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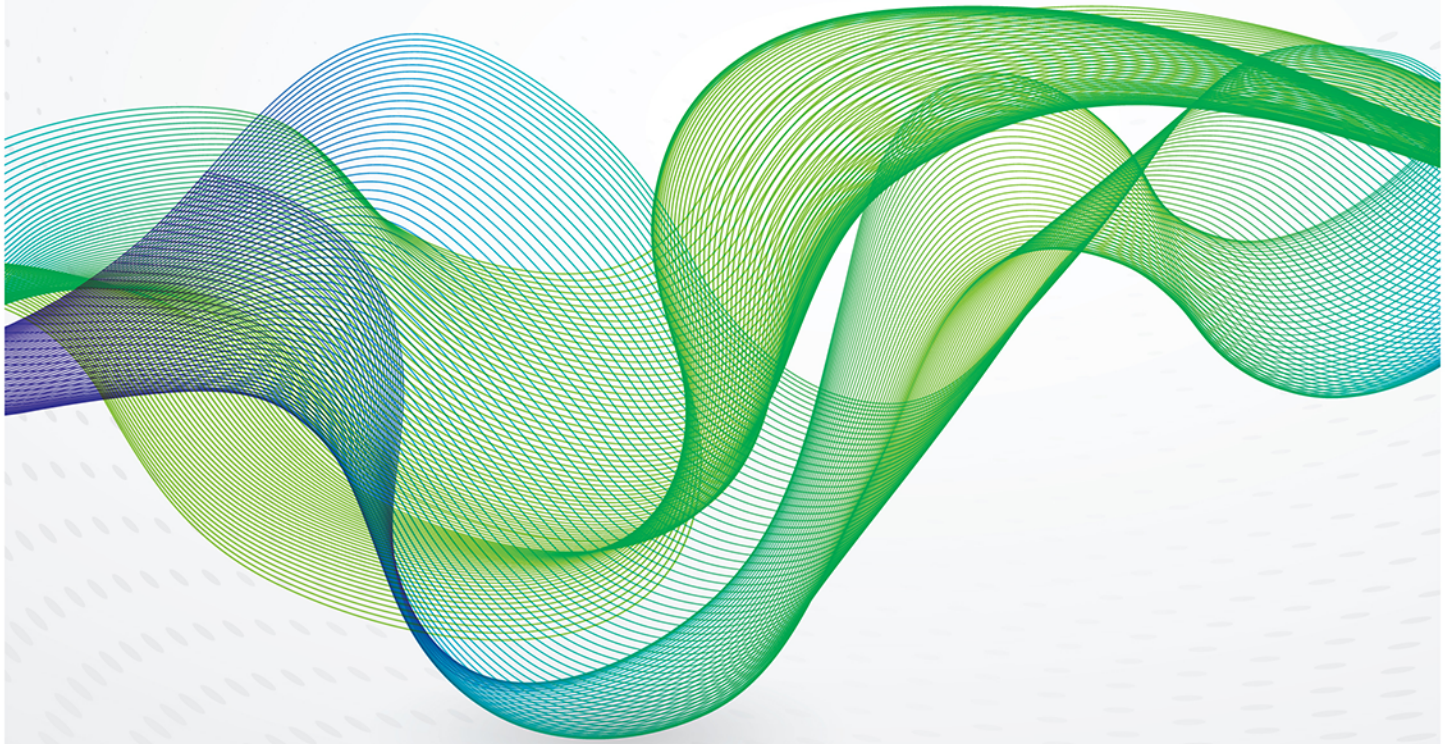
Oil Relations and the Balance of Power between the Big-3 Oil Producers: Transformations and impacts

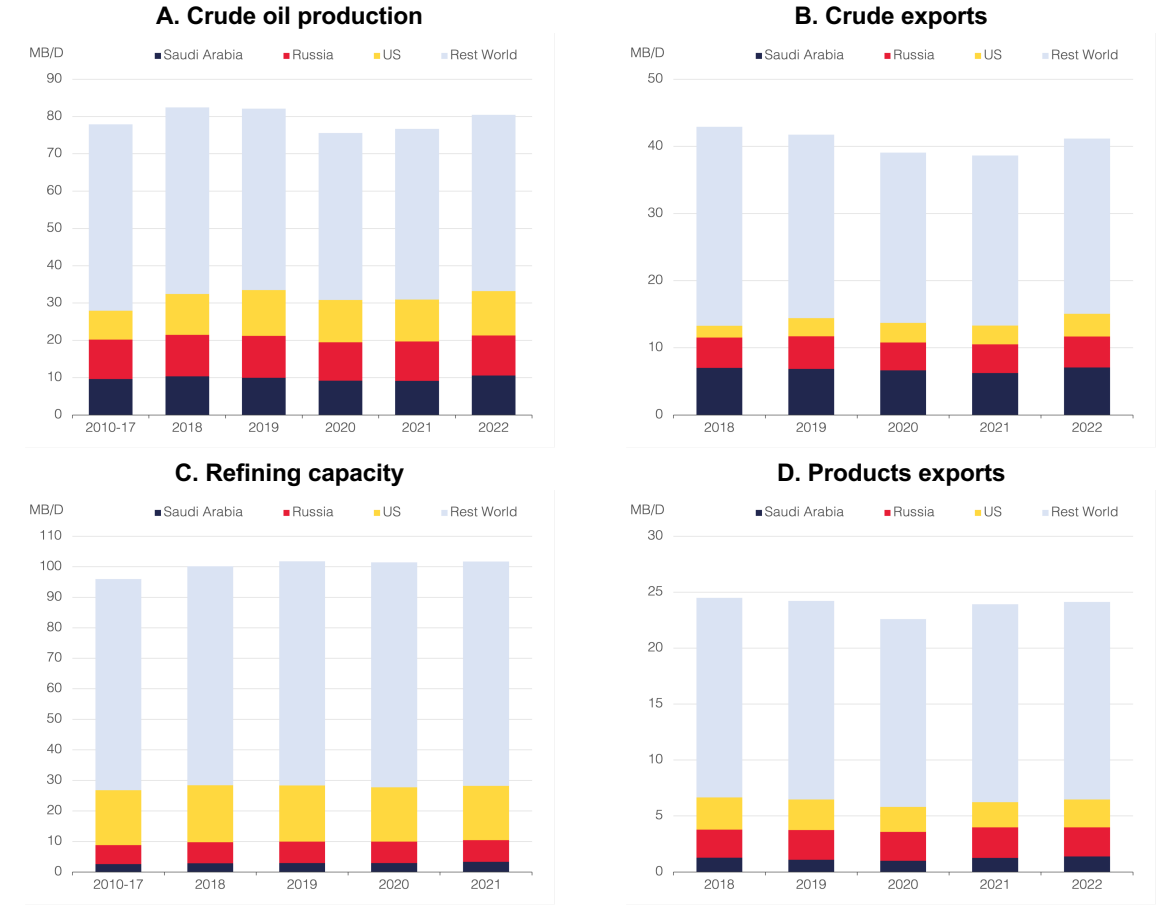


OIES ENERGY COMMENT

Bassam Fattouh, Andreas Economou, OIES

2022 marked a structural shift in the relations and the behaviour of the largest three global oil producers, Saudi Arabia, Russia, and the United States, a shift that will have long-lasting implications for oil market dynamics. These three producers play a key role in oil markets accounting for around 40% of the world's oil production and 37% of world's crude oil exports in 2022, as well as they account for 28% of the world's refining capacity and are key exporters of refined products, accounting for 6.5 mb/d or 27% of global products exports in 2022 (**Figure 1**). Saudi Arabia moreover is the only country which has an official policy of maintaining spare oil production capacity. Since 2016, Saudi Arabia and Russia have been part of the Declaration of Cooperation (DoC) between OPEC and non-OPEC oil producers which as a Group are referred to as OPEC+ and have played a key role in shaping OPEC+ output decisions in the face of some extreme extraneous shocks and uncertainties.

