly to our long-standing $65 price target, but rather topped at WTI $55.2 and Brent $58.4 in early January, and now has had to endure last Friday's seeming climax bottom at WTI $43.8 and Brent $46.6. In a year when we've gotten just about everything right, this call is looking wrong – and it has been one about which we had strong conviction.*

It's time for a look at the dynamics at work right now in the global crude market, to revisit our long-standing $65 price target.

- We think Friday's lows, followed by a dramatic intra-day reversal, probably mark a bottom for crude – not forever, but in the sense that we think we'll see $65 before we ultimately explore lower lows. *Once again, for many reasons we will explain in this report, we think oil is priced for perfection in an imperfect world* – as we said in early 2016 when crude double-bottomed at $26 (see "Oil: Priced for Perfection in an Imperfect World" January 20, 2016).
- *So yes, we are standing by our $65 price target. But the logic of our forecast is by its very nature subject to time-decay. We're not at its sell-by date yet, but we nervously hear the clock ticking.*
- We say this because we believe deeply that oil production is undergoing a long-term productivity revolution that will ultimately drive its price back down to historical norms, which would be a range between $15 and $35 in today's dollars. We seemed like techno-futurist quacks when we said this three years ago (see, first, "The Stench of CrISIS" June 25, 2014; and then among many others, "Oilmageddon" December 16, 2014, "I Have Seen the Future, and It Fracks" February 24, 2015, and "The Shale Boom Shifts Into Higher Gear" June 1, 2015).
- It's hard to remember now, but while we were saying those things the consensus was still clinging to "peak oil." Now the consensus has swung over to our point of view, we think unrealistically so.

Update to strategic view

OIL: We are disappointed by the recent move by oil to the low $40's. We recognize that our price target of $65 has a sell-by date, that it is eroded every day by the secular technology revolution in fracking that we ourselves have celebrated. But in the cyclical timeframe, the shadows of the 2014-2016 crash – global CAPEX underinvestment and OPEC cuts, and political instability in producer nations – argue for higher prices. The seeming surge in US shale production is the exploitation of low-hanging fruit, and cannot be extrapolated. Seemingly high inventories are in part due to hedging at the onset of unanticipated supply cuts, and are now beginning to come down in a season when they should be rising.

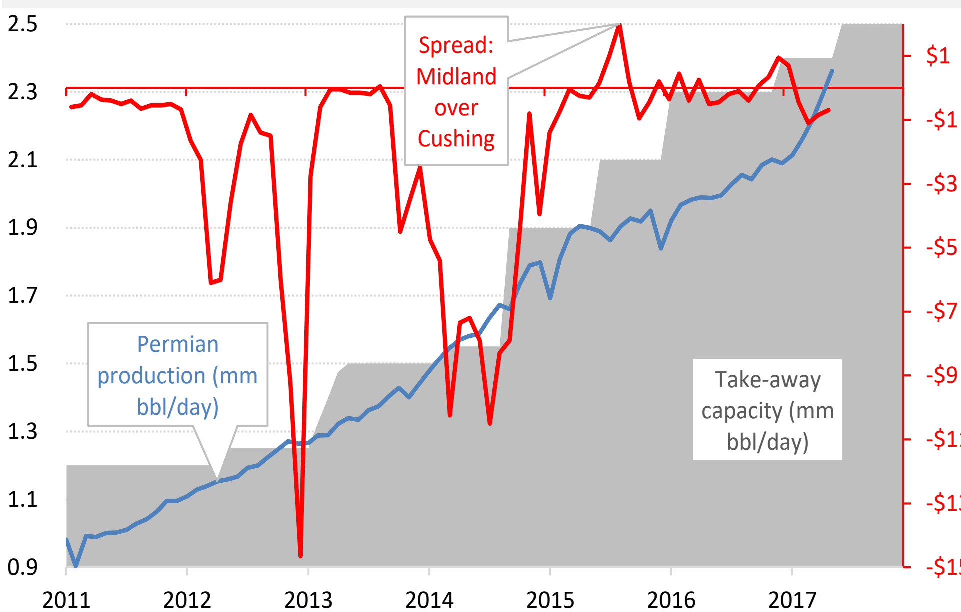
[Strategy dashboard]

__We think it is unrealistic to expect a long-term technology revolution still in its infancy to offset, with instantaneously higher production, the consequences of two-plus years of sharply curtailed global CAPEX, and now, deep and extensive cuts by OPEC members and non-members.__

__We understand that US production statistics would seem, nevertheless, to be confirming that exactly this is happening. But we think they are sending deceptive signals.__

