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Russia's Invasion of Ukraine: New Oil Order?

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Russian invasion of Ukraine: A Paradigm Shift?

- Russian invasion of Ukraine represents a paradigm shift for European energy markets and EU energy relations
- Widespread belief that no return to previous order and European energy markets are searching for a new normal (diversification of supply sources, acceleration towards renewables, energy security concerns)
- But the transition to the 'new normal' can be long and bumpy and will not proceed evenly across the globe
- In oil markets, size of Russian output disruption has been limited so far but this is changing rapidly especially after the EU's proposal to phase out Russian oil imports into the EU
- Oil markets more than ever subject to policy levers (embargos, sanctions, unilateral cuts) which is creating high uncertainty and price volatility and reducing liquidity from mature markets
- Extent of self-sanctioning by the private sector and commodity traders key feature of this shock

Russian invasion of Ukraine: A Paradigm Shift?

- New patterns of crude and products trade flows emerging (Russian crude towards East, Middle East and US crude towards Europe; Europe has to source products such as diesel from further away places)
- New trading practices (blending, STS transfers) and segmented markets (Russian origin versus non-Russian origin products)
- Exposed the reality that despite ambitions for a fast energy transition towards new energy sources, current energy order is still highly reliant on hydrocarbons (oil, gas, coal) limiting foreign policy options
- Energy security remains at the core of energy policy and energy security comes at a cost and can derail other objectives
- Transition to new energy order in a smooth and an orderly manner may not even be possible as frictions between key players in the global scene intensify (US-China, Russia-West, slowdown in globalization)

Some key questions

- How are oil markets coping with the shock so far?
- What types of trade patterns and trading practices are emerging? Will these shifts be permanent?
- Russian invasion has raised the ambition for an accelerated energy transition away from hydrocarbons (at least in Europe). Does the Russian invasion ease the removal of the barriers needed for an accelerated energy transition? Or are there new factors that can work in the opposite direction and actually slow or delay the transition for few years?
- Are we likely to see more comprehensive energy policies that integrate sustainability, security, affordability and economic development/competitiveness? What are the implications of such a broader integrated energy policy?

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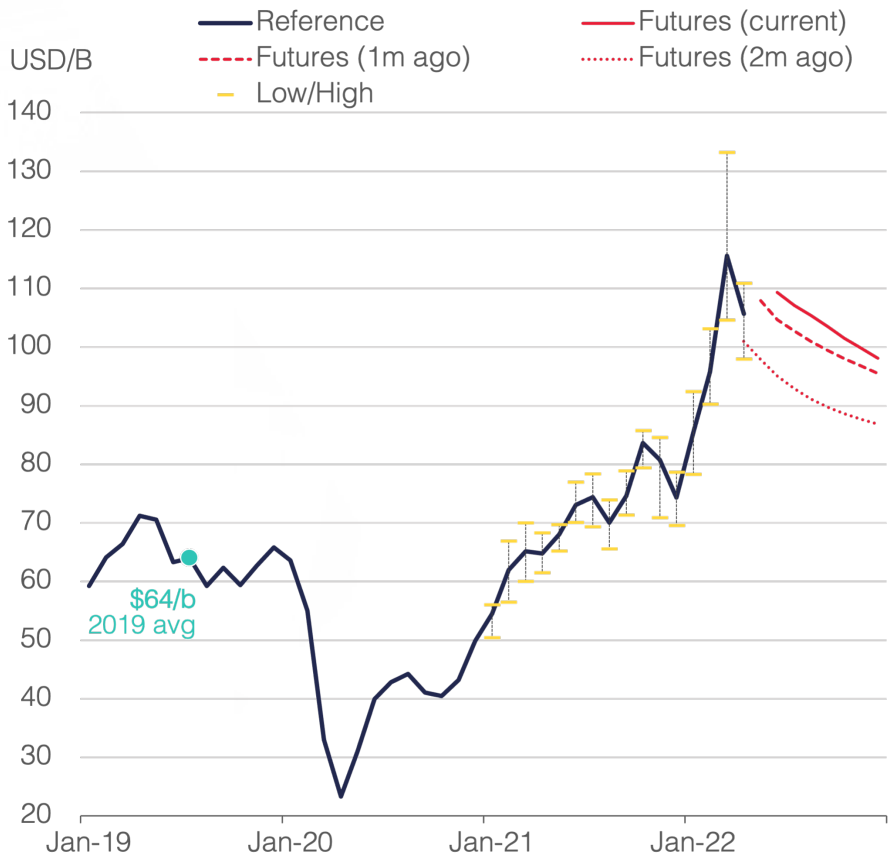
The context

The Russian invasion of Ukraine in context

- Before recent invasion of Ukraine oil prices have been rising steadily reflecting tighter fundamentals
- Recovery in oil demand from pandemic continued to surprise on the upside
- Sharp rise in natural gas prices in Q4 2021 resulted in some substitution from gas into oil which gave additional boost to demand
- Lack of investment & sanctions limiting supply responses
- OPEC+ has been returning fewer barrels than planned in their current agreement
- OECD crude and products stocks continue to fall well below their five-year average
- High concerns about the size of spare capacity in a deteriorating geopolitical environment and increased probability of output disruptions
- Russia-Ukraine crisis adds a massive layer of uncertainty and potential source of disruption

Monthly Brent price

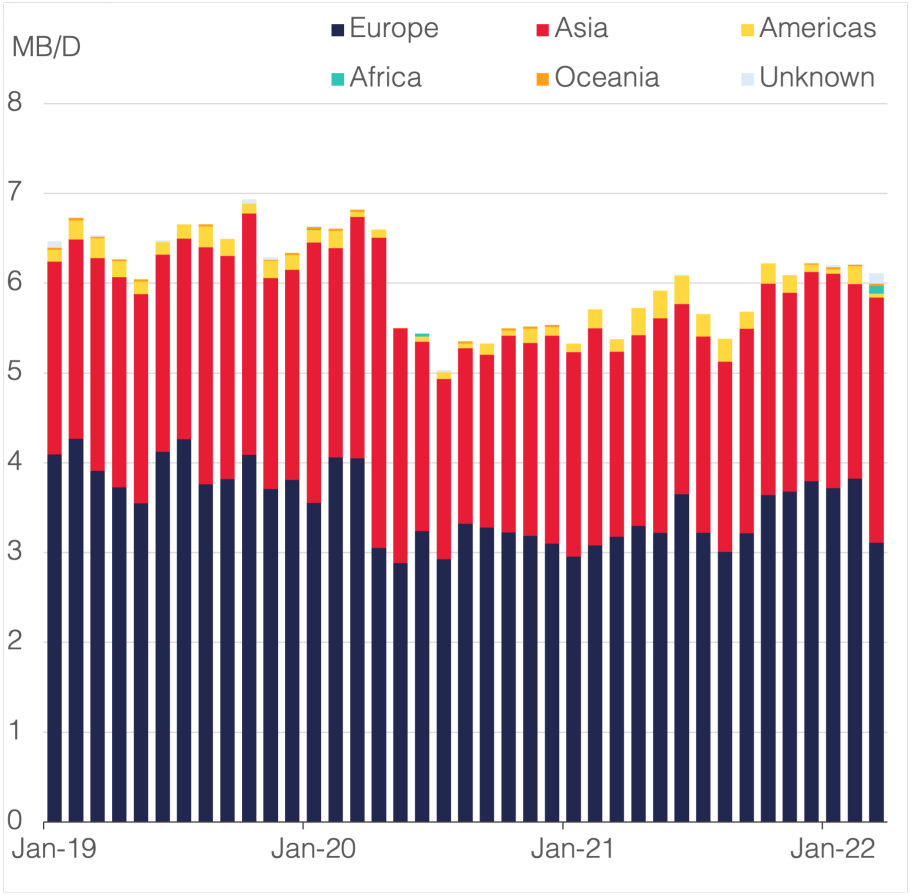


Source: World Bank, ICE

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

- Russia is one of the world's largest producers and exporters of crude oil
- In 2021, Russia's production of crude and condensates averaged 10.5 mb/d representing 14 per cent of global production
- Since 2016, Russia has been part of the Declaration of Cooperation with OPEC
- In 2021, Russian crude and products exports averaged almost 7 mb/d
- European refineries particularly rely on Russian crude part as part of their diet but Russian crude has global reach all the way from Europe to the US to Asia
- Around 60 per cent of Russia's crude exports were destined to Europe and 28 per cent to Asia in 2021

