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MARKET UPDATE: CRUDE OIL IN THE TIME OF COVID-19

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OVERVIEW

Crude oil can be quite rightly defined as one of the most volatile commodities and yet among the most relevant for its significant impact both on the real economy and on financial markets. Its fluctuations largely affect the financial statements of the companies operating in the O&G industry, which contributes nearly 4% of the global economy. In order to better assess what is going on over these days, it may be worth to gain some confidence with the key drivers for this asset's price. Let's split them between:

→ *Supply-side factors*: OPEC members' production policies play a fundamental role in driving the price of this commodity under all of its three declinations (Brent, WTI, OPEC basket). OPEC is responsible for almost 44% of global crude production, and its huge reserves accounts for about the 80% of the total: it is pretty clear why their decisions weigh this much. Such policies, in turn, generally depend on geopolitical developments (e.g. international relations) and technological shocks (e.g. fracking technique).

→ *Demand-side factors*: Any factor affecting the economic growth and international trades, generally speaking; among them we observe: economic cycle, demographic growth, political and military tensions, technological shocks in the most energy-intensive industries, transition to renewables, green policies (including carbon-related taxation and emissions' regulation).



Figure 1 – WTI Historical Price (inflation-adjusted)
Source: Macrotrends

Looking at the WTI historical price, there are sudden climbs and dramatic drawdowns: this is how the asset's behavior could be summarized and, for sure, its track would be too scary even for a rollercoaster addicted.

There is one thing we want to focus our attention on: the historical behavior of WTI. In fact, a conscious analysis of the present cannot overlook at least a little understanding of what drove this security's insane behavior over the past decades. More in detail, in this section we will travel through (with a complete albeit brief chronological review over the past 70 years) the main shocks this commodity has undergone.

- i. **The 1973 oil crisis.** This event, also known as the *first oil shock*, was triggered by the oil embargo promoted in 1973 by OPEC members in response to the Western countries' supporting Israel during the Yom Kippur War. The result? Oil price soared by 400% before the end of the embargo (1974), targeted countries drafted acts and regulations to ration oil consumption and the US government eventually asked its citizens not to put up Christmas lights.
- ii. **The 1979 energy crisis and 1980s oil glut.** With the effects of the *first oil shock* still not absorbed in full, the outbreak of the Iranian Revolution led to a sharp interruption in the local oil extraction and caused the commodity's price to spike up to \$130. However, the overall disruption on the supply side was around only 4%, as other OPEC nations managed to boost their production and partially fill the gap: needless to say, by looking at fundamentals we assessed that price movement was more emotional than rational. As a consequence, a huge correction took place during the 1980s. What is commonly referred to as the *1980s oil glut* is nothing but the natural outcome of an excess of stored capacity by exporting countries clashing against a slowdown on the demand side. Such braking can be traced back to two factors: a) a reaction to the high oil price; b) a declining consumption in industrial economies.

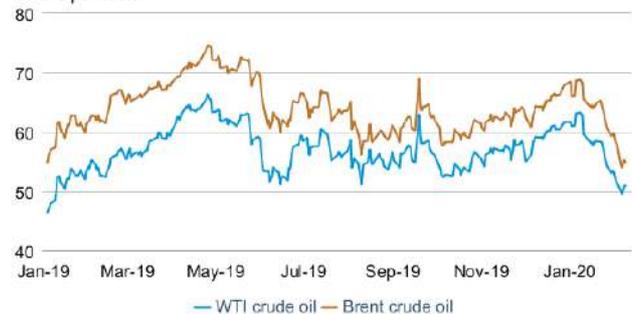
- iii. **The 1985-1986 oil crash.** In 1985-86, OPEC changed its objective from price targeting to securing a share of the market in response to an increase in production in non-OPEC areas, like the North Sea. This event led to the price collapsing as much as 66% from November 1985 to March 1986.
- iv. **The 1990 oil shock.** This is the only case in which an external shock, rather than a period of iterated higher prices, led to a sudden drop in the oil price (-48%). The triggering event was the Iraqi invasion of Kuwait, which removed a large portion of the Iraq/Kuwait crude from the market.
- v. **The 2008-2009 crash.** Such even was the response to the 2008 financial crisis, where, following the fate of many other financial instruments, crude oil price declined by more than 75%. A rebound of the economy in the wake of the market crash, together with some strategic decisions from the OPEC members, helped this commodity to (almost) restore its pre-crisis price level in just two years.
- vi. **The 2014-2015 crash.** During 2011-14, the US alone added 4 mb/d to global oil supplies. Combined with two other unconventional sources (Canadian oil sands and biofuels) more than 6mb/d were added to the international oil market. At the same time, the policy the OPEC decided to maintain in such framework was not helpful: the alliance, indeed, decided for the nourishment of its market share (increasing its global production as well) rather than for controlling the volatility of the price. As a result, crude oil experienced a 51% drop between October 2014 and January 2015.

JANUARY AND EARLY FEBRUARY 2020

Several events in January contributed to significant uncertainty in crude oil markets and the world economy in general. Early in the month, geopolitical developments drove oil prices. Brent spot prices closed at \$70/b on January 6th, the highest level since

May 2019, following U.S. military operations in Iraq. However, as tensions in the Middle East deescalated and market concerns over any related oil supply disruptions faded (e.g. the attack to Saudi Aramco's production site), during January, crude oil prices fell. The price decline accelerated with concerns about economic growth, as a result of the outbreak of coronavirus. Oil prices declined for five consecutive days starting on January 21st. To a further reduction of the demand in January contributed a warmer-than-normal temperature

Figure 1. Crude oil front-month futures prices dollars per barrel



cia OVE Group and Intercontinental Exchange, as compiled by Bloomberg L.P.; WTI=West Texas Intermediate

across most of the northern hemisphere, which eventually led the EIA to cut its estimates on heating oil consumption.

