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Russia's Invasion of Ukraine and Oil Market Dynamics

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The Oxford Institute for Energy Studies



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The context

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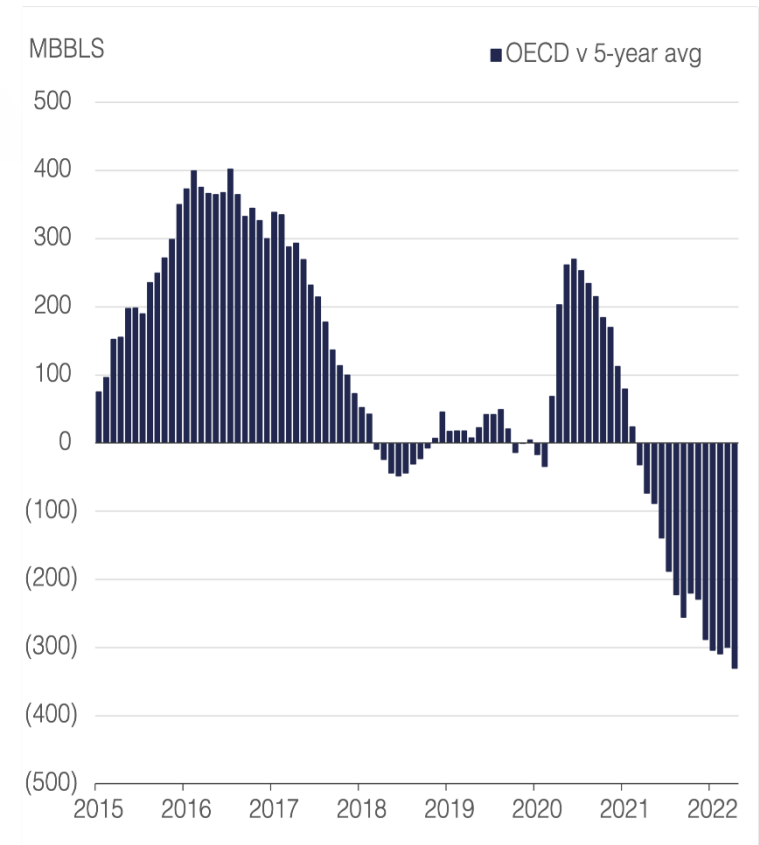




The Russian invasion of Ukraine in context

- Before recent war oil prices were rising steadily reflecting tighter fundamentals
- Recovery in oil demand post pandemic shock continued to surprise on the upside
- Sharp rise in gas prices in Q4 2021 resulted in some substitution into oil
- OPEC+ returning fewer barrels than agreed and US shale production yet to recover to its pre-pandemic levels
- Reduced investment & sanctions limiting supply responses
- OECD crude and products stocks continue to fall well below their five-year average
- Concern rising about size of spare capacity in a deteriorating geopolitical environment and increased probability of output disruptions

OECD commercial stocks vs 5-year average



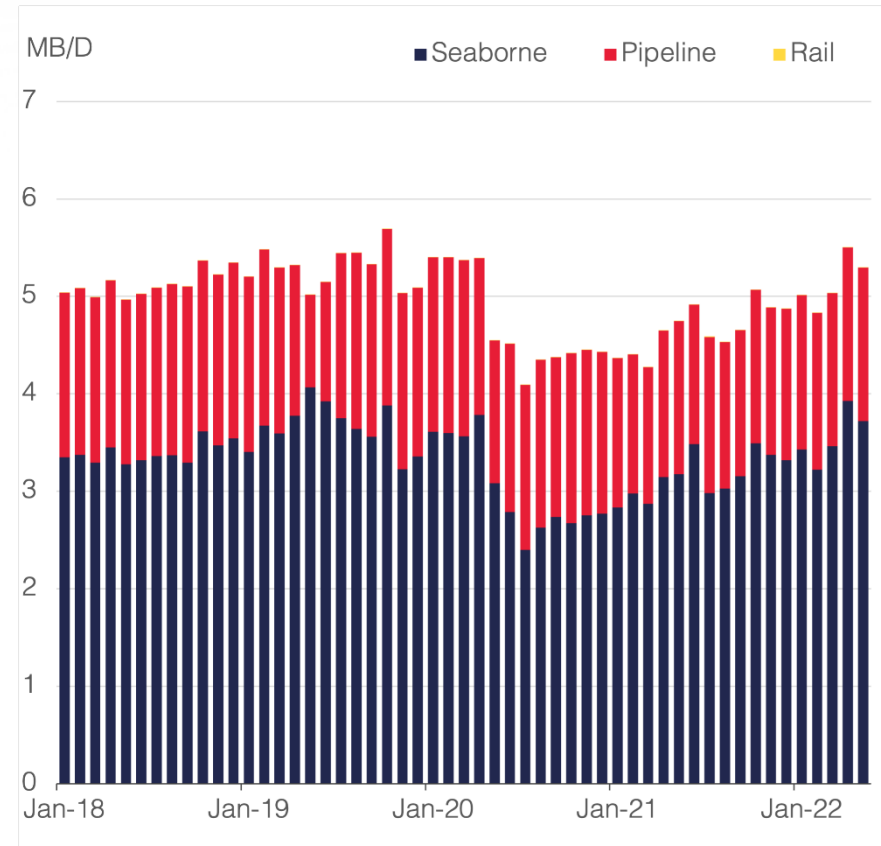
Source: IEA



Importance of Russia in global oil system (1/2)

- Russia-Ukraine war adds a new layer of uncertainty and source of disruption
- Russia is one of the world's largest producers and exporters of crude oil
- In 2019, Russia's production of crude and condensates averaged 11.25 mb/d representing 14 per cent of global production
- Since 2016 Russia has been part of the Declaration of Cooperation with OPEC
- In 2019 Russian crude exports averaged 5.3 million b/d
- European refineries particularly rely on Russian crude as part of their diet, but Russian crude has global reach across Europe the US and Asia

Russian crude oil exports



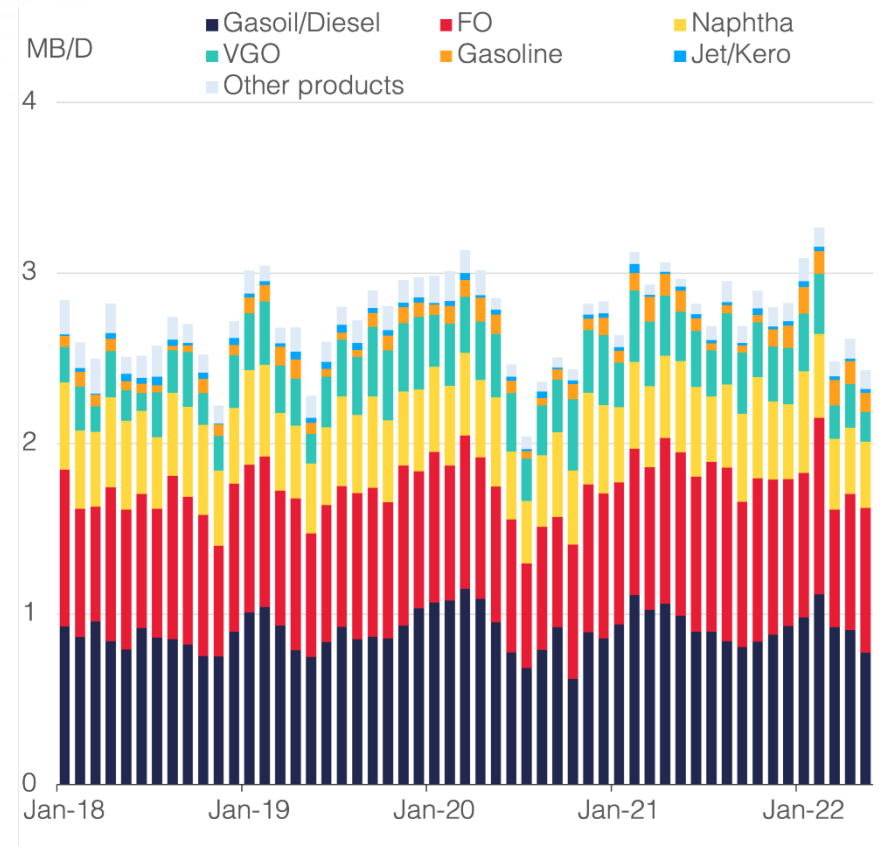
Source: Argus, Kpler, OIES



Importance of Russia in global oil system (2/2)

- Russia is also a key exporter of products such as diesel and naphtha
- Russia also exports fuel oil and Vacuum Gas Oil (VGO), important feedstocks for refineries to produce products such as diesel and gasoline
- Russia is a key supplier of crude and refined products to Europe supplying nearly 30 per cent of Europe's total oil imports in 2021 and the largest supplier of diesel in the region accounting for nearly 40 per cent of the total

Russian oil product exports



Source: Argus, Kpler, OIES

Russia under sanctions

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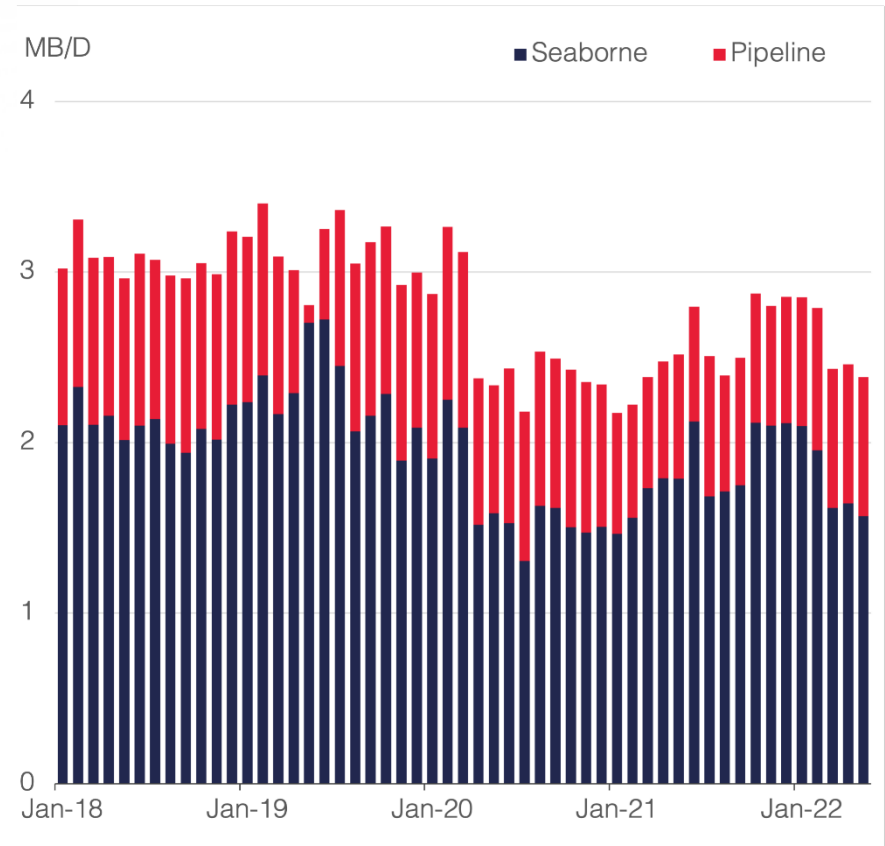




Russia under sanctions

- US, EU, and their allies have imposed severe sanctions on Russia
- Until recently sanctions on oil and gas flows and energy related payments were avoided
- This has changed: EU agreed to impose a ban on Russian oil (seaborne) and EU operators will be prohibited from insuring and financing the transport of oil to third-party countries
- 'Self-sanctioning' from private sector already extensive with many European companies suspending oil purchases from Russia
- Russian crude exports to Europe have fallen

Russian crude exports to Europe



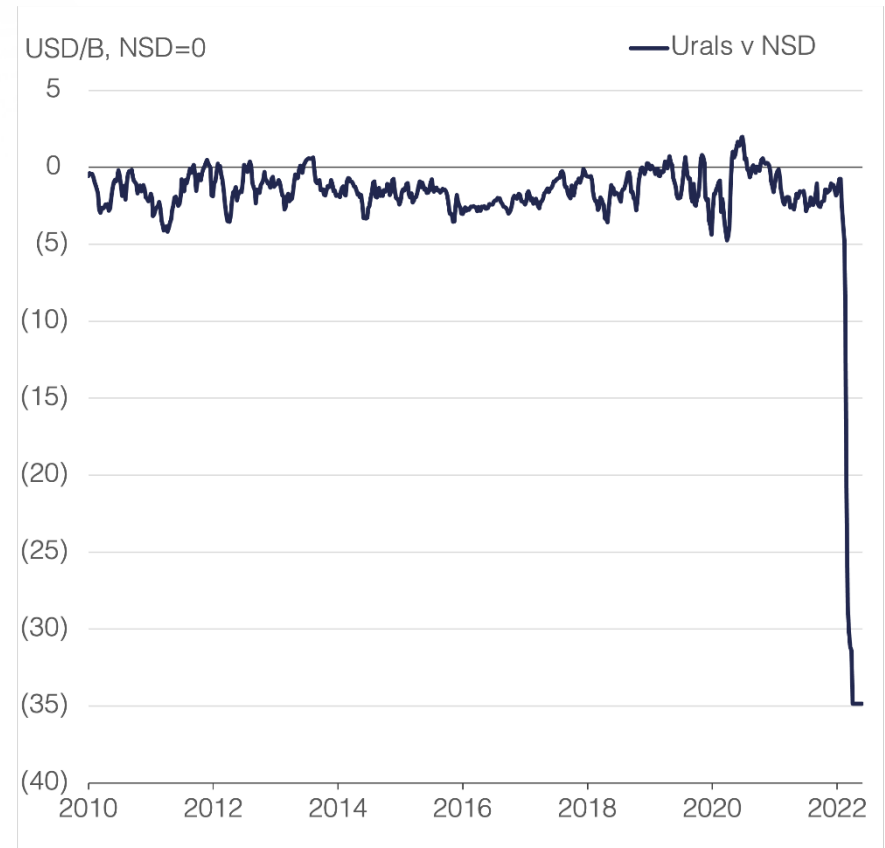
Source: Kpler, Argus, OIES



Implications on crude markets

- Redirection of trade flows towards Asia (particularly India) and the Med (Turkey and Italy)
- Russian trade shifting from short-haul to long-haul and Urals crude-on-water have been rising
- Helping this redirection of trade flows has been the offer of Russian Urals at a large discount and easier payment conditions
- Redirection of trade flows is helping clear Russian barrels
- Russia's total crude exports have risen (lower domestic demand and lower refinery runs)

