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Global oil & gas markets: macro & geopolitics to the fore

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David Fyfe, Chief Economist

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Commodity Markets Intelligence

Consulting & Forecasts

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Agenda

1. About Argus Media
2. Macro-economic & geopolitical backdrop
3. Global natural gas market
4. Global crude market

1. About Argus Media

Argus – global energy & commodity pricing

Argus is a leading independent Price Reporting Agency and provider of market intelligence to the global energy and commodity markets.

Argus at a glance



The role of price reporting agencies (PRAs) in the commodity industry

PRAs play a crucial role enabling global commodity and energy trading

Commodity markets are characterised by



Opaque bilateral trades and infrequent transactions



Price volatility



Complex, bespoke transactions



Significant exogenous factors

Argus provides the transparency essential to making markets work



Independence



Standardisation



Robust methodologies

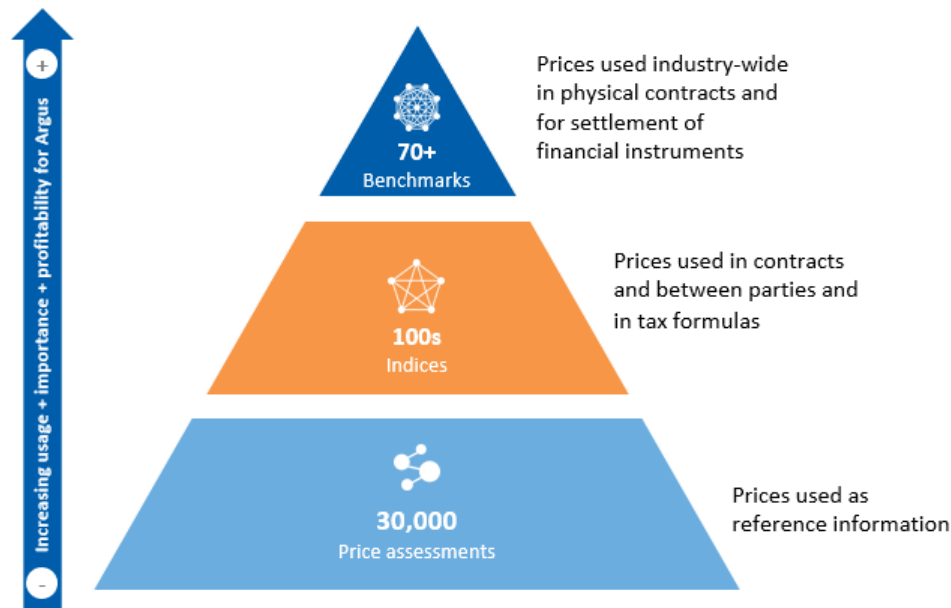


Ability to manage risk

PRAs provide market transparency that promotes trust and trading that underpins the world economy.

