Trend Macrolytics, LLC
Donald Luskin, Chief Investment Officer
Thomas Demas, Managing Director
Michael Warren, Energy Strategist

MACROCOSM

How High Can Oil Go?

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Michael Warren and **Donald Luskin**

Calling all frackers: by year-end, sentiment will have flipped from glut to shortage.

Crude oil is already up, as of this writing, about 60% since the double-bottoms of January and February, when we were saying that all possible *bad* news was already priced *in* and all possible *good* news was completely priced *out* (see "Oil: Priced for Perfection in an Imperfect World" January 20, 2016).

- *It's not over. We think the dominant narrative around oil will completely reverse polarity, from glut to shortage.*
- *From here the question is no longer whether Wall Street's sell-the-bottom call for $10 oil might still actually happen. The question is: how high can oil go?*
- *There will be ups and downs along the way. But we reiterate our call for oil to trade as high as $65 before this year is done.*
- In the grand scheme of the crash we predicted would begin in June 2014 when Brent crude was $116 (see "The Stench of CrISIS" June 25, 2014), a $65 price target may not seem like much. But it would be a serious move – about a 50% rally from here.
- *This will definitively end the mini-recession caused by too-low oil prices* (see "Have We Suffered Enough?" February 26, 2016).

The math is simple and compelling, as we have already pointed out (see "On the Doha Oil Freeze Failure" April 17, 2016). Global demand will likely grow by 1.13 million barrels/day over the next 12 months. Total production in the US – the global swing-producer now – will likely fall by 750,000. *This means someone is going to have to come up with 1.88 million barrels/day.* Saudi Arabia, already at record production, claims it is still the call, or so says its new oil minister. It's not going to be Iran that fills the gap, even in its wildest dreams.

- Even the Paris-based International Energy Agency – the great official cheerleader for the idea of virtually permanent glut – has begun to change its tune. As recently as February, right at the bottom, it was saying "Supply and demand data for the second half of the year suggests more stock building… it is very hard to see how oil prices can rise significantly." It is now admitting "the oil market looks set to move close to balance in the second half of this year."

Update to strategic view

OIL, US MACRO: We reiterate our call for oil to trade as high as $65 this year. The glut is over, and soon all the talk will be about shortage. The math is simple: a year from now demand will be 1.13 million barrels per day higher, and US production will be 750,000 barrels lower. Where is the missing 1.88 million barrels going to come from? Not Iran. As US operators see oil prices rise from here into the $50s and the $60s, drilling will resume and fracklogs will begin to come down. As the industry and its financiers return to health, we'll have a definitive end to the mini-recession caused by too-low oil prices. But US operators will have to swim upstream against net exhaustion of legacy wells of 115,000 barrels each month, and do so with an impaired ecosystem of services suppliers and frack crews. We will find a supply-creating price, and an equilibrium where a transformed oil industry can flourish, and consumers can still enjoy relatively low prices.

[Strategy dashboard]

- The biggest change in IEA's global supply picture is a non-OPEC production decline, led by US shale operators.
- Obviously, at $26, we found the supply-destroying price of oil. But now the bear case for oil is a bet that shale production will rapidly come back to life as pricing improves, self-destructively restoring the state of over-supply.
- True enough, in principle, and for the long-term. This is the idea of "just in time" energy we have been talking about for quite a while (see "Just-In-Time Energy" April 27, 2015). But the reality of the near-term is very different.
- Pioneer Resources has become the posterchild for the bears, because it announced it will increase production more than previously expected – by 12% instead of 10% – with additional rigs, improving well performance, and hedging a higher percentage of production. Drilling contractor Nabors has claimed that $50 is the new "magic number," as some of its customers would start to add rigs if the price of oil stayed "comfortably" above it this year. Our own posterchild for the high-tech fracking revolution – EOG Resources (see "I Have Seen the Future, and It Fracks" February 24, 2015) – has announced a "permanent shift" to widespread "premium drilling" projects with a minimum of 30% after-tax return at $40 oil.
- *But across the whole US ecosystem of shale and light-tight oil, it's not going to be quite so easy.*
- Pioneer and EOG can fund themselves, but smaller operators and operators in smaller plays are still facing a very difficult capital environment.
- Remember, while the focus has been on the large plays – such as the Bakken, Eagle Ford, and Permian Basin – the smaller plays that cumulatively contributed much to record high shale production have been devastated.
- We've already discussed the "roll up" of the Tuscaloosa Marine Shale (again, see "Oil: Priced for Perfection in an Imperfect World"). Now the Mississippi Lime play in Kansas is sharing that fate, with production now below 2010 levels, and only one horizontal well spudded this year, down from 58 in 2015. Recovery won't be immediate as prices rise, with Midstates Petroleum filing for bankruptcy and SandRidge Energy issuing a "substantial doubt" statement.
- And with operators everywhere, large and small, having forced draconian cost-cuts on their services partners, the service sector's ability to quickly scale up to meet a surge in demand is compromised.
- Maybe $50 will be the "magic number," but $45 hasn't been. The grand-daddy of the shale plays – the Barnett – has no rigs drilling this week for the first time in well over a decade. The Fayetteville in Arkansas has not had a single rig operating this year, and still doesn't.

