Macro Observations

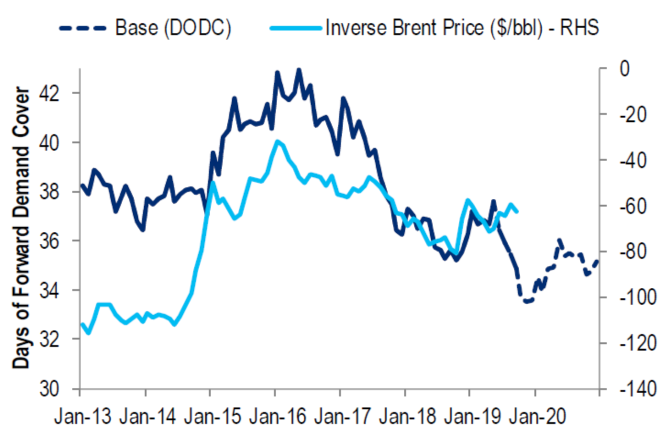
The September attack on the Saudi oil facilities was unprecedented. For a short time, half of Saudi oil production was offline during a period with minimal global oil spare capacity. The multi-billion dollar defense systems proved completely inadequate to the new technologies of drones and low flying cruise missiles. Now, over 15mmb/d of oil production in the Middle East, and more globally, is vulnerable. The attack should have increased the risk premium for oil, but it has had the opposite effect.

The strike on the Saudi oil facilities was so successful that the market now fears that some sort of negotiated peace is inevitable and that the Iranian sanctions will be lifted. The return of Iranian barrels to the oil market is the single greatest risk to the oil price. The US and Saudis have not retaliated to the strike for fear of escalation. The increase in military support from the US to the Saudis was minimal. The crown prince of Saudi Arabia said that a peaceful solution is the best course of action. Israeli Prime Minister Netanyahu, the largest international proponent of sanctions, is politically weak and at risk of criminal charges. Indeed, Trump tried to meet with Rouhani during the United Nations week but was rebuffed. The Iranians want sanctions removed before any sort of negotiation occurs, while the US increased sanctions in response to the attack. More importantly, the Iranian Revolutionary Guard is not in favor of a negotiated peace and wants to continue its expansionary foreign policy. Now, it is almost certain that ballistic missiles must be added to any nuclear settlement, which is something that the Iranians will not tolerate. Since the sanctions were put in place in May, there has been a steady increase in oil-related attacks. This includes attacks on tankers in the Gulf, a pipeline attack in Saudi, an attack on Shaybah (one of Saudi's largest oil fields), and, most recently, the attack on Abqaiq and Khurais. The situation is not stable. The most likely outcomes will either be the complete removal of sanctions or a further escalation. Nonetheless, a Sunni / Shia détente will not necessarily increase the chance of the sanctions being removed because it lowers the oil price risk for the Trump administration. The main impetus to the sanctions was originally the threat to Israel, and since the attack, an Iranian general publicly announced that Iran has the capability to destroy Israel.

The Saudis did an excellent job of appearing to recover from the attack, but it is difficult to know the real state of affairs given their incentives. The Saudis have incentives to downplay the situation to prevent the release of government emergency stocks, avoid losing market share to other OPEC members, appear competent in front of the Aramco IPO, appeal to national pride, and, most importantly, prevent panic. In late September, Aramco announced the restoration of production capacity, which was indeed confirmed by Genscape's satellite imagery. However, as the WSJ made clear quoting a Saudi official, production capacity is not the same as processing capacity. The Abqaiq facility experienced direct missile hits to 9 of its 11 spheroids (oil and gas separators), which will likely take months to repair. While oil production has recovered, if the Saudis are filling tankage with unprocessed oil that cannot be exported (as many analysts speculate), then Saudi is still producing from spare capacity and selling from inventory. This would mean that the oil market has perilously little buffer, and there is a risk that Saudi will have difficulty suppling the market as their inventories drain. In the beginning of October, Saudi exports were running about 800kb/d below the pre attack level, but this data is much too variable to draw any definitive conclusion. If the Saudis are forced to lower exports because of the attack, it is in their interest not to cause a price spike and have commercial inventories globally draw at a measured pace.

