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Oil: Priced for Perfection in an Imperfect World

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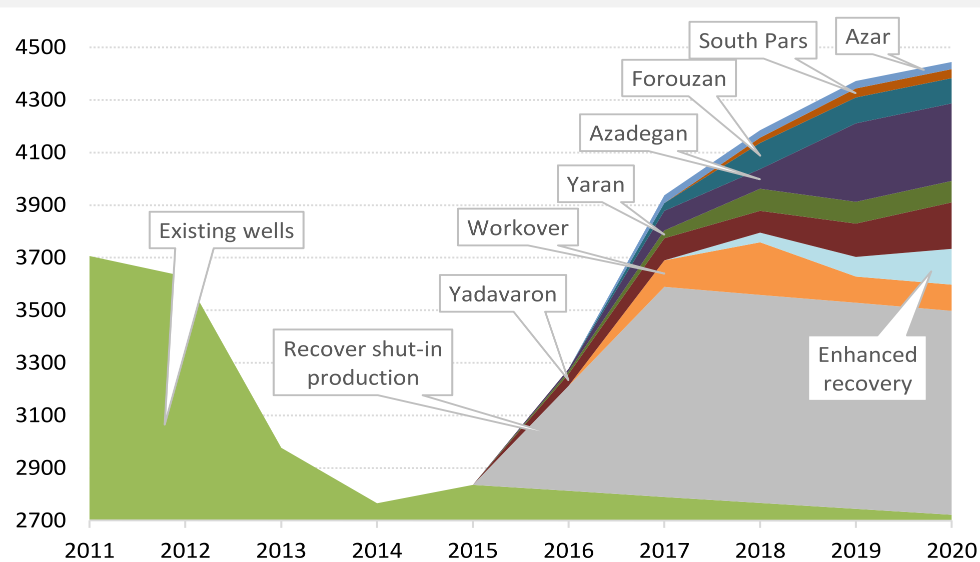
A flood from Iran, a stable Middle East, crashing breakevens, collapsing demand. Dream on.

Oil has been beaten down well below $30, by a gruesome confluence of endogenous fundamentals, an increasingly recessionary global macro environment and the brutal logic of mature bear markets. *It feels like an act of foolish heroism to say anything now except that it is going to zero.*

- We were alone in mid-2014 calling the top in oil (see "The Stench of CrISIS" June 25, 2014), and in projecting a long-term price as low as $15 (see "Oilmageddon" December 16, 2014).
- *Now we feel alone again in thinking that even prices in the high-20s are way too much way too fast, reflecting endogenous and exogenous fundamentals that are temporary and fragile, and ignoring inexorable reaction-functions and accumulating risks.*
- *All that's left is the madball fire-sale dynamic, reflected in hysterical headlines about oil selling for less than zero.*

The latest real factor driving oil lower has been the rather sudden lifting of sanctions against Iran last week, with "Implementation Day" for the nuclear

Iran crude production potential, by source Thou. barrels/day, year average



Source: OPEC, TrendMacro.Energy calculations

Update to strategic view

OIL: Below $30, oil is priced for perfection. Iran sanctions were lifted sooner than expected, but the market will be disappointed that Iran can't instantly increase production by 1 million barrels/day. The planned IPO of assets of Saudi Aramco reflects not capitulation by the Kingdom, but the building of a war-chest with which to attack growing US "energy independence." Saudi's new willingness to flirt with geopolitical risk embeds calls that the present oil market is not pricing. Stories of US shale productivity have gotten way ahead of the reality of below-breakeven prices, and rising bankruptcies. And recessionary expectations of a demand collapse ignore that prices are already so low consumers have no incentive to stop buying gasoline. Even if all these perfections are delivered, then oil has no reason to fall further. But they won't be, and this journey below $30 is likely the climax phase of a sloppy bottoming process.

deal coming about two months earlier than we had originally expected (see "Iran: The New New World Oil Order, Volume I" July 20, 2015).