- We do not agree with the DOE Energy Information Administration's call for US crude output to grow by 860,000 barrels per day and surpass the April 2015 peak this calendar year. To be sure, after the OPEC production cuts were announced, US frackers mounted a supply-response to fill the gap, and it was greater than we expected. So we're raising our 2017 forecast from a 430,000 barrels per day gain (see "It's a Good Time to be a Fracker" February 24, 2017) to 540,000 million. *__But we think what the EIA and the consensus are missing is that this gain in production is highly front-end loaded – it's all low-hanging fruit. The rapid ramp-up in US crude oil production on the back of the mighty Permian field is starting to run into some daunting bottlenecks__*.
- When the OPEC cuts were announced, Permian production surged to gobble up almost all available take-away capacity – that is, the available infrastructure for transporting oil from the well to the demand-center. *__Today there is only 38,000 barrels per day in spare takeaway capacity in the Permian.__* As a result, Midland WTI, which was trading at nearly a $1 premium to Cushing in January when there was still plenty of spare take-away capacity, is now trading at a discount in April (please see the chart below).
- Another 100,000 barrels per day take-away capacity will come on-

Permian production, take-away capacity and pricing



Source: DOE EIA, Bloomberg, TrendMacro calculations

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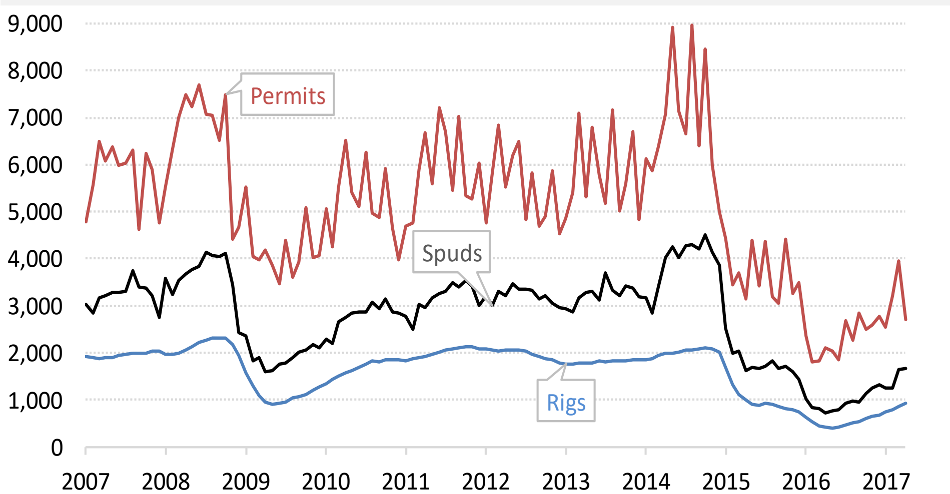
line in a matter of months, as new pumping stations increase through-put in existing pipelines. But other than that, Permian production will have to wait for Enterprise Product Partners' Midland to Sealey 460,000 barrels per day pipeline. Originally to come on-line in mid-2017, [its builder says]() it has been delayed to second quarter 2018.

- That means that the Permian will be hard-pressed to add any more than another 150,000 barrels per day We don't expect rig count to be pulled back, so there will be a rise in drilled uncompleted wells.
- We focus on the Permian because its 261,000 barrels per day production gain since the OPEC cuts makes it the only US shale play to have had a gain of any significance.
- The Eagle Ford has attracted more rigs than we expected, due to the rise in US condensate exports that are compensating for Qatari production cuts at a time when Asian demand has risen. But this play is still a distant Number Two to the Permian, with only a 48,000 barrels per day gain since the OPEC cuts were announced.
- The other major US shale play – the Bakken – also received some favorable news, with the Dakota Access pipeline in operation by mid-May, a month earlier than expected. It will pipe oil to the Gulf Coast that was previously railed to the East Coast, with the possibility of minimally increasing volumes, with the Bakken having actually seen production decline by 23,000 barrels per day since the OPEC cuts. The Bakken has seen rig count rise slightly to replenish stored oil that is being used to fill the pipeline, but we don't expect to see a significant production increase because of it. That would require a highly unlikely widening of the WTI/Brent spread to $6, which would make it economical for Bakken producers to ship oil on Jones Act tankers to recapture East Coast markets (again, see "It's a Good Time to be a Fracker").
- *Across US shale, the total production gain has been only 328,000 barrels per day. But this can't be extrapolated simplistically into the immediate future, as the EIA and the consensus seem to be doing.*
- In April, permits declined sharply and spuds leveled off even