Figure 1: Saudi Arabia, Russia and US supply



Notes: Crude and products exports are seaborne only. Source: IEA, OPEC, Kpler, OIES

This paper analyses the oil market dynamics from the lens of the output and investment policies of the worlds' largest three producers and their evolving relations. The behaviors, strategies, and the relations between these three big producers have changed over the years and have been shaped by key events and shocks impacting the oil market such as the rise of US shale and the COVID-shock. The Russia-Ukraine war represents yet another milestone in the evolution of these oil relations and the position of the three big producers in the global energy scene, with long-term implications on the dynamics of oil markets. These changes are occurring against a more complex energy scene where governments are pursuing policies to achieve the key objectives of sustainability, security, and affordability which will impact the future role of oil in the energy mix.

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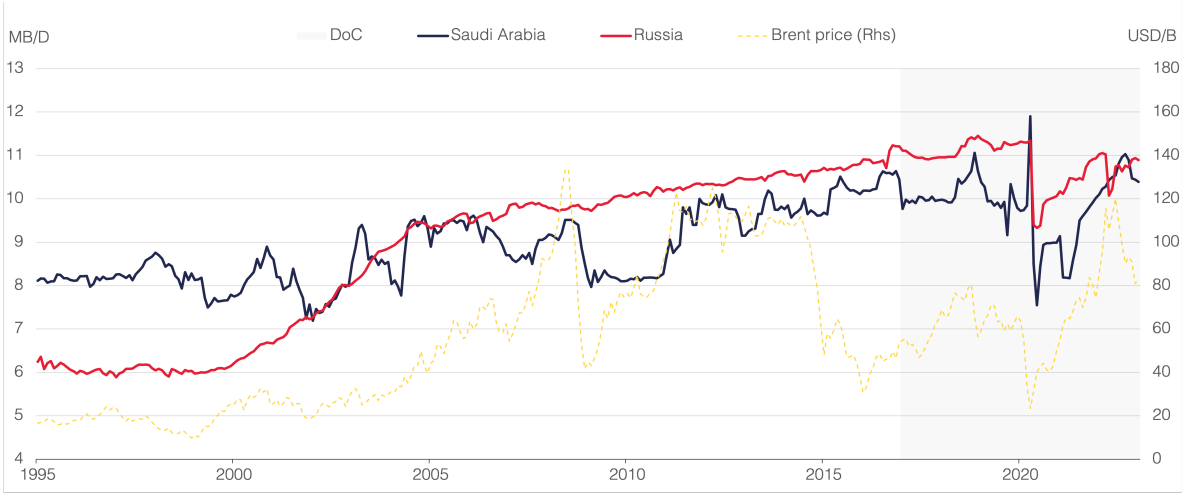
Figure 2: Saudi Arabia and Russia crude oil production



Source: IEA, OPEC, OIES

Evolving oil relations

After a series of failed attempts by OPEC in the 1990s and 2000s to establish a cooperative framework with Russia,[1] the real breakthrough came in December 2016 with the Declaration of Cooperation (DoC) between OPEC and some non-OPEC producers (**Figure 2**). This constituted an unprecedented milestone in Russia–Saudi oil relations. The DoC occurred against a background of a sharp and extended period of oil price falls between 2014 and 2016. A key factor that shaped oil market outcomes and producers' cooperation was the transformation of the US oil industry. The rise of US shale represented a supply shock as witnessed in the massive increase in US production in a relatively short period. Between 2008 and 2015, US liquids production nearly doubled rising from 6.9 mb/d to 13 mb/d, despite US shale operators experiencing negative cash flows (**Figure 3**). Also, the US 'shale revolution' represented productivity and technological shocks that transformed the oil supply curve, the elasticity of supply and the nature of the investment cycle in the oil sector. Equally, the US shale turned the US into a net energy exporter. The repeal of the crude export ban in December 2015 by the Obama administration resulted in a massive shift in trade flows in crude and petroleum products with US crude and products exports rising sharply and reaching new markets including Asia and Europe. These energy transformations shaped US relations with the rest of the world and led to the emergence of the doctrine of 'US energy dominance'. The US became more assertive in its foreign policies towards other producers including imposing sanctions on key OPEC producers Iran (first imposed in 2012 with stringent secondary sanctions and reinstated in 2018 following an interim suspension in 2015 under the JCPOA) and Venezuela (imposed in 2019) without risking a sharp rise in oil prices. At the same time, the US called on other OPEC+ producers to increase production to offset the impacts of supply losses on prices. And while US-Saudi relations strengthened during the Trump era, on multiple occasions President Trump accused OPEC of 'ripping off the rest of the world' and putting the US and global economy at risk.[2]

The dynamics between the big three producers went through another milestone when the oil market was confronted with its biggest demand shock ever driven by the collapse of activity during the COVID pandemic. During 2020, oil demand declined year-on-year by 9 mb/d, with the year-on-year decline in the month of April 2020 reaching an unprecedent level of 21.7 mb/d. One of the first impacts of the

[1] See Henderson, J. and Fattouh, B. (2016) 'Russia and OPEC: Uneasy Partners', Oxford Energy Comment, Oxford: The Oxford Institute for Energy Studies.
[2] See Fattouh, B. and Economou, A. (2019) 'OPEC Policy in the Age of Trump', Oxford Energy Comment, Oxford: The Oxford Institute for Energy Studies.

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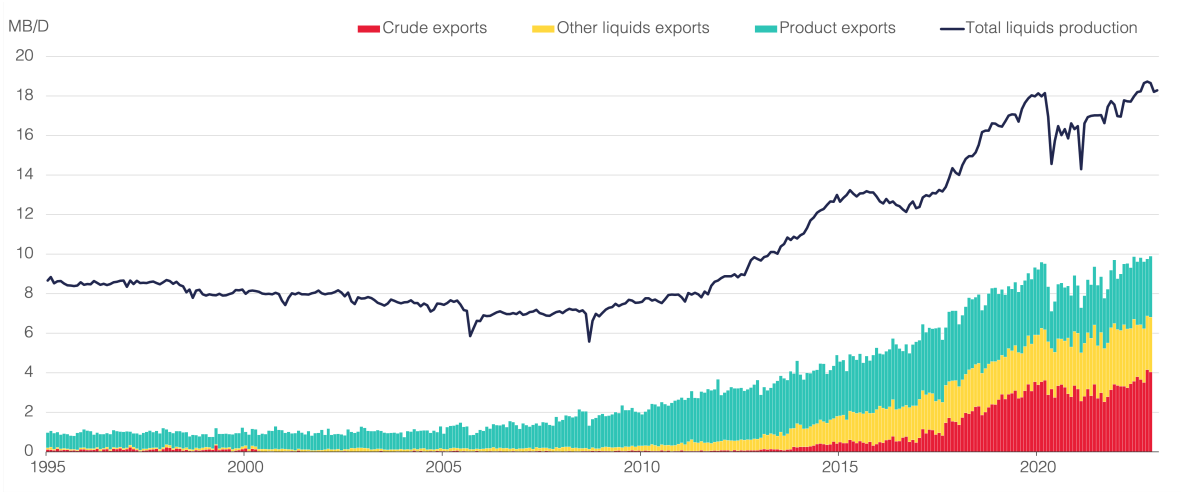
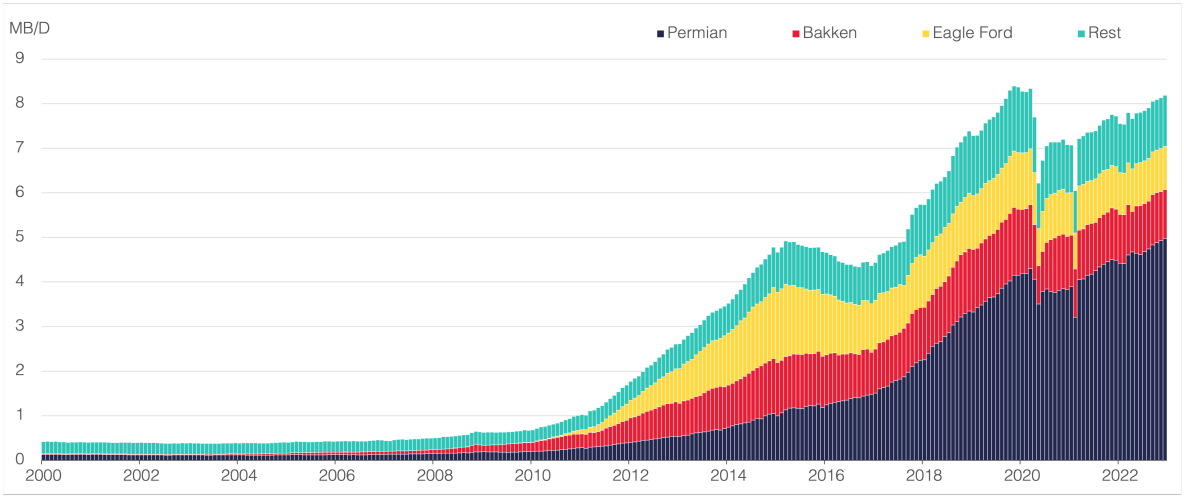
Figure 3: US total liquids production and exports



