OPEC, shale & geopolitics: The oil price puzzle

The popular thesis of “lower for longer” oil prices has run headlong into the realities of unparalleled OPEC production cuts and synchronized global growth. Of course, there have been many calls of oil’s pending demise. In 1999 The Economist forecast that oil prices may never again stray much above $10 a barrel as the world was “drowning in oil”. The Economist cover story in October 2003, as oil prices hovered above $30, read “The End of the Oil Age”. Fifteen years later investors are once again concerned about oil price sustainability, now fearing electric vehicle adoption. The laws of supply and demand have always won out over misplaced perception. That is likely the most important lesson to be learned by long term investors who take a look back at the history of oil markets.

The recent oil price cycle began in 2014 (Exhibit #1). For over 3 years oil prices had averaged above $80 per barrel. A sustained higher price environment facilitated technological innovation in the U.S. where exploration companies were in earnest unlocking significant oil resources from shale and tight rock. Oil production levels from Iran, Iraq and Libya had also begun to recover just as demand growth momentum in China was starting to wane. This combination of events became the catalyst for what would be an extended period of global oil inventory builds and a corresponding crash in oil prices.

In late 2014 OPEC, led by Saudi Arabia, balked on an expected production cut and instead proclaimed that market share was a greater priority than oil price. The Saudis believed low cost production and vast foreign reserves would ensure they could endure any pain associated with lower prices longer than producers in U.S. shale, the arctic, deepwater, and oil sands. Saudi Arabia underestimated not only the depth and the duration of the impending oil price down turn, but also the resilience and ingenuity of North American oil & gas companies. The first cracks in the Saudi market share strategy started to show in 2016 as social cost began to weigh on the Kingdom’s finances. Infrastructure spending was significantly pared back, civil servant bonuses and Ministerial pay cuts were enacted, and the banks even required a capital injection to help maintain liquidity. The Saudis began to speak of a willingness to cut production, but only if others would join. By OPEC’s November 2016 meeting, most members had bought into the idea, and for good measure Russia decided to join the party. The plan sounded great on paper, but implementation didn’t go quite as smoothly. Rather than inventories falling, they rose during the first few months of 2017. Russian cuts, for example, were slow to materialize, with claims from Russian producers that they could not curtail production during the winter months for fear of freezing
Pipes. Meanwhile, U.S. oil production from shales, which had been in decline since 2015, started to recover as exploration and production (E&P) companies lowered their break even cost. By the end of the first quarter U.S. oil inventories had reached a new all-time high. At OPEC’s next meeting, in May of 2017, the group extended production cuts for another 9 months. While initially this seemed like bullish news for prices, oil bears argued that even if OPEC managed to stick to the plan, a wave of OPEC oil would hit the market in March of 2018, U.S. E&P companies would continue to ramp production, and thus any drop in the global oil inventory overhang would be short lived.

As the summer progressed, oil inventories finally started to decline and have been doing so ever since (Exhibit #2). In November OPEC and Russia elected to once again extend the production cut, with the end of 2018 as the new target. OPEC’s efforts have been aided by global synchronized economic growth. During the first quarter global oil inventories witnessed a counter seasonable inventory draw and summer driving season is approaching. It now appears that OPEC has achieved its goal of returning inventories to a more normal level. Rather than declare victory the group intends to carry on, and from a seasonal perspective inventory draws may accelerate.

Exhibit 2: U.S. crude oil inventory (excluding strategic petroleum reserve)

As oil inventories fall, geopolitical risk becomes increasingly important to traders. Inventories and spare capacity among oil producers would be called on in the event of a large production disruption. Currently there is no shortage of geopolitical hotspots on the map. Iran is fighting a proxy war with Saudi Arabia in Yemen and Saudi Aramco’s oil infrastructure has been targeted by Iranian backed Yemeni Houthi fighters. Israel has become increasingly concerned with Iran’s presence in Syria and launched airstrikes killing Iranian troops. Both of these conflicts have real possibilities of escalating, and in doing so, impacting the oil markets. In Iraq there remains a possibility of a civil war if the Kurds look to form an independent state of Kurdistan. Libya remains a failed state with two governments and numerous tribal rulers. The Niger Delta Avengers could restart their bombing campaign at any time. Venezuela’s economy has cratered and is in the midst of a mass exodus with an estimated 1.5M people fleeing the country. The list goes on, and as inventories fall, each conflict becomes more relevant to the oil market.

There is also an increasing fear among oil analysts that after a three year period of underinvestment by the oil industry a supply shortage could materialize in 2019 or 2020. The introduction of additional barrels from legacy oil projects, which began construction prior to the down turn, is coming to an end. On top of this, global oil production declines naturally by 3% - 6% each year. This means that over 2.9M barrels of new production will need to be brought on line just to keep production flat. Global oil demand grew by 1.6M barrels per day in 2017, and general expectations call for another 1.4M-1.6M barrel per day demand increase in 2018 (Exhibit #3).

