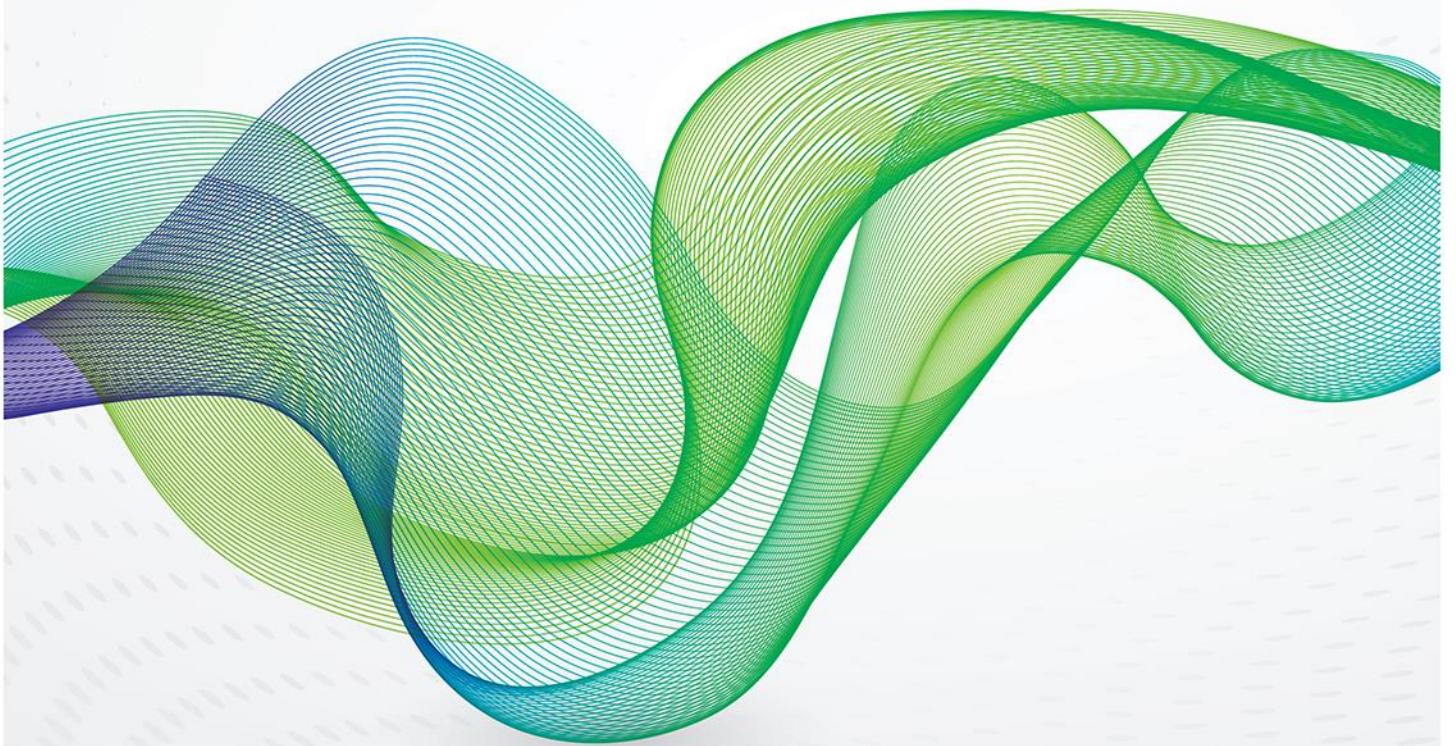




THE OXFORD
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OPEC's Hard Choices



Introduction

Oil market sentiment has shifted considerably over the last few weeks. Brent is trading above \$60 per barrel, the major benchmarks are in backwardation, stocks have been falling towards the five-year average, global oil demand remains strong, financial positioning is at record length, OPEC and non-OPEC compliance has been high, the additional Nigerian and Libyan barrels have been absorbed into the market, geopolitical risks have heightened, multiple disruptions have occurred recently, and OPEC supply risks outside the core Middle East are tilted to the upside. So OPEC seems to be in the controlling seat, or is it?

It is at these critical junctures that OPEC and its most important player, Saudi Arabia, face some very hard choices. While OPEC has reasserted some control of the market in the last few months, the room for manoeuvring is getting tighter and tighter. The context in which OPEC operates has been dramatically transformed. One key question that OPEC has to continuously grapple with is whether there is a 'sweet' oil price range that does not endanger the prospects of global oil demand while at the same time keeping a lid on oil supply growth, so the market remains in balance.

