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MACROCOSM

Despite the Gloom, Still a Shale Boom

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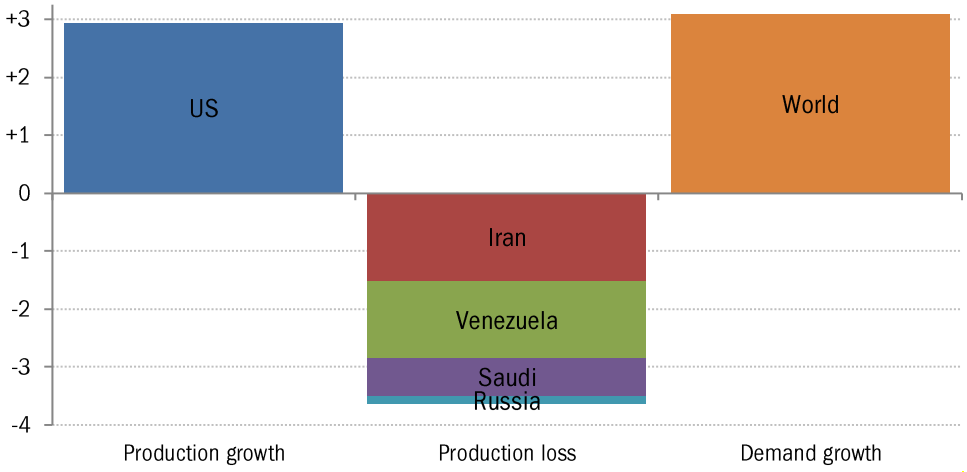
Michael Warren and Donald Luskin

The US has captured all the oil demand growth of the last three years. Onward and upward.

WTI oil has stayed almost magically within our forecasted price range of $50 to $60. It was a gutsy call at the time we made it (with WTI at $65!), as previously waived sanctions on Iran were finally kicking in, and Iran had begun a series of provocations in the Straits of Hormuz (see "The Perfect Moment to Take Out Iran" April 23, 2019). Since then, it has taken repeated flirtations with "black swan" risks from Iran and the announcement of prolonged OPEC-plus production cuts – and hints of more cuts to come – to keep weak oil prices even as high as they have been. *The underlying reality that explains persistently weak prices in the face of such powerful supporting factors is that the oil market is, in fact, in a global glut*, with US shale production charging forward at the same time as oil demand growth in China has virtually ceased for more than a year – and exports from Iran and Venezuela zeroed out about as much as they ever will be. *Unless OPEC-plus cuts production further, where's the price support?*

- On the one hand, it could be said that *the marriage of the shale boom with the Trump administration's geopolitical pressure tactics against Iran and Venezuela has engineered a massive market-share shift from those two nations to the US, gobbling up all the demand growth since President Donald J. Trump took office* (please see the chart below).

Change in crude production (and demand) from December 2016, billions barrels per day



Source: DOE IEA, Bloomberg, Energy Intelligence, TrendMacro calculations

Update to strategic view

OIL: Oil prices remain weak, despite alarming geopolitical risks with Iran. The key dynamic remains that Iranian and Venezuelan exports have already effectively been zeroed out. US production is growing and Chinese demand growth is flat, so only OPEC-plus production cuts can support prices now. Effectively, since Trump was elected, new US production has satisfied all new global demand growth at the expense of OPEC-plus market share. Media stories about the death of the shale boom are mistaken, as usual. The short-term hiccup in US production is all in the Gulf, due to Hurricane Barry. Shale production is surging – and with high efficiency – especially in the Permian, constrained only by takeaway and export capacity. That is coming on slightly more slowly than expected, but nevertheless still coming on strong.

[Strategy dashboard]