Source: IEA, US EIA

pandemic was the break-up of the OPEC+ agreement in March 2020 which resulted in massive increase in supplies in the months of March and April, with total OPEC+ crude production between February and April rising by 2.2 mb/d and reaching a record-high 45.5 mb/d. Although at that time, many were of the view that this signaled the end of oil cooperation between Russia and Saudi Arabia, the subsequent events showed the opposite. Cohesion within OPEC+ became stronger with Russia and Saudi Arabia cooperating closely within OPEC+ to confront the impacts of the COVID shock.

Figure 4: US LTO production by play



Source: US EIA

The resulting increase in oil supplies in the face of a large contraction in demand put severe pressure on markets, prices, oil infrastructure, and the oil and gas industry including US shale in the first half of 2020. Unlike the 2014-2016 cycle, which came at the back of a sustained period of Brent prices above $100/b, the financial position of US shale players was relatively weaker at the start of 2020 following years of negative cash flows. The US supply contractions/production shut-ins in response to sharp fall in oil prices were deeper and faster than in previous cycles (between November 2019 and May 2020, US oil production fell by 3.3 mb/d from nearly 13 mb/d to 9.7 mb/d; see **Figure 4**). This exposed the fragility of US shale to such severe shocks and more fundamentally, exposed the limitations of the energy dominance doctrine, as it became clear that the US could not insulate itself from global oil shocks. The severe impact on the oil sector prompted the US to play a very active role in oil diplomacy,

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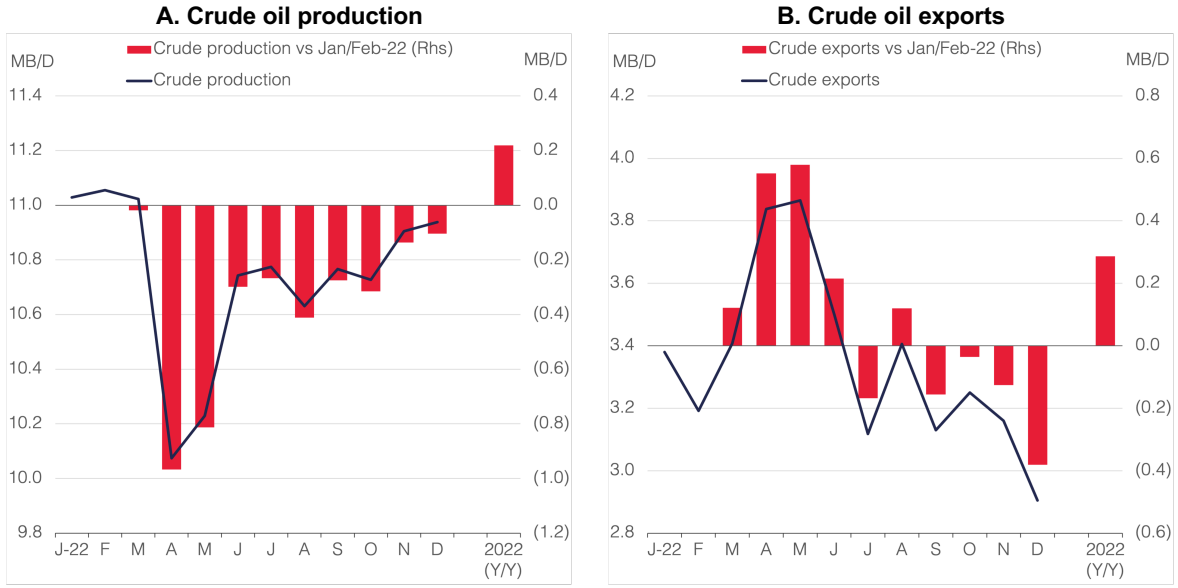
with then US President Trump being the first to publicly float the idea (on Twitter, 2 April 2022) of a coordinated global cut. Unlike previous price cycles such as in 1997-1998 and in 2014-2016, when it took many months and even years to reach an agreement between producers, within weeks, OPEC+ producers were able to agree on one of the deepest output cuts in the history of the oil market with President Trump announcing in a tweet on April 12, 2020 that the 'big Oil Deal with OPEC Plus is done' and that this 'will save hundreds of thousands of energy jobs in the United States'.[3] Between April and June 2020 total OPEC+ output fell by a staggering 10.2 mb/d, from 45.5 mb/d to 35.3 mb/d, recovering to 42.3 mb/d only in September last year.

The Russia-Ukraine war and the Big-3 producers' oil policies in 2022

The Russia-Ukraine war represents another milestone in the relations between the three world's largest oil producers. In 2022, the three countries followed very different paths in terms of their output and investment policies with deep implications for oil markets.

Figure 5: Russia supply disruptions



Notes: Crude oil exports are seaborne only. Source: IEA, Kpler, OIES

Russia's oil disruption limited (so far)

While Russian exports of pipeline gas to Europe have fallen sharply, against all expectations, Russia's crude production and exports increased compared to pre-war levels (Jan-Feb 2022) and year-on-year by 220,000 b/d and 290,000 b/d in 2022, respectively (see **Figure 5**). Until recently, all the signals were that Russia has no intention of reducing its oil supplies to global markets. On the contrary, Russia has been somewhat successful at navigating through the various sanctions and embargos through adjusting its pricing, insurance, and payment methods, redirecting its crude and products exports away from Europe, creating new companies to facilitate the trade of Russian barrels, and securing access to tankers in the shadow market to ensure its oil trade was optimized under sanctions.[4] President Putin signed a decree on December 27, 2022 prohibiting exports of crude oil and petroleum products to countries that comply with the G7 price cap.[5] The decree had almost no impact on Russian exports, as it did not impede deliveries to Russia's main buyers such as India, China and Turkey which announced

[3] Reuters. 'Trump says 'great' OPEC+ deal will save US jobs', 12 April 2020.
[4] Fattouh, B., Economou, A. and Mehdi, A. (2023) 'Oil Market in 2023: The Year of the Aftershocks', Oxford Energy Comment, Oxford: The Oxford Institute for Energy Studies.
[5] Bloomberg. 'Putin Responds to Oil-Price Cap With Sales Ban for Participants', 27 December 2022.