- So now the world waits to see how much oil Iran can pump and export into a fully-supplied market, how quickly, and how heedless of price.
- Who knows what the markets are discounting? Volume estimates are all over the lot – with the idiot-fringe anchored by the Iranian Oil Ministry's claims of an additional 1 million barrels/day by mid-year. *It feels to us like markets are discounting the full million, and are assuming that Iran intends to just dump it.*
- *In this sense – and as we will see in others as well – the oil market is priced for perfection. When markets are postured that way, then even if perfection is delivered, there's no further for markets to run. But perfection is rarely delivered in this world, and markets priced for it tend to reverse.*
- *For new Iranian oil, we think the reality won't be perfect at all, but rather at the middle-to-lower end of expectations – because there is a world of difference between Iran's physical abilility to pump, and its abilty to export that which it pumps.*
- *We estimate that, as a maximum set by the bounds of engineering, Iranian production can grow to 3.28 million barrels/day on average over 2016, up from 2.84 million for 2015, for a of 441,000 barrels/day. About a third of that gain will come from new wells, an about two-thirds from recovery of shut-in production* (please see the chart at the bottom of the previous page).
- But the National Iranian Oil Company is in more of a hurry than that, having been ordered by the Iranian Oil Ministry to increase production by 500,000 barrels/day immediately. This is physically impossible in terms of sheer engineering. There are also many above-ground obstacles that the regime faces.
- First, new production will come from projects in existing fields – Yadavaron, Azar, North and South Yaran, North and South Azadegan, Forouzan and the oil layer in South Pars. *Development hinges on the Iranian government following through with a new form of contract for foreign partners, resembling production-sharing agreements, without the much-loathed buyback clauses that chased away investments in the past. Enhanced oil recovery could also add significant volumes in the out-years. But first, know-how and technology must be imported to capture bypassed oil in existing fields.*
- *Second, Iran has inadequate and antiquated storage infrastructure, so it cannot raise production that it cannot immediately export.* Iranian onshore storage facilities on the island of Kharg, Lavan and Sirri can handle only 39 million barrels, and they are reportedly already full.
- *Third, Iran will be hard-pressed to arrange export contracts.* Identifying continental Europe as its battleground, it cut crude prices immediately after sanctions were lifted to claw back market share. Unfortunately, the European refining industry has lost 1 million barrels/day capacity since 2010 due to Europe's aging population and cheaper diesel imports from North America. Since

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June, Saudi Arabia's Yanbu refinery has started exporting diesel into Europe. All Iran has to offer is crude oil. So Iran faces a big challenge to just achieve pre-sanctions market share, and even if it does it will likely not regain former volumes.

- *Fourth, China could be an alternate export outlet for Iran, yet Iran's exports to China – which has never imposed sanctions on Iran – have held steady over recent years. Why should they increase now?* China's biggest import source is Saudi Arabia, with Russia having gained some market share recently. Iranian exports to China should increase once China National Petroleum Company starts production in the second phase of its North Azadegan joint-venture in Iran, but this would entail volumes of only 75,000 barrels/day.
- In the short term there will likely be many headlines that the Iranians are flooding the oil market. There are reportedly 50 million barrels of Iranian crude and condensate stored offshore in vessels waiting for the call to lift anchor, and Iran could pump 39 million barrels out of onland storage. *These barrels will probably go to the spot market, and then Iran will have to wait to raise production significantly until its agents can obtain long-term contracts. But there are cross-purposes here – the more Iran distorts the spot market, the longer it will take to establish long-term contracts at resonable prices.*

The nuclear deal has put all eyes on Iran. But perhaps its most consequential dynamics are arising with the reaction-function of its regional rival Saudi Arabia. Surely the Kingdom foresees Iran extending its sphere of influence in the region with the lifting of sanctions and the ascension of Iran-friendly Shiite leaders in Iraq. Taken together, Iran, Iraq and Syria comprise a large land mass with a population-base that is aligned against Saudi interests. Coupled with the Houthi-led overthrow of the former Sunni-led Yemeni government last year – which has prompted an ongoing proxy war between Saudi and Iran played out in Yemen (see "Oil and the Obama Doctrine" April 10, 2015) – it is no wonder that the Saudis feel that a noose is slowly being tightened with only small Sunni states like Jordan, Bahrain and the UAE remaining in its orbit.

- Internally, Saudi must deal with difficult succession and reform issues. Intrigues swirl within the royal household, including leaked claims by Saudi princes that King Salman suffers from dementia. The King has ruffled feathers and raised eyebrows by sacking his half-brother, and replacing him as Crown Prince with his nephew. He has named his own son Deputy Crown Prince and defense minister – a post for which the young Mohammed bin Salman would appear to have no qualifications, yet a post from which he has been most aggressive in his prosection of the proxy war in Yemen.
- At the same time, the new King's circle reportedly brings an aggressive reform agenda to the Kingdom, potentially opening up the economy and enhancing personal freedoms. These would all be difficult matters in the best of times. Generally, Saudi Arabia has had little choice but to stand back and watch oil prices crash since

June 2014 – driven by a US-led technology revolution over which the Kingdom has no control – preserving its dignity by claiming that OPEC's strategy is to build market-share rather than support prices (see "Saudisfaction Guaranteed" March 13, 2015).