Urals NWE vs North Sea Dated



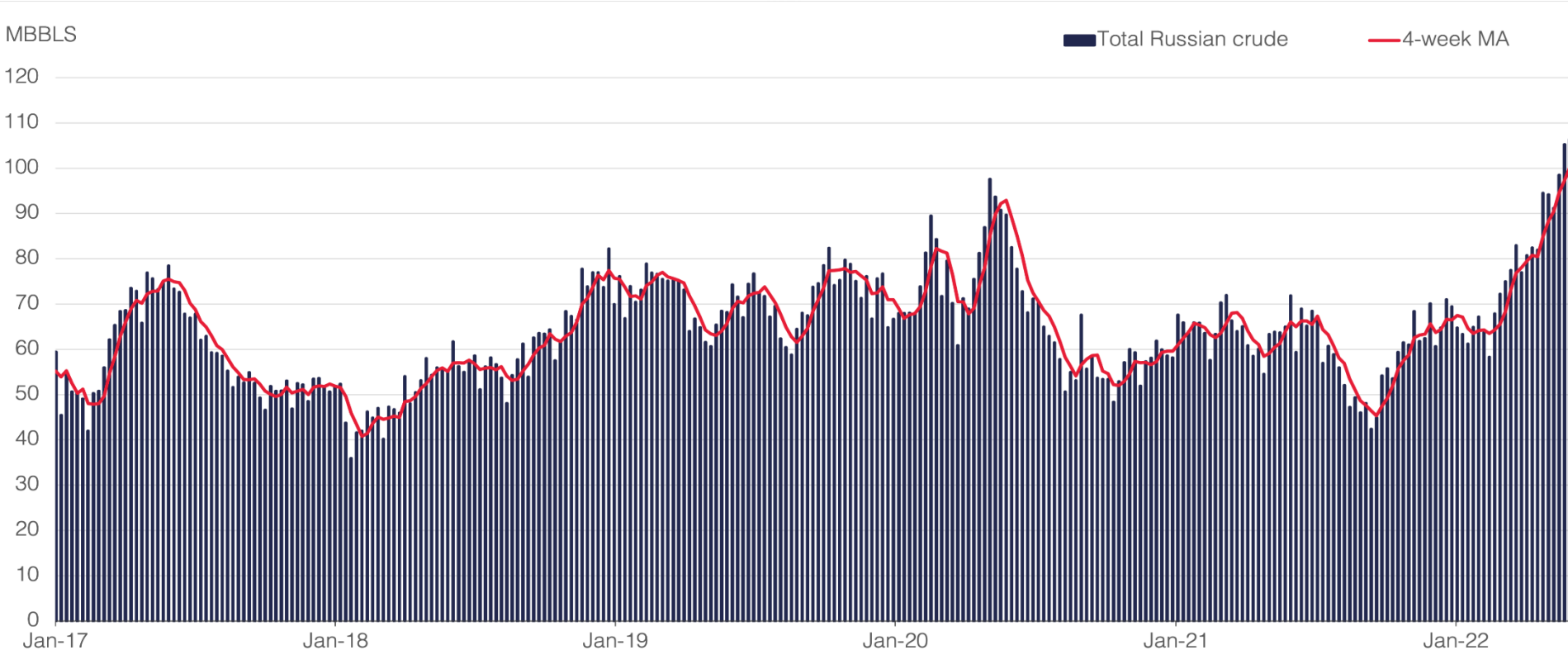
Source: Argus



Redirection of trade flows: Short-haul to long-haul

Russian crude exports shifted from short-haul to long-haul with Russian crude-on-water at record levels.

Russian crude-on-water



Source: Kpler

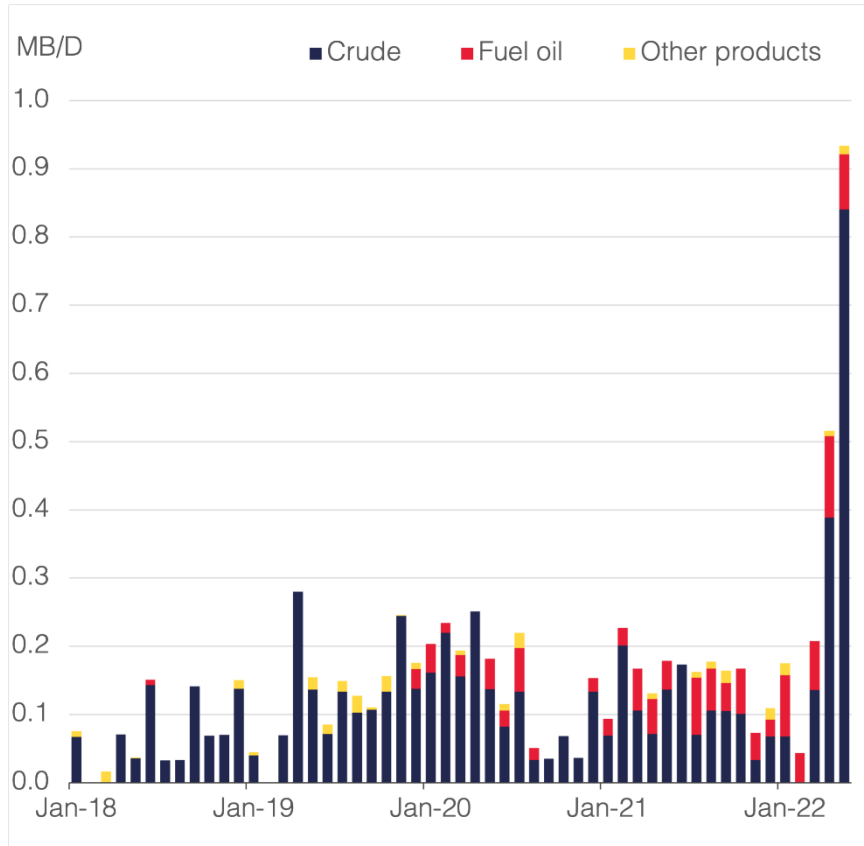
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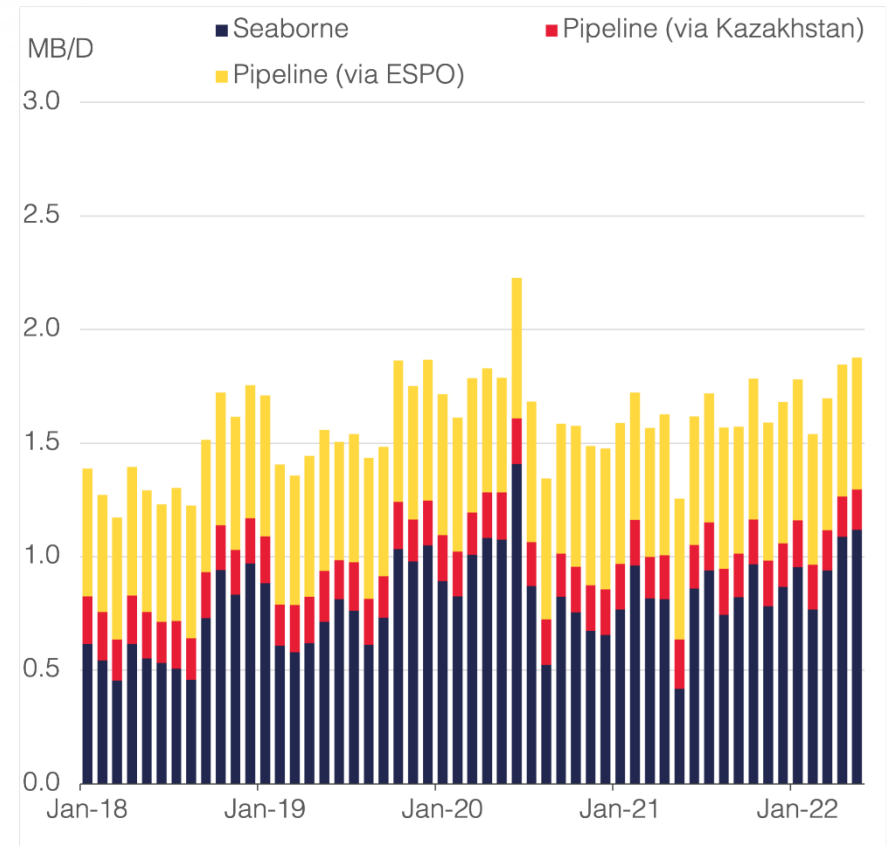
Redirection of trade flows towards Asia

India imports of Russian oil



Source: Kpler

China imports of Russian crude

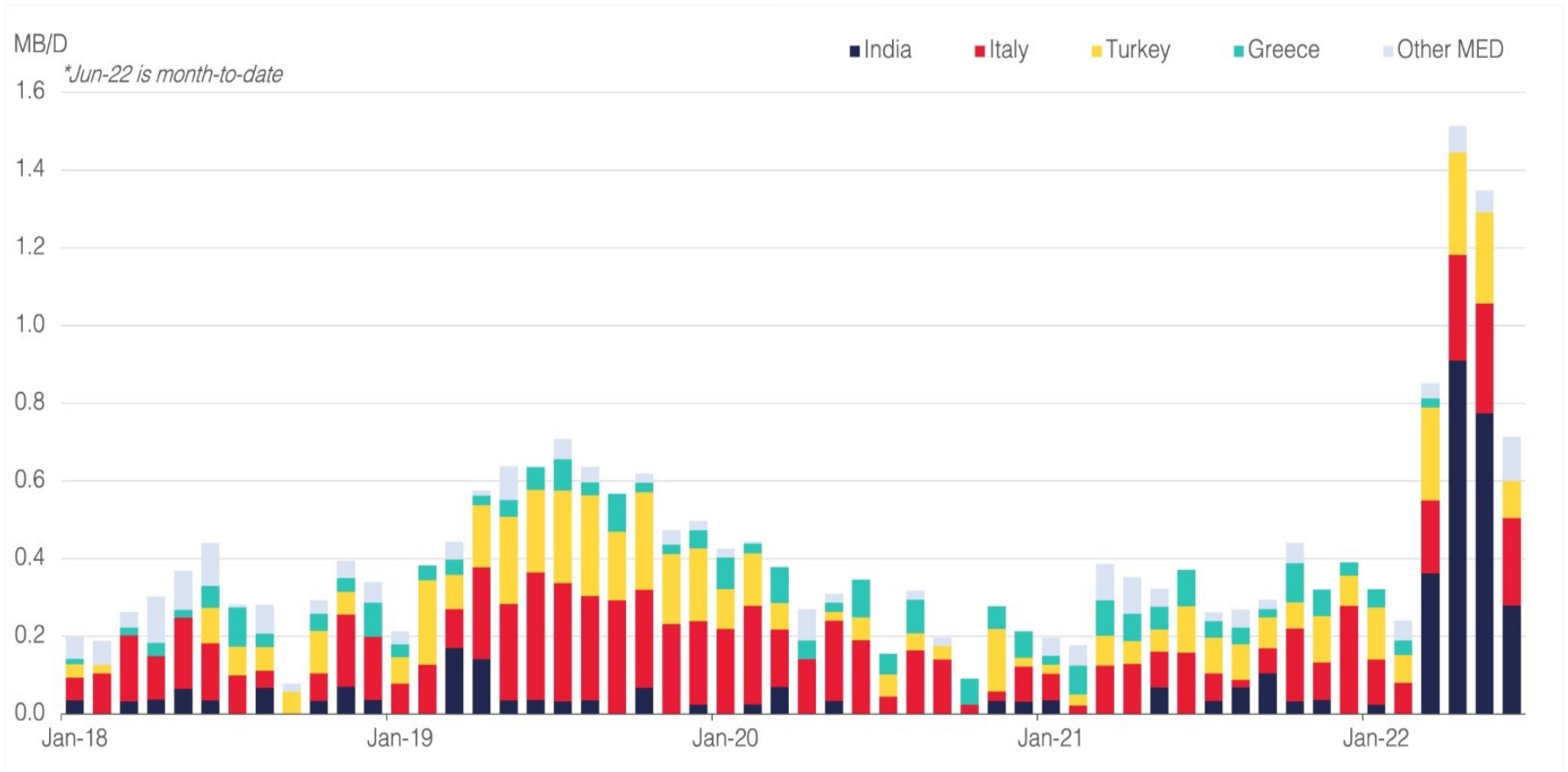


Source: Kpler



But also the Med

Russian exports of Urals crude by destination



Source: Kpler

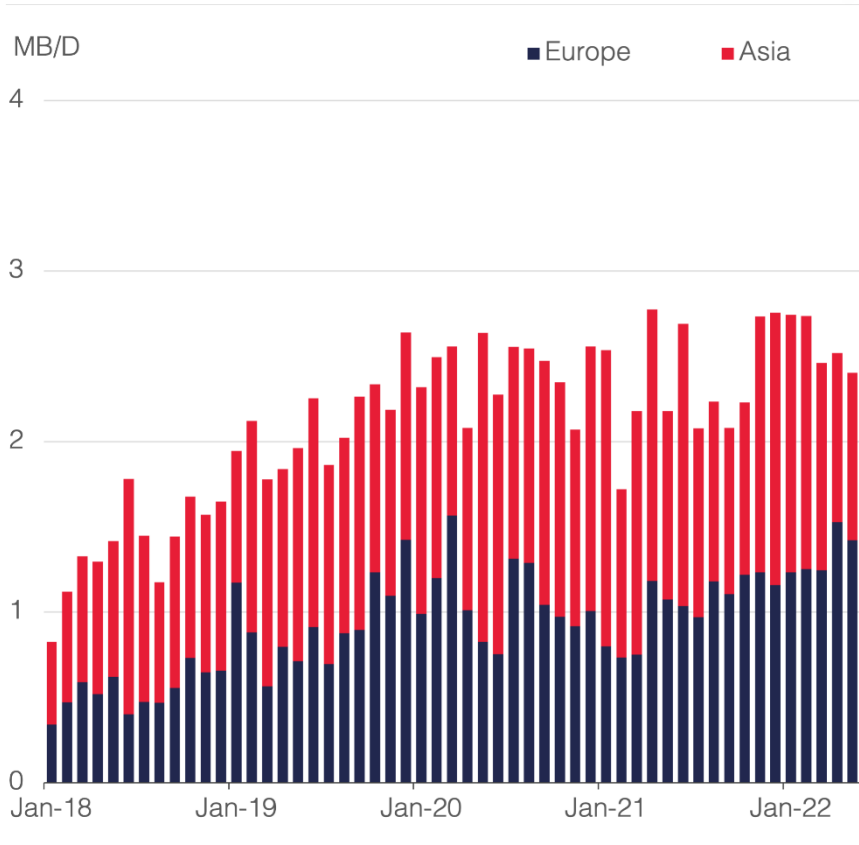
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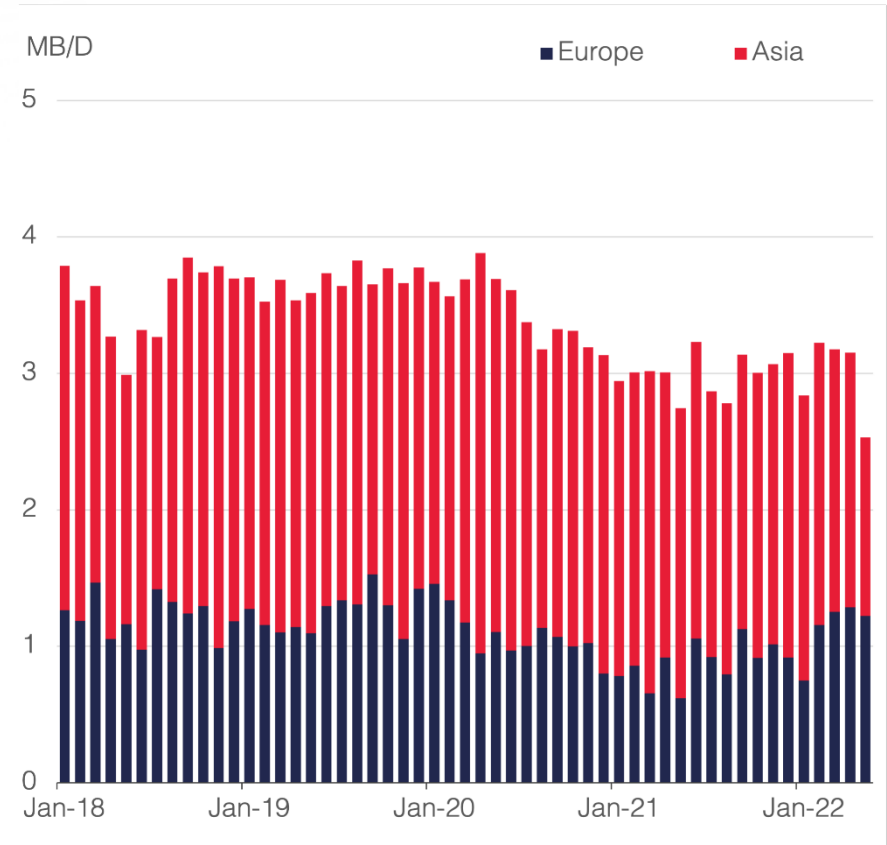
Redirection of crude flows into Europe: US and WAF