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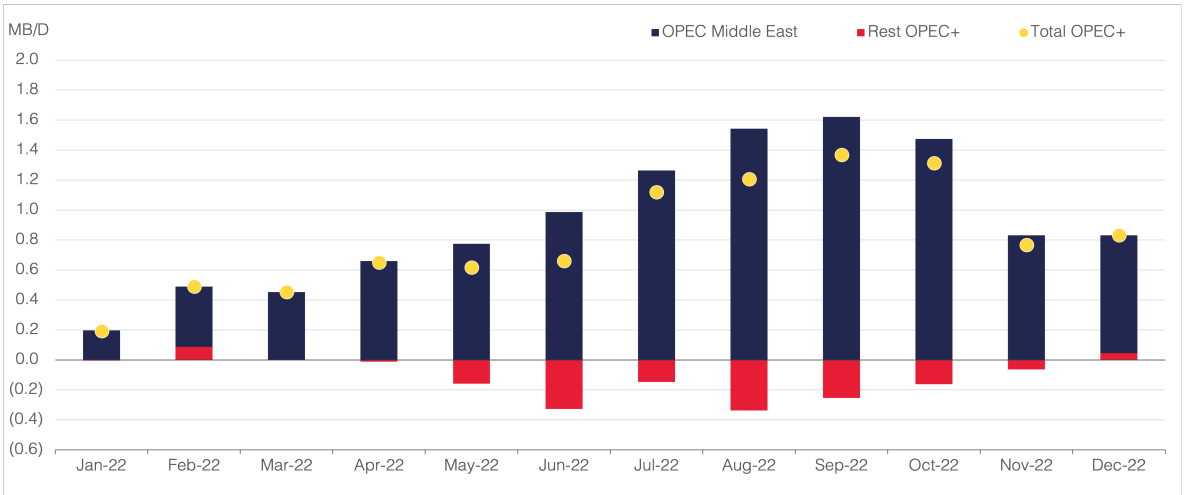
that they would not apply the price cap. However, the Russian Deputy Prime Minister warned that Russian oil output would decline by 5%-7% in early 2023.[6] This is most likely to be caused by the decline in products exports which would necessitate cuts in refinery runs and consequently crude production.[7] Indeed, in February 2023, Russia announced that it would cut its output 'voluntarily' by 500,000 b/d in March 2023 from the January 2023 levels of 10.9 mb/d. Whether or not this reduction is 'voluntary' or most likely caused by the inability of Russia to export its crude and products after the EU embargo on Russian crude and products came into force, it represents a significant departure from 2022. Russia for the first time signaled its willingness to declare 'voluntary' output cuts and shape market expectations. However, the impact on prices was short lived as the market is pricing a larger Russian supply disruption and lower Russian refinery runs in 2023 as Russia's exports of products are projected to fall. Unlike crude, redirecting products to new markets is more challenging and the products tanker capacity is limited. Russia could still consider setting a floor on the price of its crude sales or minimize the discounts on its crude, which would require continuous adjustment in its output. However, there is no indication so far that Russia has plans to pursue such an output strategy on a consistent basis. It also remains unclear whether such a strategy would be effective especially that it is not coordinated with other producers.

Pre-emptive and cautious OPEC+

In terms of OPEC+ output policy, the OPEC+ decision in October 2022 represents a very important departure from past behaviour. By September 2022, OPEC+ increased its output by 1.4 mb/d compared to December 2021 with the Gulf producers alone (i.e., Saudi Arabia, Kuwait and UAE) increasing oil production by 1.6 mb/d and Saudi Arabia in particular accounting for the bulk of the total hike by nearly 1 mb/d (**Figure 6**). This represented a continuation of the 2021 OPEC+ policy of returning barrels to the market in a gradual way to meet the increase in demand as economies opened following the COVID pandemic. The increase in OPEC+ output was interrupted in October 2022 when OPEC+ decided to cut overall production by 2 mb/d. The OPEC+ decision caused an outcry from the US, which claimed that the decision was geopolitically driven and that it increased risks for the global economy by increasing prices and inflationary pressure. On the contrary, the data show that since October, oil prices have trended lower and market balances weakened considerably in Q4 with OECD stocks rising, despite the OPEC+ cut. It can be therefore argued that the October cut was 'the necessary and the right course of action towards stabilizing global oil markets'.[8]

Figure 6: OPEC+ output vs December 2021



Source: IEA, OPEC, OIES

[6] Bloomberg. 'Russia Retaliates for Sanctions by Announcing Oil Output Cut', 10 February 2023.
[7] Fattouh, B., Economou, A. and Meidan, M. (2023) 'Short Term Oil Market Outlook: Q1 2023', OIES Presentation, Oxford: The Oxford Institute for Energy Studies.
[8] OPEC. '34th OPEC and non-OPEC Ministerial Meeting', Press Release No 33/2022, 4 December 2022.

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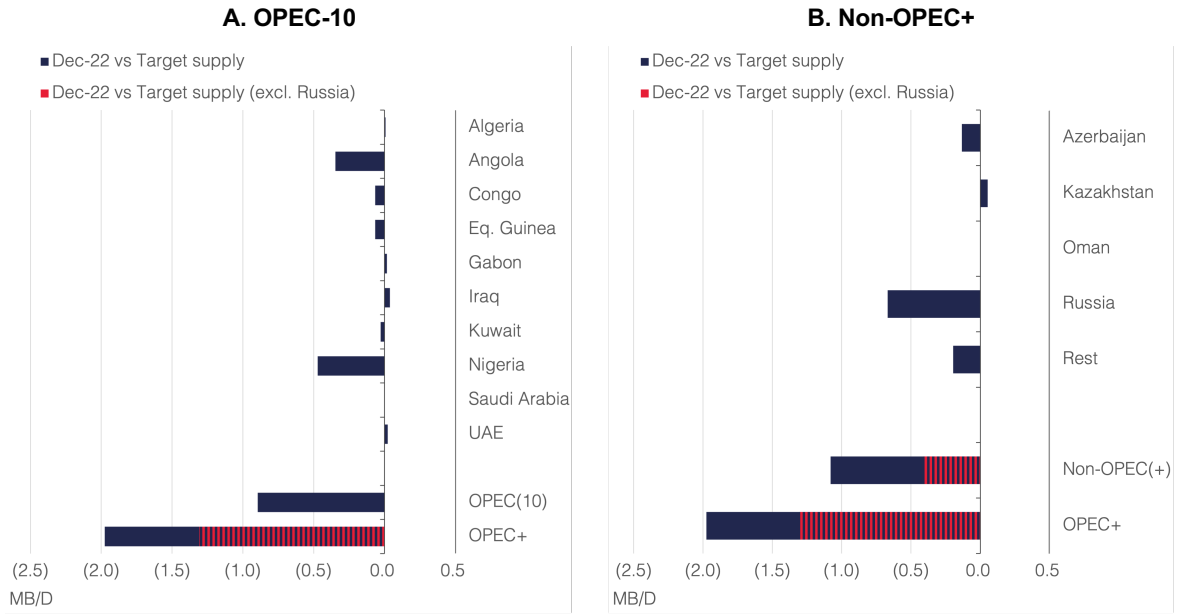
The October decision sent a clear signal of OPEC+ willingness and ability to act in a pre-emptive manner to support market balances when faced with uncertain fundamentals, a clear departure from previous behaviour. In the past, such pre-emptive and pro-active moves were not feasible as the cohesion within OPEC was not strong enough and it took months or even years to negotiate output cuts. As a result, OPEC responses always arrived late, only after market balances had already weakened sharply, requiring OPEC to implement deeper cuts for longer periods.

