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Crude Oil Market Dynamics

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The oil and gas industry has been negatively impacted by energy demand destruction created by COVID-19 AND a concurrent supply shock posed by Russia's refusal in March 2020 to hyphenate itself with OPEC in cutting oil production.

The fallout from COVID-19 continues and activity levels in the oil patch, already in decline since early 2019, are in a free fall. This is very likely the most rapid transition from economic growth to decline ever observed, and the same is true of the downward shift in accompanying energy demand. Less than two months ago, global crude oil demand in 2020 was expected to grow by well over 1 million barrels per day. U.S. crude oil production had continued to increase to meet this rising demand, exceeding 13 million barrels per day in February 2020. Now, global crude oil demand will be sharply negative in 2020, falling by perhaps 8-10 million barrels per day by some estimates, and doing so in short order.

The market implications are unambiguous – crude oil production should fall to adjust to crashing demand. This is what will happen in the U.S. as drilling activity slows dramatically. There is no question the U.S. is about to do its part in terms of contributing to the broader supply solution. Unfortunately, Saudi Arabia and Russia, the next two largest crude oil producing countries in the world behind the U.S. increased production in March 2020 rather than decrease production. Saudi Arabia/Russia action was a play for global market share with each attempting to gain at the expense of the other, and at the expense of the United States. And this was wrong. It was counterintuitive to market forces, and was a blatant attempt to capitalize on a potential global health crisis and the proper response to stop the spread of the virus in its tracks.

The Kansas Independent Oil & Gas Association (KIOGA) condemned the reckless actions by both countries to destabilize global energy markets in such an opportunistic fashion, and condemned their decision to attempt to punish the only major producing country in the world that is operating in a true market economy.

A substantial production cut was agreed by the OPEC+ countries including Russia on April 9th. This was an international dispute between two of the three largest crude oil producers in the world and the U.S. (the largest producer) was caught in the crossfire. Only the Trump Administration and Congress were in a position to exert meaningful influence on Saudi Arabia and Russia. KIOGA urged the Trump Administration to work to advance policies which lead to stable oil prices at a level which supports healthy and robust economic activity. We called on President Trump to use the tools at his disposal to defend American industry and jobs by correcting this imbalance. We cannot allow our freedom and jobs to be taken from us.

Those in the oil and gas industry are dealing with a two-punch blow to the economy. Businesses are closing and Americans are losing their jobs. It is critical that we unite to fight this pandemic without risking our national security. It was long overdue for Russia and Saudi Arabia to do their part. This unprecedented health crisis has shaken the economy and, most importantly, led to the grave loss of life. America will survive this pandemic. But to fuel our recovery, it is paramount that American energy leads the way.

How we got here

In March 2020, the oil markets – led by Saudi and OPEC - were blindsided by Russia's refusal to cut oil production with OPEC in a year when oil demand growth was expected to decline independent of the coronavirus. Russia made some noise about OPEC cheating on its commitments but abandoned its three-year alliance with OPEC primarily to harm U.S. oil production and gain global market share at the expense of the U.S. Larger political reasons such as U.S. sanctions on Rosneft and Nord Stream 2 also motivated Russia.

Unwilling to lose market share and also to force Russia to return to negotiations, Saudi Arabia announced plans to raise production from 9.7 million barrels per day (bpd) to 12.3 million bpd starting April 2020. It also doubled down on its bet by offering discounts of $4 to $8 per barrel on its production. In solidarity, the United Arab Emirates will increase supply by 0.8 million bpd.

A third of the world's population is today living in countries that have enforced moderate to severe lockdowns on virtually all human activity to mitigate the spread of COVID-19. In all, 27 countries have imposed lockdowns with nearly all of them opting for severe measures. Only three countries – Israel, Ireland, and the Czech Republic – have chosen to

impose moderate lockdowns. In addition, there are a handful of countries where lockdowns have not been mandated but citizens in caution have voluntarily limited activity.

How much oil demand is impacted?

These lockdowns are collectively impacting oil demand in an unprecedented fashion. The 27 countries under moderate to severe lockdown consume ~61 million barrels of oil daily. Including other countries such as Brazil where gangs are enforcing lockdowns, almost two-thirds of global oil demand – ~66 million bpd – is under threat of significant destruction from COVID-19.