Russia crude exports by destination

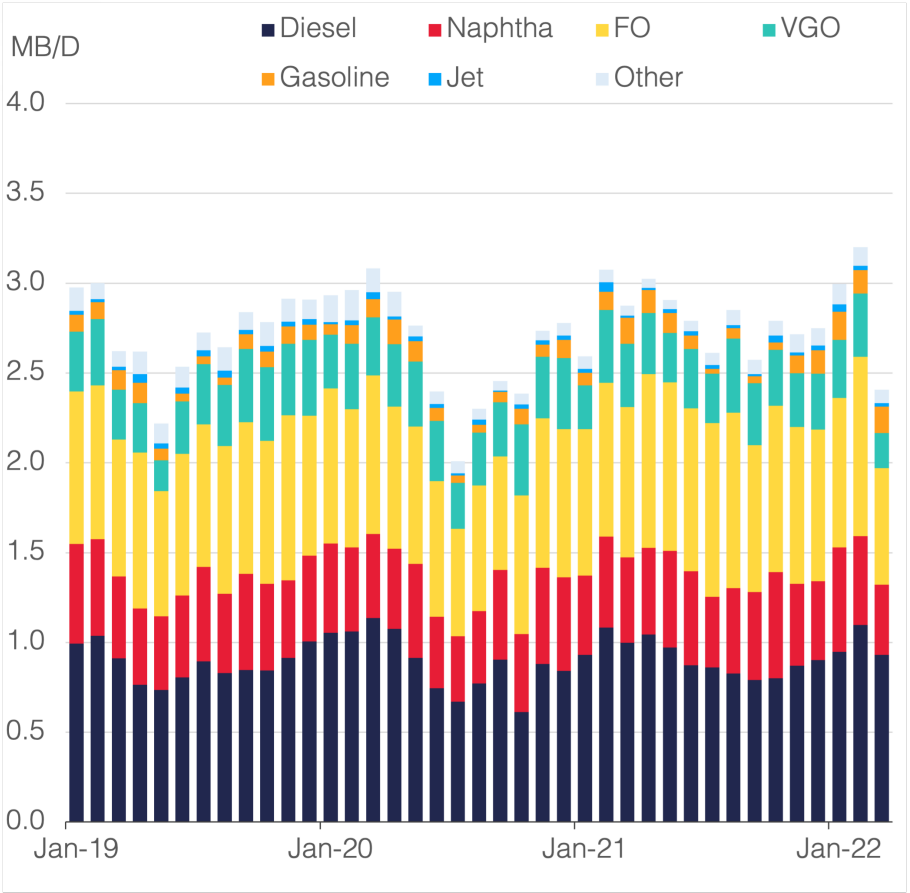


Source: Argus, Kpler, OIES

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

- Russia is also an important exporter of products such as diesel and naphtha
- Russia is a key supplier of diesel to Europe supplying nearly 600,000 b/d more than 40 per cent of its total diesel imports
- Russia is also an exporter of fuel oil and Vacuum Gas Oil (VGO) which are important feedstocks for refineries to products products such as diesel

Russia exports by refined product



Source: Kpler

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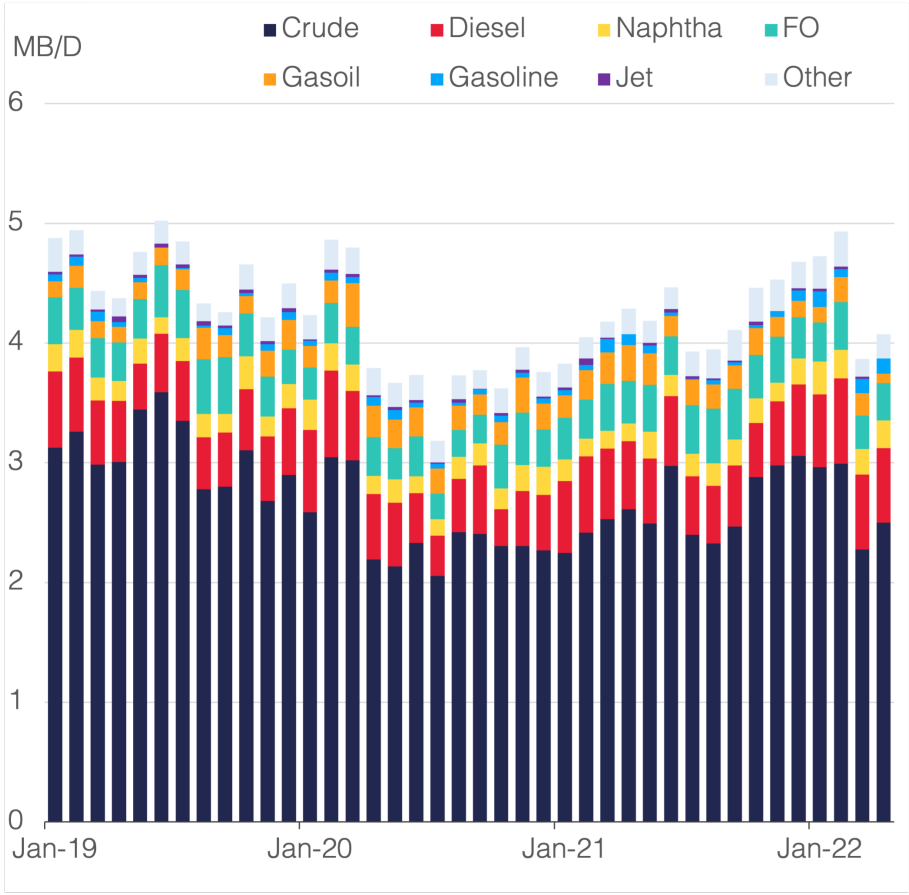
Russia Under Sanctions

Russia under sanctions

- US, EU, and its allies have imposed very severe sanctions on Russia (sanctions on Russian central bank)
- But sanctions on energy sector and energy related payments avoided until recently
- This could be changing: On May 4, 2022, EU announced a proposal to face out Russian crude imports within 6 months
- An EU ban of Russian refined products will be more gradual towards year-end
- ‘Self-sanctioning’ from private sector is extensive with many companies suspending oil purchases from Russia
- Russian crude and products exports to Europe have taken a big hit

Russian waterborne exports to Europe

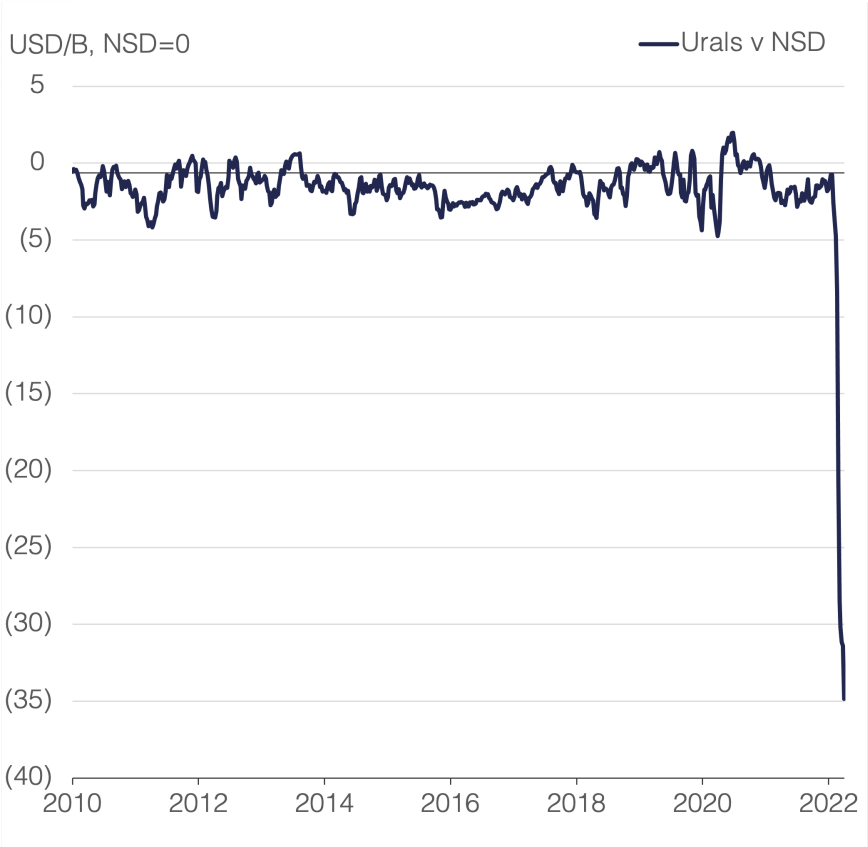


Source: Kpler

Implications on crude markets so far

- Redirection of trade flows towards Asia (particularly India) and the Med
- Russian trade shifting from short-haul to long haul and Urals crude-on-water on the rise
- 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
- Middle East and US crudes exports to Europe easing pressure on European crude prices