The pre-emptive and proactive position in October 2022 reflects fundamental changes in the dynamics within OPEC+. First, OPEC+ cohesion is stronger than in previous cycles, driven by strong leadership and effective oil diplomacy by Saudi Arabia and its emphasis on key principles such as ensuring all countries - no matter how big or small - comply with their quotas. This has ensured fairness through the introduction of a compensation mechanism for countries that did not comply with their targets in some months. It has also created a general realization that cooperation has resulted in improved outcomes in terms of higher revenues and stronger signals to the market. Also, the dynamics within OPEC+ are shaped by the fact that most OPEC+ producers including Russia are producing at maximum capacity and below their targets (**Figure 7**). In effect, only the Gulf producers within OPEC+ are meeting and can increase production beyond their output targets. Although the inability of most OPEC+ producers to increase output reduces the impact of OPEC+ especially in a rising market, negotiations and reaching output agreements are easier in a context where most producers are close to or are at maximum capacity and/or are producing below their production targets. In the latter case, an OPEC decision to cut production would only result in the cut of 'paper' barrels for this group of producers. This raises a more fundamental issue within OPEC+ related to quota revisions and quota allocations. Producers with the ability to increase production and producing below their maximum capacity often demand higher quotas while those who are not capable of increasing production because they are at maximum capacity would defend their quotas even if these are not being met. These issues become more pressing when the call on OPEC increases. However, this is not an issue for 2023 as the current OPEC+ agreement will hold for the rest for 2023. Also, in the past, OPEC+ has shown its ability with active diplomacy to resolve quota-related issues.

Figure 7: OPEC+ actual vs target crude production in December 2022



Notes: OPEC-10 crude oil production is based on OPEC's secondary sources. Source: IEA, OPEC, OIES

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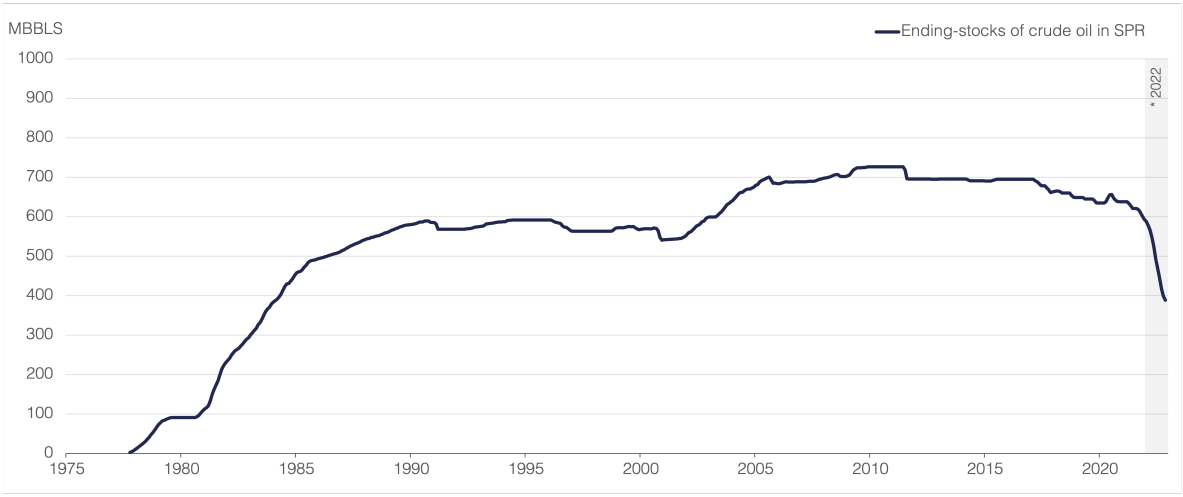
More interventionist US oil policy

In a clear departure from past behaviour, the United States used the SPR as a tool to influence market balances and expectations in the wake of the Russia-Ukraine war. In 2022, the release of crude from the US SPR totaled 221 mbbls, even though the projected large disruptions in Russian supplies failed to materialise (**Figure 8**). But the impact goes beyond the release of physical volumes to the market. The US Administration used the SPR releases to signal its willingness to put a cap on the oil price which shaped market expectations in 2022. This could continue in 2023 with the US administration recently signalling that it is not ruling out further releases from the SPR nor any option to bring prices lower, though the use of SPR is likely to become less effective over time if crude stocks continue to fall to critical levels.

Figure 8: US strategic stocks of crude oil



Source: US EIA

An interesting development in 2022 has been the US Administration plan to buy crude to refill the SPR to 'provide both certainty to industry that there is stable demand for increased production' specifying a price range at or below $67-$72 per barrel, in effect trying to put a floor under the oil price. Also, for the first time, the US with its allies intervened directly in oil market pricing mechanisms by imposing a price cap on Russian crude in attempt to reduce Russia's oil revenues. Though the effectiveness of the price cap in achieving its objectives remains subject to debate especially as it is difficult to assess the impact of the counterfactual scenarios with the embargo but without the price cap, the imposition and policing of the price cap has elevated uncertainty (and confusion) for oil exporters, shippers, insurers, traders, banks, and even financial players.

Beyond the release of crude from the SPR, the behaviour of US shale players and their output profile has also changed during this cycle. The mantra of growing production at any cost fell out of favour and the focus has shifted towards improving returns, reducing debt, and returning money to shareholders through dividends and buybacks, reinforced by pressures from investors to maximize returns and not output. Also, the cost structure of the US shale industry has moved higher. The environmental record of the US shale industry has also come under closer scrutiny impacting investment flows into the industry. The impacts of such shifts have been multi-fold:

- The lags between the increases in prices and increases in output are now longer especially as the US shale industry faces many bottlenecks and inflationary and cost pressures.
- The output increases in response to higher prices are more modest compared to previous cycles.
- The asymmetries have amplified with the output responses to price falls are likely to be larger and faster than output responses to higher prices.

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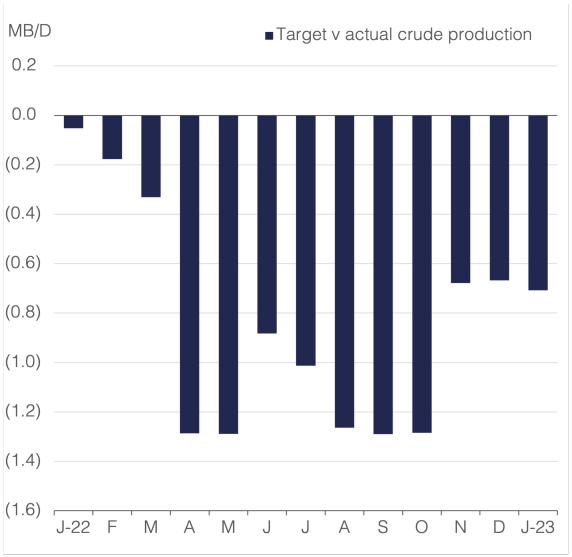
Therefore, unlike the 2014–2016 price cycle, the US shale production decline following the fall in oil price in early 2020 has been sharp and fast: US shale output fell from its peak of 8.4 mb/d in November 2019 to 6.2 mb/d in May 2020, a staggering 2.2 mb/d drop (see **Figure 4**, p. 4). The US shale response on the upside of the cycle has been slower than in previous cycles with US shale output yet to recover to its previous peak three years after the pandemic and as of December 2022 remaining 210,000 below November 2019 levels at 8.2 mb/d, indicating a less responsive US shale supply, though in 2023 US production is expected to reach the previous peak. But 2022 was a record year in terms of crude exports averaging 3.4 mb/d (a y/y increase by 570,000 b/d) and reaching highest ever level of 3.8 mb/d in the month of November as EU demand to US barrels increased, US production continued to recover, and the US released large amount of crude from SPR. The composition of US exports to Europe has also changed with more sour crudes arriving in Europe.

Divergence in oil productive capacities

The different dynamics between the world's largest three oil producers are not only limited to output policy. In terms of productive capacity, the three countries are likely to follow very different paths. Russia is unlikely to maintain its current productive capacity in the face of current sanctions as it has lost access to finance from global financial markets, the services of western companies and to high quality equipment. As a result, Russia's productive capacity and production could fall over time. Ending-2022, Russia's crude production excluding condensates was already standing well below its OPEC+ target by 710,000 b/d, while target production at 10.5 mb/d is 300,000 b/d above its estimated sustainable production capacity (~10.2 mb/d; **Figure 9**).

