Oil market dynamics- Understanding and way forward

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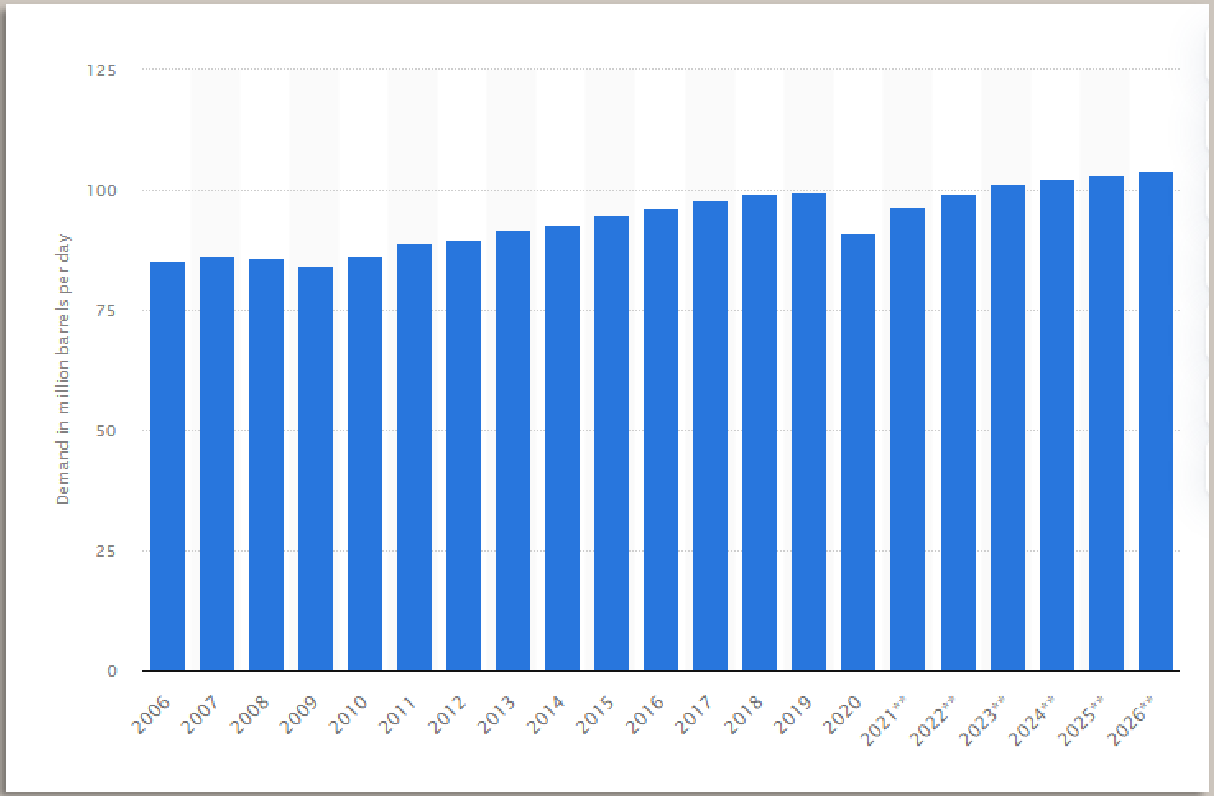
Oil markets- A primer

Global demand – Crude oil

- Global demand for crude oil (including biofuels) is projected to increase from 96.5 million barrels per day in 2021 and 104.1 mbpd in 2026

- Compared to the daily oil demand of 86.4 million barrels in 2010, the increasing demand trajectory that occurred in the past decade is nevertheless still clear.



