Global Letter

The price of oil – peak incoherence

Wishing will not make it so

Analysis[1] of the price of internationally-traded oil customarily rests on two basic tenets:

- First, price is determined fundamentally by the interaction of supply and demand, and so will be (approximately) equal to the marginal cost of production; and
- Second, it is difficult for producers to manipulate the price for any but a very short time.

From time to time, however, a view resurfaces[2] that, because some producers 'need' a higher price in order to finance their countries' expenditure plans or budgets[3] they will bring this about, through their own actions. However, this view is disputable, for a range of reasons.

No one would deny that the price of oil can be volatile. There are periodic shocks to supply – wars, natural disasters, and the like; and shocks to demand, such as occasional panic stock-building. The 2 mbd supply disruption in 1973/74 quadrupled the oil price; the stock-building spike in 1978/79 doubled it; the oversupply through 2014/15 halved it.

The 'fiscal needs of producers' theory

None of this, however, should be taken as evidence that a single producer, or even a group, can simply decide, because they have a fiscal need, to take action that will hike the price. That notion founders on at least two reefs; the first behavioural, the second economic.

- The behavioural: if producers can simply raise the price of oil through their own actions, why would they do so only when they have fiscal 'need'? They would just do it.
- The economic: the scope of a single producer, or even a group, to raise prices by their own actions is limited – in the near term, and even more longer term. It is worth reflecting on why.

A producer supplying the market would restrict supply only if the resulting increase in price more than offset the proportionate cutback in their volume restriction. And certainly, with users having little near-term scope to economise in the use of oil in oil-using installations, and their scope to switch to alternative fuels similarly limited, prices can indeed be expected to rise in response to supply restrictions. Thus a probably representative *ex post* 1-year price elasticity of, say, 0.1 would present a monopoly producer with the option of cutting production and seeing revenue increase.[4]

However, in today's world there are many producers of oil and other hydrocarbons, not just one; and the market share of even the largest oil producer, Saudi Arabia, is only about 10%. Hence, for a production cutback to raise oil-producer revenue, it would be necessary for a number of producers, with a combined market share well in excess of 10%, to cut production.

Further, over a 5-year horizon, with the (*ex post*) price elasticity of demand likely to be of the order of 0.5 or so, raising revenue from a production cutback would require producers of more than half of the world's oil to agree to – and stick to – a reduction in output.

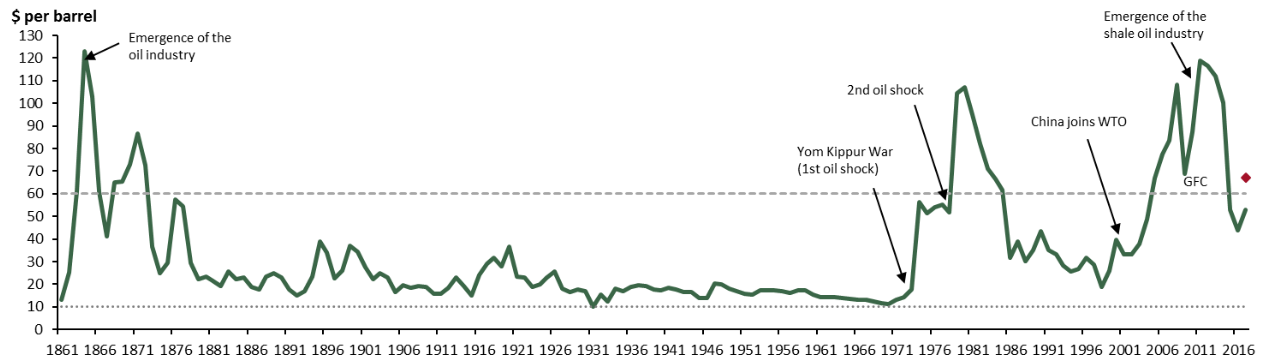
Even were such collusion possible, enthusiasm for a higher price in the near term would be tempered by the fact that, longer term, such a rise would lead to reduced consumption of energy, increased supplies of oil and gas, and substitution into other sources of energy – accelerating a process already underway as the world seeks to decarbonise economic activity. Cartel countries would be devaluing or stranding their longer-run stock of wealth, and so the incentives to leave or cheat would likely make collusion untenable for long.

The rise of the US as a major producer further complicates matters. The marginal cost of some of the largest, most productive US shale fields is likely below $50, and supply probably more elastic than in the past.

Taking all these factors into account, the potential for any producer or group of producers to take action that will raise prices durably seems particularly limited. That is why we continue to judge that the price of oil will not stay above $60 a barrel for a prolonged period and, but for hiccups, will oscillate in its historically lower range (see the figure 1).

Similarly, that is why we judge that oil producers will have to adjust their fiscal plans to the oil price, rather than the other way around.■

Figure 1: Crude oil price, inflation-adjusted, 1861-2017e



Source: BP Statistical Review of World Energy 2017, Macrobond, and Llewellyn Consulting
Notes: 2016 prices. Red marker is Brent spot price from 26 Feb 2018.

[1] Helpful comments on an earlier draft, for which the authors are grateful, were offered by Nick Butler.

[2] The authors have seen this argument expressed periodically over the past 30 years or more. A recent example is Dale, S., and Fattouh, B. (2018). Peak Oil Demand and Long-Run Oil Prices. *The Oxford Institute for Energy Studies*. [Online]. Available at https://www.oxfordenergy.org/wpcms/wp-content/uploads/2018/01/Peak-Oil-Demand-and-Long-Run-Oil-Prices-Insight-25.pdf [Accessed 26 February 2018.]

[3] This view, often is expressed in somewhat obscurantist terms, such as the need to meet the social cost of production across major oil producing economies, or the fiscal breakeven price that would be required to finance the oil-producing government's planned expenditure, such as health care provision or public sector employment.

[4] Such a price elasticity would be an *ex post* phenomenon, tracing the observed shift in prices and quantities as the market moves from one equilibrium to another. This encompasses both the effects on demand and those on (induced) supply. So, for example, if the *ex post* elasticity of demand is 0.1, then for all normal supply and demand curves, the elasticity of supply must be less than 0.1 except in the case where the elasticity of demand is equal to zero when the elasticity of supply equals 0.1. Thus, the ex post elasticity marks the *maximum* elasticity of any normal *ex ante* supply and demand schedules.

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