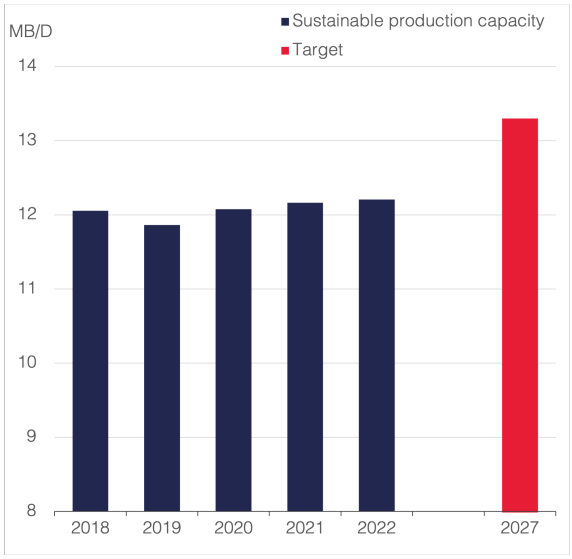
In contrast, Saudi Arabia has ambitious plans to increase its productive capacity and crude export potential. Saudi Arabia has announced that it would increase its productive capacity to 13.3 mb/d in 2027 from close to 12.2 mb/d in 2022, but at the same time, sent a clear signal that it has no plans to increase its productive capacity beyond that level (**Figure 10**). Saudi Arabia's export potential could be higher than the increase in production capacity as the share of gas and renewables in the power sector increases and more efficiency measures are introduced freeing more crude for exports.

Figure 9: Russia target vs actual production



Notes: Crude oil only. Source: IEA, OPEC, OIES

Figure 10: Saudi Arabia production capacity



Source: IEA, OIES

The US production is expected to continue to increase but in a more gradual way compared to previous cycles given the transformation in US shale business and investment models and as US producers face capital constraints and ESG pressures from investors, shareholders, and their financial backers to maximize returns and not output. US shale players also face various forms of bottlenecks and cost

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inflation, a very uncertain regulatory environment, pressure to reduce emissions and declining quality and quantity well inventory. The EIA estimates the US domestic crude production to rise in a gradual way reaching 13.3 mb/d in 2030 in the reference scenario. In the high price scenario, the increase could be higher at 17.6 mb/d.

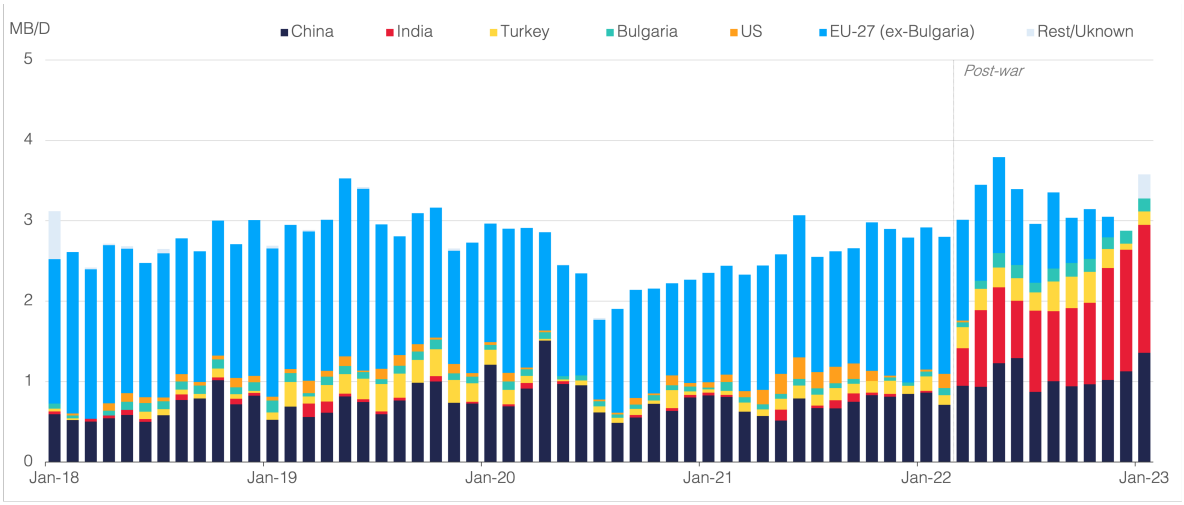
In short, there is divergence in the future production profile of the world's largest three producers: Russia's production is expected to fall by the end of this decade; Saudi Arabia's productive capacity is expected to reach a high of 13.3 mb/d in 2027 and be maintained at that level with increased potential for exports; and the US production is expected to continue to increase but in a more gradual way with increased potential for exports.

Long-lasting impacts on oil markets

These different dynamics in terms of output policies, investment, and productive capacity profiles are likely to have long term implications for oil markets, the position of the three big producers, and their relations with each other and the rest of the world. Below are some key impacts:

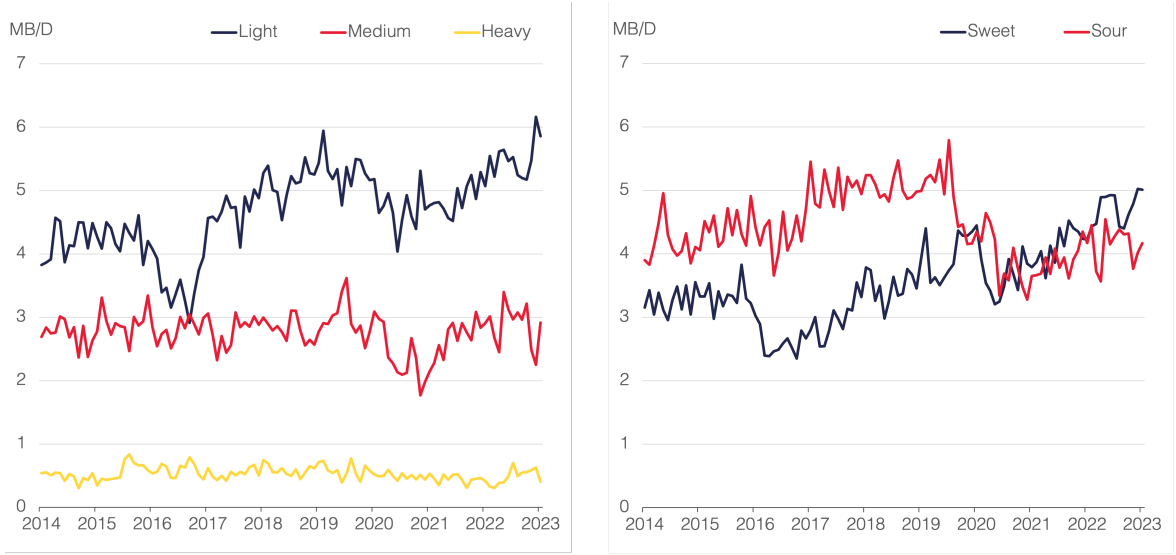
- **Russia has lost key oil markets and its reputation as a long-term reliable supplier.** Following the Russian invasion of Ukraine, Russia is unlikely to be seen as a reliable long-term supplier. Russia has also lost a key market for its crude and products. In 2022, Russian seaborne crude exports to EU-27 declined from 1.8 mb/d at the start of the year to some 160,000 b/d by December, with only Bulgaria accounting for the remaining shipments (**Figure 11**). In terms of products, the fall was less sharp but significant declining from 1.5 mb/d at the start of the year to 1.2 mb/d by year end, but it accelerated in January 2023 ahead of the EU ban of Russian product imports. The loss of the European market opened the way for Saudi Arabia and the US to increase their crude and products exports to Europe. EU crude imports from US and Saudi Arabia have increased y/y by 350,000 b/d in 2022 while those of products have also increased but only marginally by 20,000 b/d. Also, with inclusion of WTI into the Brent benchmark from June this year, US crude could make even big inroads to Europe. Crude imports from the US and the Middle East are not of the same quality as Russian Urals, but through blending crudes with different qualities, European refineries have been able to create synthetic crudes to replace some of the Russian Urals (**Figure 12**). It is important to note that while the shares of US and Saudi Arabia in the European market are likely to continue to rise, Europe is not a growth market for oil with a wide range of policies being put in place aimed at accelerating the transition away from hydrocarbons, including oil. From Russia's perspective, the loss of the European market may not represent a long-term strategic loss.

