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Coronavirus and Saudi Arabia oil policies: Modelled Oil Price Scenarios to 2030

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Introduction

This article presents modelled oil price scenarios for the period to 2030 to see the impacts of the coronavirus pandemic and the tussle over market share between Saudi Arabia, Russia and the USA.

The analysis uses a proprietary Global Petroleum Model that combines GDP growth, population and geopolitical scenarios to generate quantitative outcomes for GDP growth, oil and natural gas demand and supply and oil price. The model dynamically evaluates the influence of oil price on supply and demand.

Scenarios and Analysis

A subset of four scenarios is published in this article. These have the following common scenario elements:

- Libya returns to full production capacity in early 2020s.
- Venezuela returns gradually between 2022-2027.
- Sanctions on Iran are lifted in 2025.
- Iraq reaches a production capacity of 6 million b/d in the early 2030s.
- Deep-water Brazil reaches peak production of some 6 million b/d in the mid 2030s.
- US LTO has a maximum production potential of 8-9 million b/d in the early 2030s.
- Russia's crude oil production starts to decline in the mid to late 2020s
- Gasoline and diesel demand are forecast from a proprietary road vehicle model with an average global EV market penetration of 60% of new vehicle sales in 2040. These electric vehicle sales are 80% battery electric vehicles or hydrogen fuel cell electric vehicles.
- No other global recessions or conflicts/sanctions regimes significantly affecting production or demand.

The subset of four scenarios combine Saudi Arabia's production policy (over the next two years, either enough for the market or more than the market demands), and the impact of coronavirus on the global economy (either sharp, deep recession or zero growth in the first half of 2020). These two macroeconomic cases run through the Global Petroleum Model yield global real GDP (PPP) growth rates for 2020 of -2% and +1.5% respectively. Figure 1 shows just the price outcomes for each of these scenarios.

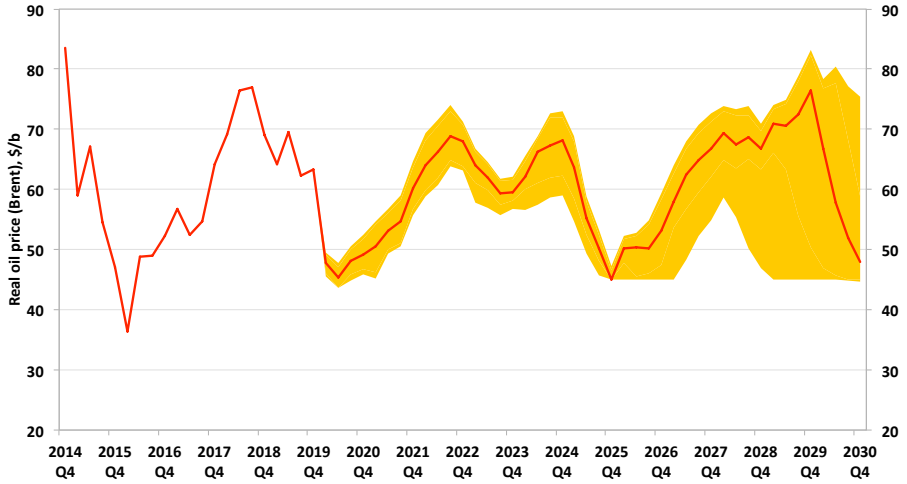
The oil market remains oversupplied as it has since 2014 and this is most likely to continue into the second half of this decade. In this situation the oil price is highly sensitive to OPEC policy and the effectiveness of its implementation. If OPEC policy is to support the price, the price can be held at or close to a desired level by production restraint. If OPEC policy is to pursue market share, the price will sink to the cost of the marginal new barrel around $40-45/b (rising demand), or the marginal cost of production some $30/b (flat or falling demand). Clearly, the combination of Saudi Arabia's market share policy and the effects of coronavirus will push the oil price into a range around $30/b for as long as the economic impact of the coronavirus lasts. Note that this is the average price over a 3 month period, and the price can fall significantly below this level over shorter timescales.

Given the scenario conditions described above, in the second half of the decade, supply and demand are forecast to move closely into a tightening balance and the oil price is expected to rise towards $70-80/b even without OPEC intervention.

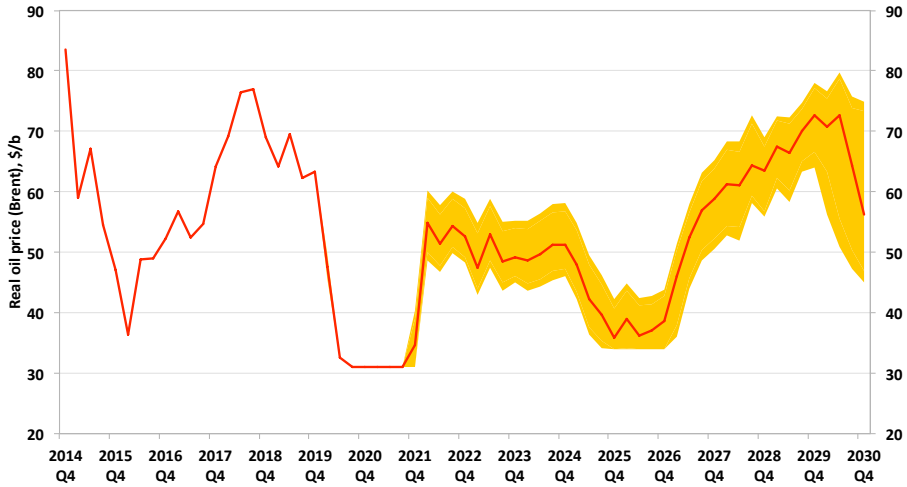
The following additional observations and comments are relevant:

- The impact of coronavirus on the global economy and hence demand for oil is profound, particularly in the most likely case of deep recession. Crude oil price remains below $50/b until after mid 2025.
- The impact of excess production by Saudi Arabia is significantly less important in reducing the oil price and hence impacting global oil demand. This is not surprising given demand suppression by the coronavirus impacts.
- Up to the mid 2020s, USA light tight oil (LTO, shale oil) production is forecast to continue to increase at a reduced rate into 2021 before falling to a plateau significantly below peak production. This takes into account the time lags in unwinding operations, hedging horizons and costs of supply. Financially exposed operators, even in the lowest cost Permian basin, are unlikely to survive without considerable external assistance.
- The modelling indicates that Saudi Arabia's market share policy will be a futile gesture in the face of the overwhelming economic impact of the coronavirus pandemic**.** In the 2020s, Saudi Arabia would be better served by a policy of maximizing revenue rather than market share by production.

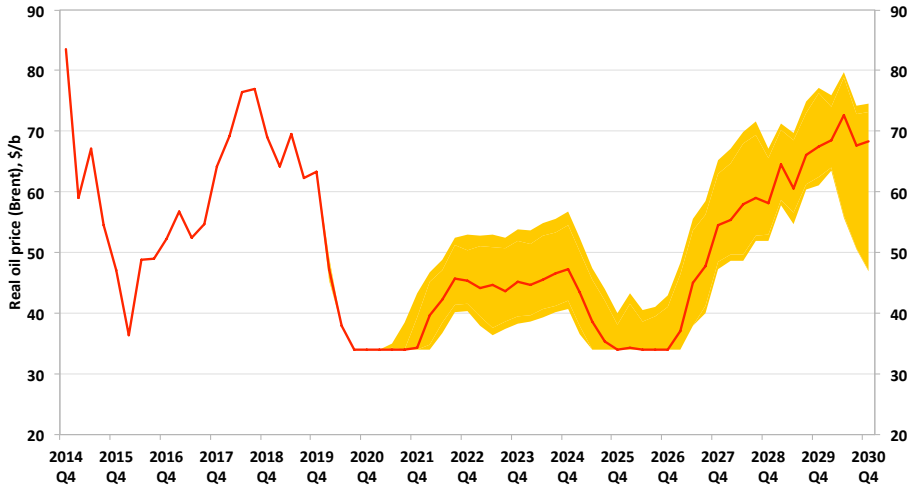
(a). Mild Coronavirus impact (zero growth in first half 2020 recession)
Oil demand in 2020 up 0.5 million b/d on 2019
No increase in production by Saudi Arabia



(b). Mild Coronavirus impact (zero growth in first half 2020 recession)
Oil demand in 2020 up 0.5 million b/d on 2019
Excess production by Saudi Arabia in 2020 and 2021



(c). Severe Coronavirus impact (deep, sharp recession in 2020)
Oil demand in 2020 down 0.5 million b/d on 2019
No increase in production by Saudi Arabia



(d). Severe Coronavirus impact (deep, sharp recession in 2020)
Oil demand in 2020 down 0.5 million b/d on 2019
Excess production by Saudi Arabia in 2020 and 2021

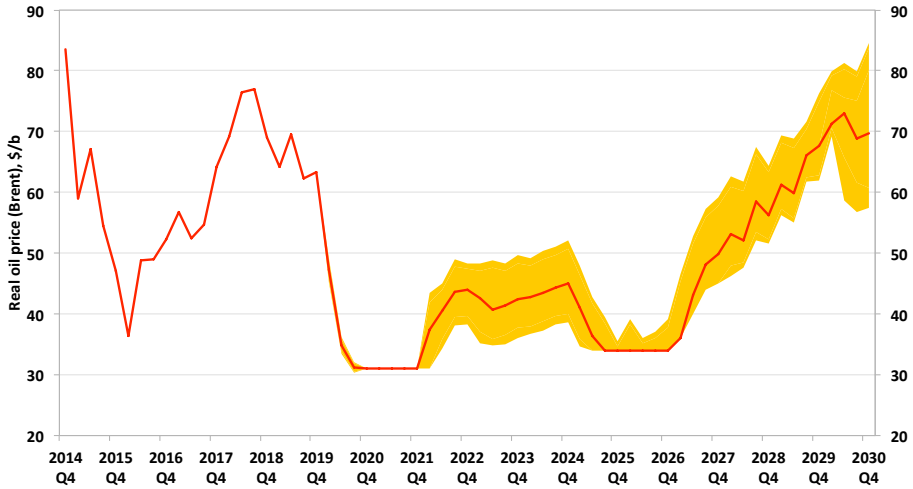


Figure 1: Real oil price (Brent, Q4 2019) outcomes for four scenarios. Yellow band is 90% confidence.