US crude exports to Europe and Asia



Source: Kpler

WAF crude exports to Europe and Asia

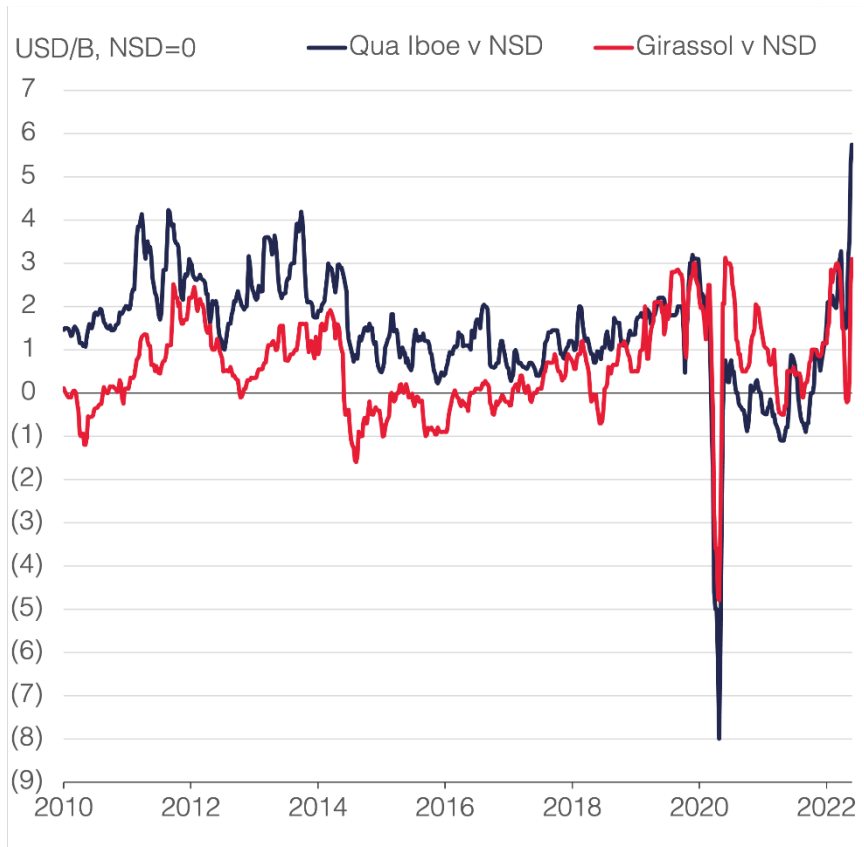


Source: Kpler



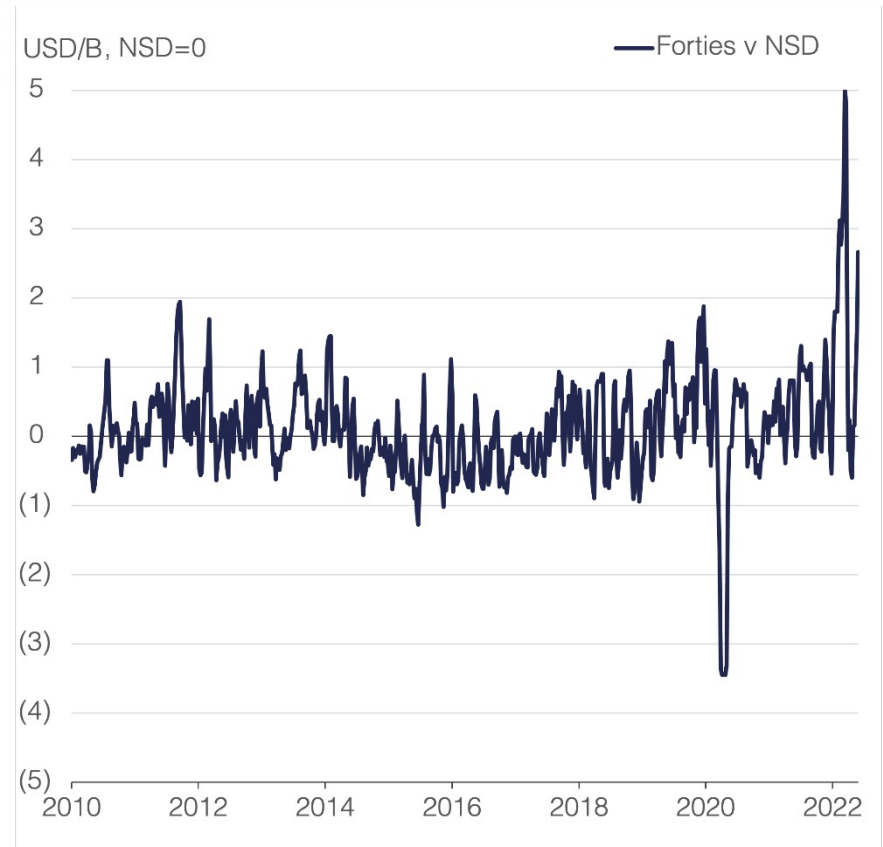
Sharp movements in differentials (1/2)

WAF grades vs North Sea Dated



Source: Argus

Forties vs North Sea Dated



Source: Argus

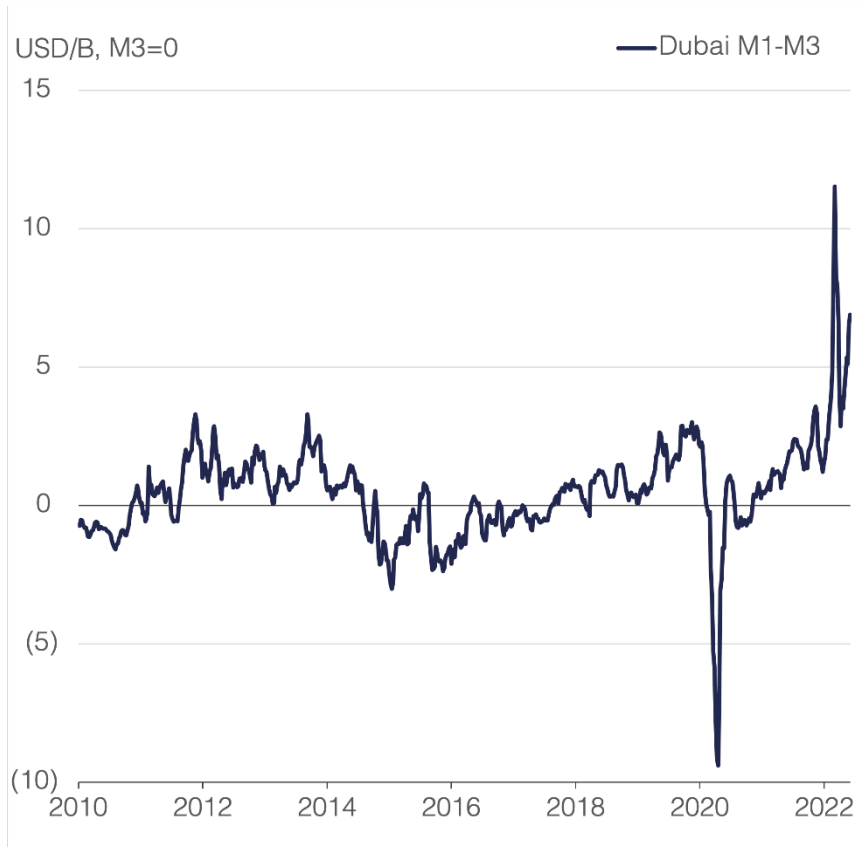
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Sharp movements in differentials (2/2)

Dubai M1-M3



Source: Argus

Brent-Dubai EFS



Source: Argus

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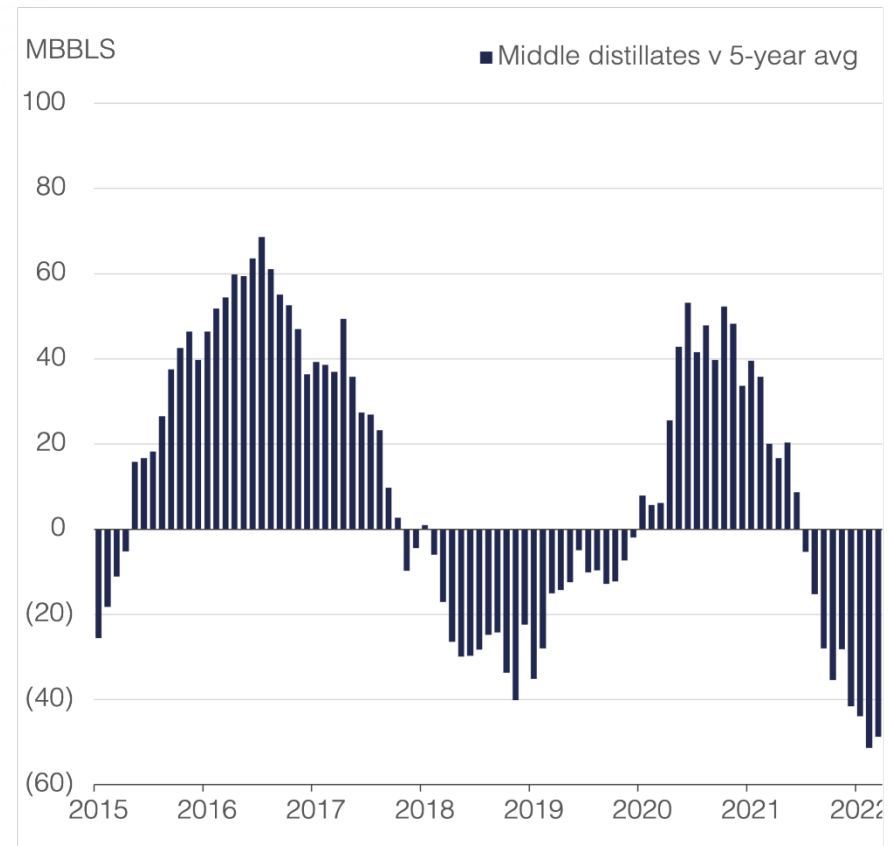
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Impact on products markets

- Even before the invasion, European refineries were facing a cost shock in terms of rising crude prices and increase in the cost of refining particularly as gas and hydrogen prices rose sharply
- Having implications on products' supplies such as diesel and gasoline
- Distillates markets were already under severe pressure; in Europe distillate stocks have been declining and distillate prices have risen sharply
- Exacerbated by EU imports of Russian diesel falling and Russian refineries cutting runs

OECD Europe middle distillate stocks vs 5-year average



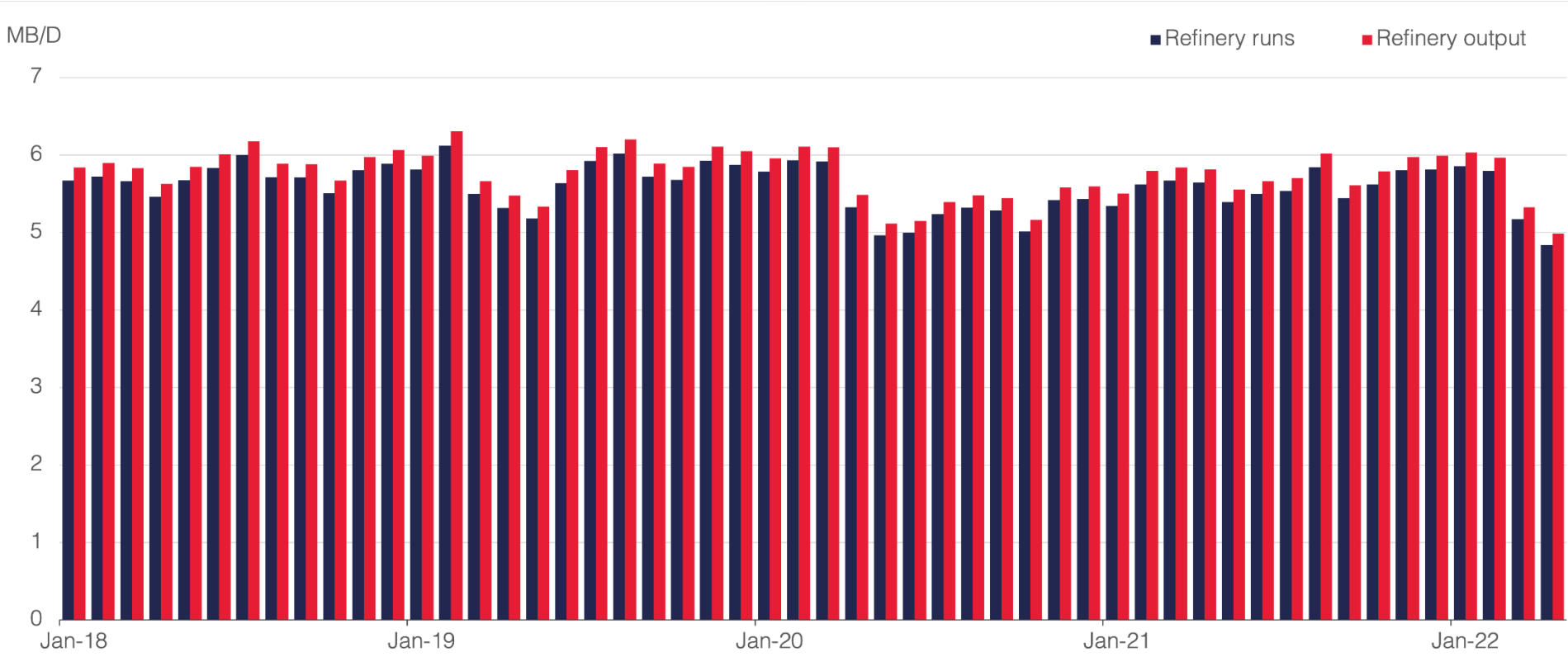
Source: IEA



Russian refinery cuts

Russian refinery runs are down by 17% or more than 1 mb/d since the start of the year as sanctions affected both exports and domestic demand and also maintenance.