Source: Statista 2022

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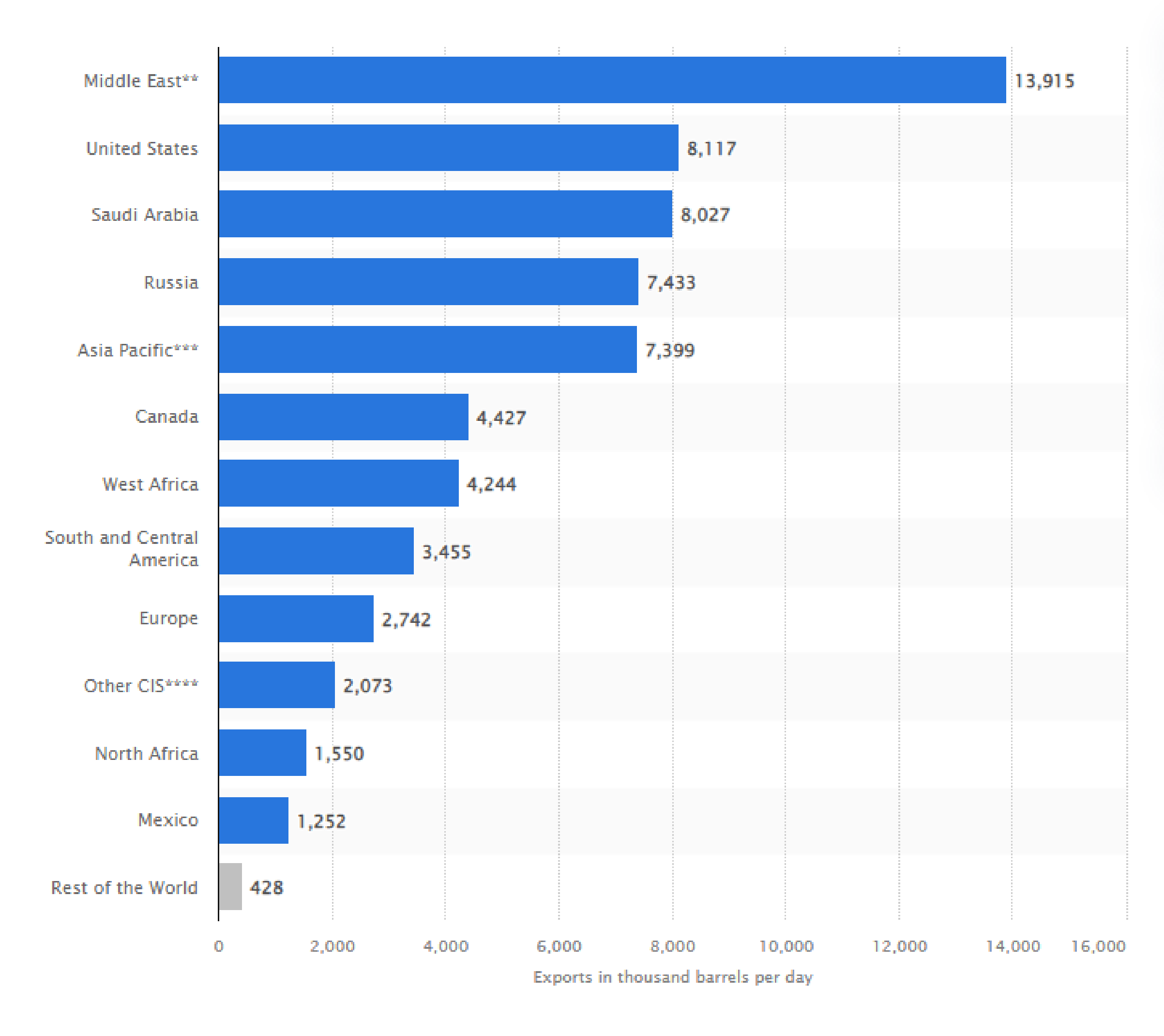
Oil exporters worldwide by region 2020

- The Middle East region is the largest exporter of oil in the world, at approximately 14 million barrels per day in 2020.
- The Asia-Pacific region exported the second largest amount of oil, though roughly half as much as the Middle East.