US exploration and production dynamics



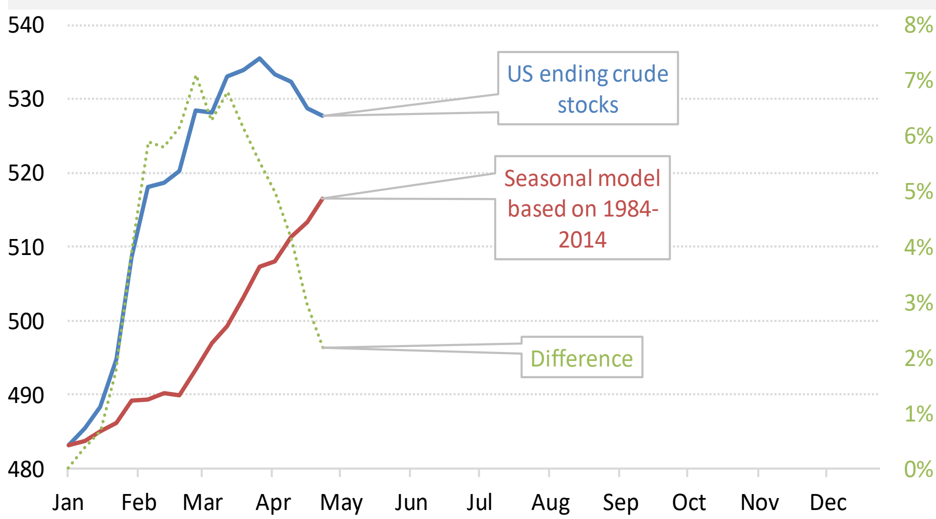
Source: DOE EIA, TrendMacro calculations though rig counts continued to rise. One month doesn't make a trend, but in context we think this one actually will: US operators are taking their foot off the pedal, which will slow production increases in the second half of 2017 (please see the chart on the previous page).

- The Permian is takeaway capacity-constrained, and the other shale plays are, to various extents, price-constrained. Geology and transport costs conspire to make oil considerably more expensive to produce in, say, the Bakken than the Permian. Much of the hand-waving about sharply lower break-evens is, in fact, *only* true in the Permian. Nation-wide, we can't assume continuation of production gains, such as they have been with oil in the $50's, with oil now in the $40's.

The second factor negatively affecting crude prices is the seemingly bearish buildup of US stockpiles to new all-time highs. This is another false signal that can't be extrapolated into the future.

- OPEC members and non-members agreed to a production cut because, as they have said, they are "determined to do whatever it takes to achieve our target of bringing stock levels back to the five-year average." There must be some considerable slapping of foreheads in Vienna, because exactly the opposite has happened in the short term. In retrospect, it should have been obvious.
- *Cartel producers got ahead of their agreed cuts by dispatching VLCC tankers to the US before the cuts took effect. Refiners hedged against those cuts – which, again, came as a surprise to them – by snapping up those cargoes and laying in as much supply as they could store.*
- From January to mid-February US imports rose by a whopping 821,000 barrels per day on average, above the same six-week period last year – and as much as 7% above the long-term average (please see the chart below).

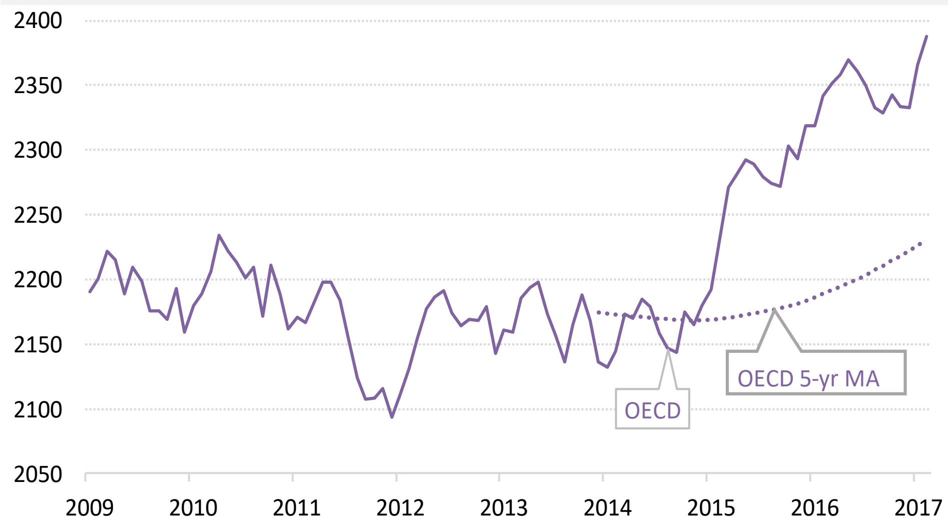
US ending crude stocks Millions barrels, as of April