Economic concerns continue to weigh on the oil price and energy stocks. In particular, the US saw a poor ISM reading, although the Markit PMI was inline. With the unprecedented drop in global interest rates, it is fairly certain that a cyclical turn to the global economy will come, but the timing is not clear. In September, there was a large debate in the market about when the rotation from growth to value stocks would occur. The energy sector is the most beaten up, out of favor, value sector, so this debate is relevant. Cornerstone Macro believes that global PMIs will bottom in Q1 which will likely be the starting point a sustainable 12-18-month rotation into cyclical / value stocks. They also warn that the months before the rotation are the worst for cyclicals. Their outlook does not assume that a US / China trade deal is resolved, which would clearly pull forward the inflection point. With the impeachment process in the US and the deteriorating situation in Hong Kong, it seems likely that both sides in the trade dispute have even more incentive to reach a deal.

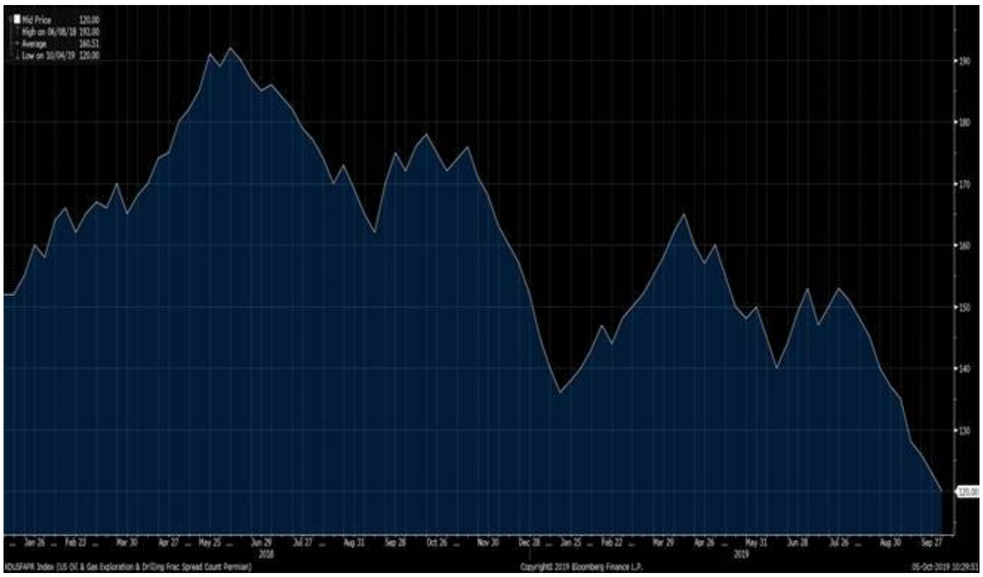
Figure 10. Global observable oil inventory outlook (days of demand cover, LHS) vs. inverted Brent price ($/bbl, RHS)



Source: Bloomberg, Citi Research estimates

The oil inventory situation remains constructive and improving. On a global basis, oil inventory in terms of days of demand cover is below where it was when we had triple digit oil price. In the OECD, we are now below the five-year average on an absolute basis and declining. According to the high frequency US data, in the last four months crude inventories have had the second largest draw in the history of the data going back to 1982 (the largest draw being in 2017 when OPEC was showing discipline, but there were no demand issues.) Moreover, it seems very likely that US inventories draw faster going forward as exports pick up to meet the disruption caused by the Saudi attacks. Asian countries will likely want to hold more emergency stocks and seek to diversify their sources of supply. OPEC is still intent on lowering inventories to raise the oil price, but their tool of inventory control is very inexact. The relatively benign inventory situation, coupled with the low oil price, indicates that the oil price is very much governed by sentiment. The two largest factors weighing on the price are the illusion of endless US tight oil growth and the perception of endless weak demand. Inventories will go lower, but it is also likely that the negative perception changes.