Russian refinery runs and output



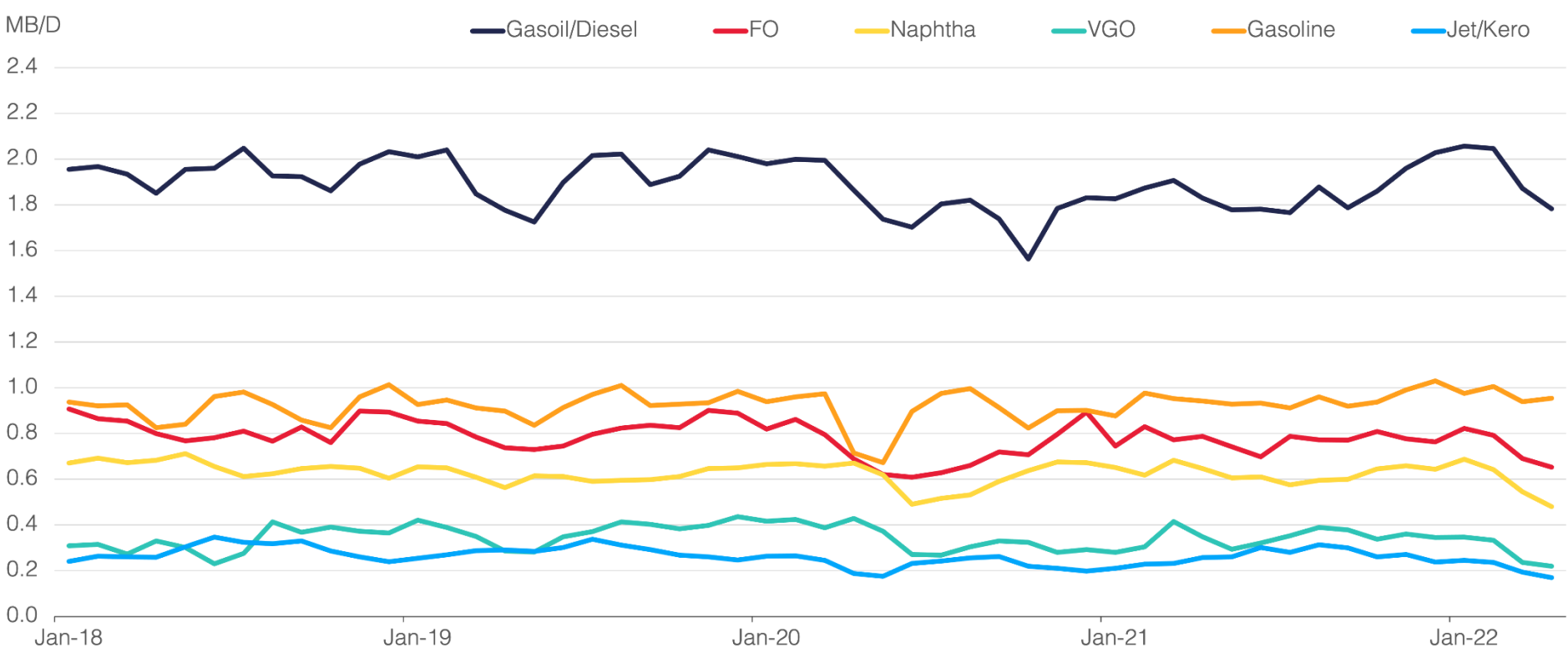
Source: Argus, OIES



Russian refinery output

The production of VGO, jet/kero and naphtha is curtailed by nearly a third since the start of the year (~30%), followed by significant cuts in FO (-21%) and gasoil/diesel output (-13%).

Russian refinery output by product



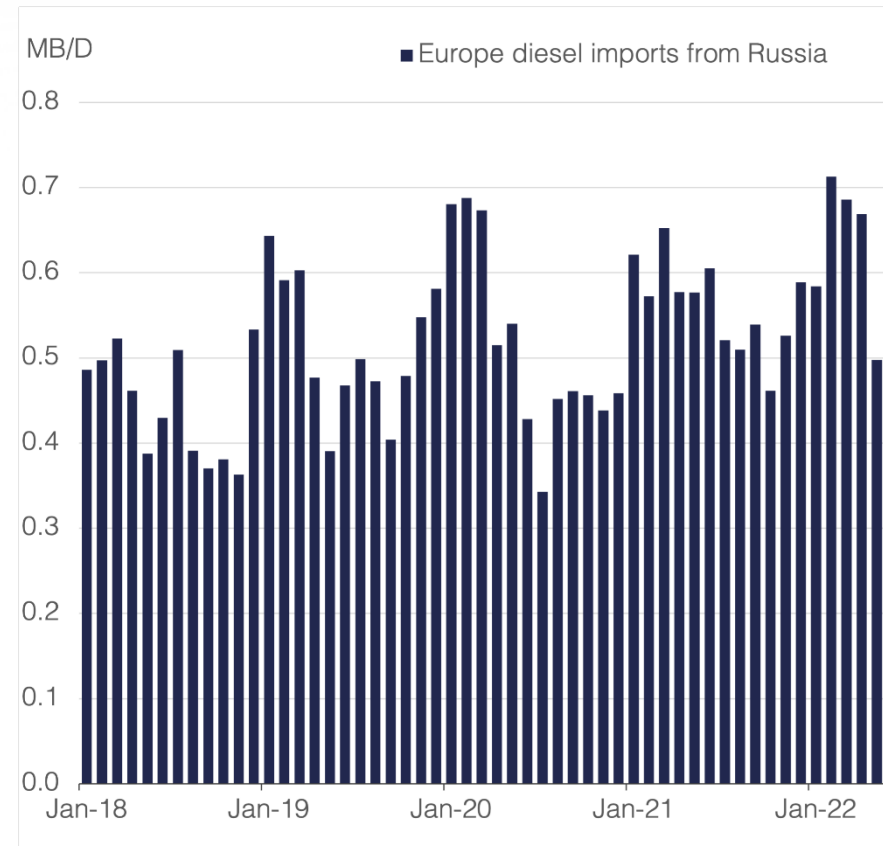
Source: Argus, OIES



Segmented markets

- Russian diesel continues to flow to Europe
- Markets pricing non-Russian diesel versus Russian diesel, with non-Russian diesel pricing at a premium
- Initially definition of what constitutes non-Russian cargoes was not strict (certain percentages of Russian origin allowed, Russian diesel from non-Russian ports)
- More rigorous restrictions on suppliers on the origin of their products raising premiums
- EU proposal to ban imports of products

Europe imports of Russian diesel

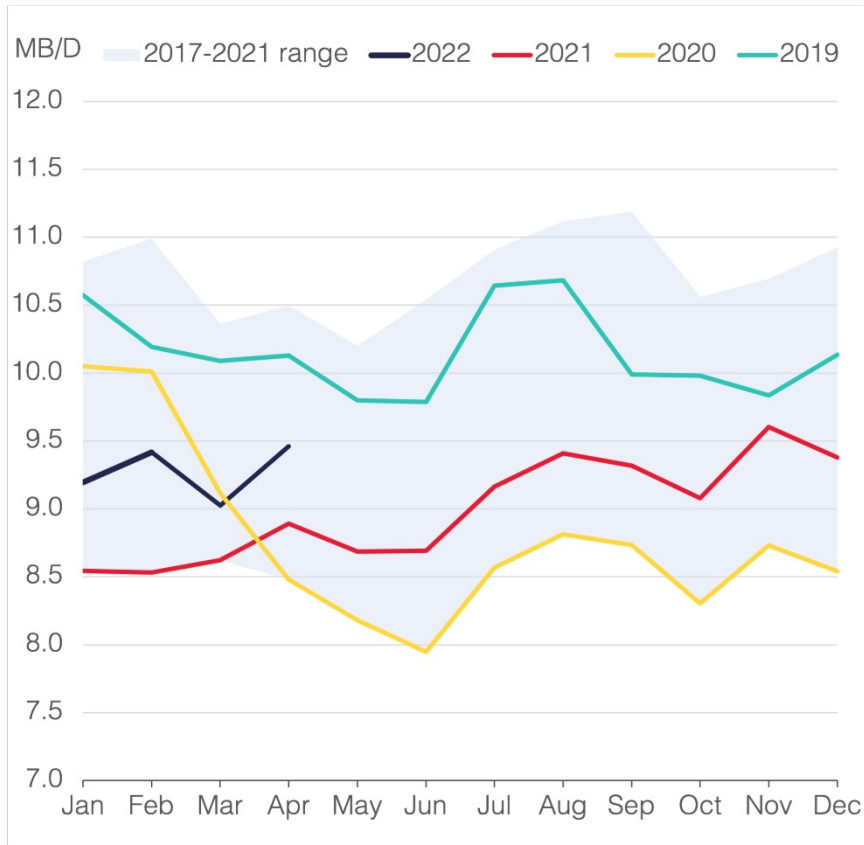


Source: Kpler



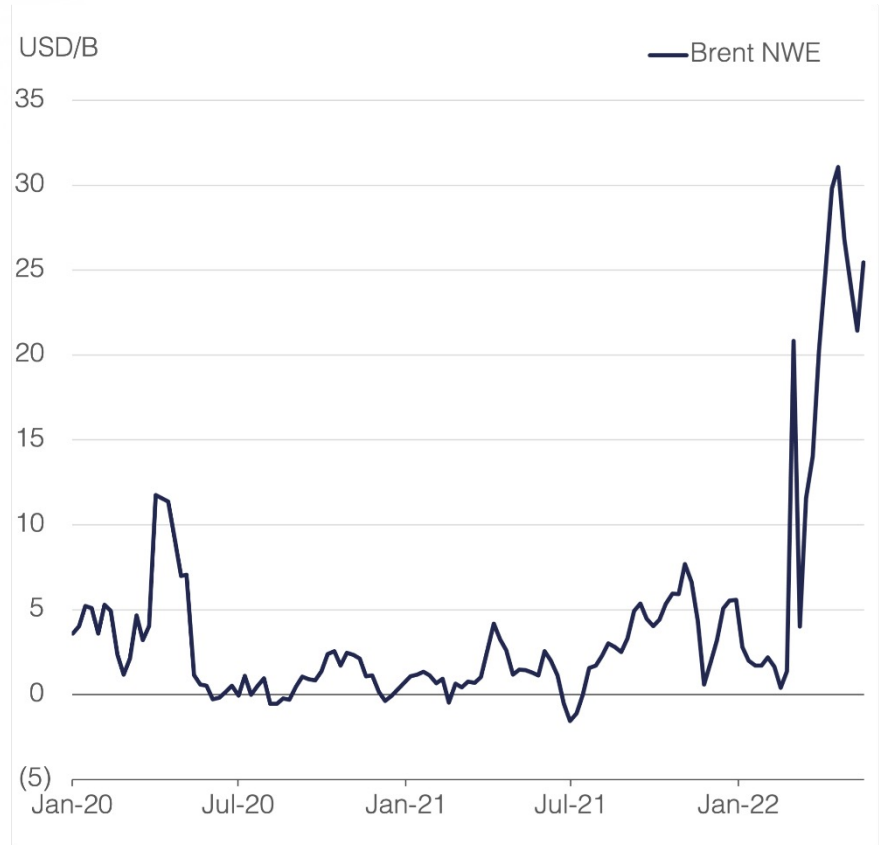
European refinery runs and margins

EU-16 refinery runs



Source: Argus

Europe refining margins



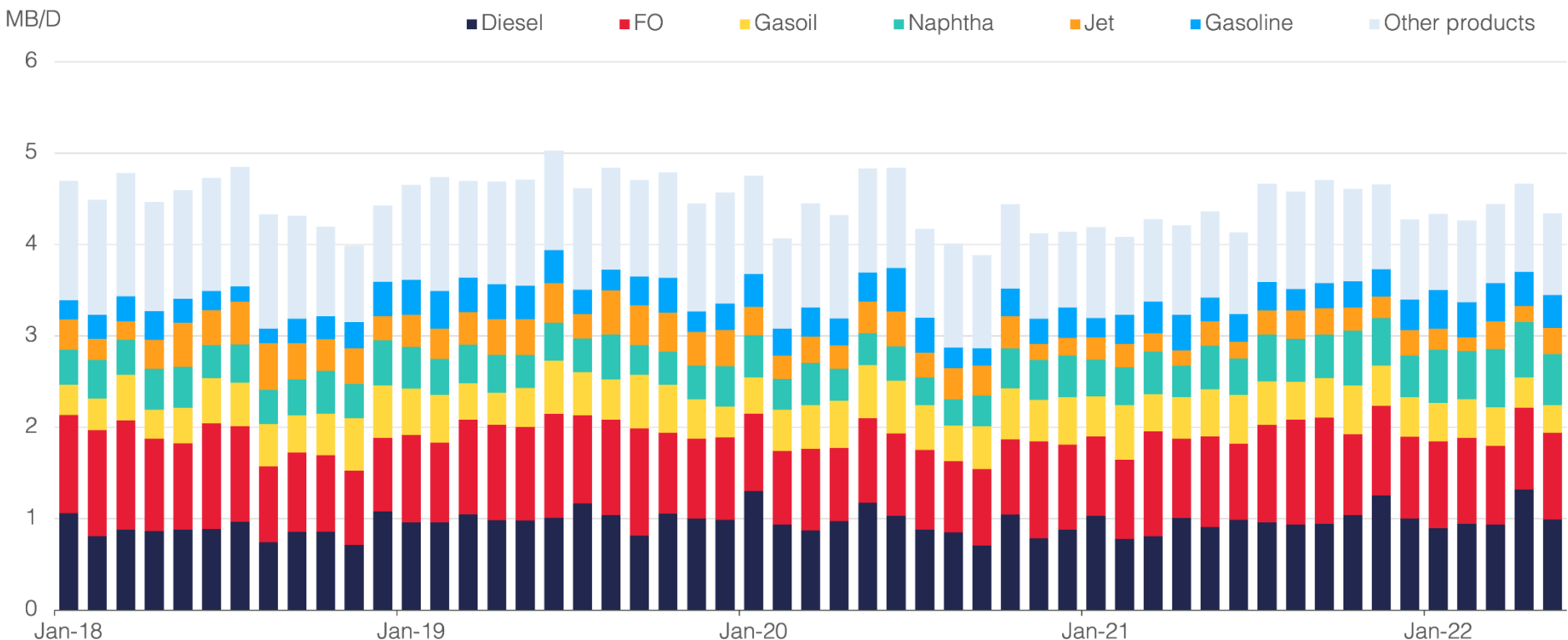
Source: Argus



EU Imports of products

EU imports of products have been maintained at historical levels despite cuts in Russian imports