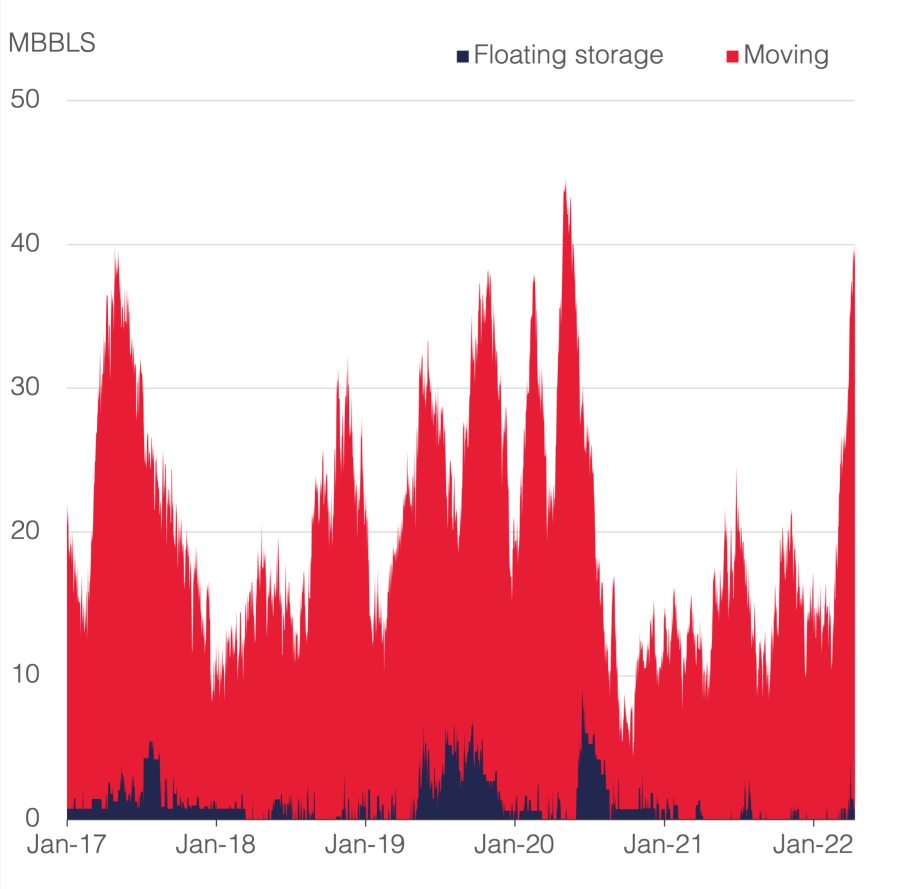
Urals NWE v North Sea Dated



Source: Argus

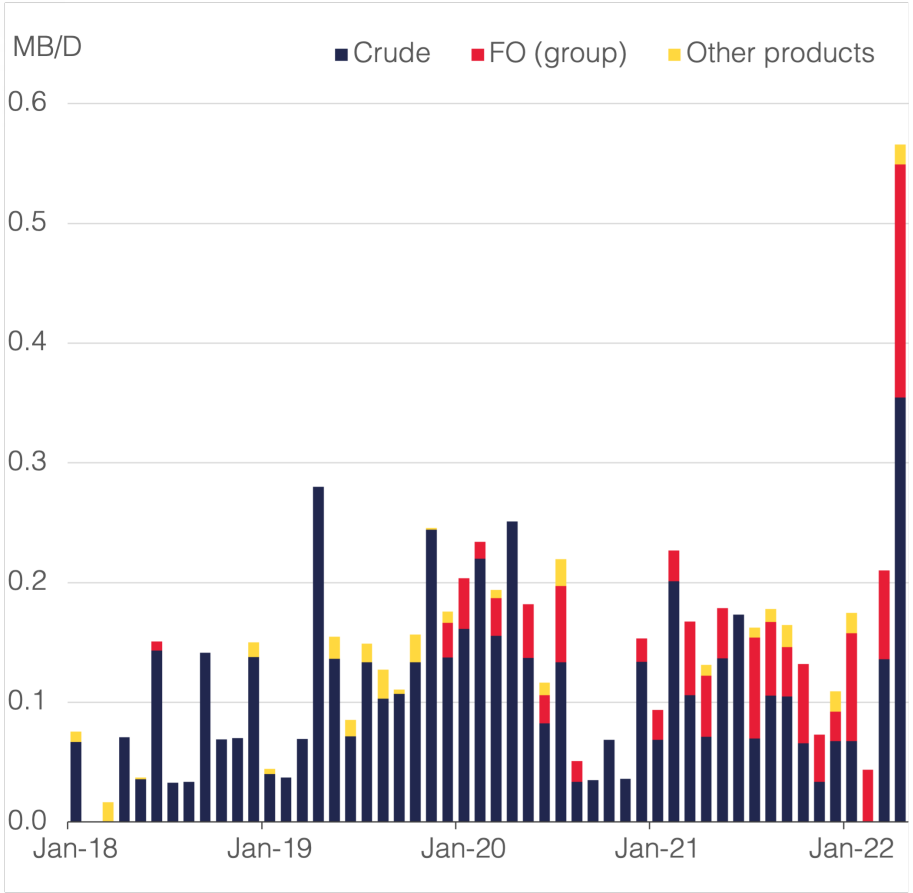
Redirection of trade flows

Russian Urals on water



Source: Kpler

India's imports of Russian crude and products

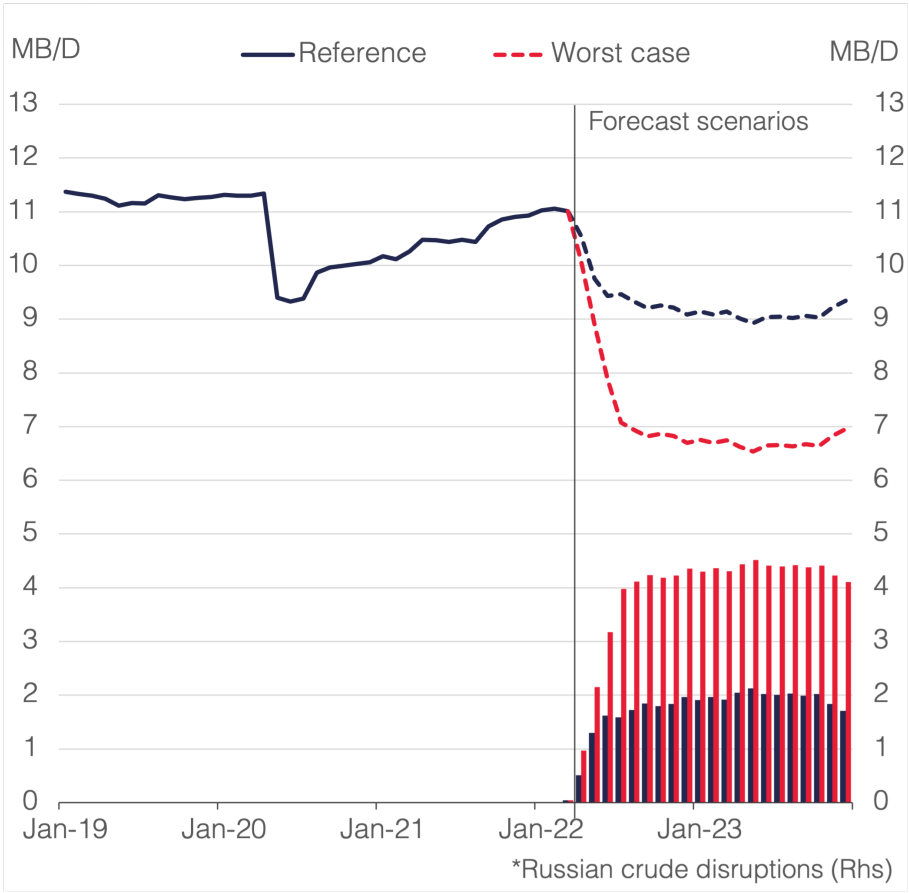


Source: Kpler

Supply disruption limited so far but risk of bigger disruption rising

- Size of disruption depends on ability to redirect oil which is constrained by multiple factors
  - Reluctance of many banks to finance Russian-related commodity transactions
  - Increased cost of moving crude in face of heightened security concerns, higher fuel costs and insurance premiums
- Disruptions taking place as logistical constraints more binding (storage constraints, refineries cutting runs as domestic demand fell & increased constraints on products exports)
- Risk of bigger disruption increasing (European ban, Russia cut-off supplies, traders not renewing term contracts, some trading houses not able to access derivatives markets)

Russia oil production scenarios

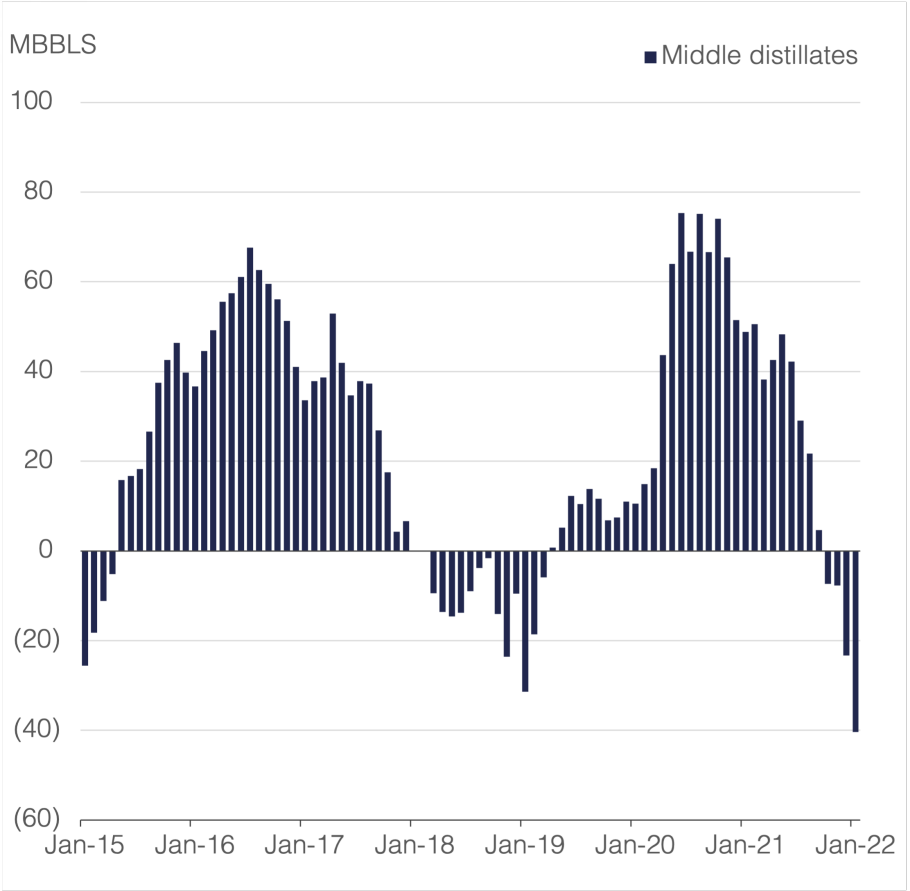


Source: OIES

Impact on products markets (1/2)

- Even before invasion, European refineries were facing a cost shock in terms of rising crude prices & 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 as products are not clearing fast