CORONAVIRUS: EFFECT ON PRICES AND SUPPLY/DEMAND ESTIMATIONS

During February and in particular in the latest week from February 24th to 29th, oil price saw a sharp decrease due to coronavirus spreading in different countries. Indeed, on Feb. 24 Brent crude was down by 4.1% from the previous day, to \$56.09 a barrel and U.S. crude futures fell by 4% from the previous day, to \$51.26.

On Feb.27th, Brent crude was down at \$51.96 per barrel. West Texas Intermediate (WTI) futures fell to trade at \$47.38 per barrel. In the five trading sessions through Thursday, Brent has dropped 10.6%, while WTI has declined 10.4%, their biggest five-day percentage losses since August 2019.

The spread of coronavirus to large economies such as South Korea, Japan and Italy has caused concerns



that fuel demand growth will be limited. The magnitude and duration of the coronavirus's effects remain highly uncertain, but experts and institutions are reducing their estimates for global oil consumption for 2020 as a result of the events. Moreover, travel restrictions in China, that began in mid-January, are disrupting petroleum demand in China as well as in other countries.

For example, EIA (US Energy Information Administration) expects liquid fuels consumption in China to average 14.8 million barrels per day (mb/d) from February through April, when EIA assumes the effects of travel restrictions will be most acute. That level of consumption is 0.4 mb/d less than forecasted in their last month's short-term energy outlook (STEO). Furthermore, jet fuel demand is likely to fall because of travel restrictions and demand for other oil products is likely to fall because of lower economic growth. EIA has also lowered its expected liquid fuels consumption for the rest of Asia (excluding China) by 0.1 million b/d for the period from February to April 2020 compared with last month's STEO.

Also, the Organization of the Petroleum Exporting Countries (OPEC) reviewed expectations for world oil production. Oil demand growth in 2020 is revised down by 0.23 mb/d from January assessment. Taking into account this, global oil demand is now forecasted to grow by 0.99 mb/d and average 100.73 mb/d for 2020, with OECD oil demand growing by 0.01 mb/d in 2020, while non-OECD oil demand is growing by 0.98 mb/d. The outbreak of the Coronavirus in China during 1H20 is the major factor behind this downward revision.

Concerning the supply side, oil markets faced renewed supply disruptions from Libya, where unrest in the country led to force majeure events at its main export terminals. EIA estimates that the export terminal disruptions caused Libya's crude oil production to average 0.8 mb/d in January, down from 1.2 mb/d in December. The outages became more severe later in the month, and by the first week of February, when EIA estimates Libya was producing less than 0.2 mb/d.

Non-OPEC liquids production growth for 2019 is revised up by 0.02 mb/d from the previous month's assessment and is now estimated at 1.88 mb/d, to average 64.36 mb/d. With this, US liquids production growth YoY is revised up by 11 tb/d to average 1.68 mb/d. In contrast, non-OPEC liquids production growth forecast for 2020 is revised down by 0.10 mb/d from last month's assessment and is projected to grow by 2.25 mb/d to average 66.60 mb/d.

More in general, EIA expects that most of the decrease stems from decreased liquid fuels consumption in China during 1H20. EIA expects that some of the effects of lower oil consumption early in 2020 will be offset by reduced production from the OPEC. EIA assumes that this alliance will reduce crude oil production by 0.5 mb/d from March through May in response to concerns over oil demand growth. This cut would be in addition to existing OPEC cuts.

IMPLIED VOLATILITY OF OIL PRICES

Implied volatility of crude oil prices increased to the highest levels since September 2019 by early February, as illustrated in higher premiums for options contracts amid the uncertainty surrounding global economic growth and supply disruptions in Libya. The implied volatility of Brent prices increased by 9 percentage points from January 2nd to settle at 36.0% on February 6th. WTI implied volatility increased by 13 percentage points to settle at 37.5% over the same period.

Figure 3. Crude oil implied volatility





CONCLUSIONS

Oil price is known for being volatile. Indeed, during years 1950-2020 the price of this commodity experienced significant fluctuation with sharp falls (more commonly) or positive increments over a limited period of time. As mentioned above, implied volatility is currently around 36% for Brent and 37.5% for WTI.

With the spread of Coronavirus, oil price experienced a fall around 11% in the last week, as a result of the concerns over a drop on the demand side given the slowing global economy. Compared with the events mentioned in the opening paragraph, however, this shock has a far lower magnitude. Indeed, even considering the strong media-attention around this event and the consequences of travel restriction, reaction appears to be relatively contained. How this story will further develop will mostly depend on two key factors: how OPEC+ countries will set their production policies and the velocity at which the virus will continue its diffusion.

However, it may be worth to notice how O&G companies corrected their stock prices over the past week. Given an average correlation of around 0.51 (between the main European O&G stocks and the Brent crude price) the strong drawdown these stocks recorded in the recent past could signal a favorable buy opportunity, were the near future outlook not to worsen suddenly.

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