EU-27 imports by product



Source: Kpler

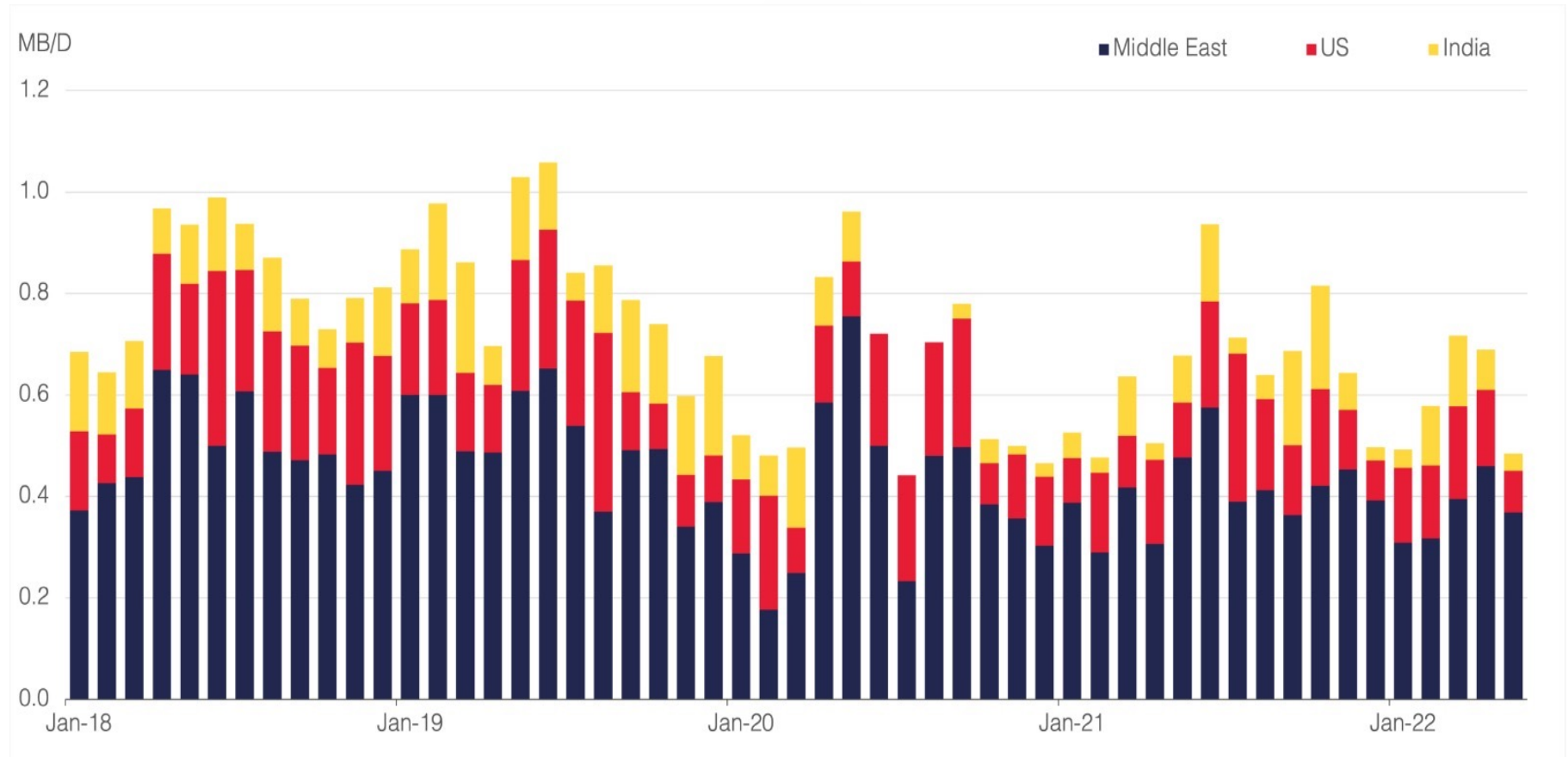
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Exporters of products into EU

Middle East, US and India product exports to EU-27



Source: Kpler

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Asian margins strong

Diesel margins in Asia



Source: Argus

Jet fuel margins in Asia



Source: Argus

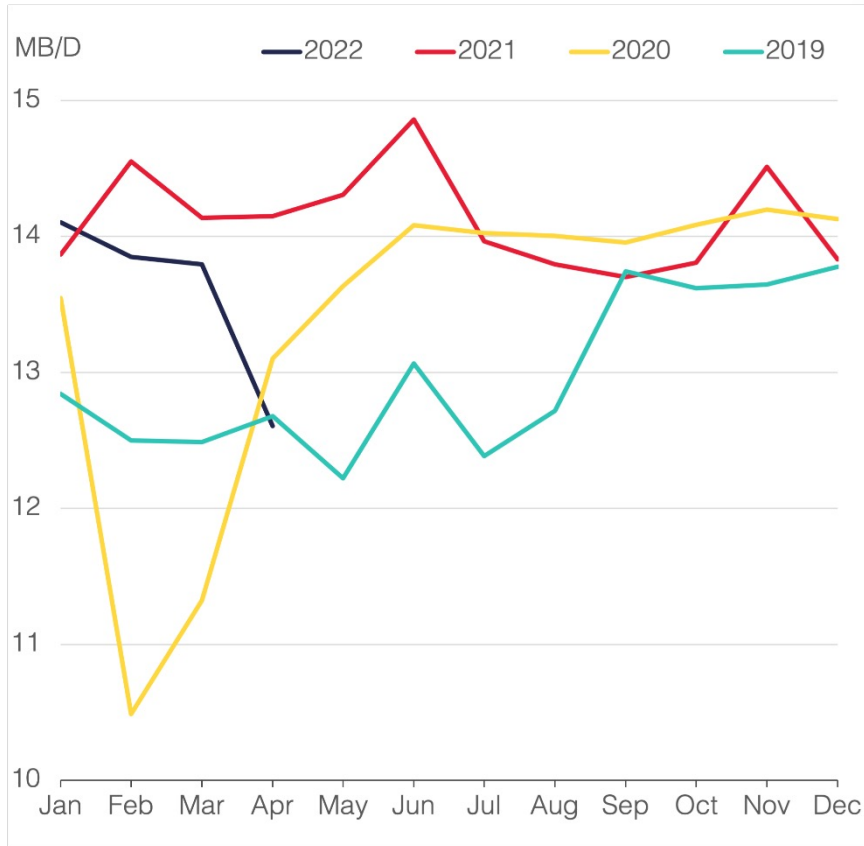
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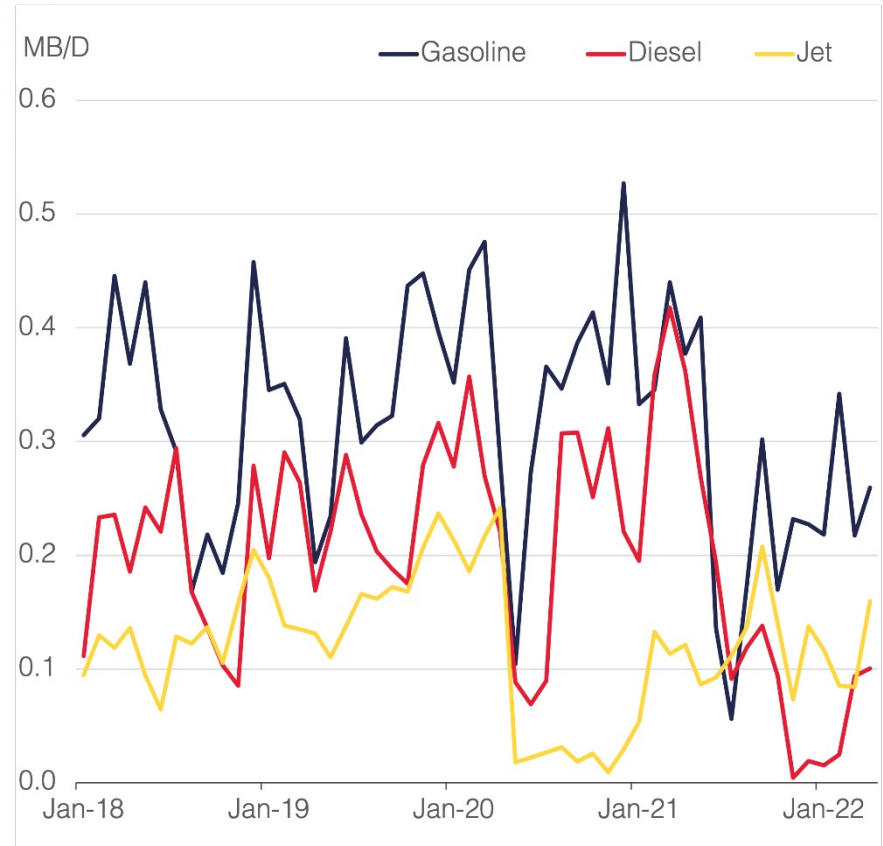
China refinery runs and product exports

China refinery runs



Source: Argus

China product exports



Source: Kpler

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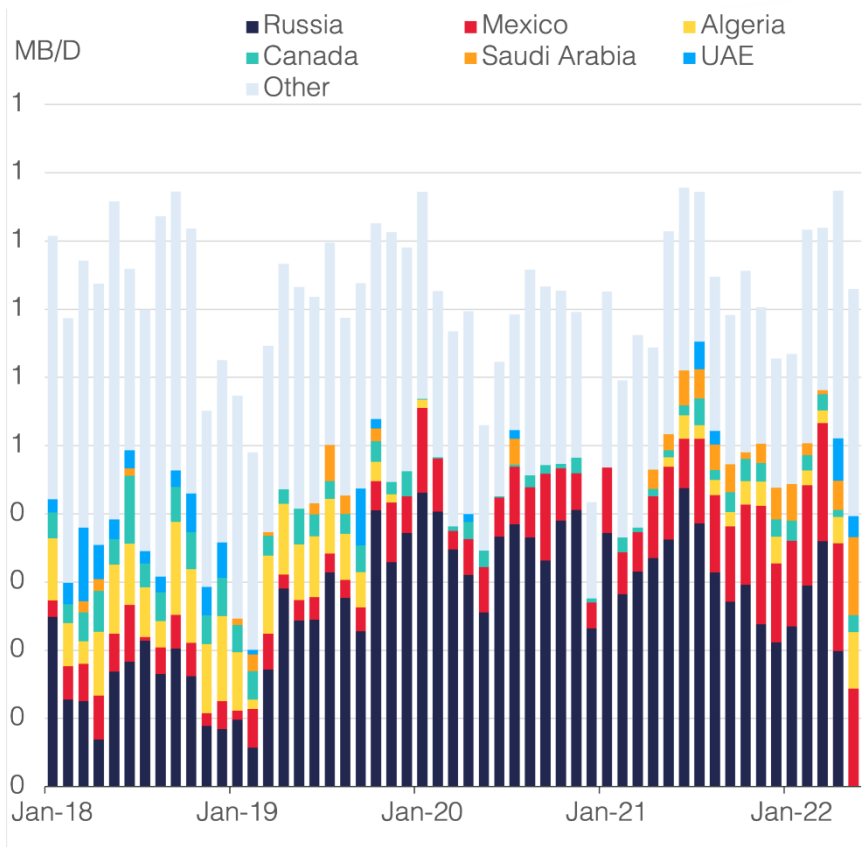
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US products market tight

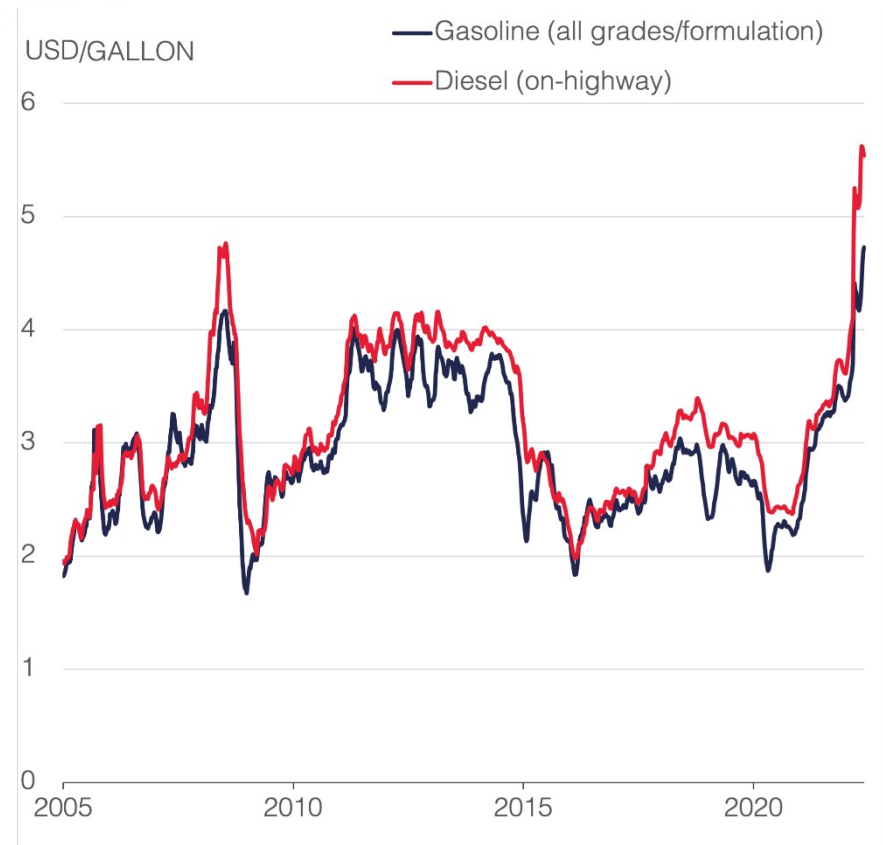
Closure of 1.5 mb/d of refining capacity in the US and Canada across 2020-2021, lower imports of VGO from Russia, and shortages of key gasoline blendstocks key contributors.