OECD Europe middle distillate stocks versus 2010-2014 average

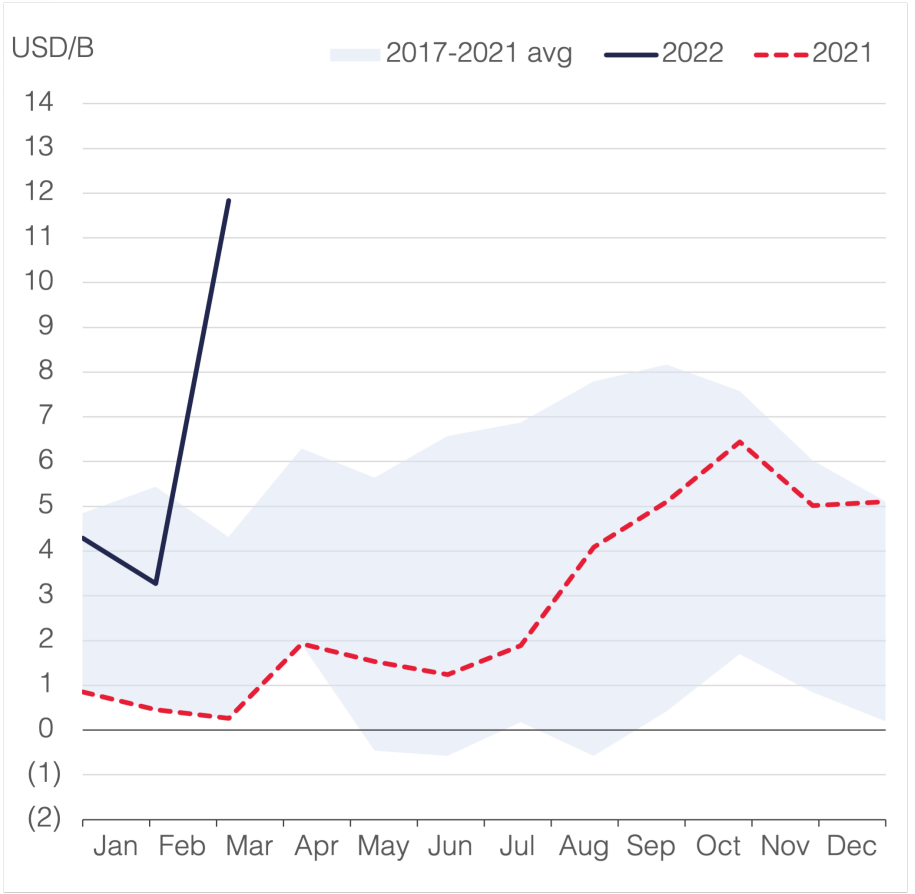


Source: IEA

Impact on products markets (2/2)

- Refining margins at record levels (sign of bottlenecks)
- EU refineries ramping up production but facing constraints and cant fill the gap (crude availability, high cost of operations, refining constraints, closure of refineries)
- High prices in Europe opening arbitrage and diesel cargoes from Asia, US and Middle East are filling some of the diesel gap (longer time & distance)
- But distillates markets in Asia are tightening due to increased demand as economies open and stricter limits on products' exports from China
- Spreading to other markets such as jet fuel whose price has risen sharply

Brent cracking NWE

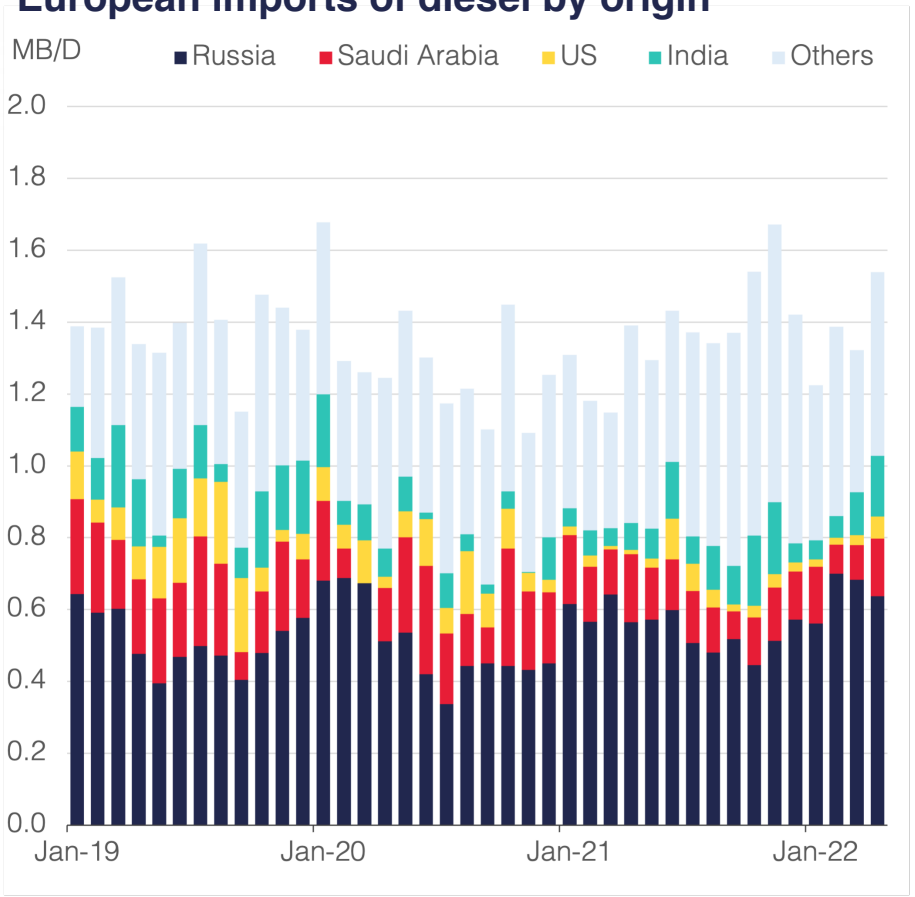


Source: IEA

Segmented markets

- Russian diesel is still arriving in Europe (through blending)
- Markets started 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 by end of 2022

European imports of diesel by origin



Source: Kpler

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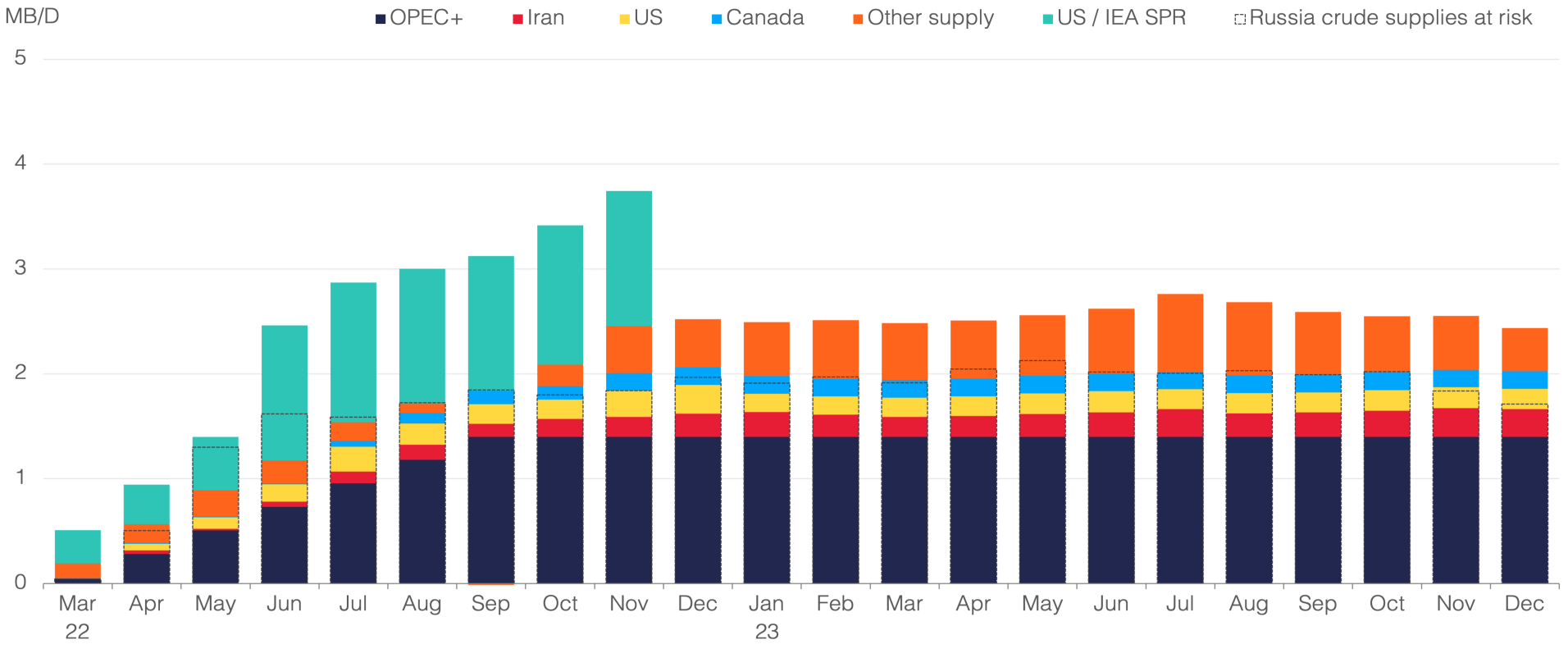
Scenarios

Supply response in Reference case

Our *Reference case* sees the disruption of 1.6 mb/d in Russian supplies by June 2022.