Source: Statista 2022
**** Denotes regions amongst countries*

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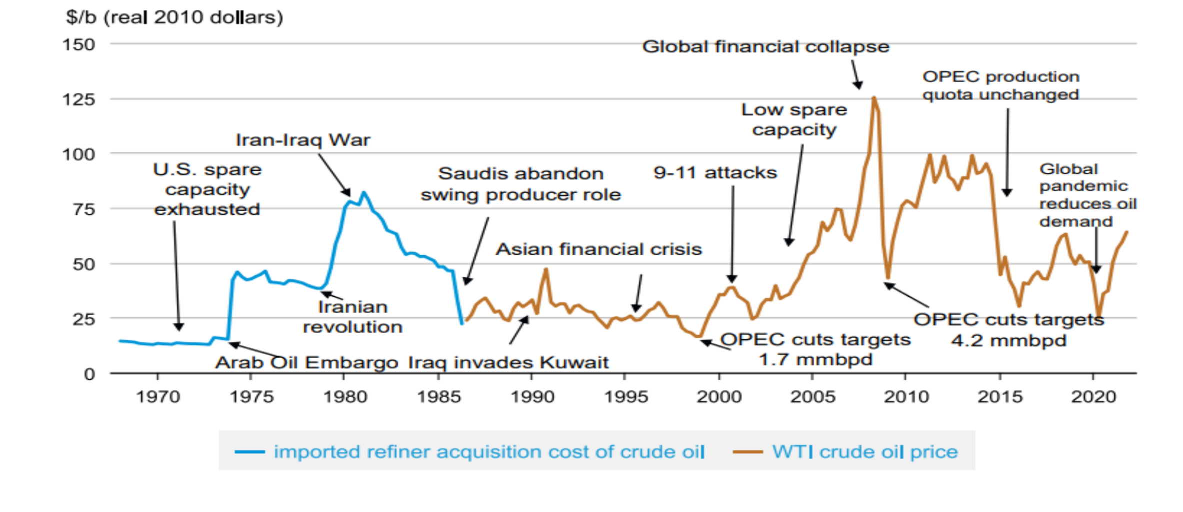
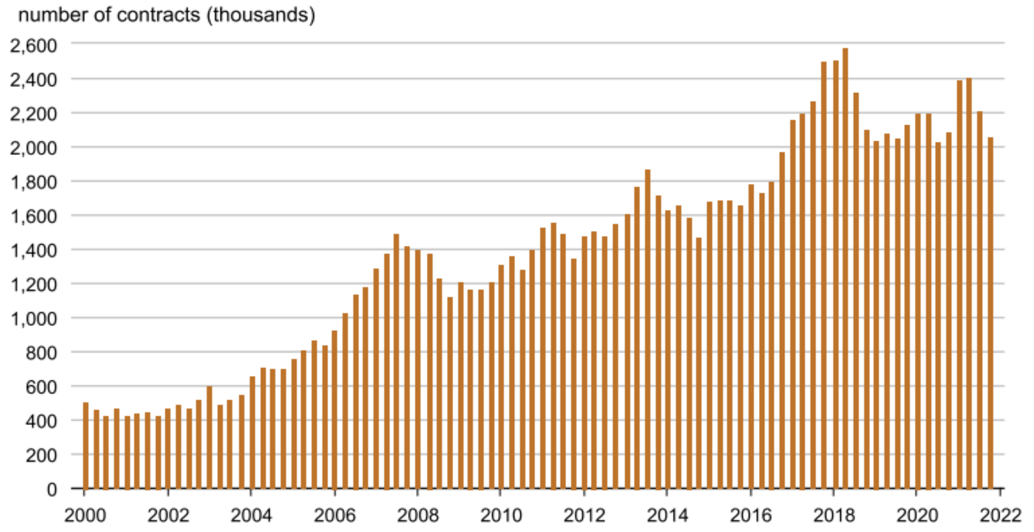
So, what drives crude oil prices?

- Geopolitical and economic events (top right graph)
- Economic growth and changes in expectations of economic growth
- Changes in non-OPEC production
- Changes in Saudi Arabia crude oil production
- Unplanned supply disruptions
- Spare production levels
- Open interest in crude oil futures (bottom right graph)



Sources: U.S. Energy Information Administration, Refinitiv An LSEG Business



Source: EIA

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Russia-Ukraine crisis: Implications for global oil markets

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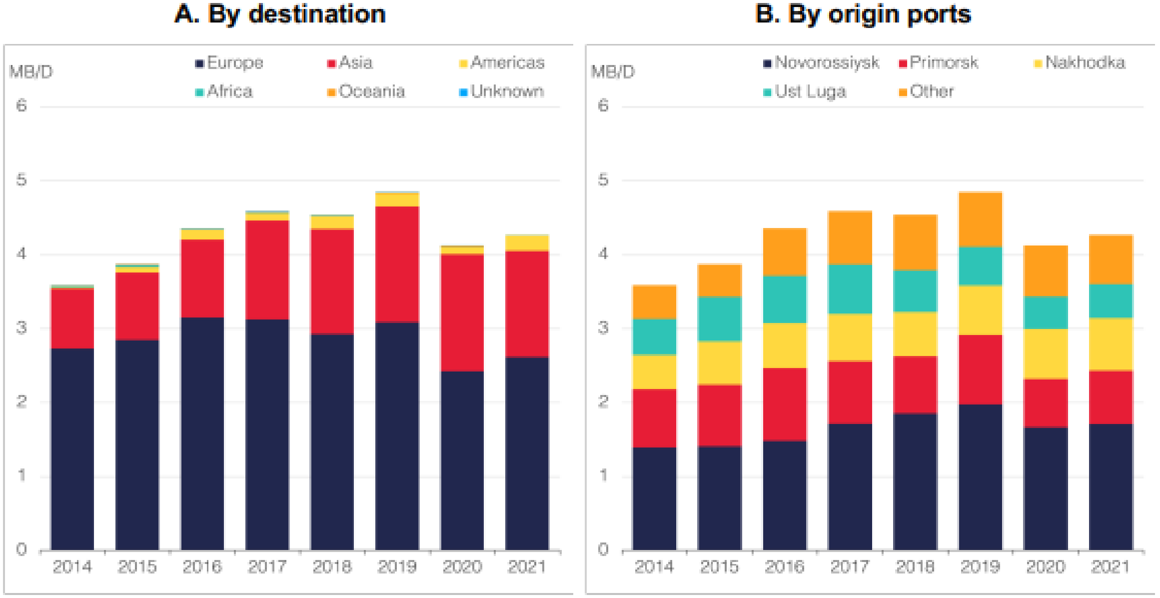
Importance of Russia in the global oil system