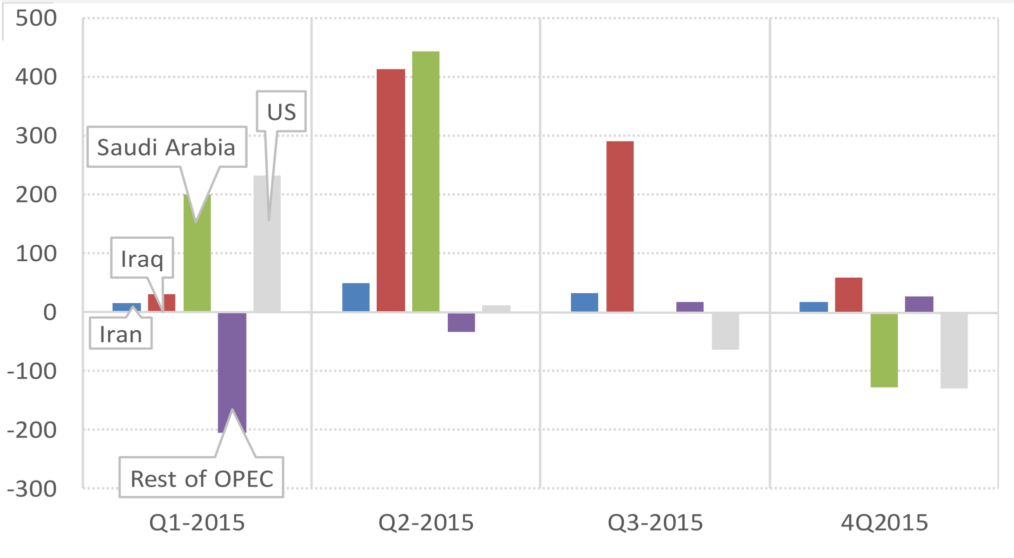
- Now with prices so low, Saudi's geopolitical and strategic choices may be shaping up to play a more important role at the margin. It seems that, at these oil prices, Saudi Arabia has become more willing to court geopolitical risk.
- Ironically, the June 2014 top in oil prices coincided with with an apparent flare-up in geopolitical risk in the Middle East – the first occupation by the Islamic State (ISIS) of significant territory in Iraq. We predicted at the time that this would not lead to higher prices, but to a crash (again, see "The Stench of CrISIS"). But now the character and scope of the risks have changed – and prices have already crashed.
- The execution by the Saudis ot Shiite cleric Nemer al-Nemer on January 2 is having a butterfly effect, with embassies being burned and bombed in Iran and Yemen, Sunni nations severing diplomatic relations with Iran, and threats of revenge against the House of Saud from leaders of Shiite-ruled states.
- Al-Nemer was from Saudi's eastern provinces where the majority of the Shiite population lives, and 46 oil pipelines crisscross the area transporting oil to export markets. The cleric was a vociferous critic of the house of Saud during the worst of the al Qaeda Arab Spring attacks against Saudi oil infrastructure from 2003 to 2006.
- The Saudis also executed 46 other terrorists with links to al Qaeda, which prompted ISIS to call for "lone wolf" attacks on Saudi state targets. ISIS has been carrying out attacks against mostly Shiite mosques and meeting places for the better part of 2015. But in August it targeted a Sunni mosque that services Saudi security personnel, raising the stakes by attacking fellow Sunnis.
- As an internal domestic threat to the Kingdom, al Qaeda has been replaced with ISIS. Blowing up pipelines and terminals are definitely in ISIS's playbook, given how they have operated in Iraq and Syria. Currently ISIS is blowing up Libyan oil infrastructure to thwart an agreement between the two warring factions that would have allowed increased oil production.

We think geopolitical risk in the region is far greater now than when ISIS first appeared in June 2014, because that risk threatens much more important producing assets – those of Saudi Arabia. Combined with an oil price almost $90 lower, today's geopolitical risks centered on Saudi probably represent a more valuable call option on higher oil prices, one which we think the market has failed to fully value.

Oil is presently priced for perfection in geopolitics – blithely ignoring the reality of a world in which major producers burn each other's embassies, and in which fundamentalist militants loyal to none of them threaten global infrastructure and carry out terrorist attacks regularly.