Figure 11: Russia crude exports by destination



Source: Kpler, OIES

Figure 12: EU-27 crude imports by quality



Source: Kpler, OIES

- **Russia's crude exports have become more concentrated.** Russia has become increasingly dependent on a few countries (mainly China and India) for its crude exports (see **Figure 11**, p. 10). Except for Turkey and some EU destinations exempted from the ban, buyers of Russian crude are now located East of Suez. Within Asia, almost 90% of Russia's exports now go to these two countries. This heavy dependence on a few buyers has important implications in terms of pricing power and financing/payment conditions and wider geopolitical relations. From Russia's perspective, the world is now divided into 'friendly' and 'non-friendly' countries with an attempt to redirect all its oil flows to friendly countries only. From the perspective of buyers of Russian oil, access to discounted crude is beneficial in offsetting the impacts of the cost shock, but there is a need for these countries to strike a balance in a more geopolitically fragmented world and ensure energy security through more diversified supplies, especially that the imposition of stricter sanctions in the future can't be ruled out.
- **Competition in Asia between the three largest players has intensified.** As Russia continues to redirect its crude to Asia, its share of China's and India's crude imports has been increasing. For instance, in the case of India, Russia's share increased from 1% in 2021 to 15% in 2022 while that of Saudi Arabia increased y/y marginally by 1% to 17% (**Figure 13**). In contrast, the share of the US in India's imports has declined to 7% in 2022 from 10% in 2021. The impact of Russia's redirecting its crude in Asia has been felt most strongly on those exporters that rely on spot market such as the US, West African and South American producers and less on sellers with term contracts such as Saudi Arabia. From Asian countries' perspective, access to discounted Russian crude is one factor among many that enter their purchasing decision, including securing supplies from more reliable sources, buying on the basis of term contracts, diversifying sources of supply, having access to suitable types of crude. Access to discounted Russian crude and lower Russian exports of products to Europe allowed the Asian refineries to increase their share of the EU products imports markets. For instance, exports of products from India to Europe have increased y/y by 33% in 2022 and more than doubled in Q4 compared to a year earlier (up by 55% y/y). From producers' perspective, Asia is a key growth market and keeping a strong foothold in this market is an essential element of their strategy. With Russia redirecting its exports to Asia, the competition will only intensify and the pricing, marketing, storage, and investment strategies of Gulf players including Saudi Arabia will have to adjust to more competitive markets in Asia.

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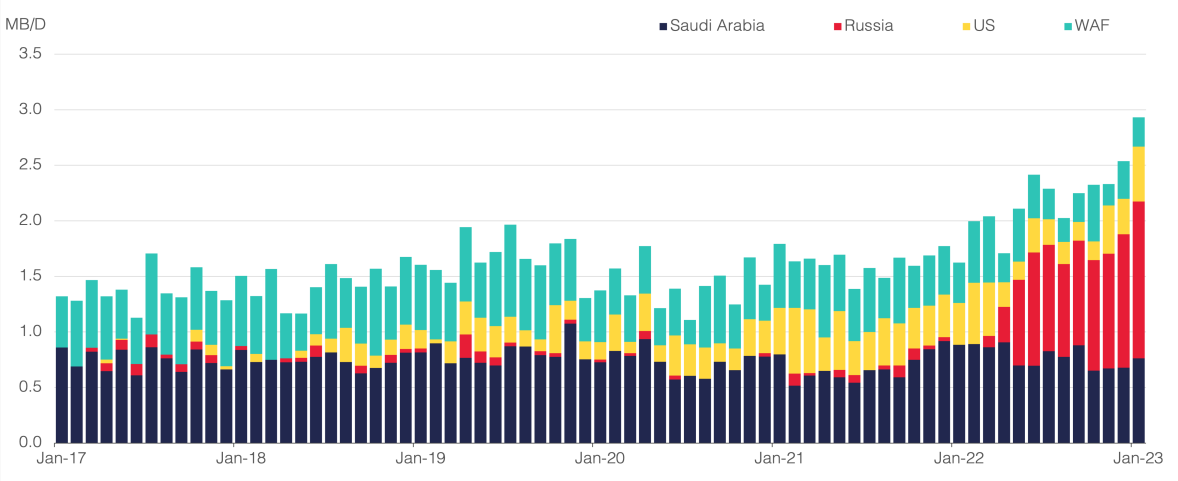
Figure 13: India imports by selected origin



Source: Kpler

- **Russia's power within OPEC+ could decline.** In the face of current sanctions, lack of access to high quality equipment and the exit of services companies, Russia is unlikely to increase its current productive capacity and its output. If Russia's productive capacity declines sharply, its influence and position within OPEC+ is likely to decline over time. Historical experience shows that sanctioned countries and/or countries with volatile output and not in a position to meet their production targets are either excluded from OPEC+ agreements or become less effective over time in influencing market outcomes. In a rising market, these countries have no ability to ramp up production and most likely would be producing below their quotas, and in a declining market, any decision to cut output would result in the reduction of 'paper' barrels unless there is an adjustment to their quotas to more realistic levels.
- **US-Saudi approaches to oil market management diverged.** 2022 showed a clear divergence in approach towards managing the oil market between the US and Saudi Arabia. While the US relied heavily on the release of crude from the SPR, Saudi Arabia within OPEC+ followed a more gradual and cautious approach, optimizing the use of its spare capacity and did not respond to calls to change their approach. This caution was justified since the expected Russian output disruption did not materialise, Q3 and Q4 demand growth weakened considerably as recessionary pressures built and China pursued a zero-Covid policy. Also, and as important, there is a clear realization that the US is not 'able to control what happens at OPEC+' and therefore there is a new focus towards controlling what they have access to (i.e., the SPR). The variety of tools to manage the market and lack of coordination in the release of SPR adds a new layer of uncertainty to the market though with the crude stocks hitting low levels and no clear plans as to when and how to replenish the SPR, there are limits on the effectiveness of using the SPR as a market management tool.
- **US shale and OPEC+ more aligned.** With the US shale industry focused on maximising returns to shareholders (not output growth) and OPEC maximizing revenues to its governments, the behaviour of the two have become more aligned. OPEC+ pricing power is also a function of the elasticities of supply and demand. The lower responsiveness of US shale output to higher oil prices has enhanced OPEC pricing power.

Beyond these impacts on oil relations, there have been other impacts on the structure of the oil market and its functioning which will have implications on the behaviour and strategies of these key players:

- **Oil markets have become more segmented.** Embargos, price caps and self-sanctioning have all contributed to a more segmented market with large volumes of sanctioned crude and products being traded and with wide divergence in prices of sanctioned and non-sanctioned crudes and products. The wide divergence is also impacting price spreads and this has been perhaps most reflected in the sharp movements in the Brent-Dubai EFS and West African crude differentials in 2022 (see **Figure 14**). As more and more sanctioned and discounted crudes and products are