- Russia is one of the world's largest crude oil producers and exporters and in 2016 it joined the Declaration of Cooperation with OPEC.
- In 2021, Russia's production of crude and condensates averaged **10.5 mb/d**, representing **14 per cent of global production. Russian crude exports averaged 4.27 mb/d, with Europe accounting for around 60 per cent of Russia's total crude exports, followed by Asia accounting for nearly 35 per cent (Figure 3A).**
- The key exportable grade is Urals blend, a medium sour crude with API of 30.6 and Sulphur content of 1.48 per cent.
- Russia's crude exports to Asia reached 1.44 mb/d in 2021 with China importing 805,000 b/d (56 per cent of the total).

Figure 3: Russia crude oil exports



Source: Kpler.

Source: EIA, Kpler

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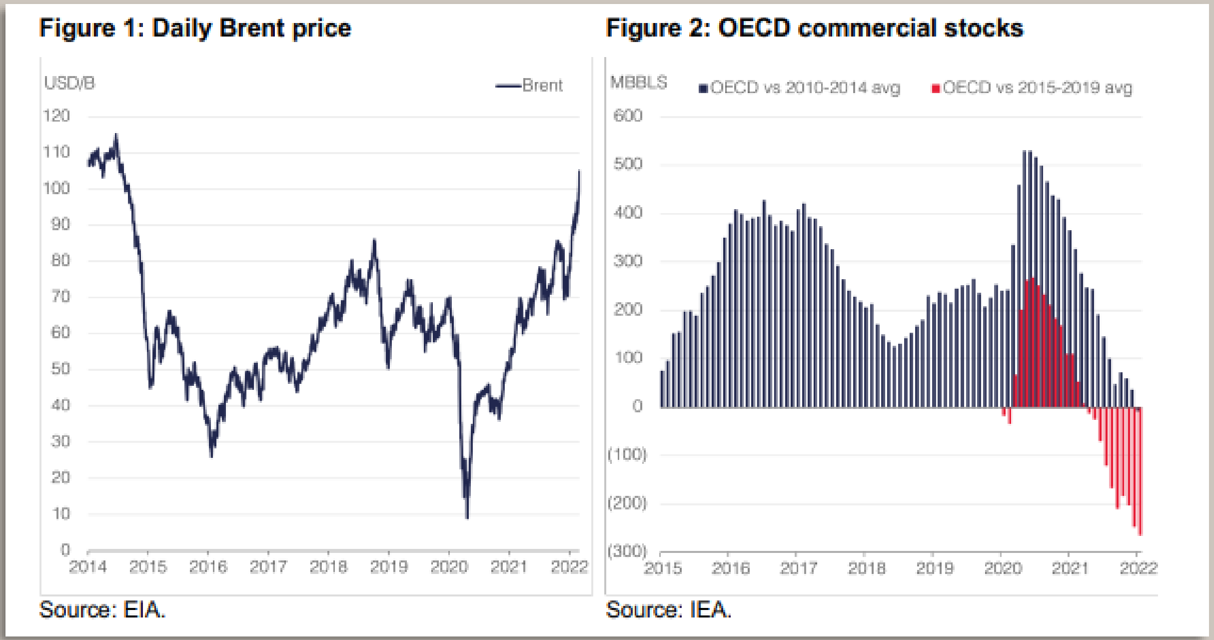
What kept oil elevated pre-conflict?

- The rise in oil prices over the last few months reflects tighter market fundamentals with the recovery in oil demand surprising on the upside, OPEC+ returning fewer barrels than planned in their current agreement and OECD crude and products stocks continuing to fall (Fig.2) .

- The Russia-Ukraine crisis adds a new layer of geopolitical uncertainty on top of a wide range of uncertainties surrounding the oil market



Source: Oxford Institute of Energy Studies, EIA, IEA

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Russia under sanctions

- The announcement that some Russian banks will be banned from the SWIFT system prompted some financial institutions to self-impose sanctions, refusing to finance Russia-related transactions, including opening letters of credit or clearing payments. There are already reports of buyers struggling to open letters of credit and shipping companies struggling to call at Russian ports.

- Some European refiners –such as Neste– have also made public shifts in their crude procurement plans (retreating from Urals in favor of other grades). In the spot market, trading houses have been offering Urals cargos at a large discount to Dated Brent. As Figure 4 shows, Urals crude relative to Dated Brent have fallen to historically very low levels.

Figure 4: Urals NWE v Dated Brent

Source: S&P Global Platts.

