Investec

The Dynamics of the Oil Market

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Supply, Demand and COVID-19

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Background

As a result of government lockdowns across most of Europe, USA, India, and other countries, demand for crude oil products has plummeted. According to some estimates, about 40% of the world's population are currently advised to stay home to limit the spread of COVID-19. The shutdown orders have contributed to significant contractions in service industries with extraordinary knock on effects for energy markets, the travel sector and manufacturing worldwide.

Supply and Demand Dynamics

- Global demand for crude oil in 2019 amounted to 100.75 million barrels per day – According to the International Energy Agency demand in May 20 will fall by 26m barrels per day.

- Global crude oil production in 2019 amounted to 100.57 million barrels per day – According to the International Energy Agency production in May 20 will fall by 10m barrels per day.

- Approximately 58.5 million barrel per day of global oil production comes from the top ten countries, US 15m, Saudi Arabia 12m, Russia 11m, Iraq 4.5m, Iran 4m, Canada 3.5m, UAE 3m, Kuwait 3m, Brazil 2.5m.

- The Organisation of the Petroleum Exporting Countries (OPEC) is an intergovernmental organization of 13 nations, founded on 14 September 1960 in Baghdad by the first five members (Iran, Iraq, Kuwait, Saudi Arabia, and Venezuela) – according to 2019 data OPEC members countries produce over 30 percent of the world's crude oil which is roughly 32million barrels per day.

Timeline of Recent Events

- On 08 March 2020, Saudi Arabia initiated a price war with Russia by opting to increase oil production, facilitating a 65% quarterly fall in the price of oil. The price war was triggered by a breakup in dialogue between (OPEC) and Russia over proposed oil-production cuts in the midst of the 2019–20 coronavirus pandemic. Russia walked out of the agreement, leading to the fall of the OPEC+ alliance.

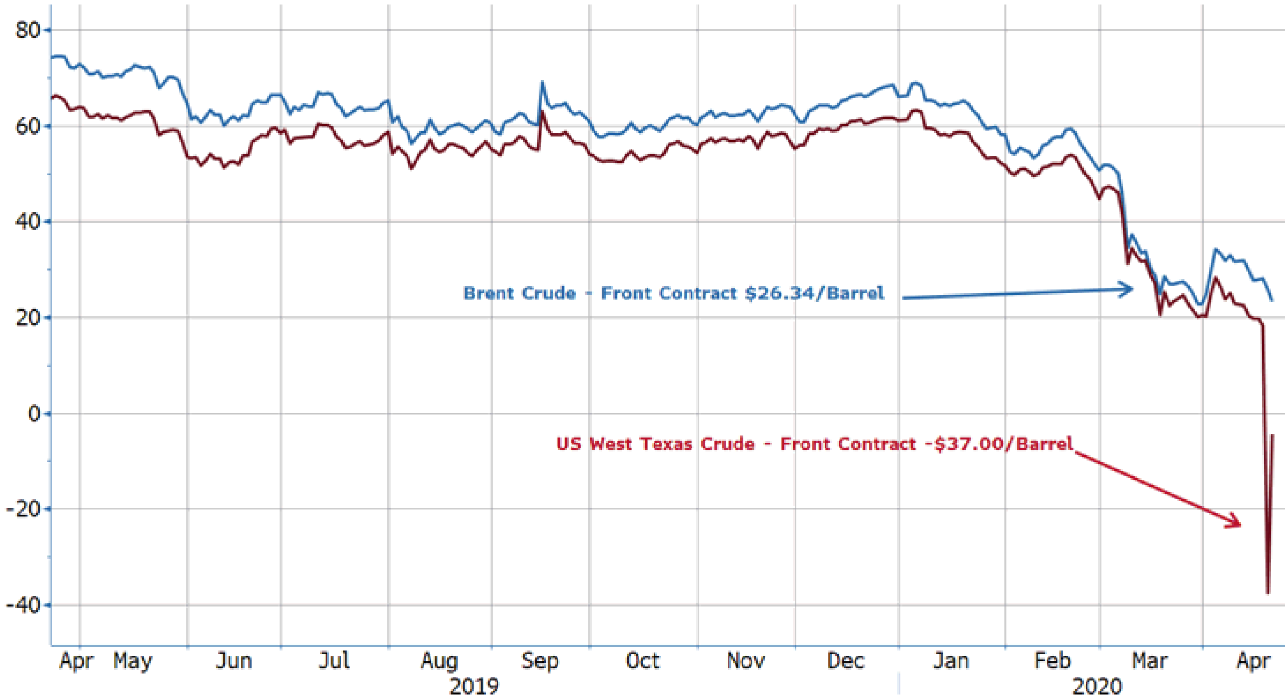
- On the 09 April 2020 OPEC and allies including Russia agreed to an historic 10 million barrel per day production cut.

- Brent Crude oil prices have fallen over 70% since the start of 2020. From $66/barrel to low $18/barrel (21 April 20).

- US West Texas Crude oil prices have fallen over 150% since the start of 2020. From $60/barrel to low -$40/barrel (20 April 20).

- On the 20 April 20 US Oil prices plunged into negative territory for the first time on record. Sharp selling comes as uncertainty mounts around storage. The dynamic of negative prices is playing out amid worry that key storage facilities in the US are nearing capacity.

Brent & WTI Crude – Front Contracts 20 April 2020:



Source: Bloomberg

Can Brent Crude Oil follow US Oil and trade at negative prices?

- West Texas crude oil storage in the U.S. is limited as well as landlocked, making transportation more difficult which can lead to a supply glut and negative prices as we saw 20 April 20.

