

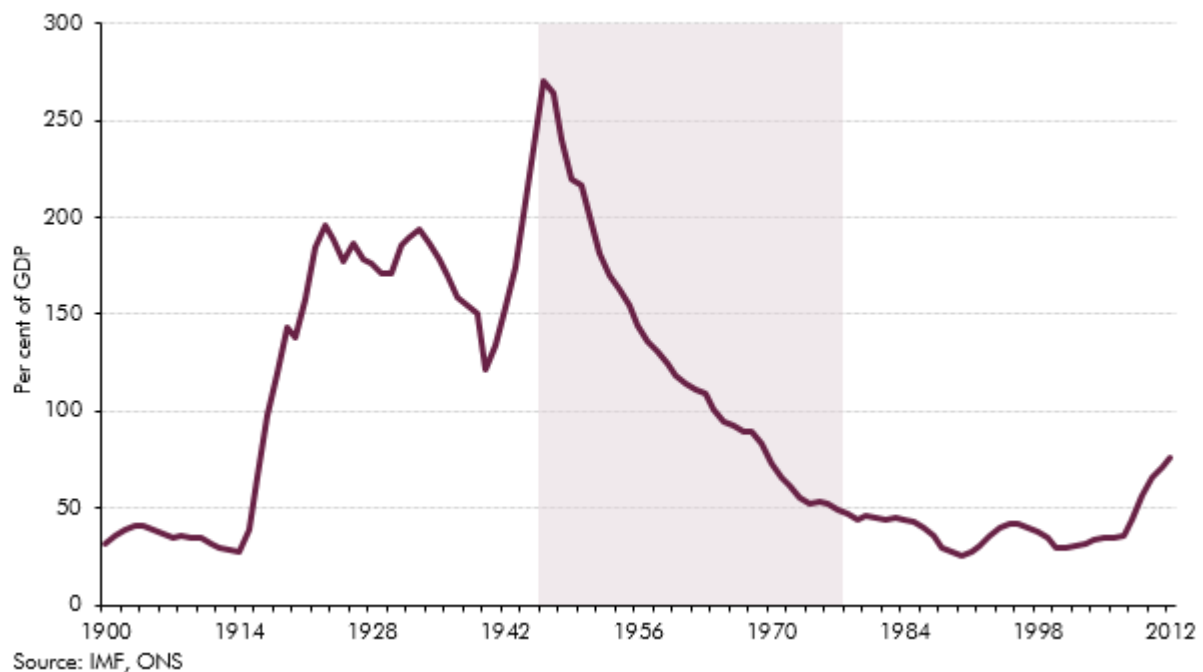


THE OIL PATCH POST-COVID-19

I always told myself never forecast anything beyond two years, as you never know what 'crocodile' is around the corner.

I'm glad that I stuck to my own advice. Covid-19 has turned the world upside down and there is little in terms of a benchmark to match the future scenario with. Had I forecast anything, I would have been wrong or lucky! Take Shell cutting their dividend. Not one forecaster got that right.

I can only look at the downstream oil



The world's largest economies were thrashed both materially and economically and austerity was the name of the game. The UK, as one of the major participants, ended up with loans to GDP ratio of 270% and this all had to be paid back to the lenders, the USA being one of them. The German economy was bombed out of existence and only the Marshall plan could bring it out of its death throes. The Japanese economy, likewise,

business, as this is what I have been involved in for the last 55 years. So, I am going to take a shot at looking what the world will look like, if we have not struck gold, with an easy to produce vaccine, that can be manufactured and deployed globally.

One of the possible benchmarks for the situation we find ourselves in, is to look at the years shortly after the end of WW11, which we celebrate the 75th anniversary of this 8th May.

especially after Hiroshima and Nagasaki were flattened in the first example of nuclear warfare.

The USA was the one big gainer, in that the land mass of N America was spared the destruction and its factories had been geared up to a high level of productivity, particularly in aircraft, truck, car and shipbuilding and were thus able to take advantage of the emerging demand.

So how does this relate to the Covid-19 war? Well we have a similar situation, in that the virus can be deemed to be an enemy, albeit unseen, and we are on a war footing. We are asking our industries to gear up to making things they would not have made before. Such as ventilators and PPE (Personal Protection Equipment) just as car manufacturers were turned into making spitfires.

We also have rationing of gasoline (in an inverse way) and we are reducing the amount we consume, be it in goods and services. All these end up as a form of imposed rationing.

So, let us look at the scenario without a vaccine. If we are to remain healthy, we will still need to maintain social distancing. This will restrict several providers of goods and services. Take flying. The current business model of packaged holidays started to get off the ground in the early 1960's. It required planes to be full all the time to make the financial model work. This then cascaded into the early 1990's when airlines such as Ryanair and EasyJet were established on the simple business model of pile them high and sell them cheap! That model would be severely tested if social distancing became a requirement. They would need to take out every other row on the plane to achieve anything like two-meter segregation. To do this and cover their costs would mean doubling of air fares.