Source: EIA, S&P Global Platts

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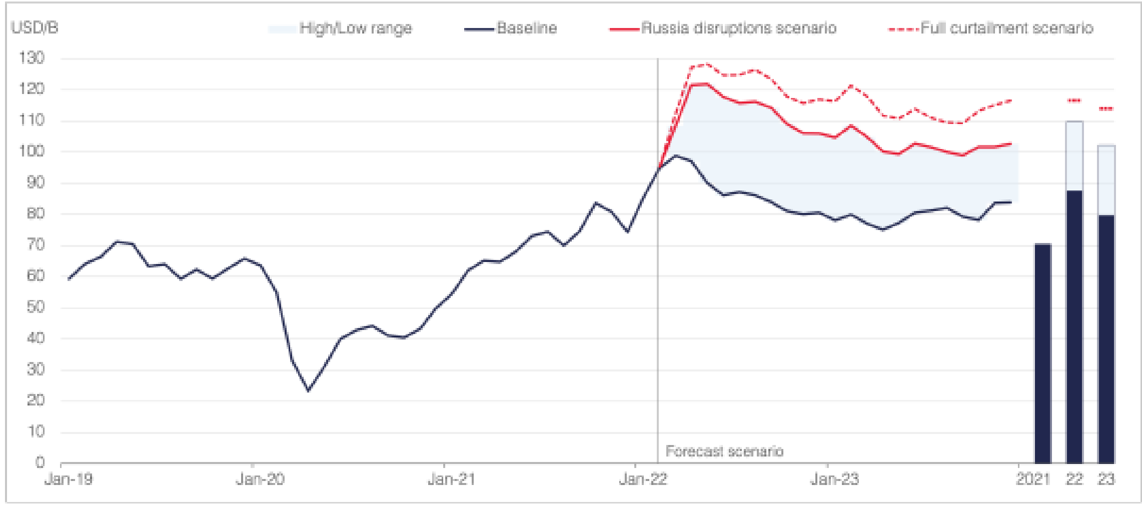
Russia oil disruption impact- Scenario analysis (1/2)

- At its peak impact, such a scenario could result in a disruption between 3 mb/d to 4 mb/d of Russian crude oil production from current levels of 11 mb/d .

- Assuming a gradual disruption of 3.2 mb/d in March and April which accounts for 70% of total Russia crude oil exports, modelled results show that in the current market context a supply shock of such a magnitude would add nearly $25/b to the Brent price, lifting the monthly price to $122/b by April before retreating towards $106/b year-end to average $110/b for 2022 (Figure 5)

Figure 5: Russia oil disruption scenario impact on Brent price



Notes: *Baseline* assumes a de-escalation of the crisis in March 2022. *Russia disruptions scenario* assumes the loss of 3.2 mb/d of Russian production by April 2022. *Full curtailment scenario* assumes the complete halt of Russian crude exports, leading to the loss of 4.2 mb/d of Russian oil production. Analysis of the forecast scenarios is based on the 5-variable structural VAR model of the global oil market due to Economou et al. 2017[1].
Source: OIES.

Source: Oxford Institute of Energy Studies

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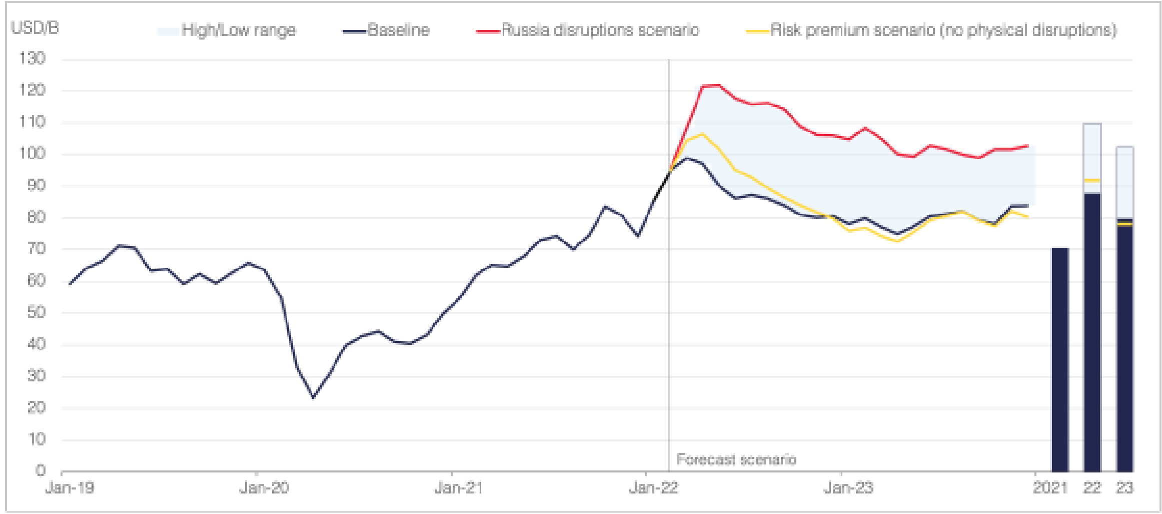
Russia oil disruption impact- Scenario analysis (2/2)

- Assuming, physical supplies are not impacted, the oil price still contains a speculative premium, which is often reflected in the desire to hold stocks in an environment of increased uncertainty and low stock buffers.