- Crude stockpiles at Cushing, Oklahoma, America's key storage hub and delivery point of the West Texas Intermediate contracts was at an estimated 55 million barrels at the end of February 20. The hub has working storage capacity of 76 million according to the Energy Information Administration. It is assumed that the Cushing, Oklahoma facilities reached capacity leading to oil contracts being sold at negative prices.

- Brent crude is priced in the middle of the North Sea, where tanker storage is ample and very accessible so product can be moved at a faster pace and to anywhere in the world if required, not to say it can't/won't happen but it will be more difficult for prices to trade below zero.

- The global oil tanker fleet has a capacity to hold around 4 billion barrels of oil products. Oil tankers account for around 29 percent of global seaborne trade.

- There's another important difference between the two contracts. While the Brent futures contract is cash settled against the value of the Brent index price, the WTI contract is physically settled, meaning a trader must take delivery of barrels of oil at Cushing in Oklahoma!

Definitions

The forward curve essentially defines the prices at which a contract for future delivery can be concluded today. When the crude oil forward curve is upward-sloping, the market is in **"contango".** When crude oil forward curve is downward-sloping, the market is in **"backwardation".**

The forward market today is in Contango. Example Brent Crude Front Contract on the 20 April 2020 was priced $26/barrel – Brent Crude December 2020 contract was priced at $36/barrel.

- **The Meaning:**

  20. **Contango** - The spot price of a commodity is lower than the forward price – The higher costs looking forward can be broken down into the cost of borrowing, insurance and storage. Borrowing and insurance costs are negligible so the massive increase is down to the increasing cost of storage.

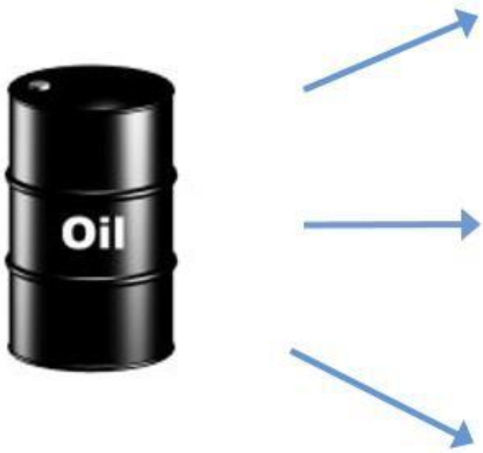
  21. **Backwardation** - The forward price of the commodity contract is lower than the spot price – The lower forward price can be broken down from an estimate that when in a thriving economic environment, oil demand is high and products are only held in storage for very short periods leading to very low estimated storage cost looking forward.

Crude Oil Products

- A barrel of Crude Oil is refined in to various products – The more you refine a product the higher it costs – Example petrol (light end) more expensive than diesel (middle distillate).

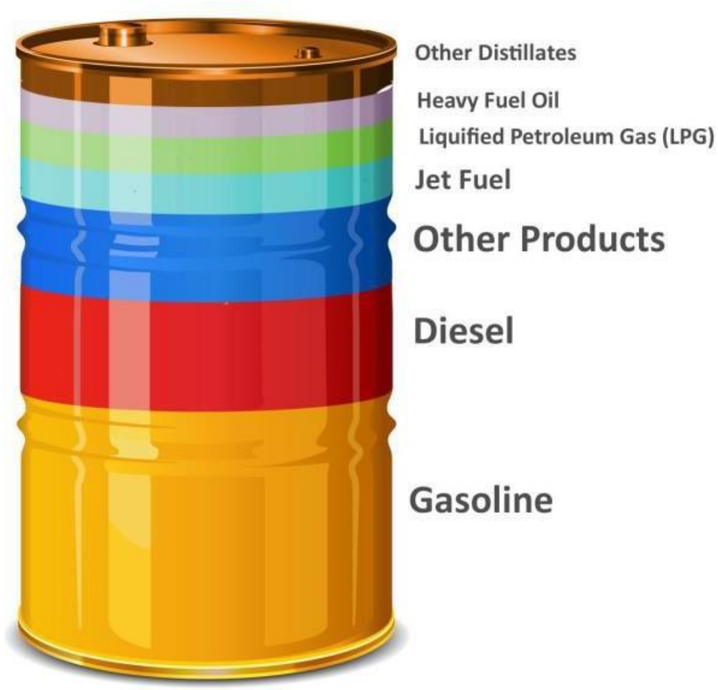
Crude Oil

- WTI
- Brent



- **Light ends**
  - Petroleum Gas
  - Naphtha
  - Petrol
- **Middle distillates**
  - Gasoil
  - Diesel
  - Jet
- **Heavy distillates**
  - Fuel Oil
  - Bunker Fuel

- A 42-U.S. gallon barrel of oil yields about 45 gallons of petroleum products:
  1. Gasoline makes about 20 gallons of oil.
  2. Diesel makes up about 12 gallons.
  3. Jet fuel makes up about 4 gallons.
  4. 6 gallons of a barrel of oil makes a range of other petroleum products, example Heavy Fuel Oil.



Source: Medium.com

3 ways the market can stabilise over the coming months according to IEA estimates

1. The OPEC+ production cut in May of 10 million barrels per day will provide some immediate relief from the supply surplus in the coming weeks, lowering the peak of the build-up of oil stocks

2. 4 countries (China, India, Korea and the United States) have offered their strategic storage capacity to industry to temporarily park unwanted barrels or are considering increasing their strategic stocks to take advantage of lower prices. This will create extra headroom for the impending stock build-up, helping the market get past the hump.

3. Other producers, with the United States and Canada likely to be the largest contributors, could see oil production fall by around 3.5 million barrels per day in the coming months due to the impact of lower prices.

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