What can we learn from China's lockdown?

These lockdowns are uncharted waters with little guidance on the extent of oil demand destruction. China is the only example we have of a region that has gone through this crisis before. Transportation data released by the Chinese Ministry of Transport suggests that lockdowns cut ~55% of road transportation and ~33% of truck traffic in February 2020.

How much oil demand will coronavirus destroy?

If we assume that these reductions in road and freight traffic hold across the ~30 countries with lockdowns. You can also believe that 60% of oil use in transportation is via gasoline, and the rest diesel and jet fuel. Given these assumptions, we have an estimated collective loss in oil demand of ~23%, which when applied to the ~66 million bpd of demand in the locked down countries translates to ~15 million bpd of demand destruction in 2Q 2020.

However, there are significant uncertainties, e.g., will COVID-19 impact all countries the same way as it did in China? Assumptions around the share of fuels in oil demand may also vary. Finally, several other factors could also provide significant influence on oil demand including demand elasticity at depressed prices, potential for a quicker rebound or an extended lockdown, and impact of government stimuli.

Oil and gas operators will cut production as oil prices reach new lows - WTI is barely at $20 in early April - but the extent is uncertain. But we do know that most of those supply cuts will likely happen in the U.S. Many large U.S. oil producers have started cutting capital spending with most reductions averaging 25% to 35%.

U.S. producers are cutting drilling budgets but continue completing well inventories. This could limit the supply impact. The last oil price crash was followed by supply cuts that exceeded 1 million bpd over 15 months beginning in late 2014. The U.S. oil industry will need to deliver much deeper cuts this time – probably around 2 million bpd through 2020 – in order to keep oil prices from falling and staying at marginal cash costs.

What Implications Can Be Drawn From Anticipated Demand Destruction?

Demand destruction of this order is unprecedented and would trigger significant implications.

1. Oil and gas producers will intensify capital cuts to cut growth. Marginal assets such as stripper wells will be distressed.
2. The industry will be caught up in a stampede for oil storage, which is underway with limited access to it especially for smaller producers.
3. Refiners will likely intensify cuts to crude runs and start ramping down utilization further as fuel demand evaporates.
4. Lack of fuel demand will trigger force majeures by oil refiners. Some refiners are invoking force majeures on crude oil purchase contracts for April.
5. Significant changes in the product mix should be expected as refiners will try to shift yield toward diesel where demand destruction is expected to be lower than that for gasoline.
6. As refinery operators start cutting runs and utilization rates, they are likely to advance turnaround and other maintenance activities although this will vary based on asset type, location, and historical maintenance patterns.
7. Petrochemical producers will start evaluating their feedstock mix as refined product prices decline dramatically impacting relative competitiveness of naphtha and ethane for producing olefins.

What happens now?

A substantial production cut was agreed by the OPEC+ countries on April 9th while other countries have signaled that their production is falling. The drop in oil demand, however, is so significant that this cut in supply will not begin to tighten the market until July or August. In the meantime, crude oil prices will be shaped by global stock build, the destruction in demand, OPEC+ compliance with new production targets, and the point at which global supply will actually be below global demand. These are all fluid developments over the next several months. Even so prices should recover over the course of the summer, fall and into the winter. Filling the Strategic Petroleum Reserve (SPR) in the next phase of the stimulus is likely the next market-shaping action of the Trump Administration.

Countries Agree to Massive Supply Cut - The 20 Countries of OPEC+ agreed to an historic production cut on April 9th to address the demand destruction of COVID-19. They pledged to cut production by 9.7 million b/d from an October 2018 base, except in the case of Saudi Arabia and Russia who will cut from 11.0 million b/d.

This agreement is a significant victory for Saudi Arabia. The Saudis will cut production in May by close to 4.0 million b/d from April's levels. This is a dramatic reduction. Russia, who refused to cut production in early March, has already lost production and will cut by roughly 2.0 million b/d between end March and end June. Meanwhile Iraq has pledged to cut almost 1.1 million b/d. This is another notable victory for Saudi Arabia because Iraq has done very little in recent years in support of production restraint. Most of the other contributions to this epic agreement were close to our expectations. Except Mexico, where the cut will be only 100,000 b/d after being asked to cut by 400,000 b/d.