- It is estimated that it can reach as high as $12/b implying that if the current tensions continue, the upward pressure on oil price could be maintained and Brent could be sustained above $100/b depending on the duration of the crisis, even if market fundamentals ease as oil demand and oil supply responses to higher oil prices accelerate (Figure 6)

Figure 6: Risk premium scenario impact on Brent price



Notes: *Risk premium scenario* assumes no physical disruptions in Russian oil production and the Russia-Ukraine tensions peaking in March 2022, followed by a de-escalation of the crisis by the end of H1 2022.
Source: OIES.

Source: Oxford Institute of Energy Studies

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Possible responses to the supply shock

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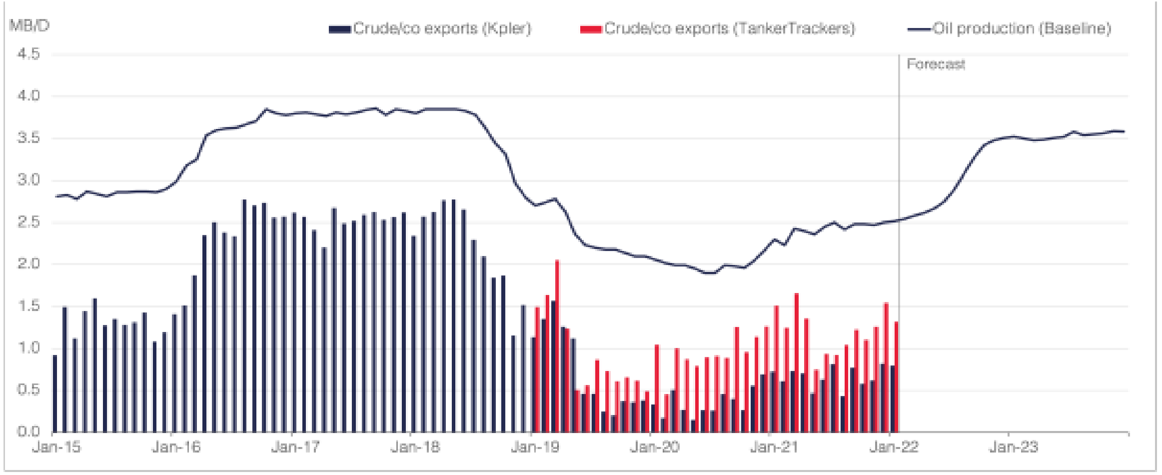
Potential responses (1/3)- The Iran factor?

- In the short term, potential responses to ease the price pressure are likely to come from the supply side. The signals about how fast a deal between Iran and P5+1 (the permanent members of the United Nations Security Council the United States, the United Kingdom, Russia, France, and China — plus Germany) could be reached are conflicting. While negotiators seem to have made significant progress, some key issues remain unresolved. It remains unclear whether the current Russia-Ukraine crisis would increase pressure on the US to resolve the outstanding issues and conclude a deal.

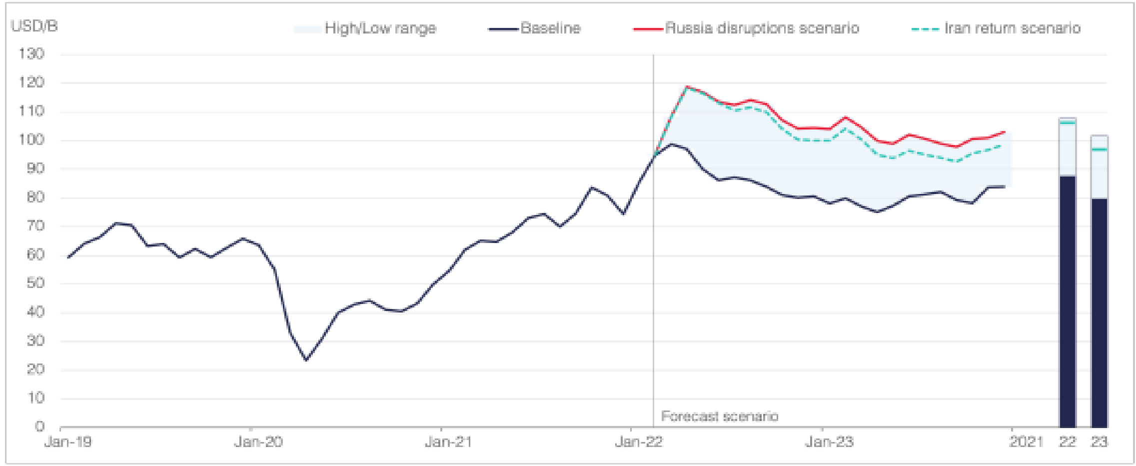
- According to Iran's oil minister, Iran's sales of petroleum products to foreign buyers reached a record high despite US sanctions. Latest estimates from companies that track Iranian flows put Iranian oil exports in 2021 at 1.2 mb/d, about 250,000 b/d higher than both 2020 and 2019 (Figure 13). This implies that Iran's production increase from the current level could be smaller than consensus, especially that Iran may have lost some productive capacity under sanctions.