Permian Frack Spread Count
(Data from Primary Vision as reported by Bloomberg)



A significant shift in outlook with regard to US tight oil is imminent. The IEA anticipates 1.3mmb/d and OPEC anticipates 1.5mmb/d of tight oil growth in 2020, while tight oil has shown minimal sequential growth in 2019. ***Furthermore, from Q3 to Q4 2019, the IEA anticipates 490,000 b/d and OPEC anticipates 600,000 b/d of sequential tight oil growth, while this number is likely to be zero or even negative.*** The IEA and OPEC believe that the increase in Permian pipeline capacity will lead to an increase in production. ***However, the Permian frac spreads have dropped by an astounding 22% since the last week of July.*** You cannot grow oil production without fracking, and the frac spread count is much more indicative of oil growth than the rig count or pipeline capacity. YTD through July, on the official monthly EIA numbers, tight oil (states of TX, NM, OK, ND, and CO) has grown at an annualized rate of 247 kb/d versus last year's rate of 1,234 kb/d. Last year production accelerated dramatically into Q4 given the concern around the Iranian sanctions, while production this year is likely to decelerate, making the y/y comparison increasingly wide. On the weekly numbers (which are based on an econometric model and running overstated versus the official monthly numbers), tight oil has been flat for 4 months. This huge divergence in perception regarding tight oil is likely to be resolved during Q4 as production comes in much lower than forecasted.

Looking forward, tight oil will grow at significantly lower levels than in the past. The most obvious reason for lower growth is that Wall Street is demanding a FCF focus from the E&P industry. The more important factor is that the size of the resource base has been revised downwards over the last 18 months. In the early days of tight oil, the resource seemed unbounded, and most companies wanted to grow as fast as possible to pull forward NPV. With the realization that the resource is bounded, the prudent strategy is to grow much slower so that the companies do not hit their resource limit to growth. Judging from the public companies, Permian unconventional production can likely double, to an incremental 3.5mmb/d, while the rest of unconventional production only offsets declines in conventional oil. This assessment is greater than the EIA's International Energy Outlook published in September, which sees a total incremental 2.0mmb/d of production growth from the US. This assessment is less than a conclusion driven off the United States Geological Survey, which suggests an incremental growth of 4.5mmb/d, including locations only economical at $125 oil. Furthermore, the reaction function of the industry is now likely very muted. At $55 WTI, the industry is likely to keep US tight oil production flat. At $75 WTI, the industry likely produces substantial cash, but grows less than 750 kb/d, whereas, in the past, the industry would have burned through cash to grow faster. With 1.4-1.5mmb/d of global demand growth in normal times, the global oil industry is on the verge of serious supply issues if only the economy would cooperate.

The longer-term outlook for the oil price remains constructive. In September, IHS Markit reported that conventional oil discoveries fell to the lowest level in 70 years, with no major rebound in sight. After the fields in Brazil and Norway ramp, there is no large increment of conventional production coming. The Brazilian fields are now 75% ramped, leaving only the Johan Sverdrup field in Norway, which will start to produce in October. In August, electric vehicle (EV) sales actually lost share to internal combustion engine (ICE) sales, with global EV sales down 9% versus that of global ICE which was down about 5%. After the Chinese government cut EV subsidies in late June, Chinese EV sales came in at negative 16% y/y versus total Chinese car sales which was down 8% y/y for the month of August. While this is only the first month that EVs lost share, it pales in comparison to early 2019 when EV sales were growing at close to 100%. Long term oil demand models will need to be substantially altered if this trend continues. Poor residual value and long recharge times make EVs weak competitors to ICE cars when there are no government subsidies. Furthermore, from a governmental perspective, there are security of supply concerns for EVs (half of the cobalt produced in the world comes from the DRC) and environmental concerns related to the disposal of batteries. The alarm regarding long term oil demand growth is likely very overblown, but it will partly depend upon China's central planners and their concerns with regard to the security of oil supply.