US imports of FO and VGO by origin



Source: Kpler

US retail gasoline and diesel prices



Source: EIA

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Supply and demand responses

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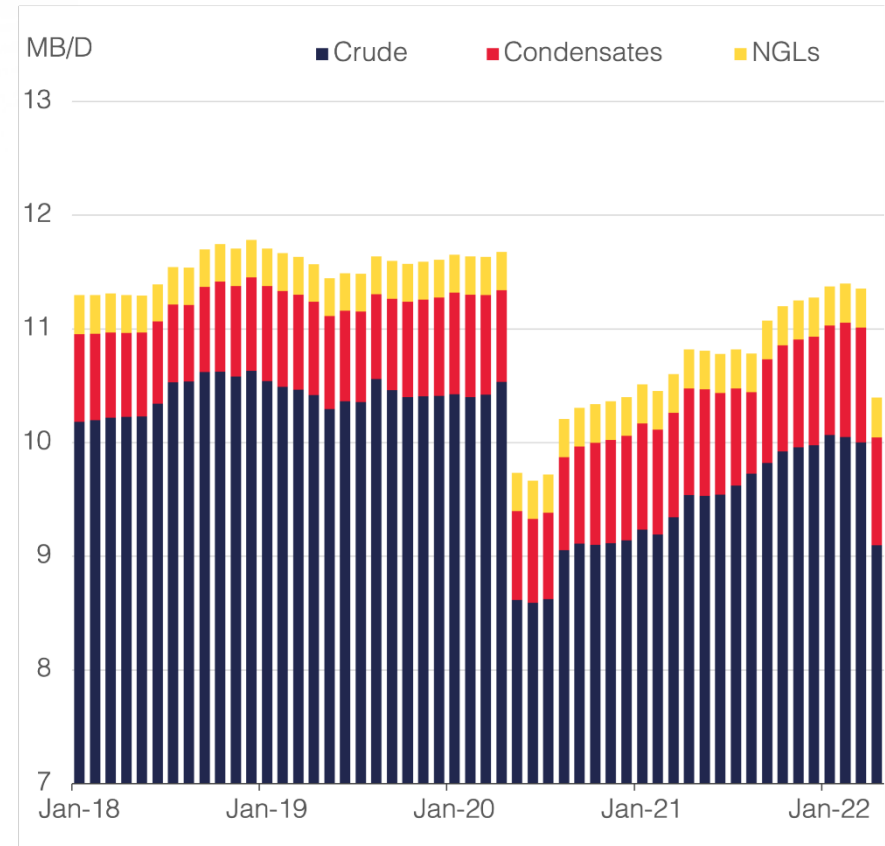




Supply disruption limited but risk of bigger disruption high

- Risk of bigger disruption rising by the day
- Self sanctioning
- European ban on Russian seaborne imports
- EU operators prohibited from insuring and financing transport of Russian oil (including reinsurance)
- Reluctance of many banks to finance Russian-related commodity transactions
- Traders not renewing term contracts (but Russian companies entering directly in deals with India's refineries)
- Limits on Asian importers' ability to absorb additional larger volumes of Russian barrels?! Russian Urals ending up in storage?

Russian oil liquids production



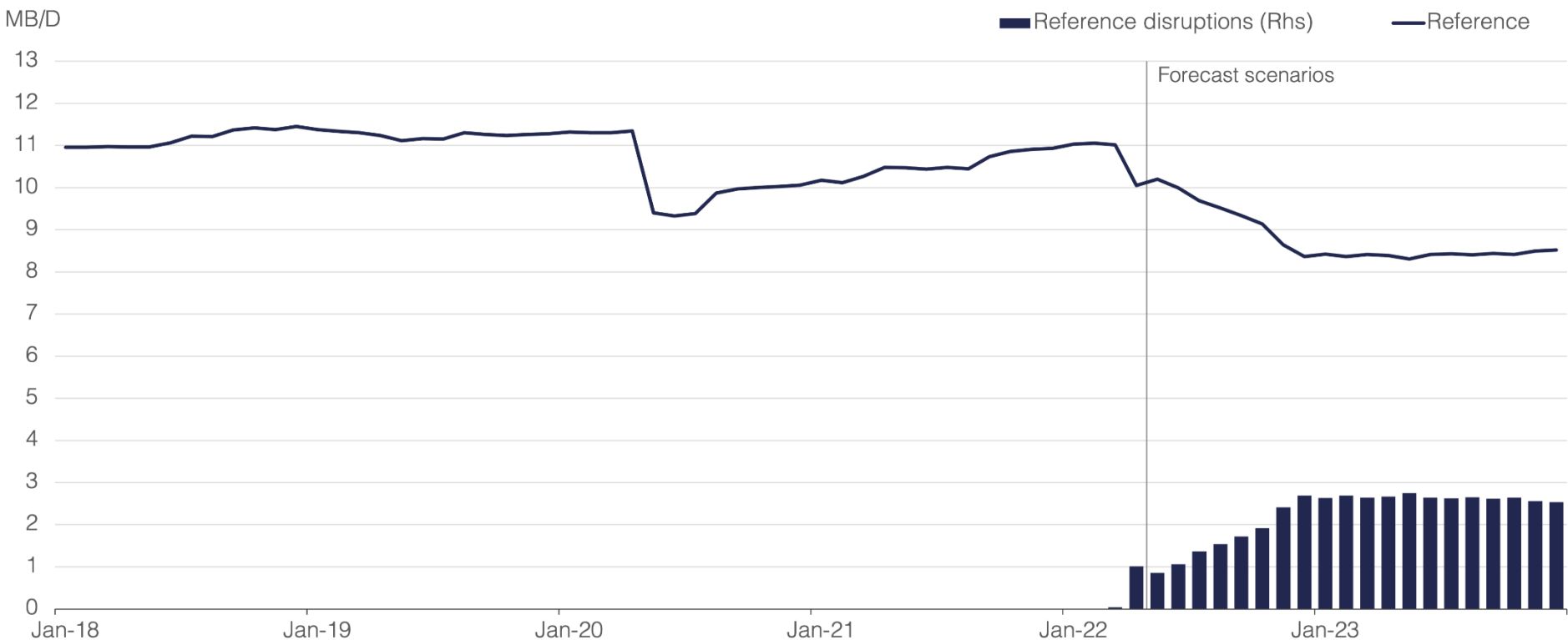
Source: IEA



Russia output disruption scenarios

Expect the EU oil ban to result to a total loss of 2.6 mb/d of Russian crude oil production by year-end, but the decline to be gradual.

Russia crude oil production scenarios



Notes: Crude oil includes condensates.
Source: OIES

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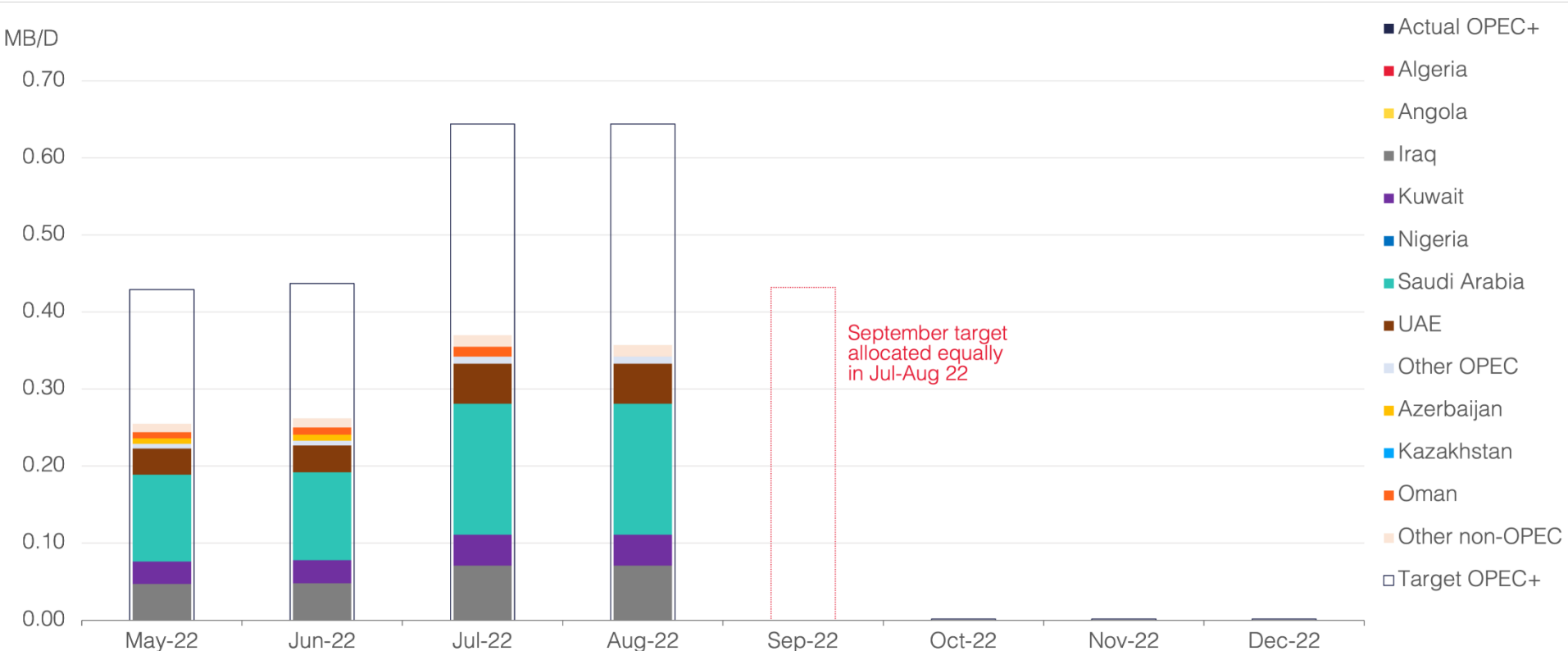
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Global supply response: OPEC+

Despite the latest move by OPEC+ to advance its September output hikes to July/August, our reference case continues to see the return of only 1.2 mb/d between May-August versus the 2.1 mb/d target.

Target vs projected OPEC+ production increases by country



Source: OIES

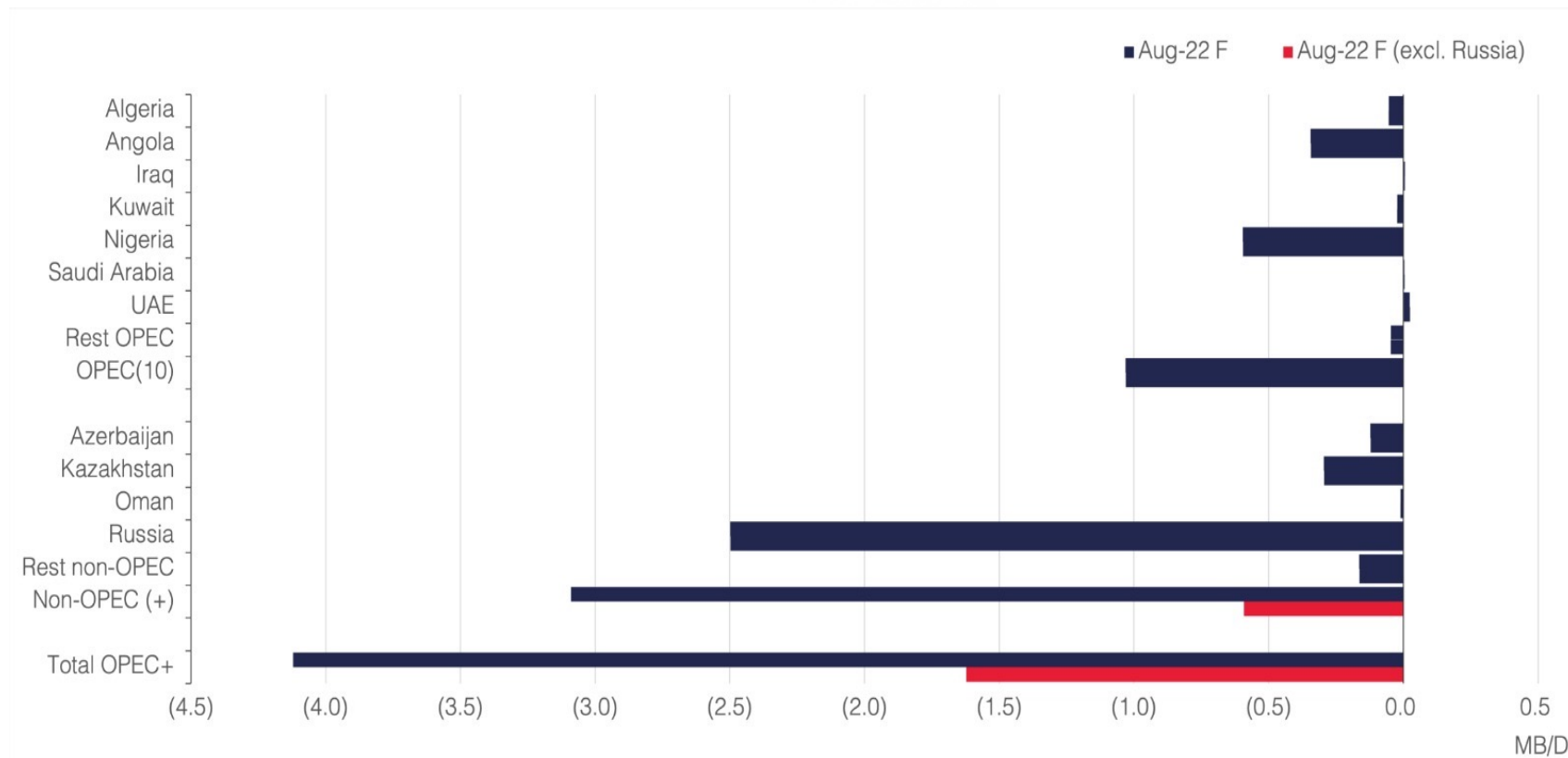
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Global supply response: OPEC+