Replacement barrels versus Russian crude supplies at risk in *Reference case*



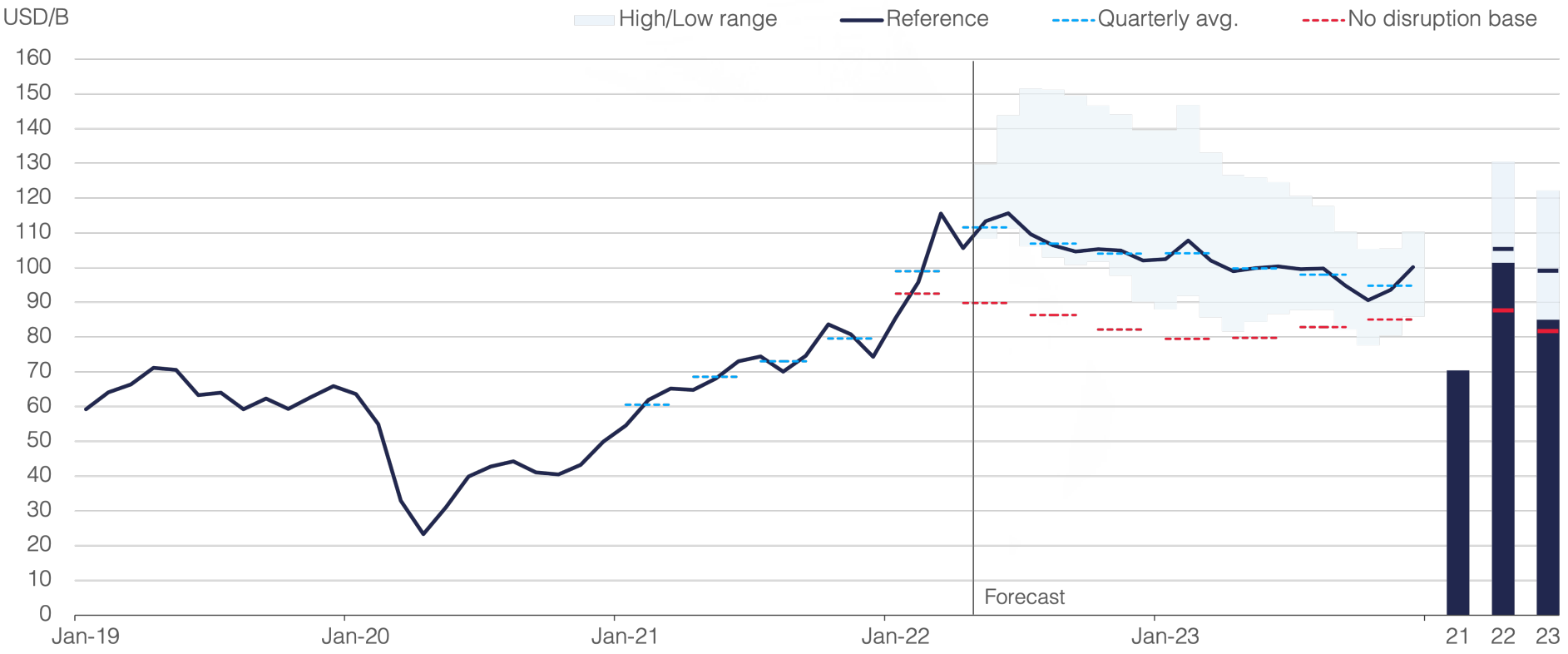
Notes: Other supply includes crude oil from rest producers and global NGLs, biofuels and other liquids.

Source: OIES

Oil price impact

Under the *Reference* case Brent averages $105.4/b in 2022 and $99.2/b in 2023.

Brent price outlook in *Reference case*



Notes: The *no-disruption base* reflects the latest forecast prior Russia's invasion of Ukraine.

Source: OIES

Impact on global oil demand

Global oil demand growth is revised downwards by 0.9 mb/d to 2.3 mb/d in 2022 relative to the no-disruption base and by 0.5 mb/d to 1.5 mb/d in 2023, resulting to a cumulative decline by 1.5 mb/d.

Global oil demand response by region in *Reference case*

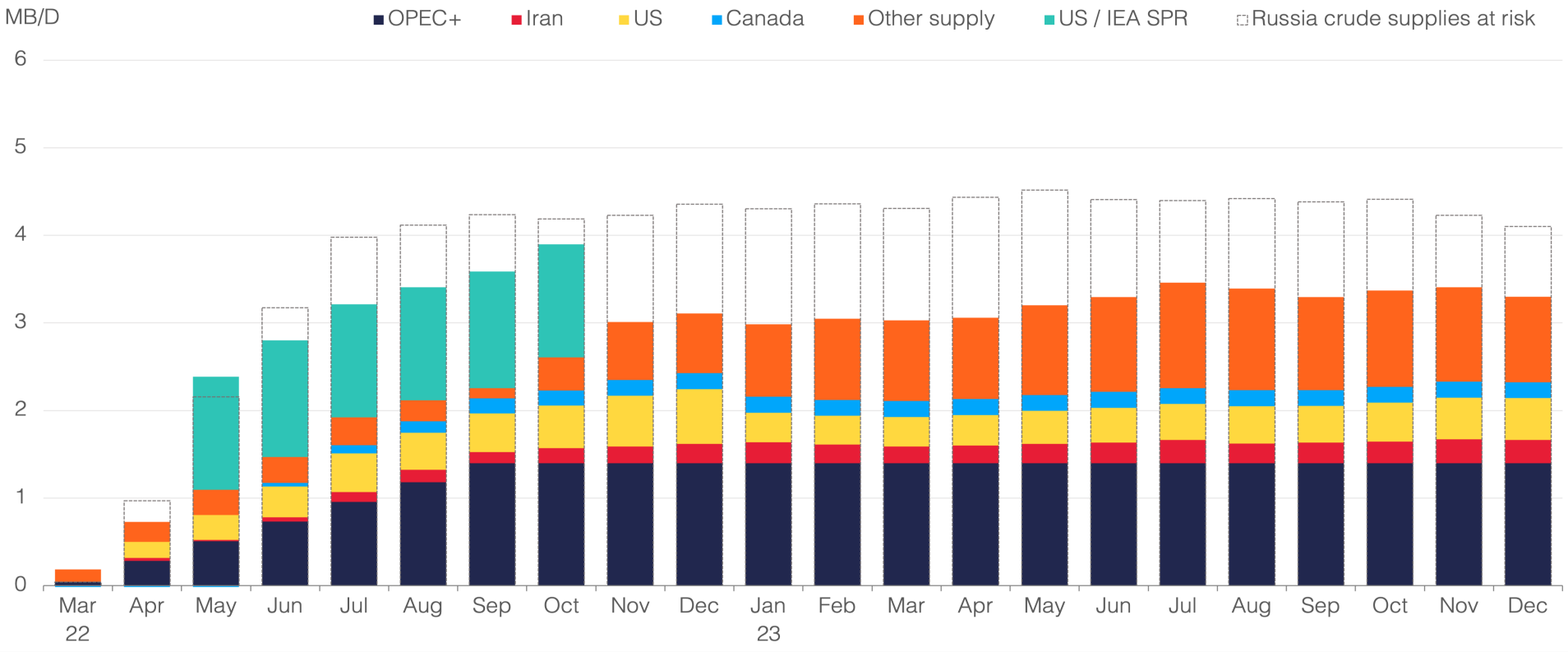
Notes: The *no-disruption base* reflects the latest forecast prior Russia's invasion of Ukraine.

Source: OIES

Supply response in case of severe curtailment

A severe curtailment of Russian supplies above 3 mb/d would see the planned SPR releases filling the gap in the near-term, but the supply pressure persists well into 2023.

Replacement barrels versus Russian crude supplies at risk in *Worst case*



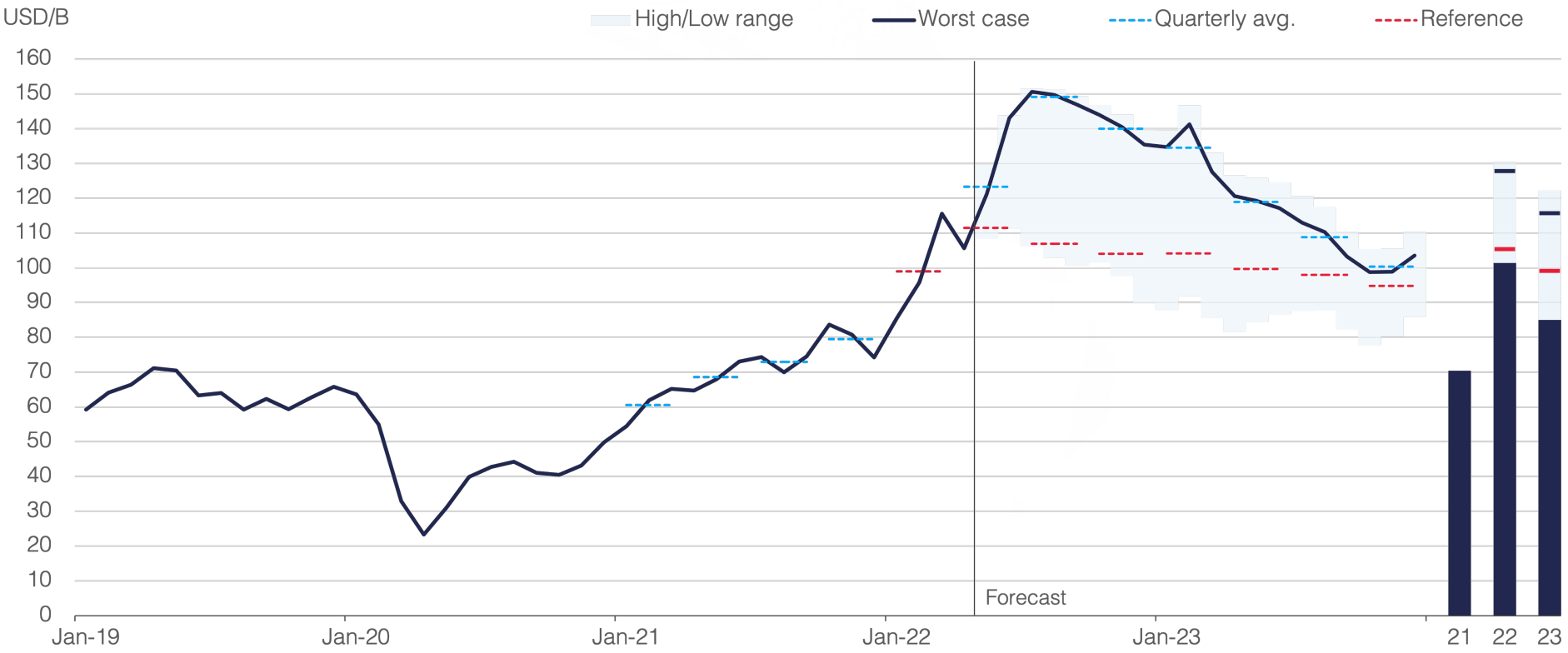
Notes: Other supply includes crude oil from rest producers and global NGLs, biofuels and other liquids.