Exhibit 3: Crude oil demand (million barrels per day)

So where is the oil going to come from to meet global demand? OPEC lists the group’s spare capacity at 3.8M barrels, but that number is likely generous. The majority of OPEC’s cuts have come from Saudi Arabia, Kuwait, Qatar, and the United Arab Emirates, and it is with these countries where the space capacity would be found. Production...
from fellow OPEC members, Libya and Nigeria, has likely peaked. Iran faces a renewal of U.S. sanctions which will curtail its ability to export crude. Venezuelan production continues to nosedive with the national oil company PDVSA falling into a total state of disrepair. In the non-OPEC world it is Canada, Brazil, Norway, Russia, and the United States which will be called on to help fill any supply deficit. Canada faces pipeline constraints to its growth. Brazil has always looked promising, but results have typically materialized at a slower pace than expected. Norway is likely good for the startup of 440k barrels per day (b/d) in late 2019, and Russia faces U.S. sanctions which impede its ability to grow oil production. This leaves much of the heavy lifting to U.S. onshore unconventional (shale/tight rock) producers.

Oil production growth rates from the U.S. shales have been a key focus of traders for well over a year. There has been a belief that with any recovery in oil prices U.S. E&P companies would dramatically ramp capital expenditures, quickly flood the world with oil, and spoil the party. This thesis has acted as an overhang on energy equities as investors have feared that any sector recovery would prove to be short lived. It is worth noting that U.S. unconventional oil only accounts for ~6% of global production, but the rate of growth has indeed been awe inspiring. That said, many U.S. production growth forecasts will likely prove overly optimistic. Top management bonuses at major independent oil producers are increasingly being tied to shareholder return metrics rather than volume growth. On first quarter earnings calls management teams have generally talked about paying down debt and returning cash to shareholders over increased capital spend. Infrastructure bottlenecks are starting to appear. The most important basin in the U.S. growth story is the Permian, but the pipelines carrying Permian crude and natural gas are starting to fill. New infrastructure will get built, but that takes time and thus production growth may not be the straight line that oil price bears project.

It is important to remember that prior to unconventional development, U.S. oil production was in decline and the nation’s refineries were dependent on oil imports. These imports are generally a heavier gravity crude oil. This is the type of barrel U.S. refineries are designed to process, but the crude coming out of the Permian, Bakken, and Eagle Ford Basins is light sweet crude. U.S. refineries are starting to max out on their ability to take light crude, which means that the U.S. will increasingly depend on the export markets to take its oil. More export infrastructure needs to be built. The thesis of unabated U.S. production growth is real but not without risks.

The near and medium term prognosis for oil prices is positive, and the setup for longer term oil prices has improved as well. OPEC seems steadfast in its plan to stick with production cuts through 2018, and has talked about slowly bringing production back on in 2019. With summer driving season starting up, the rate of global inventory draws should only accelerate. We are already seeing upward pressure on gasoline prices, a trend that likely continues. Last month President Trump chastised OPEC members for causing artificially high prices at the pump, but his actions may inflect greater inflationary pressure on gasoline prices. The President has re-imposed strict sanctions on Iran. These sanctions will come into effect over the next 180 days, and could remove as much of 1M b/d of Iranian oil from the export market. The potential for negative geopolitical event to cause a price spike is increasingly very real. It has been recently reported that Saud Arabia would like to see Brent oil at $80 a barrel. This is a level seen not only as important to balance the Kingdom’s budget, but also induce investment in the sector. The Kingdom recognizes that if prices move materially higher due to a lack of supply, demand destruction kicks in and the rate of adoption of electric vehicles (EVs) would likely accelerate. The world will be watching to see how quickly Saudi Arabia steps in to make up for lost production elsewhere.

While EVs are certainly a long-term threat to the oil industry, calls for the industry’s pending demise are assuredly overly pessimistic. Only 25% percent of oil produced goes to fuel light transportation vehicles. The rest is consumed by chemical plants, trains, ships, and planes, each of which expect to see continued demand growth. There are ~2M EVs on the road today and forecasts for 2040 range between 250 and 500 million. So significant growth to come, but according to the Green Car Reports there are 1.2B light vehicles on the road today going to 2B by 2035. The installed base of gas guzzling vehicles is immense and likely grows as well. While EVs may push some oil demand out of the way, they will increase the demand for lithium, copper, aluminum, graphite, nickel, and cobalt. The path to 250M – 500M EVs may well face a new set of commodity based hurdles. For oil, the age old laws of supply and demand still suggest stable to moderately higher prices, for now.
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