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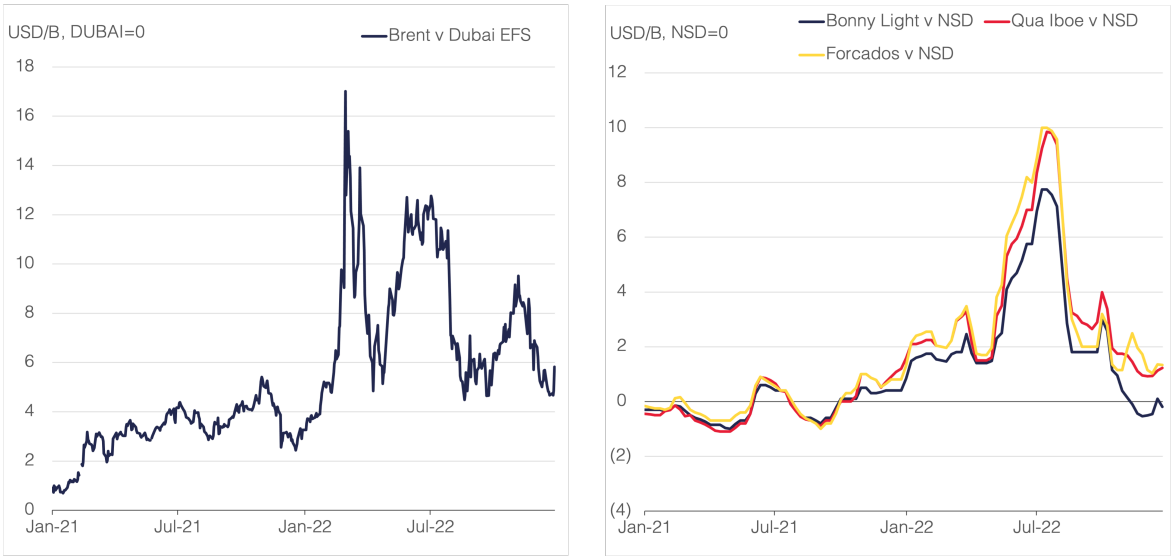
pushed into Asia, these would impact the prices of other crudes and products destined to Asia. Moreover, the tanker market has become more segmented with the tankers in the shadow market playing an increasingly important role in transporting sanctioned crudes.

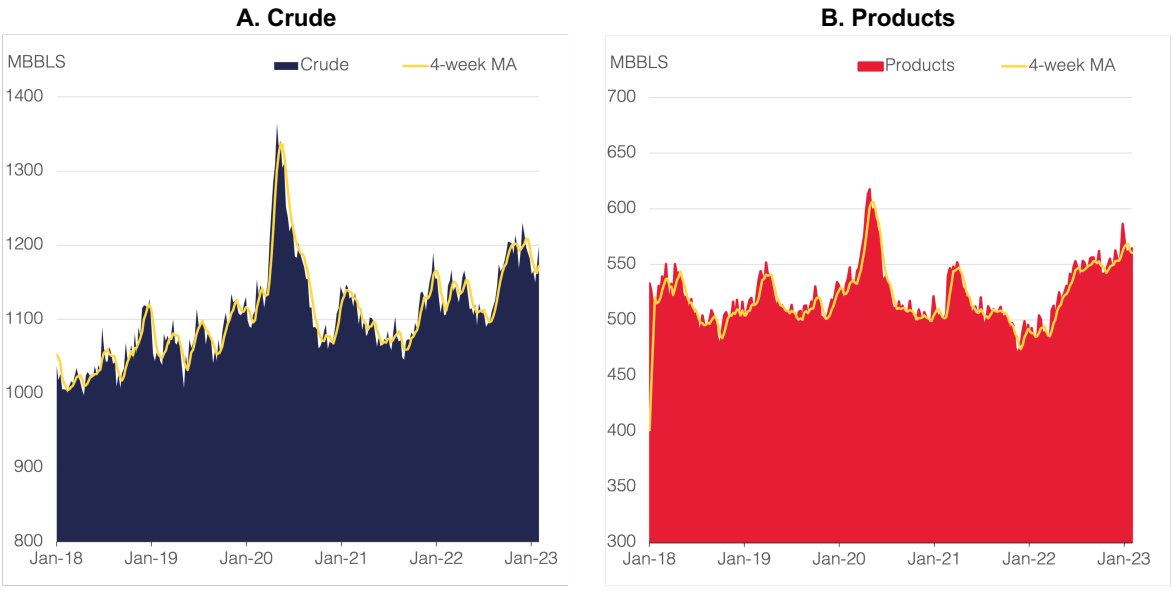
Figure 14: Price differentials



Source: S&P Commodity Insights, Argus

- **Oil trade routes have become longer and the cost of optimization has increased.** The oil market through its various layers and players has shown strong resilience and continues to perform its key functions of price discovery and redirecting crude and products in the face of a massive shock. However, this came at a cost of lengthening oil trade routes and oil supply chains. The diversion of Russian crude away from Europe into Asia meant that the trade of Russian crude shifted from short-haul to long-haul with cargoes spending more time in transit. Also, as Europe imports products from further afield to replace Russian products, trade routes have become longer (**Figure 15**). These have caused an increase in vessel tonnes-miles impacting freight rates and putting pressure on the tanker fleet.

Figure 15: Global oil-on-water



Source: Kpler, OIES

- **Oil markets have become less transparent.** As Russian Urals have disappeared from the EU market, the price discovery of medium sour crudes in Asia has become increasingly difficult and new benchmarks may be needed. Also, the practice of blending and ship-to-ship transfers have flourished, as has the reliance on shadow fleets, all of which have made it more challenging to track oil flows especially those destined to China. The change in pricing practices from FOB to CIF basis has made the process of price discovery for Russian barrels in Asia extremely difficult and dependent on assumptions about insurance premiums and tanker rates which are not transparent, and which is conducive to capturing margins through transfer pricing. Most Western energy companies and traditional trading houses have ceased trading Russian crude and products and have been replaced by new entities that operate outside G7 restrictions with low or no visibility about their activities. These new entities have limited experience in trading and shipping oil and most likely are making use of old and uninsured tankers, increasing environmental risks. These are also willing to trade in currencies other than US dollar.
- **Oil markets have become more prone to government intervention.** The elevation of energy security following the Russia-Ukraine war has caused a swing towards greater market intervention. Governments, especially in Europe, have taken measures to offset the impact of price shocks on consumers and businesses and have been introducing costly support packages with consequential fiscal impacts. Some countries have introduced windfall taxes/levies, or solidarity contributions to finance the support packages. In gas markets, the EU has imposed price caps and introduced plans for joint purchasing of gas which could eventually turn markets into monopolies, reversing decades of liberalization. There have also been calls for redesigning electricity markets in Europe. Oil markets have not been immune from increased government interventions despite their maturity, depth and sophistication. The use of SPR, embargoes, price caps, sanctions and bans on using EU shipping and financial services and Russia's responses to these measures by announcing output cuts have all contributed to increased uncertainty and volatility.

Concluding remarks

The Russia-Ukraine war has transformed the relations and the balance of power between the worlds' largest three producers, with deep implications on oil markets for years to come. While Russia has been somewhat successful in redirecting some of its trade flows away from Europe, the country's position in the oil market has weakened. Russia is no longer considered a reliable supplier, its exports have become more concentrated in fewer markets, its trade has shifted to the shadow market, its ability to attract investment and technology has diminished and its oil sales margins have declined relative to other exporters due to its need to offer larger discounts. However, in the short to medium term, the shift of Russian trade flows to Asia will intensify competition in a key growth market with direct consequences on the pricing power of other exporters to Asia. The US release of crude stocks from the SPR was a key factor shaping the oil market dynamics in 2022, but there are limits on the effectiveness of this tool, especially if oil markets are subject to a series of shocks and if the SPR is not replenished. A US industry more focused on maximizing returns and not output is more aligned with OPEC+ objectives and a less responsive US shale to prices especially on the upside increases OPEC+ pricing power. With increased cohesion within OPEC+, a more proactive approach and with Saudi Arabia having the flexibility to adjust production upward and downwards and with concrete plans to increase its productive capacity by 2027, Saudi Arabia finds itself in a stronger position to balance the market and manage the cycles. But this has come against a background of a much more challenging environment when oil markets are more segmented and less transparent, trade flows are being transformed, trade routes have become longer, the cost of re-optimizing trade flows has increased, and energy and oil markets have become more prone to government interventions. Also, this is occurring against a more complex energy scene where governments are seeking to achieve the key objectives of sustainability, security and affordability and pursuing policies to reduce reliance on hydrocarbons with consequences on investment decisions, producers' policies and short term and long-term oil supply and demand paths.

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