Let us turn away from Saudi's geopoltics and look instead at the

Change in oil production Thousands barrels/day, sequential quarters



Source: EIA, OPEC, TrendMacro.Energy calculations

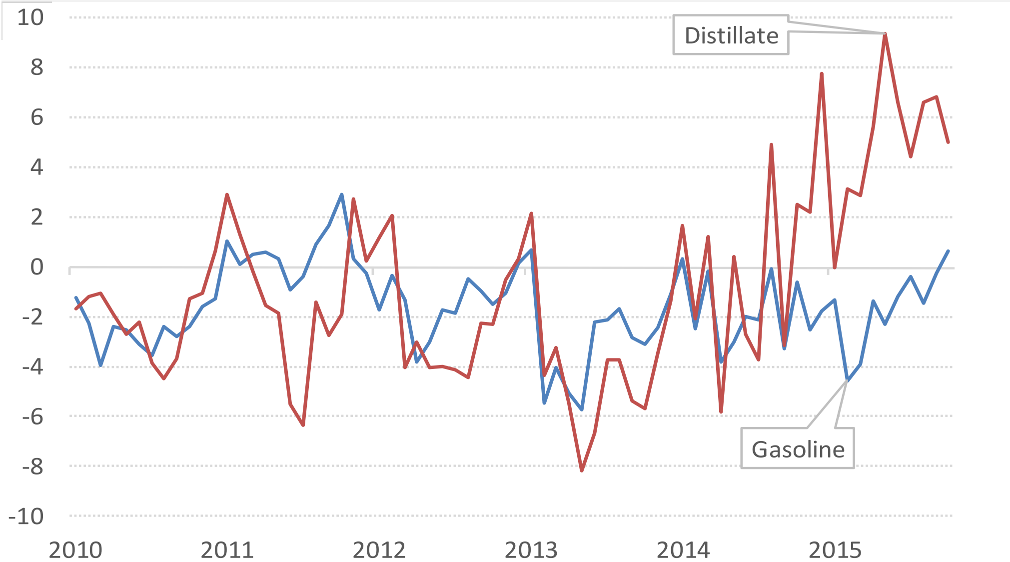
imperatives of its oil economics.

- Saudi production growth has halted, and indeed begun to decline after the new 400,000 barrels/day refinery at Yanbu was brought on line last June (please see the chart above).
- At the same time, the only real competition within OPEC for production growth last year came from Iraq, due entirely to new mooring facilities that allowed the country to export its heavy crude as a stand-alone product. We think there will be no new Iraqi export infrastructure projects brought on line this year.

Saudi has been blamed for furthering the collapse of oil prices when it refused to hold back production after US producers unleashed the shale revolution. But a closer look at Saudi strategy reveals something more subtle – to move up the value chain by reducing imports of valued-added refined petroleum products, and instead exporting them into global gasoline and distillate markets (please see the chart at the top of the following page).

- Bringing Yanbu on line last year was preceded in mid-2014 by Saudi starting up the 400,000 barrels/day Jubail refinery. Another 400,000 barrels/day refinery is planned for 2017. With Jubail, the Kingdom has met all gasoline and diesel domestic demand needs from within its borders.
- *By sticking to the former production quota system, Saudi would have had to lose international crude market share to refine more oil domestically. Thus its drive up the value-chain virtually pre-ordained the end of the former quota system, with or without competitive pressure from shale producers in the US.*

Saudi Arabia refined product balances Millions barrels/day



Source: JODI, TrendMacro calculations

Recent reports of an initial public offering of Saudi Aramco might seem to be the kind of massive capitulation one expects to see at market bottoms. At least, it could be an admission by the Saudis that the shale revolution means a permanent downward shift in crude prices (see our *Wall Street Journal* op-ed, "The Shale Boom Shifts Into Higher Gear" June 1, 2015). Perhaps, but we doubt very much that the Saudis would sell the crown jewels – that is, their oil reserves. Instead we give more credence to reports that the Kingdom would seek to off-load its vast global refining complex.

During the era of record-high oil prices, the Saudis invested in refining assets that have feedstock ties – both technically and economically – to Saudi crude. An IPO would allow the Kingdom to monetize some of these assets to offset some of the damage done to its fiscal budget and its currency from lower oil prices (see "The Recession Caused by Low Oil Prices" January 8, 2016).