Source: OIES

Price outlook

A more severe curtailment in which Russian crude production loses nearly 4 mb/d by July 2022 sees Brent averaging $127.8/b in 2022 and $115.7/b in 2023 with potential for a price spike

Brent price outlook in *Worst case*

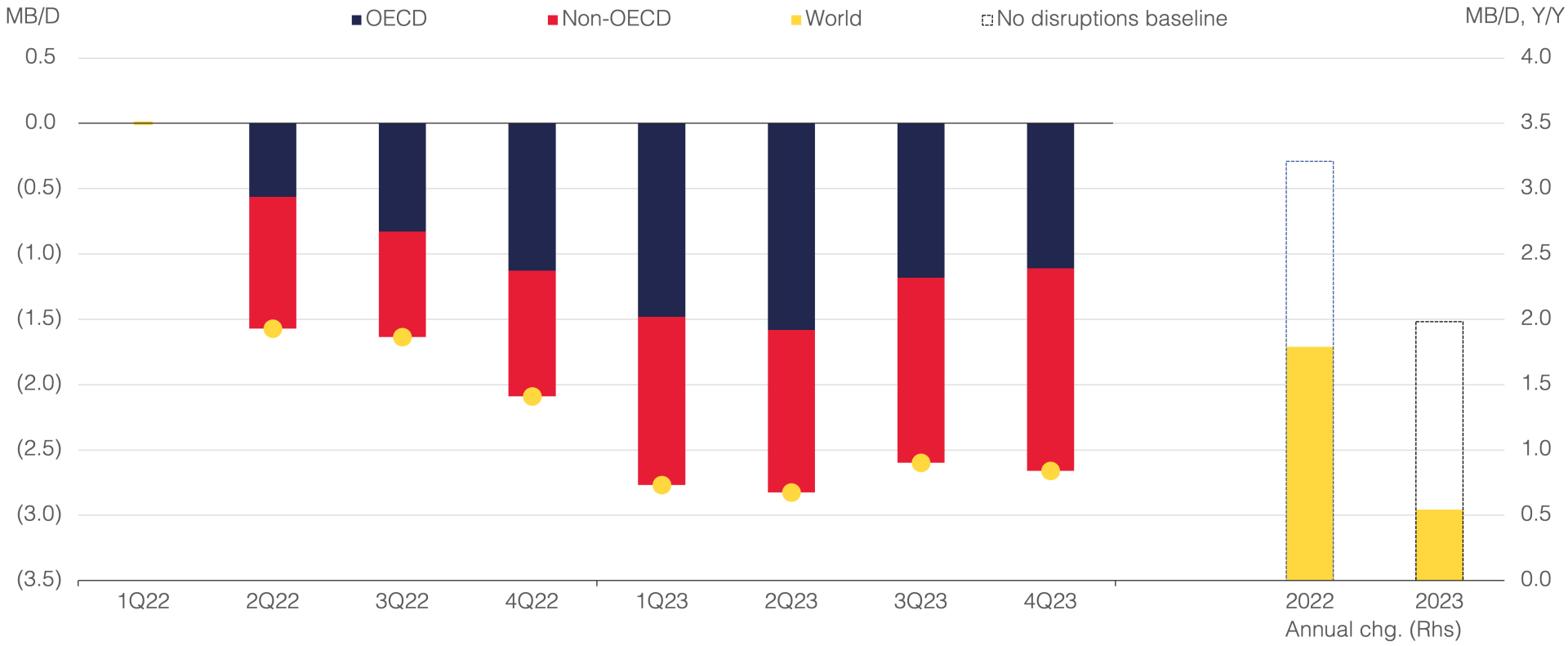


Source: OIES

Impact on global oil demand more severe

The global oil demand impact intensifies with growth losses totaling 2.6 mb/d by 2023, from 1.3 mb/d under *Reference*, with y/y global demand growth averaging 1.8 mb/d in 2022 and 0.5 mb/d in 2023.

Global oil demand response by region in *Worst case*



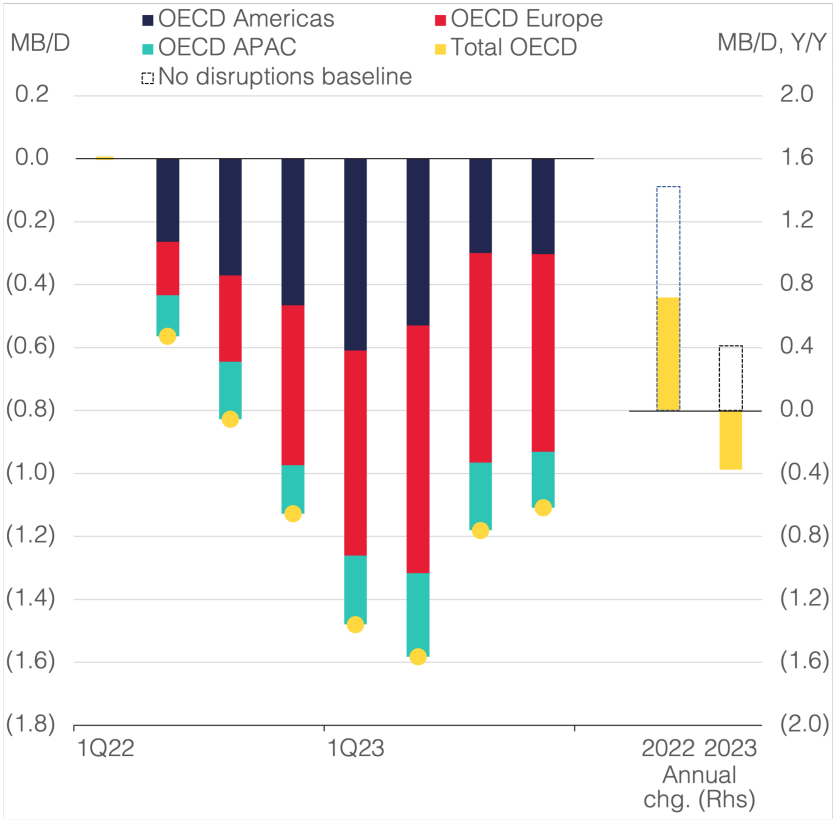
Notes: The *no-disruption base* reflects the latest forecast prior Russia's invasion of Ukraine.

Source: OIES

Impact on oil demand by region

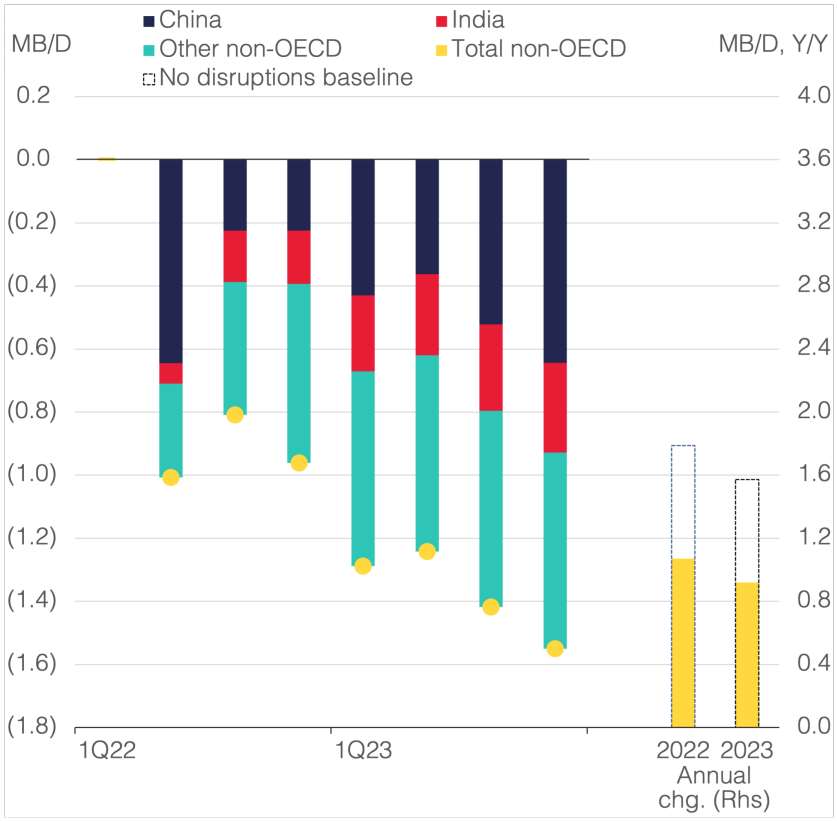
OECD demand takes a big hit with y/y growth falling to negative territory in 2023, while non-OECD demand losses reach 1.5 mb/d.