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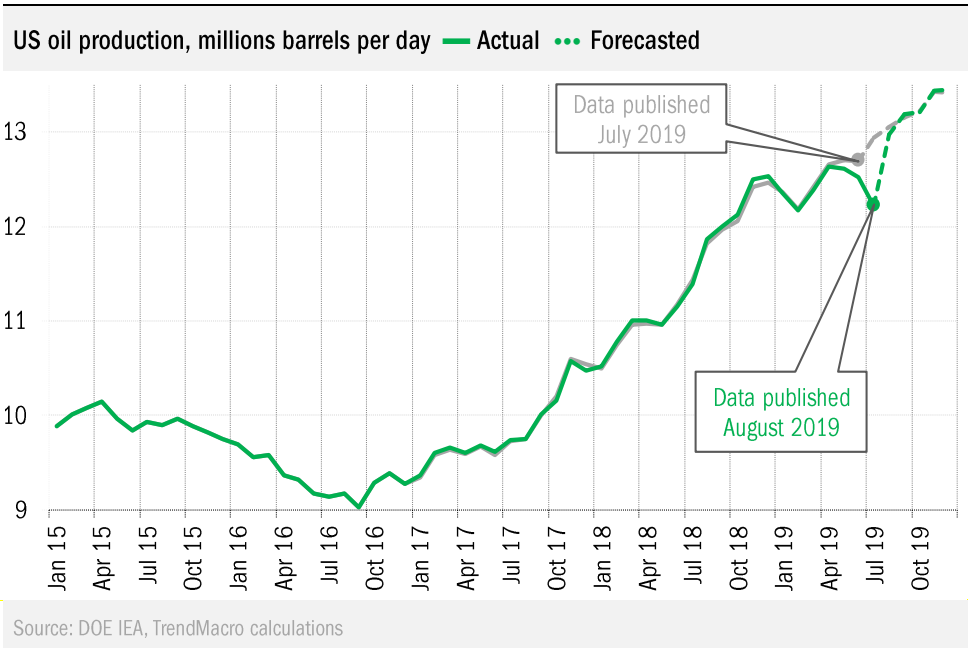
- On the other hand, it's a fragile US victory, because Trump's trade war against China has flattened oil demand growth there – leaving open the critical question going forward: *assuming Iran and Venezuela remain out of the market, just who, if not China, is going to buy the new production growth that continues to emerge from US shale* (see "Video: What you're not hearing about oil and the Iran sanctions" April 22, 2019)?
- *When clients ask us what we are most worried about – what could trigger the next US recession – we cite the risk that peace will break out in Iran and Venezuela, the sanctions will end, and they will start exporting oil again. The oil price will collapse, leading to global credit market disruptions that will trigger a recession like the one we just barely missed in early 2016, the last time oil prices collapsed* (see "The Recession Caused by Low Oil Prices" January 8, 2016). That's not a prediction. It's a big "what if?"

We don't think we get much relief from our cautious outlook on prices from the recent boomlet of overheated media stories about faltering US shale production, especially in the mighty Permian. Low prices and rising levels of US storage would seemingly disqualify these stories on the face of it. That said, last week's US Energy Information Agency's "Short Term Energy Outlook" did show a sharp drop in US production in July (please see the chart below). But that had nothing to do with shale – it was all Gulf of Mexico shut-ins because of Hurricane Barry.



Source: DOE IEA, TrendMacro calculations

Indeed, the EIA's "Drilling Productivity Report" yesterday showed growth in production from shale of 69,400 barrels per day in July, with 50,000 of it coming from the Permian (see "Data Insights: Oil" August 12, 2019). In fact, the EIA has upwardly revised its Permian production time series, now showing July production at 4.3 million barrels per day, up 130,000 barrels from last month's report.

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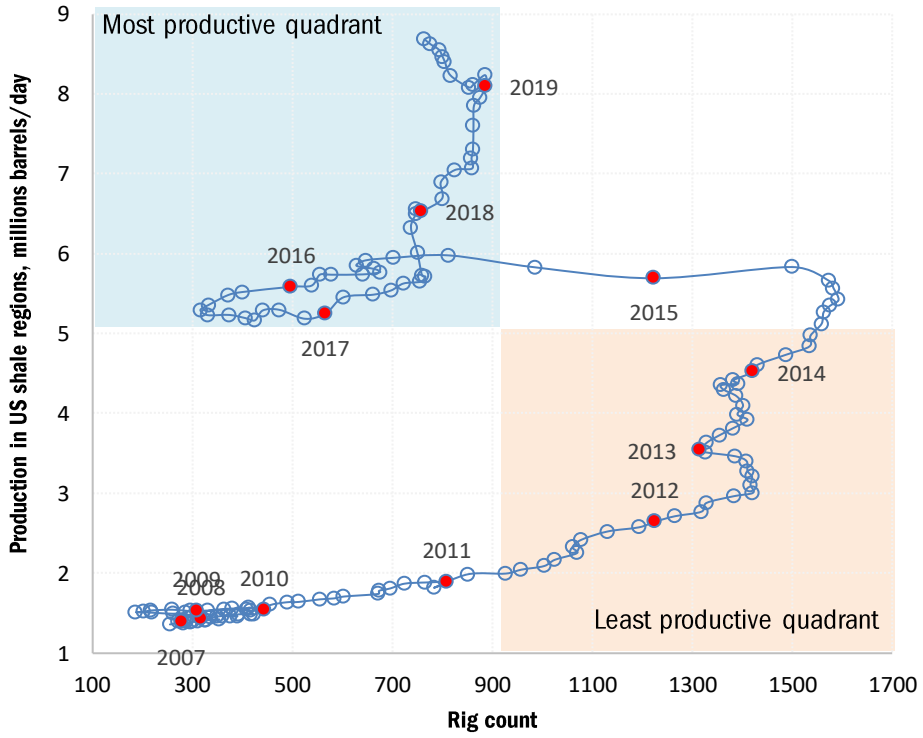
[Reading home]