- *Such monetization would preserve contracts to source low-cost crude from the Kingdom. Thus Saudi will retain ownership of its low-cost crude reserves, with a built-in customer base.*
- *This contradicts the idea that Saudi is betting on nothing but lower oil prices. While it wishes to monetize the margin-driven global refining business – arguably a business relatively insensitive to crude prices – the IPO we envision retains for Saudi its call on the upside for crude prices.*
- *And the cash from the public offering fills Saudi's war-chest. There's no love lost between the Kingdom and its fickle ally, the US. If this move allows Saudi to tighten the screws a little harder on US frackers – and deflate America's new sense of "energy independence" – so much the better.*

Nevertheless, the mere fact that the Saudis are discussing a downstream IPO at all demonstrates how much the world has changed since a year ago. When crude was hitting the top of our price range of $60 back in April (see "Just-In-Time Energy" April 27, 2015), we reiterated our call for oil as low as $15, but stressed it was for the long-term. We knew it would take considerable time to transition from the traditional "OPEC call" on crude to "just-in-time production" in which US operators bring on wells to address supply shortfalls. Do today's prices mean our long-term call should have been for the short-term?

- No, not at all. US producers' average fourth quarter 2015 breakeven costs are about $30 to $35 – in the core counties of the three top light tight oil plays. If that's as good as it gets now, then surely we haven't made the transition to "just-in-time production" yet, at least not at these prices.
- Now, something's got to give. It was US light tight oil production that broke OPEC's pricing monopoly on crude oil in the first place. If that production – even the best of it – isn't profitable at these prices, then production has got to fall more than it already has.
- *Here, too we see oil priced for perfection – the perfection of a supply-side revolution of cost-cutting and productivity that indeed is well underway and inevitable, but nowhere near capable of sustaining production at today's below-breakeven prices.*
- So we continue to stand against the increasingly strident Wall Street clamor for $20 oil. We barely even want to mention the latest call for $10. Qualcomm $1000 anybody?
- US operators are starting to fall by the wayside in a big way.
- Consider the key operators in the liquids-rich Tuscaloosa Marine Shale play in Mississippi and Louisiana. The TMS was one of the last plays to come on line while prices were still high, and the most expensive – given that operators were drilling down 14,000 feet before even kicking off a lateral.
- Now the leading operator Goodrich Petroleum has been delisted by the New York Stock Exchange. Halcón Resources is on the verge of bankruptcy. The TMS looked promising with oil prices above $80. Now it has become the first US shale play to be wiped off the map.

With US production being taken off the table, the only reason to believe in $10 crude – or even $20, for that matter – would be if global demand collapses. In the recessionary panic atmosphere that has prevailed in the New Year, that's been an attractive scenario. Indeed, we think it's been a big part of oil's latest leg down.

- But it misses an important reality in the data. While the global economy has slowed over the last year, oil consumption has moved to new highs and stayed there.
- While headlines out of China have spooked equity and currency markets through the doom and gloom of 2015 Chinese crude imports still grew by 9%, reaching 6.75 million barrels/day, only 600,000 less than what the US imported last year.

- For 2016, new commercial and strategic storage capacity in China should push total imports higher by at least 5% despite stagnant growth projections for domestic gasoline and on-road diesel sales.
- For the US, gasoline sales rose by more than 2% last year (to October) and total sports utility vehicle/cross-over utility vehicle sales grew 16.7%, while hybrid vehicle sales fell by 15%.
- Yes, we've been forecasting the first-ever recession caused by low oil prices (see, most recently, our *Wall Street Journal* op-ed "The Recession Caused by Low Oil Prices" January 8, 2016). But this will be a unique recession, one that begins with oil prices already substantially lower. In that situation, of all the things on which consumers and businesses might cut back, we'd think oil would now be the very last they'd choose.
- *One more time, oil is priced for perfection – the idea that this recession will be perfectly like all the others. We think this unique recession definitely will not be.*

Bottom line

Below $30, oil is priced for perfection. Iran sanctions were lifted sooner than expected, but the market will be disappointed that Iran can't instantly increase production by 1 million barrels/day. The planned IPO of assets of Saudi Aramco reflects not capitulation by the Kingdom, but the building of a war-chest with which to attack growing US "energy independence." Saudi's new willingness to flirt with geopolitical risk embeds calls that the present oil market is not pricing. Stories of US shale productivity have gotten way ahead of the reality of below-breakeven prices, and rising bankruptcies. And recessionary expectations of a demand collapse ignore that prices are already so low consumers have no incentive to stop buying gasoline. Even if all these perfections are delivered, then oil has no reason to fall further. But they won't be, and this journey below $30 is likely the climax phase of a sloppy bottoming process.