Prior to the 1960's all European airlines were owned by the state. Only in the USA were airlines such as Pan-Am and TWA privately owned. Do you remember Sabena, BOAC and BEA (now BA). These airlines are no longer with us, Sabena, Iberia, Swissair and Alitalia were bought out by other airlines after bankruptcy.

I believe that the post Covid-19 world will be bereft of these low-cost airline models and most of the large airlines might need state participation again if they are to survive. This will mean that either they will need to be

subsidised or that they will need to charge fares double the current rate to cover their cost. If the latter, this will mean reduced travel and schedules. It is extremely difficult to put a number to this as we do not know yet what the restrictions imposed on air travellers will be. However even without a drastic demand for social distancing, a lot of discretionary travel will be curtailed for some time, as people will fear contagion being tucked into an aluminium tube for any number of hours.

However, we look at this scenario, airline fuel demand is going to be a lot less than before Covid-19.

The latest announcements by BA and Ryanair are the precursors to this scenario.

We will examine the effect of this reduction in jet fuel demand on the refining system a bit later.

Now let us turn to the populace and look at how they will react to a relaxation on travel. If we accept the argument above, then they will be flying less but still want relaxation. This will almost certainly mean holidaying at home. The USA is a particularly good example, where a small proportion of the population ever holiday abroad. The same can be said of southern European countries who have access to golden beaches and warm seas on the Mediterranean.

Thus, the effect would be more driving. Avoiding public transport due to contagion can be another reason to use a private car.

Another thought is this, how many people would want to stay in a hotel? The fact that one would need to sleep in a bed that had only been vacated a few hours earlier by someone who might have had a virus, could put people off. The alternative would be to drive a mobile home, be it owned or hired. It is highly probable that this would be powered by a diesel engine vehicle.

The effect of this change in social activity could result in an increased demand for gasoline and diesel. However, this must be tempered by the reduction in economic activity that may take place; a big unknown at present.

Another likely casualty from Covid-19 is the cruise liner business. After the experiences of the Diamond Empress and the Westerdam a lot of potential cruise passengers might never set foot in a liner again. A drop in bunker fuel demand could result here. However, I think this loss would be offset by an increase in shipping of goods that might otherwise have been carried in a passenger plane's hold.

We will have to learn to go back to the reefer type ship for frozen goods rather than move them by air. The reduction in airliner movements will make this inevitable. Stocks at home will have to be maintained at a higher level as 'just in time' stocking will diminish.

The other sector of demand is electricity and gas. Staying at home and working from home has increased the demand for electricity and gas as more households are now occupied during the working day. I believe that this will be a relatively short-term effect once schools are open.

Parents will be able to return to work and demand will revert to near historic normal once more.

The demand for chemicals is unlikely to drop as goods will need to be purchased and a large drift to online buying will mean increased packaging required.

Finally, I need to address the elephant in the room, 'climate change'. How will the clean air that we have all been breathing in the last few weeks affect our approach to climate change. I think that a lot of people would have noticed this and would not want to go back to dirty polluted atmospheres and potential climate warming.

In order to achieve climate change materially, I have stated before that only a market led approach will work. To achieve this, we need to price carbon correctly so that the market can be incentivised to invest in carbon reduction. Carbon can be captured and stored or better used to make a useful chemical from it. Stored CO₂ can also be converted into methanol or other derivatives and subsequently used as a combustion engine fuel or petrochemical feedstock.

Therefore, the UN must drive the agenda at COP26 toward a better carbon emissions trading system and implement it globally.

Having said all that, I now turn to thinking about the effect on the mid and downstream oil industry.

If we see the dramatic drop in Jet kerosene we are predicting, then refinery economics starts to be hit. What action will be required? Firstly, hydrocrackers will almost certainly need to turn down. This leaves a substantial amount of heavy vacuum gasoil behind. The alternative is to operate hydrocrackers to a diesel oil yield. My guess is that the atmospheric kerosene yield would be enough to meet the market demand.

In turn the catalytic cracker (CCU) capacity might need to be increased or debottlenecked. Cat cracking and reforming units will begin to be profitable again. They are the engines for gasoline production.

Crude slates will also need to be altered to allow for the changed demand balance. This has already been seen with the change to 0.5% sulphur in ships' bunker fuel. The demand for shipping goods by rail or sea will increase correspondingly with the reduction in air freight, unless it becomes more profitable to fly cargo only aircraft. This could result in the conversion of some passenger planes to cargo.

I still see the commercial maritime trade as viable and therefore bunker demand as well.

This will be VLSFO and MGO, thereby bringing in more demand on the distillate hydrotreater as well as the residue sulphur pool.

So, all in all, as we come out of the lockdown, I see a changed world. I expect to see a return to nationalised airlines, a smaller cruise liner fleet and increased activity on the road.

I am not a geologist and therefore not qualified to speak on the actions the

upstream end of the business will take, but for certain we are going to have a vast stock pile of crude oil and a reduced demand in future, which will entail the refining industry reducing their nominations for May liftings. If there is not capacity to store oil left, then production must and will be cut.

Of course if we get a successful vaccine all bets are off!

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