Projected vs target production in August 2022



Source: OIES

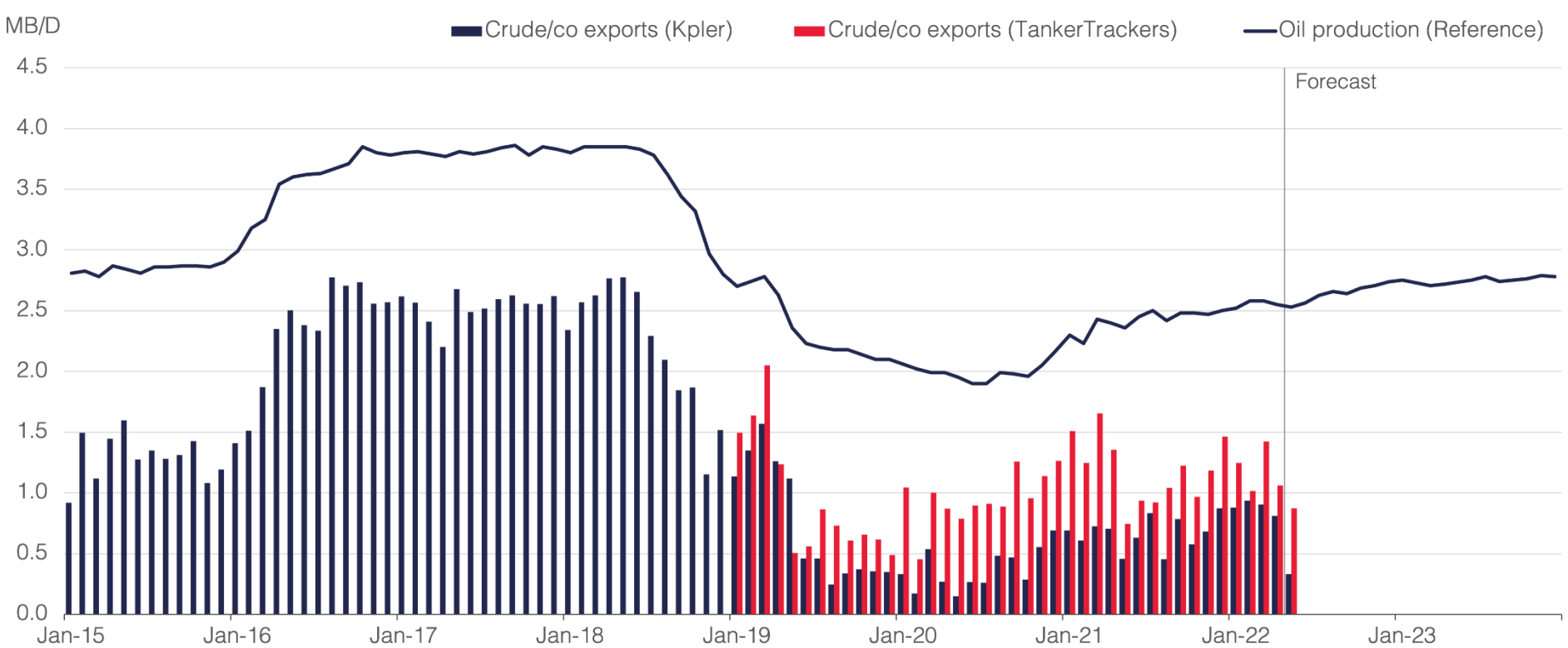
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Global supply response: Iran

Iran oil exports and production



Source: Kpler, TankerTrackers, OIES

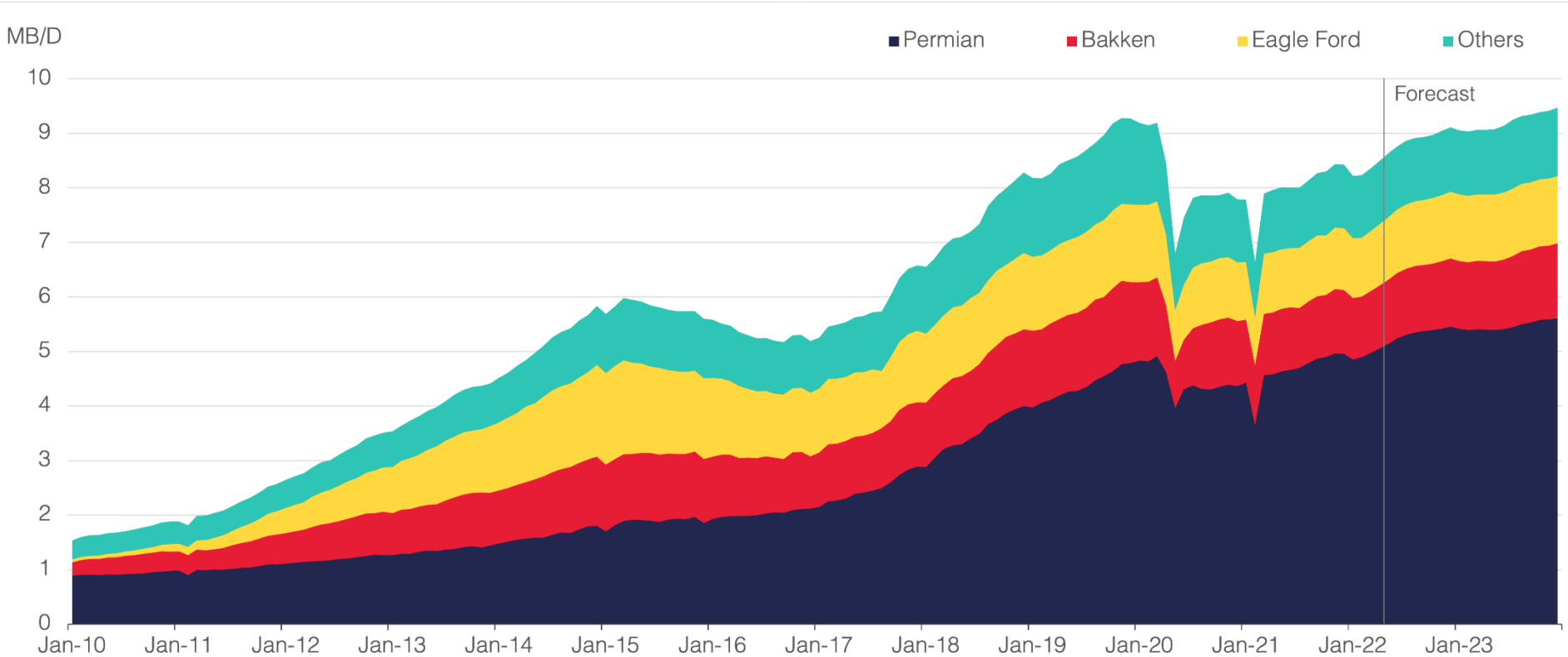
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Global supply response: US shale

US shale production by play



Source: OIES

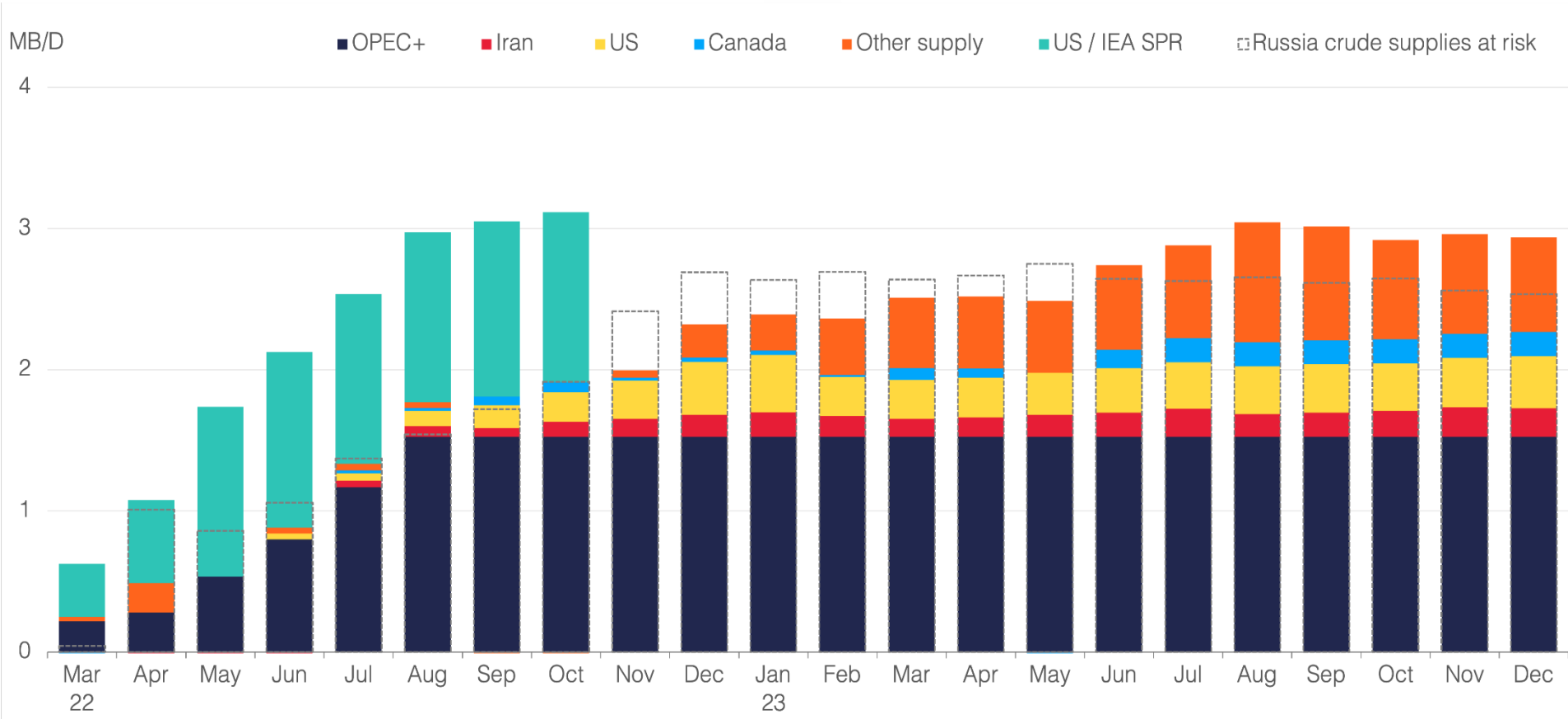
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Global supply response

Replacement barrels versus Russian crude supplies at risk



Notes: Other supply includes crude oil from rest producers, and global NGLs, biofuels and other liquids.

Source: OIES

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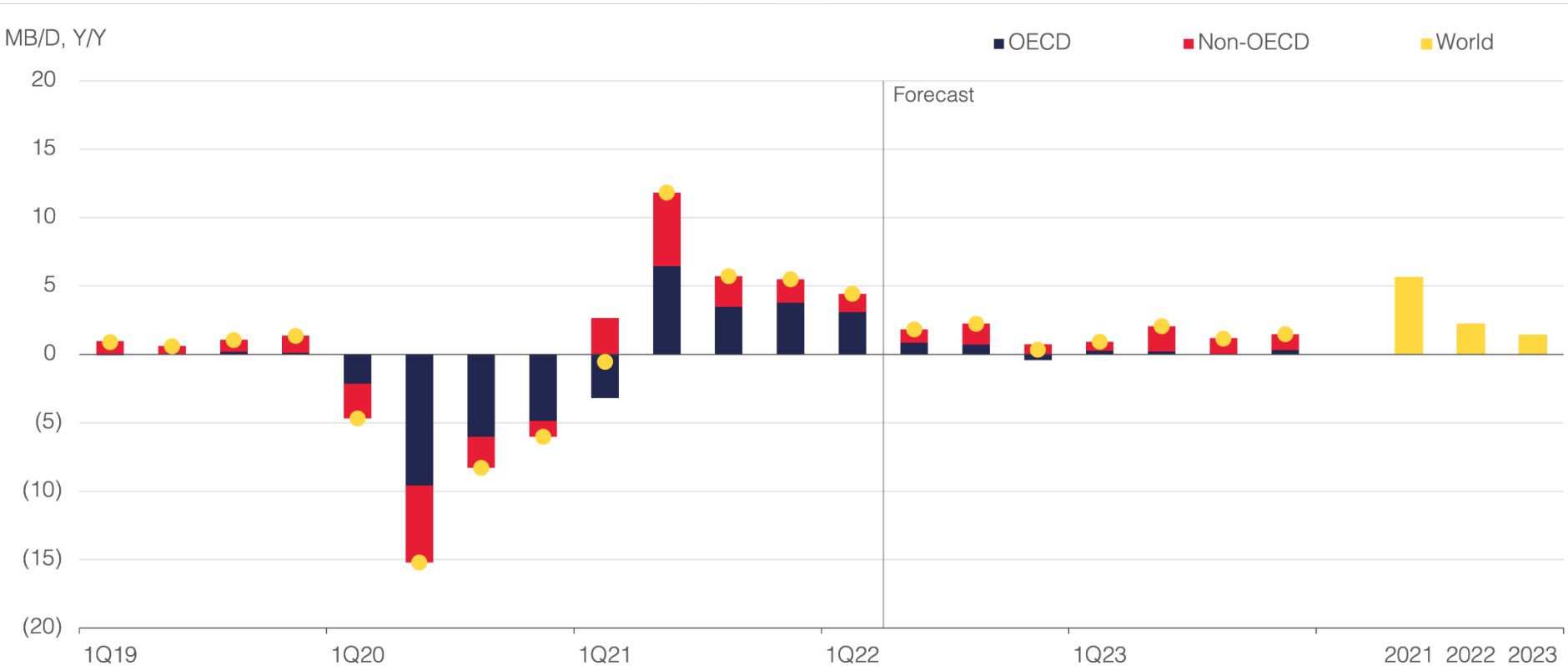
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Global oil demand

Global oil demand growth is downgraded to 2.2 mb/d in 2022 and 1.4 mb/d in 2023.

Global oil demand



Source: OIES

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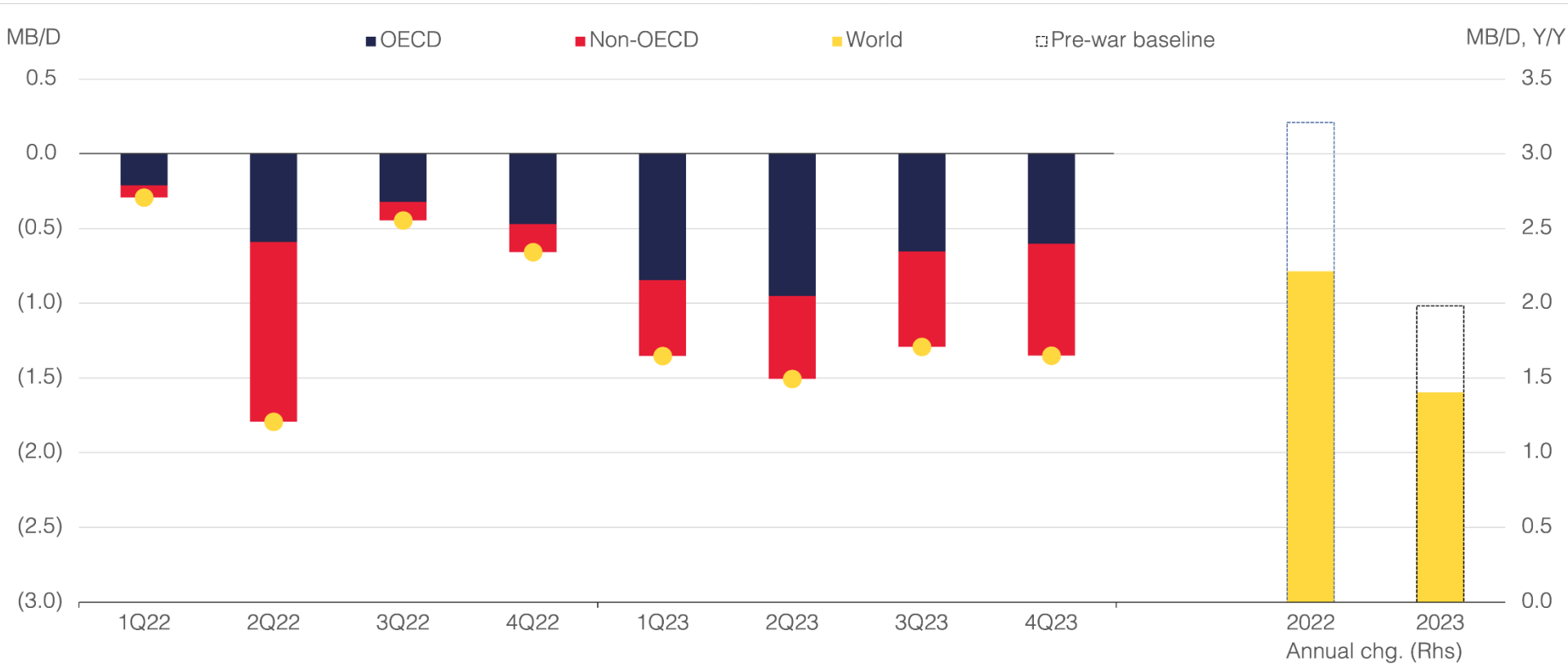
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Global oil demand revisions

The responses to higher oil prices and slower economic growth increase in 2023.