- A focus of the media's overheated concern seems to be Pioneer Natural Resources (NYSE: PXD), which is experiencing problems with well interference – but only because they reduced well spacing too much. This has happened to other companies before and will happen again, because operators always press the limits.
- The stories don't report that Pioneer has the second highest level of drilled-but-uncompleted wells (DUCs) in the Permian Basin. That will translate into higher production and lower costs, because drilling (about 30% of the cost for each well) has been paid for by CAPEX budgets prior to 2019. Going forward Pioneer can produce for only 70% of the cost of production in Q4-2019 and well into 2020-2021. And the infrastructure costs for pumped water, water disposal wells, gathering infrastructure, and so on, have been paid for by a decade's worth of prior investment.
- Yes, Pioneer's production *has* contracted this year. What matters most, though, is the estimated ultimate recovery (EUR) from a well – something that Wall Street rarely focuses on, being instead mistakenly obsessed with more easily observed initial production (IP) rates. Perhaps Pioneer made the mistake of catering to Wall Street by trying to push IP rates to the detriment of EUR.
- But Pioneer's temporary travails don't generalize to the whole industry. XTO Energy, and Exxon Mobil's shale players – have focused on EUR and are having no problems now.
- Overall, the US shale industry is at record production, and with high and improving efficiency (see the chart below).

Productivity in US shale production



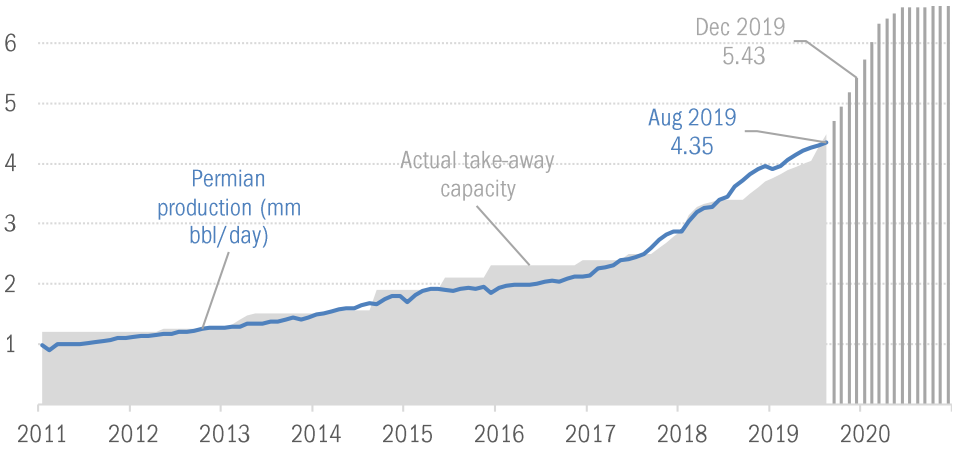
Source: DOE EIA, TrendMacro calculations

- That's not to say there won't be challenges in the future, as many shale wells are at the beginning or the middle of their life cycle, and putting artificial lift on horizontal wells is going to be much more difficult than on vertical wells. But this is the kind of engineering problem the oil industry has overcome successfully for over a century – against pessimistic finger-wagging the whole time. Shale technology at scale is only a little more than ten years old, with a century ahead of it that will yield both problems and solutions.