OECD demand response (*Worst case*)



Source: OIES

Non-OECD demand response (*Worst case*)



Source: OIES

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Beyond short-term impacts

Beyond short-term impacts

- Elevated energy security concerns
  - Importance of energy security declined in policymakers' agenda in past two decades
  - A long period of abundant supplies and relatively low cost of energy
  - Energy security alongside environmental sustainability key elements in energy policy
  - New policies could include a shift towards developing local hydrocarbon resources and sourcing hydrocarbons from various sources including coal (fuel diversification and supply diversification)
  - Also investment in more storage facilities
  - Substitution: gas to coal
  - Some policies in conflict with climate objectives at least in short-term

- Effectiveness of sanctions
  - How effective are sanctions in achieving their objectives (change in behaviour or regime change)?
  - Partial sanctions may not be effective in reducing revenues (price versus volume impacts)
  - Announcements that increase oil price without impacting supplies generate worst outcome
  - Self-sanctioning versus official sanctioning complicates managing the impacts on countries imposing sanctions

Relationship between world's largest suppliers

Relationship between world's largest oil suppliers in focus

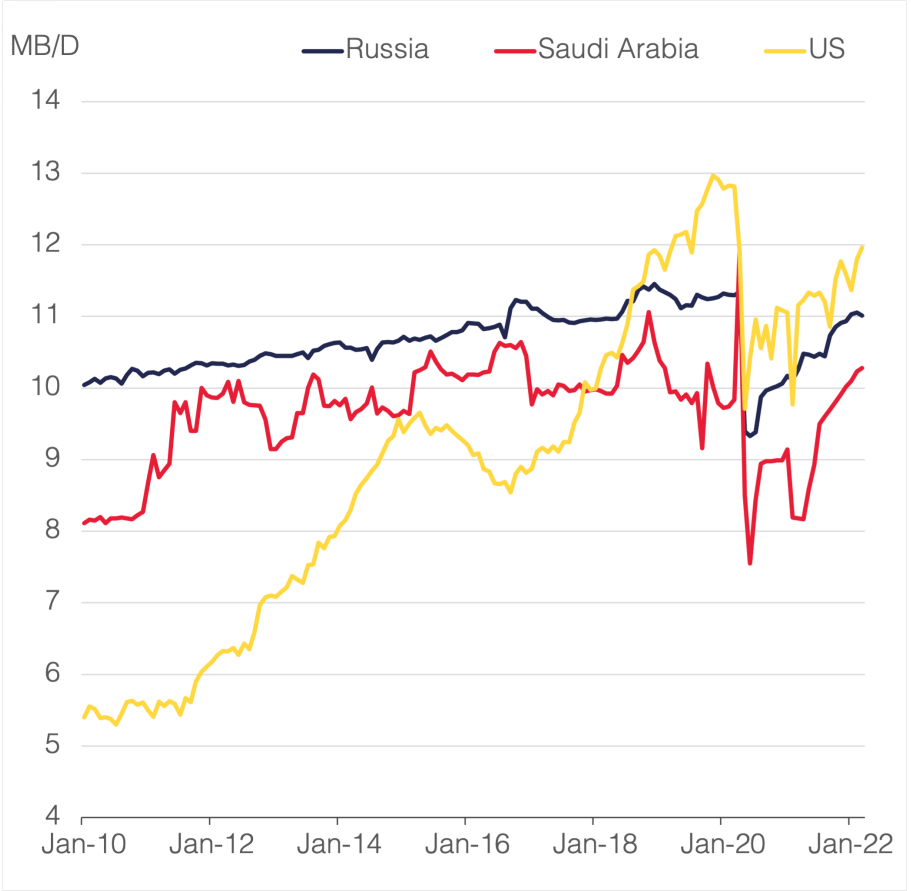
A. Gul-Russia

- ST Dynamics within OPEC+
- More competition in Asia; Stronger Middle East foothold in Europe
- Limited growth/decline in Russia's productive capacity due to sanctions; Gulf producers plan to increase productive capacity and export potential
- Alter OPEC+ dynamics in medium term

B. Gulf-US

- Limited call on Gulf spare capacity
- More use of SPR
- US shale more aligned with OPEC (Maximize value for shareholders does not imply higher output growth)

Big-3 crude oil production

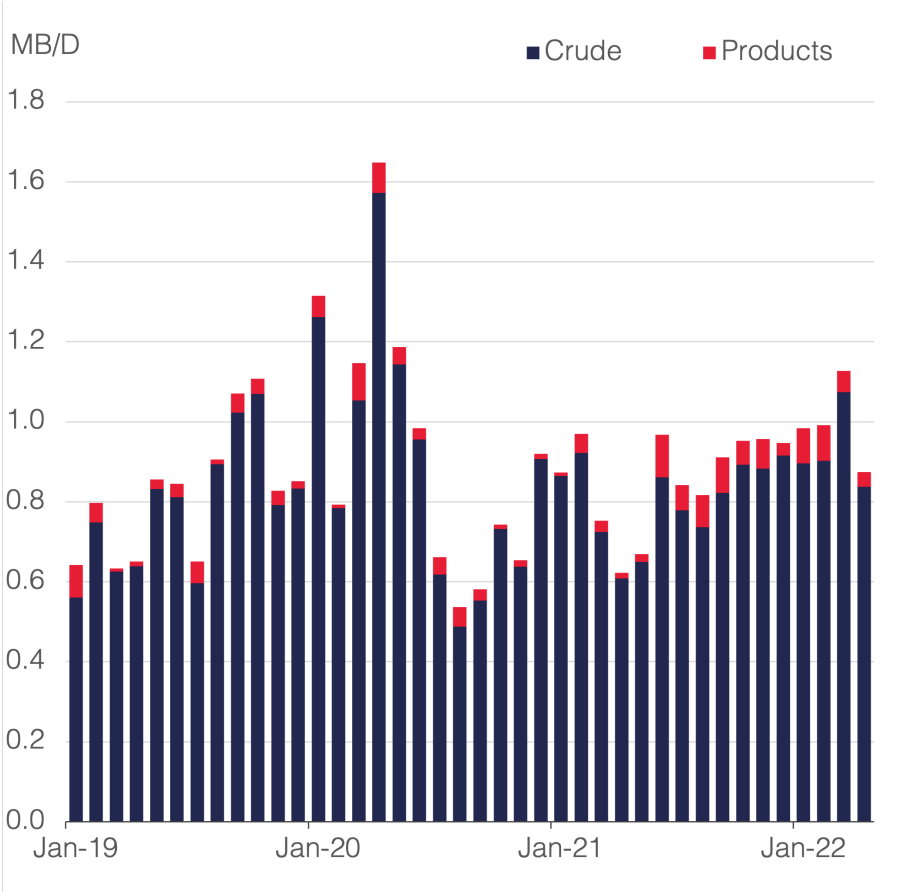


Source: IEA

Russia-China oil relations

- Greater competition between largest producers for China as Russia increases its reliance on China's market for an outlet of crude
- Pipelines flows from Russia to Asia not likely affected but payment issues for seaborne cargoes (Chinese banks reluctant to issue LCs) so limited increase so far but this could be due to COVID-19
- Russian exports to China in local currency
- Investment flows: China investment in Russia (upstream) as western companies exit
- But China sensitive to potential of US sanctions

Russia oil exports to China

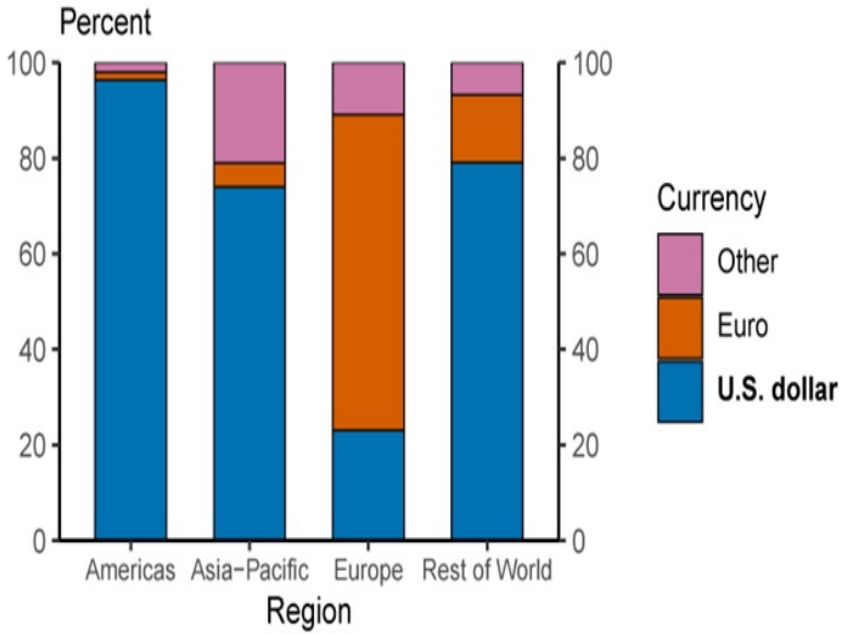


Source: Kpler

Payment systems and role of US dollar

- US dollar widely used in international trade and finance
  - Currency of choice for cross-border bank lending and international debt issuance
  - Dominant invoicing currency for trade transactions between non-US countries
  - Achieved ‘reserve currency’ status (used as a store of wealth)
- Russia increasing reliance on renminbi and Chinese payment systems
- Could other producers follow suit as fears from US sanctions increase?
- SWFs investments in West (political risk too high?)
- Increasing role of digital currencies

Share of export invoicing



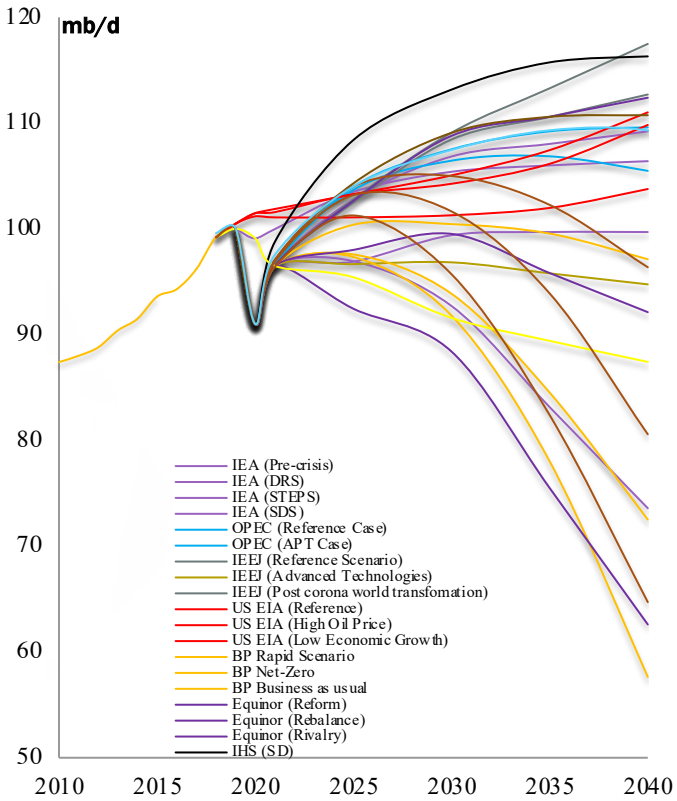
Note: Average annual currency composition of export invoicing, where data are available. Data extend from 1999 through 2019. Regions are those defined by the IMF. Source: IMF Direction of Trade; Central Bank of the Republic of China; Boz et al. (2020); Board staff calculations.