The 'sweet' oil price range

The eternal search for the 'sweet' oil price range that keeps the oil market in balance has often eluded oil exporters. In the aftermath of the 2008 financial crisis, which saw a sharp decline in oil demand and one of the deepest OPEC cuts to counteract that fall, Saudi Arabia sent a strong signal about its preferred price of \$75 per barrel. As the global economy recovered and as oil demand started picking up, oil prices stabilized around \$75 per barrel for the second half of 2009 and for most of 2010. But prices started rising at the end of 2010 with the start of the 'Arab Spring' and as the risks of spill overs to other Arab countries were becoming more visible. Between 2011 and 2013, the market witnessed some serious supply disruption and Saudi Arabia played its preferred role – increasing its output to offset the supply disruptions. During this phase, Saudi Arabia revised its 'preferred' price upward, indicating that the 'preferred' price was a moving target that reflected market conditions at the time. The Saudi oil minister, Mr Ali Al-Naimi, then sent clear signals that \$100 was a fair price for everybody: consumers, producers, and oil companies. But he also warned against the very high oil prices (above \$120/barrel), which were bad news for Europe, the USA, emerging economies, and the world's poorer nations.

But the new 'preferred' price of \$100/barrel (plus the fact that prices remained stable for a long time) generated both strong demand and supply responses, especially from US shale. In the first half of 2014, US supply growth alone exceeded that of global demand, contributing to a large build of stocks in that year. So clearly, \$100 oil price is not sustainable. What about the price floor? One critical juncture for the oil market was the fall in the oil price below \$30/barrel at the beginning of 2016. Some were of the view that regardless of what happened to the oil price, there would be no reaction from the Kingdom. But Saudi Arabia did react, signalling to the market that the low oil prices in January 2016 were 'irrational' and showing a willingness to cooperate with other OPEC and non-OPEC producers to balance the market.

But this price range between \$30 and \$100 is very wide and is not a useful guide for producers meeting in Vienna this week. OPEC needs to redefine (with the help of the market) a 'new' price range. This is an extremely difficult task as there are many moving parts both on the supply and the demand sides of the market.

The demand side

On the demand side, it is important to emphasize that a big part of the rebalancing process has been due to stronger than expected oil demand growth against a background of more robust global economic performance and lower oil prices. Despite the low price elasticity of oil demand, the sharp decline in the oil price in 2014 and 2015 has had its impact on demand, both through price and growth

effects, though the poor economic performance of oil exporting economies and the sharp decline in capital investment in the energy sector did mute the latter effect. Concerns that prices in the current, slightly higher, range of \$60–\$65 will cause a sharp fall in demand are overdone, as long as the robust global economic performance persists. The short price elasticity of demand, especially within this price range, is small, with the income effect playing a much more important role. In fact, one could argue that this higher oil price range could be beneficial for the world economy if it helps revive the economies of key oil exporters, which have taken a big hit as a result of lower revenues, and if it induces higher investment in the oil and gas sector, which has fallen sharply. Concerns of peak demand due to the advance of electric cars are already affecting current expectations, but the impact on oil demand growth from disruptions in the transport sector will be marginal at least for the next three to five years. This is not to say that oil demand growth will not slow down in response to higher prices, but the impact will be marginal unless prices jump sharply from these current levels.

The supply side

On the supply side, the picture is different. The main focus has been on US shale as the main source of new supply that can put both a floor and a ceiling on the oil price. The attributes of US shale are very well known:

- *the investment cycle for US shale is relatively short* – the time lag between Final Investment Decision (FID) and first production is a fraction of that for conventional or deep-water offshore fields;
- *projects have low capital intensity* – the capital investment required to bring a new shale well into production is a fraction of the cost of conventional wells;
- *fields decline sharply from initial production* – the only way to increase production and offset the impact of decline rates is to bring more and more new wells into production;
- *the bulk of the costs are variable in nature* – the distinction between CAPEX and OPEX is blurred;
- *US shale producers are highly reliant on financial capital markets* – they are highly leveraged and are therefore heavily exposed to changes in credit market conditions.