Global oil demand revisions



Notes: The pre-war baseline reflects the latest forecast prior Russia's invasion of Ukraine.

Source: OIES

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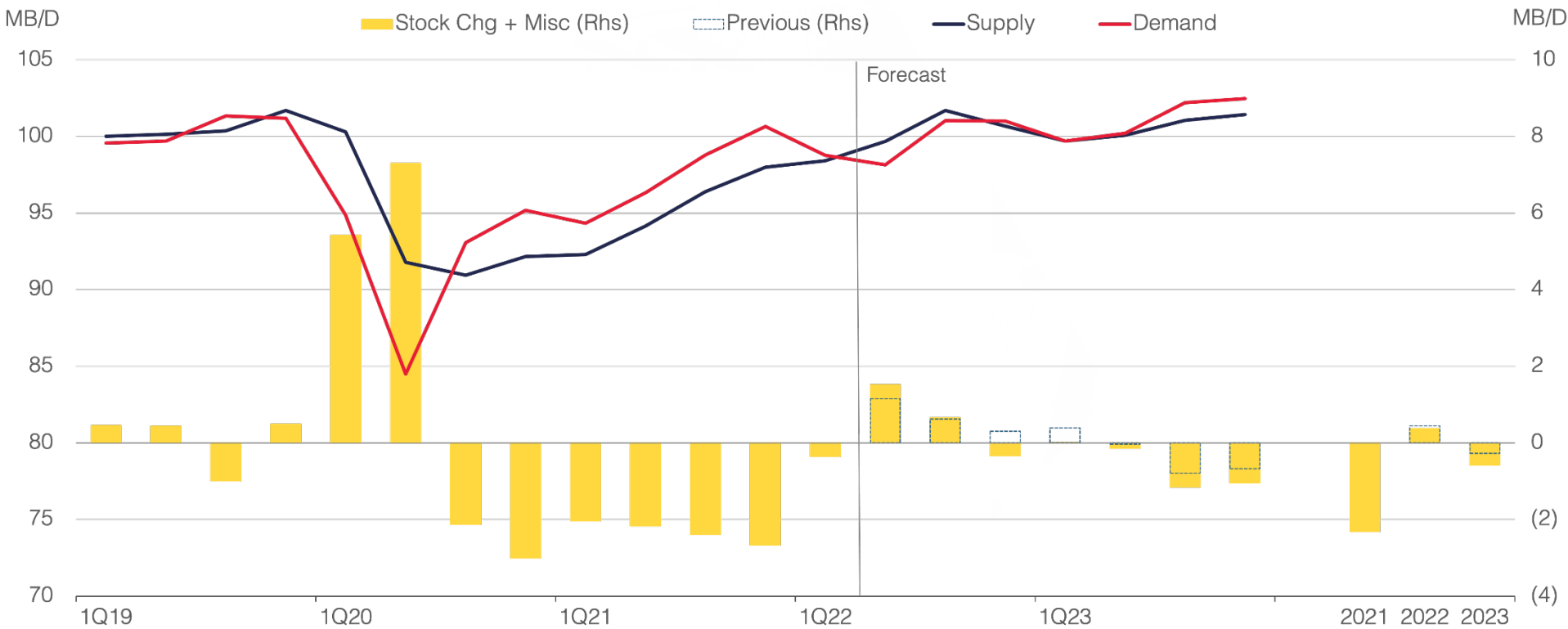
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Global balance

Market surplus in 2022 at 0.38 mb/d but market deficits re-emerge sooner from Q4-onwards deepening the overall deficit in 2023 to -0.58 mb/d.

Global balance



Source: OIES

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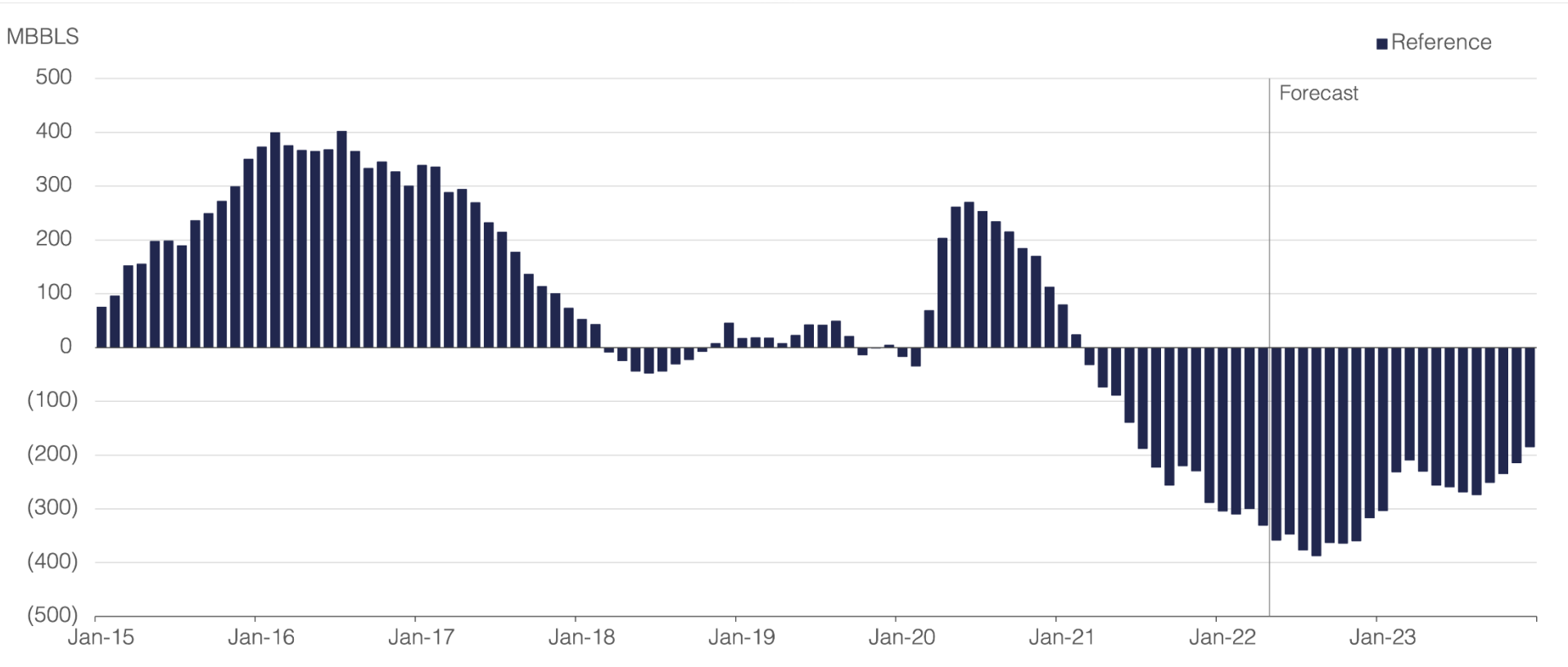
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OECD stocks

OECD stocks remain under severe pressure throughout the remainder of the year, before the draws reverse ending-2022 and ease the tight stocks position in 2023.

OECD commercial stocks vs 5-year average



Source: OIES

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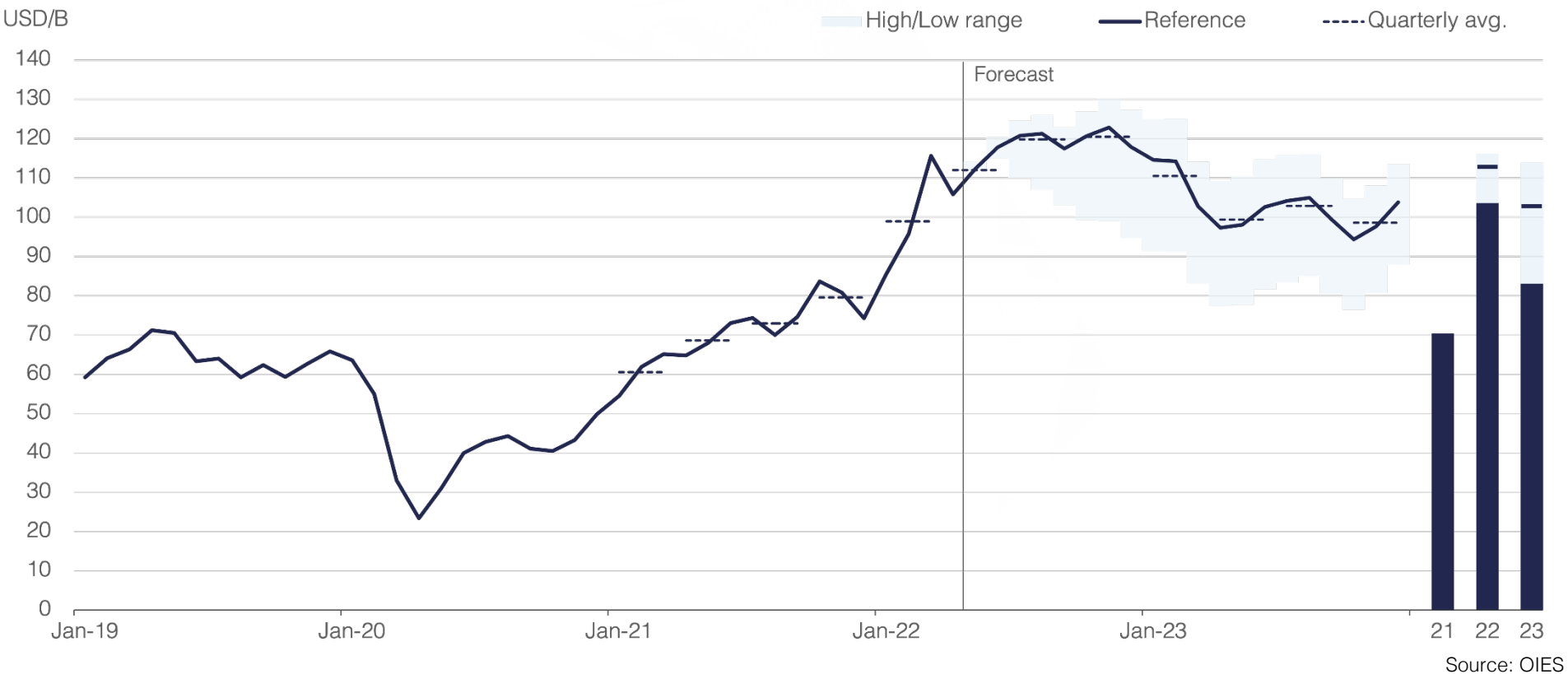
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Price outlook

Our reference Brent forecast: \$112.8/b in 2022 and \$102.8/b in 2023, with the price pressures sustained in Q2 and Q3 before easing in 2023.

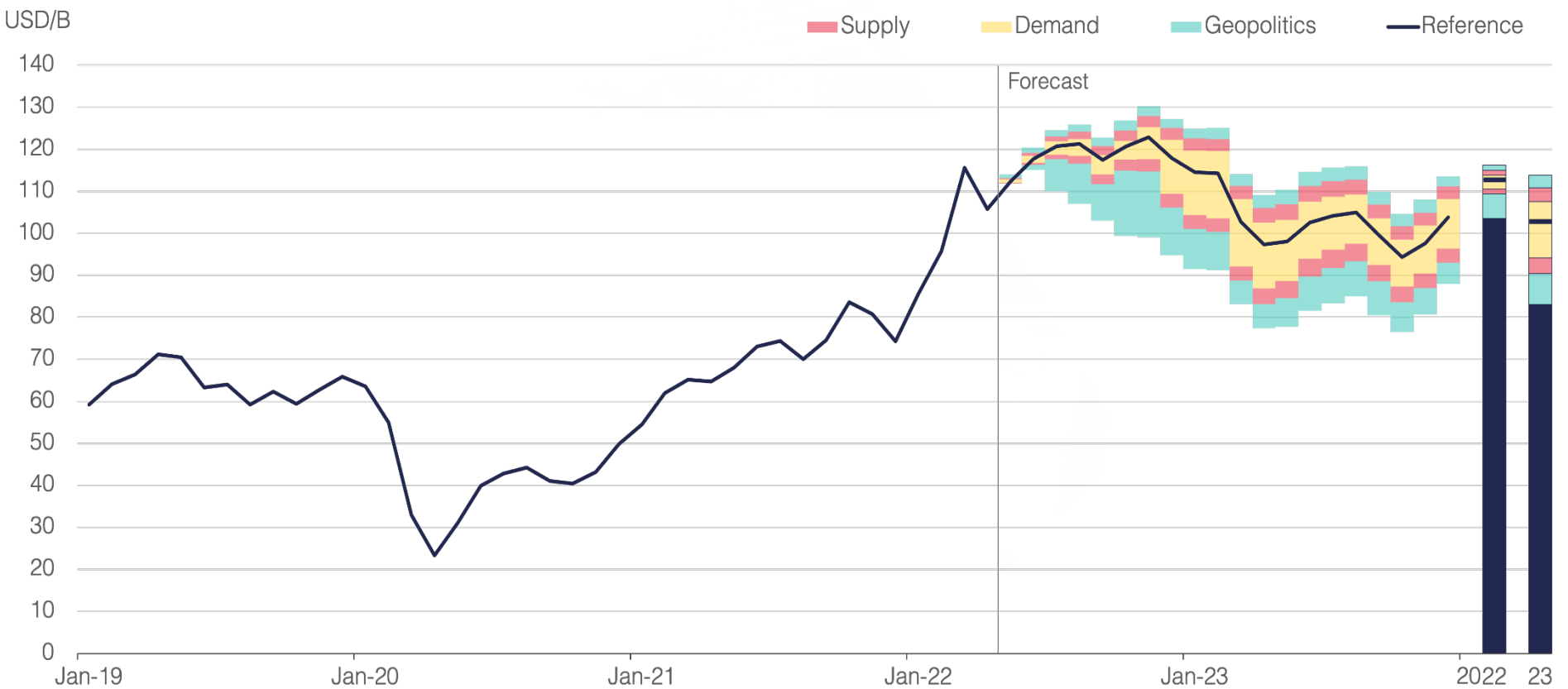
Brent price outlook





Balance of risks

Balance of risks



Notes: Brent price.
Source: OIES

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