



What are the implications of falling oil and gas prices? The *Burn Out* scenario.

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The most interesting question to ask about oil prices is: why have they taken so long to fall? Now that they have, and with a bang, it is time for the oil and gas companies, the wider energy market participants and the politicians to think through how a world of lower and gradually falling oil and gas prices might play out.

The peculiar economics of oil

In most markets, price tends towards marginal cost. If price goes much above, then competitors and entrants chip away until it falls back. In most markets too, if price falls, supply goes down.

Not so (or at least not recently) in the oil market. The marginal cost of Middle Eastern oil is about \$5 a barrel, and certainly less than \$10, and in Russia it is about \$20. Everywhere costs have fallen since the price crash at the end of 2014. Indeed, a further twist of oil economics is that the costs tend to reflect the price: if the price is high, as it was at \$100, costs rise as workers and suppliers cash in. Conversely if price falls, costs tumble as workers and suppliers are forced to accept lower rates or lose the business altogether. When oil was over \$100 Canadian tar sands cost nearly \$100 to produce. At \$50 a barrel, it turns out that it could still make money, because costs followed the price down.

Russia and Saudi Arabia

Russia and Saudi Arabia could both supply more, and they could both make money at \$30, or even perhaps at \$20. That is a practical floor. The trouble for both Russia and Saudi Arabia is that need an oil price more like \$70-\$90 to balance their budgets – to pay for all that military hardware and military personnel in Syria and Ukraine in Russia's case, and to pay for the princes, the war in Yemen and the extraordinary ambitions of the Saudi leader.

Faced with these budget requirements, both Putin and Mohammed bin Salman (MbS) face a nasty choice. In Russia's case, the last time oil prices really fell towards marginal cost, the country went bankrupt (in 1998). Yeltsin failed because he had no money. Putin, by contrast, had rising oil prices, and hence more money, every year from his ascent to power up to 2014. Much of that shiny military hardware in Syria was paid for out of ever bigger revenues. Since then it has been tougher, and now it is going to get tougher still. The "war chest" of reserves built up in the good times will have to be opened up. The overseas adventures are looking less and less affordable now, and

trouble at home will be much harder to buy off. In MbS's case, so bad has it become that selling off bits of Saudi Aramco, the one financial jewel, has been resorted to, in part to pay for his "Vision 2030", of a post oil economy. The war in Yemen has been both expensive and ineffectual. Saudi reserves will have to be raided.

There has therefore been a very strong common interest between these two producers to rig the market. All they need to do is manipulate output to keep the market balanced at their desired price. They have failed to achieve this, and for two reasons. The first is that despite repeated attempts they have not killed off the US shale industry. The second is that with the oil price below that needed to meet their spending commitments, a reduction in output (by choice or because of demand falls in global markets) is all the more painful. Revenue goes down before it goes back up, and only then if others do not plug the gap. Thus Putin has played a game with the Saudis: persuade them to agree to cut output, and then in practice hold up output in Russia, or better produce even more as long as the price is above Russia's marginal cost. That is the classic free rider problem.

As in the early 1980s, Saudi Arabia has had enough. Back then it got fed up of cutting output only to make room for others to profit, and opened the valves. It appears to be taking a similar path now. Russia would not agree, so here comes the punishment, along with the hope that it finally deals a killer blow to the US shale producers.

Following Saudi's retaliation in the 1980s, it took 15 years to have an effect. Prices carried on drifting down until 1999, except for a very brief spike for the first Gulf War in 1990. This time the prospects look a lot worse for the Saudis and probably the Russians too. It is a near perfect storm for them. Demand is already soft, with very low forecasts for world economic growth, *before* the virus struck. Now there is the virus, and the key oil and gas demand in China looks weak, not just in the immediate virus crisis, but further ahead. The Chinese economic transition already looks stretched, with a mountain of debt, and with the global trade terms looking much less benign. Add to this the longer term erosion of its competitive advantages that digitalisation brings (robots not cheap labour; cyber security concerns; and 3D printing close to final product demand), and add in the possibility that its carbon pollution might start to attract border taxes or other penalties in Europe, and things look sticky. Then there is the impact on demand of decarbonisation and the other climate change policies. If – and it is a big if – climate change gets serious, the demand for fossil fuels will have to fall. Both the Saudis and the Russians must then realise that not all the oil in the ground is going to be burnt, and then the issue is who gets to produce the last barrels.

The long run trends

The price of oil fell in real terms for about 100 years after it first bust onto the world energy scene in the third quarter of the ninetieth century. All quite rational: as costs gradually fell so did the price. Despite repeated tales of gloom and doom, and the nonsense of peak oil, and the imminent threat pronounced every decade of "running out of oil", supply responded to demand as long as the price was above the marginal cost (which kept falling). Only in the 1970s, with the two OPEC oil shocks, and in the first decade of this century, did the price go up, and in between it collapsed back down again in the 1990s, as noted above.

The long run trend should continue to be down even before the climate change considerations are grafted onto the market outlook. As set out in ***Burn Out***, the “endgame for fossil fuels” is a gradual falling price, with an intensive competition to produce the barrels to meet a gradually falling demand. Many oil companies’ response was dismissive of ***Burn Out***, and the implication that they should think about a *harvest-and-exit* strategy. Time perhaps for them to rethink where all this is heading.

What happens next

The Saudi game is to punish Russia, to get it to fall into line and cut its output and to wipe out the US shale production. In the short run, it will indeed punish Russia and it will deal a body blow to US shale producers. But all this depends upon the Saudis being able to play the longer game, and survive the consequences to itself. Arresting key rivals on “treason charges is one of the precautions MbS has taken. The trouble is that the Saudi game has to produce results quick enough to get back on financial track. It is not clear that it can. Both the Saudis and the Russians can be expected to resort to more crack downs and repression at home, in the attempt to squash the resistance from those who are going to lose out. In Putin’s case paying the army is going to be tough and require spending some of its diminishing reserves; in MbS’s case the *Vision 30* plan is not likely to get very far, for the very good reason that there is not going to be the money to pay for it. Even if there were enough money, it is a fantasy of autocrats to think they can reinvent economies by fiat.

The climate change implications

What happens in authoritarian regimes matters for global security and for their peoples. But a gradually falling oil price has serious consequence for climate change and renewables too. Renewables lobbyists are keen to point to the falling costs of renewables. They are less keen to point to the falling costs and prices of the fossil fuels. Gas in particular is a lot cheaper today, and it’s very low price means that free riders on other countries’ attempts to get out of fossil fuels are going to find their competitiveness strengthened. The oil and gas costs and prices are falling every bit as fast as wind turbines and solar panels.

This means that for a serious climate change policy to work, there has to be a specific response to the lower fossil fuel prices. This is where the carbon tax comes in. If the underlying price is falling, then consumers (and voters) may be able to absorb a carbon tax which leaves the price they pay constant. Ideally the carbon tax would be inverse to the oil price (a policy I have advocated for a long time). Now is the moment. And to make sure that countries not taking climate changes seriously, and not pricing carbon, don’t get away with the free riding, there needs to be a carbon border tax. Both need to be done now. It is what the Glasgow Conference of the Parties (COP) should focus on.

Net Zero - How we stop causing climate change will be published by Harper Collins in May 2020