These special features allow US shale producers to be more flexible and more responsive to price movements. Some describe US shale output growth as a ‘switch on–switch off’ source of supply. This characterization is useful; however, it has to be qualified as there are some important lags between price changes and output responses. These lags depend on a number of factors such as the extent of hedging by US shale producers, their ability to high grade into core areas, their success in reducing breakeven costs, and the extent to which productivity gains can be enhanced. Of these factors, hedging is key.

Using the switch on–switch off analogy, what factors can switch off the growth of US shale? The current discourse identifies three that interact with each other: access to finance; a change in US shale players’ behaviour; changes in oil prices.

Regarding the *first factor*, it is often argued that US shale producers as a whole continue to destroy capital (in other words, they don’t generate positive cash flow). While this may be true, there is no evidence so far that access to finance has acted as a major constraint on US shale growth. US shale companies continue to attract finance from multiple sources including private equity. The same conclusion applies to the *second factor*: US shale players don’t constitute a unified group and it is difficult (or even impossible) for producers to coordinate on a ‘rational more responsible’ behaviour, so OPEC should not expect them to do so. But as regards the *third factor*, even if there has been a shift in behaviour away from maximizing growth at any cost towards focusing more on profitability and

achieving adequate returns on the capital employed, a higher oil price that generates positive cash flows can induce an even stronger output response (the opposite also works if prices fall and cash flows turn negative).

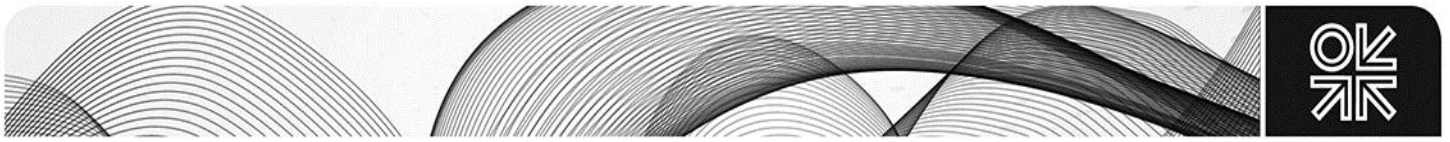
The only effective switch is the oil price, and the downturn of this cycle has revealed some important information about the reaction of US shale to price movements. At around \$50 per barrel, growth in the USA will be moderate unless starting from a low base (such as the increase in output between 2016 and 2017). However, there is wide uncertainty regarding US shale response in the \$60–\$70 price range. Estimates vary between 700,000 b/d to above one million b/d for 2018, but this range becomes narrower if US shale is assumed to stay ‘switched on’ for a few years. So for instance, in 2018, US shale can grow at 1 mb/d within this price range, but this growth is expected to slow down in 2019 and in 2020 and growth will reach modest levels beyond 2020.

OPEC could decide to test US shale response on the upside. But the response is more or less predictable: if OPEC pushes for a higher price by tightening the market, it needs to accommodate higher production from US shale, otherwise it will risk prices going down and inventories building up. The trade-off between increasing market share and achieving higher revenues is clear. One view could be that OPEC should push prices towards \$70 or even higher and ‘sweat’ US shale producers for the next few years, but even if this works (which I doubt), this view neglects the response of other producers, which could be more important for market dynamics than US shale.

Two types of producers with completely different investment cycles stand out:

- The first is exemplified by *producers with long-term investment cycles, big capital-intensive projects, but low variable costs* (a prime example being Canadian oil sands, but also subsalt in Brazil). This type of producer poses a different challenge for OPEC. While the threshold to reach a FID is higher than US shale, and it takes longer to reach first production, once the project has been completed, it will continue to produce even in a very low-price environment. In other words, unlike US shale, production does not slow down in response to lower oil prices. Similar to US shale though, breakeven costs have been declining sharply for some of these projects and will continue to do so, and FIDs could be made at much lower prices. Also, some of the producers are showing greater flexibility in their approach towards undertaking smaller projects which require smaller capital outlays. The biggest challenge for OPEC would be if the costs of this long-term cycle converge towards US shale, as the supply response would be much stronger.
- The second type is a *producer with a large reserve endowment and low-cost reserve base whose government is highly dependent on oil revenues* (prime examples are Iraq and Iran to a lesser extent). Such a producer has the incentive to increase output even in a low price environment. In addition, given its large reserve base, such a producer always has the incentive to increase productive capacity and once the new capacity is brought online, the producer will be resistant to shutting it off, even in an unbalanced market. It is much harder to reach an agreement on an output cut when capacity is left idle. Higher oil prices would release the government’s budget constraint, allowing them to invest in necessary infrastructure. International oil companies, especially those chasing low-cost barrels and those adapting their business strategy from one of high rents to one of smaller margins, will always be attracted to such destinations. In the current cycle, the output growth of these producers slowed down, and in some countries production fell sharply, through the lower price–lower investment channel (Iraq, Angola) or through the lower price–fiscal crisis channel (Venezuela). But these adjustment mechanisms are bumpy and unpredictable.