Right now, with prices in the $50's, the factors holding back Permian production growth are takeaway pipeline and export facility capacity .

- We have been pointing for quite a while to the surge in pipeline capacity in the Permian scheduled to come on-line in the third and fourth quarters of the year (see, for example, "Why Aren't Oil Prices Higher?" February 12, 2019). *In light of new company information, we're trimming our takeaway capacity forecast a bit, by about 220,000 barrels per day through year-end. But forecasted capacity growth remains enormous – by year-end, capacity at 5.4 million will be well more than a million barrels per day greater than today's. If production continues to meet takeaway capacity, then production could rise by more than a million barrels, too* (please see the chart below).

Production and takeaway capacity in the Permian



Source: DOE EIA, TrendMacro calculations

- *That said, another critical gating factor is port facilities.* We expect export capacity to grow more slowly than pipeline capacity through the end of the year. We expect 1.6 million barrels per day in additional port capacity by mid-year 2020, and enough in 2019 to accommodate increased Permian production of a least 500,000 barrels by year-end.
- The good news is that the VLCC-capable (Very Large Crude Carrier) Louisiana Offshore Oil Port (LOOP) exported more than a quarter-million barrels per day in June, double what it exported in May. Lower US oil imports and a big spread between WTI and

Brent have allowed the LOOP to transition to a major exporter this year. The Zydeco Pipeline can transport up to 375,000 barrels per day of Permian crude to the LOOP, and it began operations in May 2019. The Bayou Bridge Pipeline began operations in April 2019 and will be able to transport up to 480,000 barrels of Permian crude.

- Another bit of good news is Chevron's purchase of Petrobras' abandoned 110,000 barrels per day Pasadena refinery, completed in May. It is not clear when it will restart operations, but it will be sourced entirely with Permian crude. It is not reliant on export capacity because its output could just as easily find domestic customers.
- But the problems are with the Texas ports. Eagle Ford Terminal in Corpus Christi connects to the 660,000 Eagle Ford JV pipeline, which transports Permian and Eagle Ford oil in Suezmax and Aframax crude carriers. This terminal started exporting oil in July, but can't load VLCCs because harbor dredging operations haven't been completed yet.
- The Seabrook Expansion is another terminal that cannot export in VLCCs, but it is adding additional dock pace that will allow export capacity to grow to 700,000 barrels from 125,000.
- The Flint Hills Expansion in Corpus Christi will increase export capacity by 180,000 barrels per day to 380,000. This facility cannot load VLCCs either.
- The Ingleside Expansion is located next to the Flint Hills Expansion and has similar challenges with dredging to accommodate VLCCs. New capacity will be about 440,000 barrels per day
- The South Texas Gateway will bring 420,000 barrels per day in new capacity, which should be in operation with limited volumes by the end of this year.

Our take, then, is that overheated media reports are, as usual, just wrong. There is no shale rollover. There is a challenge in takeaway and export capacity, but that is beginning to clear, and we expect more production to rise and meet it. *Again – that makes it pretty hard to argue that oil prices ought to have much upside, at least if you rule out a geopolitical shock in the Persian Gulf.*

- This brings to mind a way Trump could kill two birds with one stone in the trade war with China. How about, in exchange for trade concessions from China, the US agrees to join China's "Belt and Road" initiative, and invite Chinese capital to fund the full-scale terraforming of the Gulf Coast into a deep-harbor environment that would permanently enable the use of VLCCs at the Texas ports? China's capital. US labor and know-how. To be sure, China would own the facilities. But then again Venezuela and Russia thought they owned Citgo…
- *Seriously!*

Bottom line

Oil prices remain weak, despite alarming geopolitical risks with Iran. The key dynamic remains that Iranian and Venezuelan exports have already effectively been zeroed out. US production is growing and Chinese demand growth is flat, so only OPEC-plus production cuts can support prices now. Effectively, since Trump was elected, new US production has satisfied all new global demand growth at the expense of OPEC-plus market share. Media stories about the death of the shale boom are mistaken, as usual. The short-term hiccup in US production is all in the Gulf, due to Hurricane Barry. Shale production is surging – and with high efficiency – especially in the Permian, constrained only by takeaway and export capacity. That is coming on slightly more slowly than expected, but nevertheless still coming on strong.