A key wrinkle in the agreement is that the production cut is only for two months - May and June. After that, they will scale back their restraint to roughly 7.7 million b/d (from the October 2018 base) for the rest of the year. There is a subsequent agreement for 2021 and early 2022.

U.S. oil production is projected to decline by 1.7 million b/d. Meanwhile Canadian production is falling and is projected to be 1.4 million b/d lower than February levels. Brazil has now stretched their expected reduction to 300,000 b/d. Others will cut production in response to lack of demand and low oil prices.

What Does this Mean for the Market? - Even with lower production and even weaker oil demand, supply will exceed demand through June, and basically balanced in July. After July, demand will exceed supply.

The massive stock build underway will essentially stop in July and begin to reverse in August. The excess global inventories building this year will fall from a peak of about 1.6 billion barrels to a level under 700 million barrels.

Prices will recover - If all of these supply pledges come true or close, and if the social distancing and other measures associated with COVID-19 are eased or lifted, then oil demand will recover in the face of lower supply. The global market will tighten, and prices will rise. There are several uncertainties in the market that will temper the price recovery. The first is the inventory overhang which will keep spot prices in the physical markets below futures for several more weeks (contango market), and thus attenuate the impact of recovering prices. The second is the possibility that as prices rise late in the year, some of the production restraint in non-OPEC countries will diminish. The third is the depth and duration of demand destruction this year. Even so, looking out from today, WTI prices are projected to be in mid to upper $30s late in the second half of 2020 and possibly rise to $45-$55 in 2022.

SPR Fill - The success of the OPEC+ agreement was predicated on the active participation of President Trump. Although he could not pledge production cuts by the U.S. private oil industry, he indicated production would fall significantly, and essentially took the objections of Mexico to cutting production off the table. The next market-shaping action the Trump Administration is

likely to take is a deal with Democrats in Congress in the Phase 4 stimulus to appropriate $2-$3 billion to purchase 65-75 million barrels of crude from U.S. producers to put in the SPR. This government stocking is a form of demand that would support prices as well.

Implications - A number of implications can be drawn from these thoughts and the oil and gas industry may consider paying attention to them.

1. Oil and gas companies should prepare for an average WTI oil price of $20 to $35 a barrel for 2020. Modest improvements will come in 2021 with recovery only in 2022.
2. Global oil inventory has surged and any price rise will have to wait until those inventories are depleted. Further, nearly two-thirds of U.S. shale production has been hedged at ~$55 a barrel for 2020 and is unlikely to fall at current prices.
3. U.S. oil production will fall – only by how much is up for debate. Even if hedges protect U.S. shale operators through 2020, sharp cuts will come in 2021. Unlike the oil price crash of 2014-16, there is limited private equity appetite to buy distressed operators. As a result, operators that are small or hold undifferentiated acreage will face significant distress.
4. North American natural gas producers will be an unlikely beneficiary of this oil price crash. As light tight oil supply falls so will associated gas production, which has driven over 50% of gas supply growth in North America in recent years. This reduction in the growth of gas supply should help Henry Hub pricing.
5. However, some of this will be limited by caps on natural gas demand growth that will come from delays to the second wave of LNG export projects in the U.S.
6. Refiners' have gone from optimistic dreams of a "golden year" thanks to IMO 2020 to a nightmare scenario of cutting refinery runs as refined product demand grinds to a crushing halt due to COVID-19 lockdowns around the world. Downstream companies with complex refineries, strong linkages to export markets, mature commercial trading teams, and integrated petrochemical assets will weather through these times but other refiners will struggle.
7. Midstream companies will face challenges with product exports, in particular, light tight oil, which will have to be discounted extensively to find overseas buyers. Support for existing and new capital projects will decline. Finally, expect investor flight to quality based on contract portfolios.
8. Shipping and logistics players with tankers, terminals, product storage tanks, and blending capabilities may benefit in this environment as a contango market drives interest and demand for storage.