As an immediate matter, what counts most is not how many new wells will be drilled, but how many pre-existing but uncompleted wells will be completed – the so-called "fracklog."

Contact TrendMacro

On the web at
trendmacro.com

Follow us on Twitter at
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Donald Luskin
Chicago IL
312 273 6766
don@trendmacro.com

Thomas Demas
Charlotte NC
704 552 3625
tdemas@trendmacro.com

Michael Warren
Houston TX
713 893 1377
mike@trendmacro.energy

[About us]

- There have been many estimates made of the current US fracklog. On first thought, that inventory of uncompleted wells ought to be quite large, considering that is has been at best barely profitable to complete with prices as low as they have been. But on more careful consideration, the fracklog is smaller than one might have thought, because operators desperate for cash-flow to stave off financing crises have completed a large number of wells over the last year even when it wasn't profitable to do so.
- *We estimate that about 4,000 wells are awaiting completion, with less than half of them in high-grade areas in the three top plays – the Bakken, Eagle Ford and Permian Basin*.
- What will it take to complete them?
- Our interactions with industry contacts reveal a consensus that operators will need to see three straight months of prices above $50 to even consider eliminating a high percentage of their fracklog.
- Some operators are considering the reduction of the fracklog now just enough to maintain or slightly increase production. EOG and Pioneer – whose excellent balance sheets allow them to act quickly if they wish, but on the other hand give them the staying power to wait for higher prices – only plan to reduce their fracklog by 70 and 35, respectively, this year.
- There are logistical constraints as well. While the biggest shale players have created their own frack crews, small and mid-size operators have historically contracted this service externally. Our contacts indicate that the number of frack crews have been halved since 2014, and many former employees have left the industry to look for work elsewhere. Overall, the US oil and gas ecosystem has lost about 185,000 payrolls in the less than two years since June 2014
- *Most important, we must bear in mind that shale production has to swim upstream against the exhaustion of legacy wells. Currently legacy exhaustion takes out of production 272,000 barrels per day each month. New-well production, at 157,000 barrels – the lowest level in almost five years – leaves a deficit of 115,000. About a tenth of the high-grade fracklog, or 150 wells, would have to be completed each month just to offset this net exhaustion.*
- *So the fracklog can only take us so far – about ten months, just to break even. Very soon, each month, more new high grade wells – not just completion of existing but uncompleted wells – will be needed to offset future legacy lost production.*
- If it sounds like we are selling some kind of "peak oil" story, be assured that we are not. We fully stand by our long-term vision that oil production has entered an historic new phase of abundance and efficiency (see "The Shale Boom Shifts Into Higher Gear" June 1, 2015). Operators like EOG with its technology-driven "premium drilling" approach, driving full-cycle breakevens at prices as low as $40 across multiple shale plays, prove it.
- We just don't think that, short-term, anyone ought to have any illusions that WTI at $43, where it stands as of this writing – while not a death-sentence like $26 was in mid-January and mid-

February – is enough to fund a broad-based US production recovery.

- But with every tick higher, we get closer to a price that will do that. Our call is that by the time we work all the way up to $65 – and with sentiment flipping to a shortage psychology that will give confidence that prices won't just fall back to $26 as soon as the pumps start pumping – we will have found a stable supply-creating equilibrium.

Bottom line

We reiterate our call for oil to trade as high as $65 this year. The glut is over, and soon all the talk will be about shortage. The math is simple: a year from now demand will be 1.13 million barrels per day higher, and US production will be 750,000 barrels lower. Where is the missing 1.88 million barrels going to come from? Not Iran. As US operators see oil prices rise from here into the $50s and the $60s, drilling will resume and fracklogs will begin to come down. As the industry and its financiers return to health, we'll have a definitive end to the mini-recession caused by too-low oil prices. But US operators will have to swim upstream against net exhaustion of legacy wells of 115,000 barrels each month, and do so with an impaired ecosystem of services suppliers and frack crews. We will find a supply-creating price, and an equilibrium where a transformed oil industry can flourish, and consumers can still enjoy relatively low prices.