Source: DOE EIA, TrendMacro calculations

- *<u>Interpreting this surge as evidence of a glut is a great error. That's what inventory builds usually mean, but this one means just the opposite: fear of a coming shortage.</u>*
- *<u>Reality is starting to set in, though no one seems to notice. Since the peak at the end of March, US ending stocks have fallen by 7.8 million barrels, when historically stocks have risen 9.2 million on average</u>* (again, see the chart on the previous page).
- All that said, it should be no surprise that OPEC members and non-members are obliged to extend their cuts, even though the first wave of cuts seems to have backfired. Indeed, an extension was inevitable from the beginning, if the goal is to reduce inventories to their 5-year average. All the more so after the early 2017 build-up – *<u>across OECD consumer nations, inventories now have to come down by about 150 million barrels to meet the cartel's objectives</u>* (please see the chart below).

OECD crude stocks inc. strategic reserves Millions barrels, as of February



Source: JODI, TrendMacro calculations

Finally, while the long-term technology revolution works to drive prices *secularly lower*, and the shadow of the 2014-2016 crash competes to drive them *cyclically higher*, *<u>there is a third factor – a random shock function – that intermittently drives prices higher: transient crises in politically unstable oil-producing nations.</u>*

- *<u>Venezuela is on the brink of collapse</u>*, which could hit production by 1 million to 2 million barrels per day – if the 2002 abortive Chavez coup is an historical indicator. We see Venezuela as a ticking time bomb – but at today's prices, oil markets seem to be assuming nothing could possibly go wrong.
- Even without a black swan event in Venezuela, we think production will decline by 300,000 barrels per day by year-end, to 1.75 million barrels – while its OPEC quota only dictates a cut to just below 2 million.
- Already, for Venezuelan oil that manages to leave the country for foreign markets, third party intermediaries – shipping agents,

terminal officials and oil companies that saw their fields expropriated during the Chavez era – are intercepting cargoes and imposing garnishments for unpaid debts. In April, the Russian state-owned shipping conglomerate Sovcomflot sequestered a cargo of heavy crude as partial payment toward $30 million owed by Venezuela's national oil company.

- *Libya continues to barely muddle along*, and Mustafa Sanalla, the head of Libya's National Oil Company, has to be praised for coordinating with different factions to allow more oil to flow to the ports. Yet his prediction that production could reach 1.25 million barrels per day by year-end seems unlikely to us. According to OPEC secondary sources, Libyan production fell in March by 61,000 barrels after nearly surpassing 700,000 since December, as warring factions prevented access to certain ports.
- *Nigerian production remains well below its 2015 average* of 1.8 million barrels per day. Crude oil production averaged 1.55 million barrels in the first quarter, lower by 22,000 compared to the fourth quarter of last year. The country is wracked by currency devaluation, drought, and the Niger Delta Avengers who knock out oil pipeline hubs forcing the increased use of costly and inefficient barges.
- *These risks are only exacerbated by today's low oil prices, which on top of all the other problems facing Venezuela, Libya and Nigeria, reduce their export revenues.*
- We don't wish to indulge in conspiracy theories, but we think this may have occurred to Saudi Arabia and Russia – the ring-leaders of the member and non-member production cut deal. For them it's heads-I-win, tails-you-lose. If the cuts work immediately, they get higher prices. If the markets continue to react perversely to the cuts, they get lower prices – until those lower prices blow up Venezuela, Libya, Nigeria or some other export-revenue-dependent and politically unstable producer nation. Then prices go up.

Bottom line

We are disappointed by the recent move by oil to the low $40's. We recognize that our price target of $65 has a sell-by date, that it is eroded every day by the secular technology revolution in fracking that we ourselves have celebrated. But in the cyclical timeframe, the shadows of the 2014-2016 crash – global CAPEX underinvestment and OPEC cuts, and political instability in producer nations – argue for higher prices. The seeming surge in US shale production is the exploitation of low-hanging fruit, and cannot be extrapolated. Seemingly high inventories are in part due to hedging at the onset of unanticipated supply cuts, and are now beginning to come down in a season when they should be rising.