Figure 13: Iran oil exports and production



Source: Kpler, TankerTrackers, OIES.

Figure 14: Iran return scenario impact on Brent price



Notes: Iran return scenario assumes the revival of the nuclear deal in H1 2022 and the return of Iranian production as a result in H2 to reach at 3.5 mb/d year-end from 2.3 mb/d in January 2022.
Source: OIES.

Source: OIES,KPLER,TANKER TRACKERS

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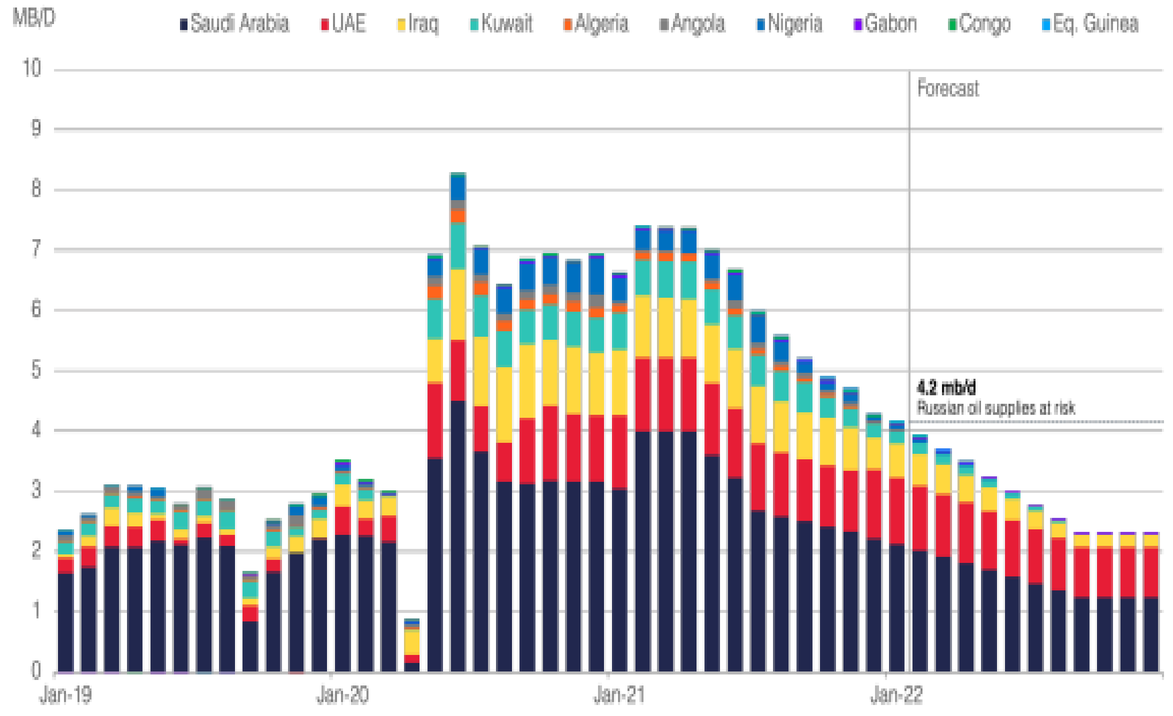
Potential responses (2/3)- OPEC+ to rescue?

- There is no indication that OPEC+ will alter its current plan, especially since the Russia-Ukraine crisis has not yet resulted in any physical supply disruptions and until recently OPEC was still expecting surpluses to build in 2022. Any deviation from OPEC+'s current supply roadmap would also be seen as a gamechanger, as its decisions being influenced by non-technical factors and geopolitical outcomes (an untidy outcome given Russia's long-term importance to OPEC).

- Furthermore, an open question remaining is the volume of barrels that OPEC+ can bring back into the market. Some producers however were already struggling to meet their targets in 2021 (mainly the African OPEC producers) and we expect this situation to become more acute and spill over to more producers, in which case OPEC+ will struggle to return more than 2.3 mb/d. Also, with producers nearing maximum capacity, the spare capacity cushion alone offers little support in the event of a disruption to Russian supplies (Figure 15).

Figure 15: OPEC(10) spare capacity



Notes: Spare capacity estimates are based on IEA estimates of sustained productive capacity as of January 2022 and actual/baseline crude oil production levels.
Source: OIES.