Bertaut, Carol C., Bastian von Beschwitz, and Stephanie E. Curcuru (2021). "The International Role of the U.S. Dollar," FEDS Notes. Washington: Board of Governors of the Federal Reserve System, October 06, 2021, https://doi.org/10.17016/2380-7172.2998.

Will war accelerate pace of energy transition?

- Key Drivers of the transition
  - Effective regulatory framework, government policy support (upfront investment, energy generation, etc…) and public funding (R&D, demonstration projects)
  - Technological developments and reduction in cost and relative costs of alternative energies
  - Viable business models so investments in new technologies are rewarded
  - Large mobilization of private finance (viable business models, supportive regulatory framework, public funding)
  - Change in consumers' behaviour and consumers' preferences
- Will Ukraine war alter any of these factors in a permanent way?

Global oil demand scenarios



Source: OIES

Government funding and political cycles

Public funding for scaling up existing technologies needed for cost reduction

- Fiscal constraints (COVID, energy subsidies, rising cost of funding)
- Developing countries face more constrained fiscal space
- Private sector yet to scale up investment in clean technologies such as in green hydrogen and CCS without government support

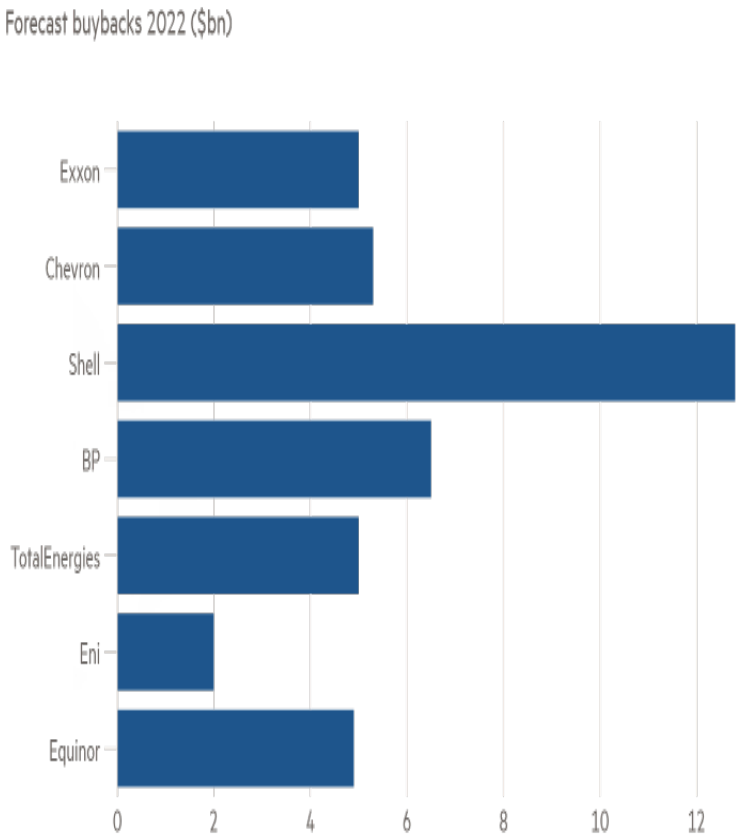
Time horizon: Short term measures and political cycles

- Impact of higher costs on growth and industrial competitiveness
- The issue of affordability
- Governments subsidising energy costs to shield impact on consumers and industry
- Windfall taxes and other interventions (undermine investors' confidence; undermine capability of energy companies)
- Short-term measures have implications on long-term transition

ESG and investment in hydrocarbon sector

- Despite aspiration/ambitions to shift to renewables, demand for hydrocarbons still rising
- Investment in hydrocarbon sector needed to meet increase in demand
- Hydrocarbon sector generates high cash flows in this price environment and rates of return higher compared to new energy technologies
- Cash flows with higher perceived risk especially in medium/long-term affect firms' valuations
- IOCs paying off debt and returning money to shareholders and limiting increase in capex (both in traditional and new activities)
- Shift of investment in hydrocarbon to National Oil Companies (NOCs) reinforcing importance of oil and gas in their economies
- Only few NOCs are able to increase productive capacity (others impacted by sanctions, mismanagement, limited funding)

Supercharged shared purchases



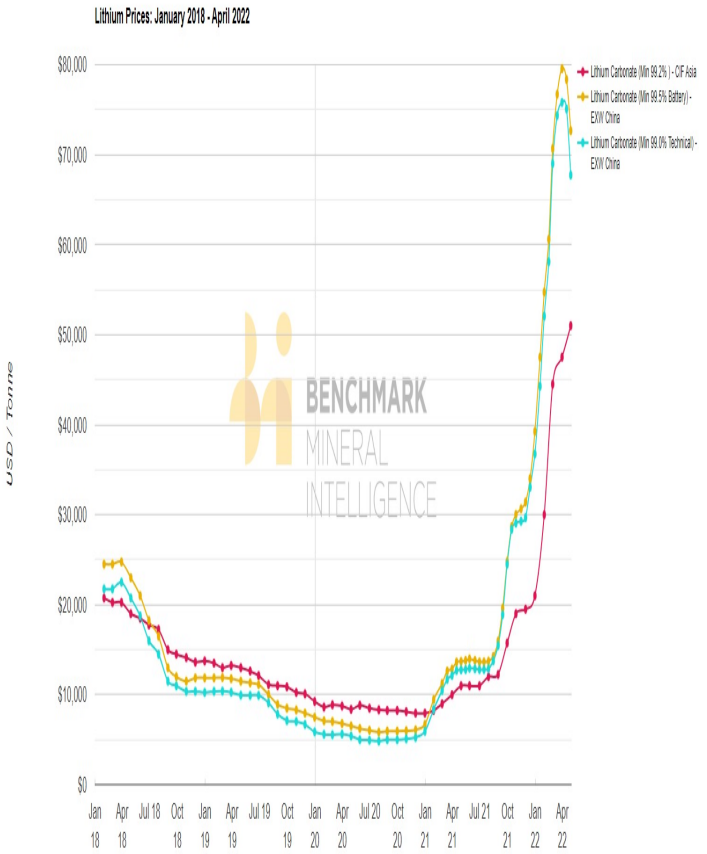
Source: RBC Capital Markets (via FT)

Supply chains and relative costs

Bottlenecks in supply chains, a shortfall of critical minerals, increase in cost of minerals needed for transition

- Battery supply chain long (extraction, chemical processing/refining, cathode/anode production, cell manufacturing, applications (for instance automobile industry)
- Battery supply chain concentrated (chemical processing, cathode and anode production)
- Costs of minerals rising (Nickel, Cobalt, Graphite, Lithium, Manganese)
- Bottlenecks, inflation and localization of supply chains increase costs further
- EV uptake may be affected especially as consumers incomes squeezed
- Strong political will to build these supply chains but this takes time

Lithium Prices (USD/Tonnes)

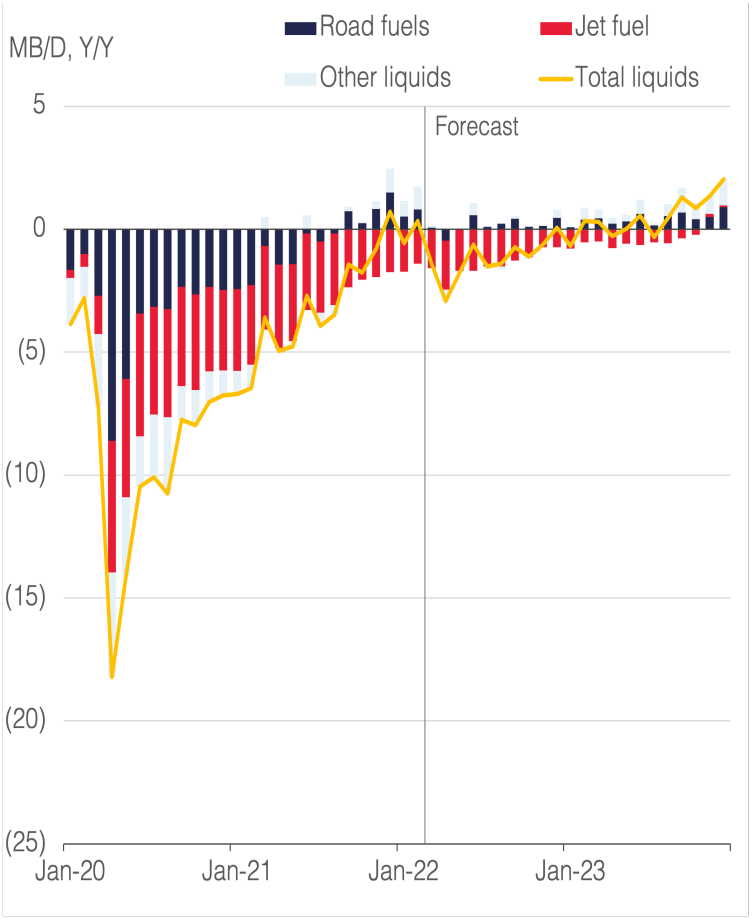


Source: Benchmark Mineral Intelligence

Mind the gaps

- Dual gaps
  - Decline in investment in traditional fuels
  - Investment and scaling up of alternative technologies to replace traditional fuels not fast enough
  - Consumer demand for traditional fuels not falling fast enough
  - Does high cost/shortages of traditional fuels/lower affordability speed the energy transition? And in all contexts even in developing countries?
  - The way to get there is endogenous and will determine the ultimate path
- Will crisis induce a change in consumers' behaviours and preferences?
- Implications of Ukraine war can be test of tolerance of governments/consumers to physical supply disruptions and higher costs and type of policy responses

Global oil demand by sector vs 2019



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