Thus, in addition to considerations of output, OPEC members should coordinate their investment plans to avoid bringing in more capacity than what is needed by the market, as this would set the stage for future headaches. However, in practice, it is very difficult for OPEC members to achieve



coordination on investments. An alternative could be for those countries with a stable political and investment environment, access to finance, and a strong record in implementing projects, to announce large investment plans to discourage other countries from investing in new productive capacity, while perhaps opening their energy sector to foreign investment to divert limited available capital into their countries.

In short, the change in the nature of the investment cycle, the decline in breakeven costs, and the combination of the short investment cycle with low sunk costs but high variable cost (US shale), the long investment cycle with large sunk costs, but low variable cost (non-OPEC outside US shale), and the low-cost cycle, but with high social breakeven cost (OPEC) has narrowed the price range within which supply and demand can grow in tandem. Outside this narrow range, we could see a strong investment–supply feedback, though with lags, which could set the scene for another cycle, especially if new sources of supply emerge whose output is not responsive to price changes. The views vary about the floor and the ceiling for this sweet price range (from \$50 all the way to \$80/barrel). The reality is that no one knows and OPEC now has the difficult task of testing the boundaries – though the ability and willingness for OPEC to put a ceiling on the oil price is yet to be tested.

Job not yet done

But testing the boundaries does not imply that OPEC should seek a stable oil price range or target the price level. To start with, the sweet oil price range is always a moving target. Even if a price range is identified at any one point in time, factors such as cost inflation (if there is a strong pick up in activity) or productivity gains will make it less relevant over time. OPEC has always emphasized market stability (which in effect means price stability) as a key objective underlying its policies. But relatively ‘high’ and stable oil prices encourage investment and lower the perception of risks for investors and oil companies, especially when the boundaries are narrow. Price fluctuations, even within the new lower price range, would create uncertainty, deter investment, and shift the focus of investment to smaller projects and marginal investments such as well tiebacks – which do increase output, but only marginally.

Of course, this is not to suggest that OPEC should advocate and should seek to induce price volatility (this would be politically very difficult as consumers, producers, and the industry all prefer price stability). However, the responsiveness of US shale to price movements, together with its short investment cycle, will induce enough volatility to discourage over-investment in the long-term and the low-cost cycles. OPEC should not aim to dampen this volatility, but instead should focus on managing the inventory levels and, indirectly, the term structure to prevent another massive build up in stocks.¹ But in order to be effective, OPEC should continue to pursue their current strategy of reducing the level of inventories – the build-up of which they were mainly responsible for in the first place, as a result of their high output strategy between 2014 and 2016. The job is not yet done. The faster this objective is achieved (which requires deeper cuts), the better position OPEC will be in.

The key question of course is whether the economies of OPEC members can adapt to more variability in their revenues, even if this volatility is within the narrower range. There is a current perception in the market that Saudi Arabia ‘needs’ higher oil prices; therefore the focus will continue to be on price stability and on avoiding any situation that could cause oil prices to fall or become more volatile.² However, an output policy driven only by the financing needs of key producers is fraught with risks, is shortsighted, and will be sending the wrong signals to the market.³

¹ While targeting inventories seems like a straightforward objective, there are many parameters that need to be defined: the desired level of inventories (currently OPEC is targeting the five-year average, which is arbitrary), whether OPEC should signal to the market its desired target, and the speed at which to achieve the target.

² To achieve that, relations between Russia and Saudi Arabia have become the focus of the market, as cooperation between these two countries are seen as guaranteeing an enduring deal. Any sign of disagreement between them about the oil market outlook will have ripple effects on the oil market, especially if the market expects a disorderly exit. Managing Russia’s exit is one of the challenges that OPEC has to face sooner or later.

³ The *Financial Times* cites an African delegate stating that ‘\$65 a barrel, if you compare with prices some weeks and months ago, it is good – but we need to keep at the deal because we need more. What is better than \$65? \$75, of course’, *Financial Times*, 27 November 2017.