Source: OEIS

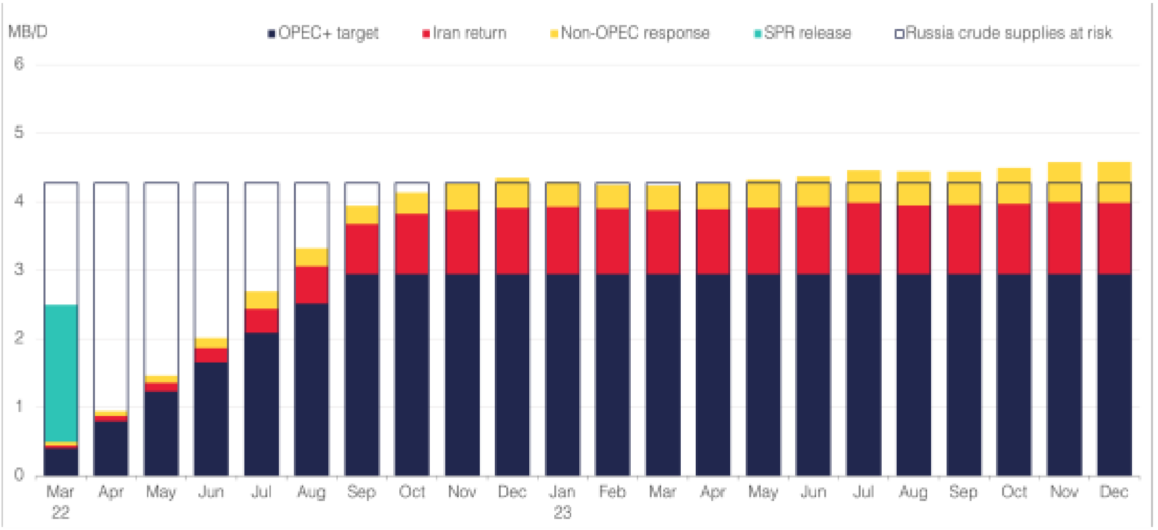
Potential responses (3/3)- SPR to rescue ?

- Another potential supply response is a release of stocks from the Strategic Petroleum Reserve (SPR). On March 1, 2022, IEA announced an international coordinated release of 60 mbbls of crude oil from emergency stock to moderate prices and ease any potential shortfalls as a result of the Russia-Ukraine crisis. Although this is equivalent to 2 mb/d over 30 days, oil prices rose by nearly 4 per cent in the day despite the announcement and settled at $104.97/b from $101.01/b the day before. This reflects concerns over the size of the release compared to the potential disruptions in Russian oil production, the ability of pledging countries to release the pledged emergency stocks, as well as the extent to which SPR releases are effective in mitigating the impact of oil shocks on market and prices.

Scenario- All the above

Assuming all the potential responses come together (highly unlikely),it would still take the world almost three-quarter of a year to replace Russian crude supply at risk (Fig. 16).

Figure 16: Replacement barrels versus Russian crude supplies at risk



Notes: OPEC+ excludes Russia and assumes the return of 2.9 mb/d of withheld crude supplies from rest OPEC+ producers according to deal targets, which is associated with the release of 1.2 mb/d from OPEC spare capacity in response to the disruption in Russia production. This leaves the system with a spare capacity buffer of 1 mb/d.
Source: OIES.

Source: OIES

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To conclude..

- Looking forward the market focus should **not only be on whether the oil sector will be directly targeted by sanctions, but also the crescendo effect of self-imposed sanctioning along the oil supply chain all the way from marketing to financing to shipping.** Fears over energy sanctions and the ambiguity over the banking sanctions have already seen companies avoid purchasing Russian barrels, pushing prices to new multiyear highs and shaving-off shock mitigation policies such as the SPR releases. Also, it has become clear that traders holding Russian crude on their books are struggling to clear cargoes and this has been reflected in widening differentials and rising shipping and insurance costs.

- The next stages for Russian crude supplies are highly uncertain but some possible impacts include **a)** Massive shifts in trade flows and sharp adjustments in price differentials to reflect shifts in Russian crude exports. Particularly, there could be a greater re-redirection of flows from Europe to Asia, but there are limits to such re-direction and not all Urals previously destined to Europe will flow into Asia. **b)** Russian oil companies could offer sweeteners to buyers to make their barrels more attractive, for instance shifting cargoes from FOB (free on board) to CFR (cost and freight) basis.

- Also, in response to more extensive self-sanctioning, Urals could be offered at discounts so large that cargoes would eventually clear, potentially as masked cargoes or via ship-to-ship transfers. But there are limits to this strategy given the large volumes of Russian exports and the intensification and widening of sanctions. Self-imposed sanctioning escalates over the coming weeks leading to a reduction in Russian production and supply disruptions at a larger scale.

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