Physical adoption → assessment use as indices & fin. benchmarks

Value hierarchy: usage, importance and profitability



Key Argus benchmarks in oil and oil products

Argus Crude

North Sea Dated;
ASCI; ESPO

Argus Americas Crude

WTI⁽¹⁾ Houston; WTI Midland;
LLS; Mars

Argus European Products

Gasoline barges;
Jet; VGO; Biodiesel

Argus US Products

Gasoline;
Diesel; Jet

Argus International LPG

cif ARA Large Cargo;
AFEI; ANSI

Argus Asia-Pacific
Products

Gasoline; Naptha; Jet

Notes: (1) West Texas Intermediate

Editorial Independence

Robust Methodologies

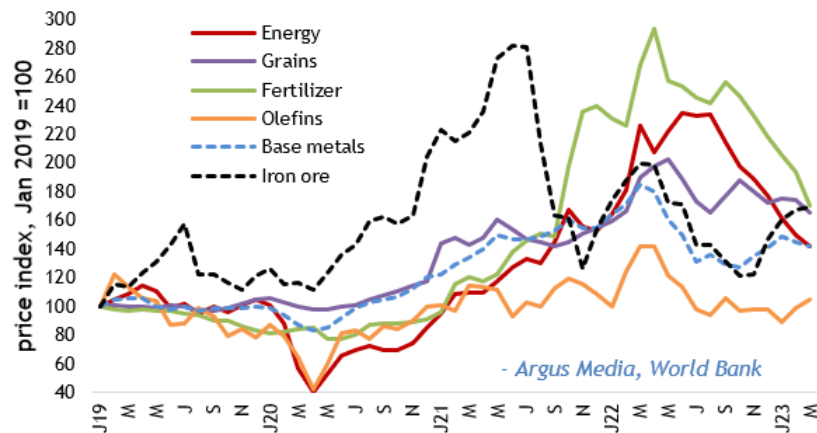
3rd Party Assurance Review (IOSCO)



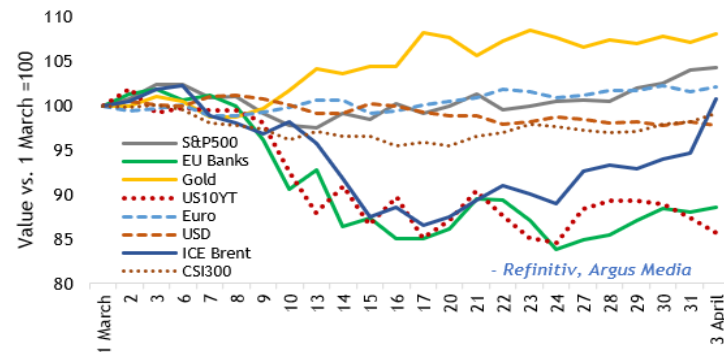
2. Macro-economic & geopolitical backdrop

Commodity market volatility baked-in by successive crises

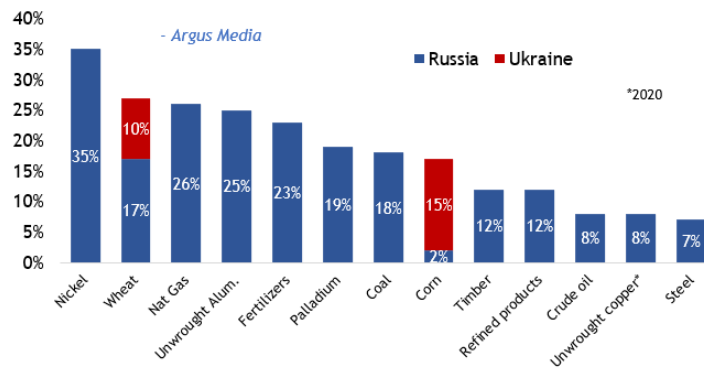
China rebound & Ukraine extend 2023 price support



Banking mini-crisis prompted flight to safety

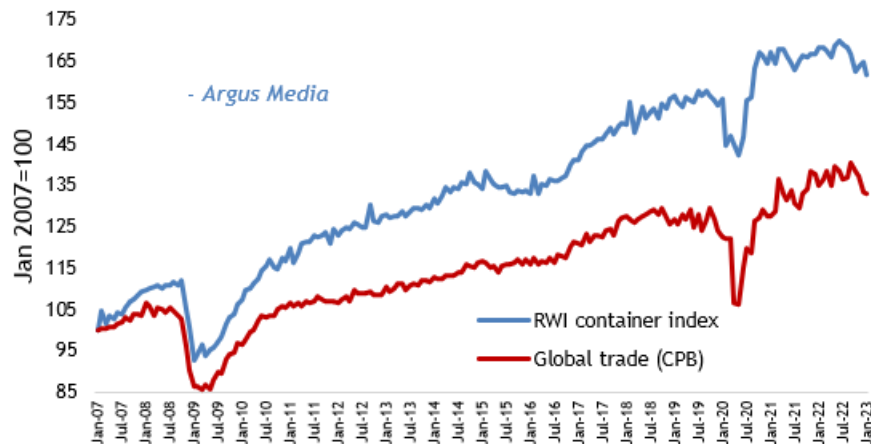


Russian 2021 commodity exports as % world trade

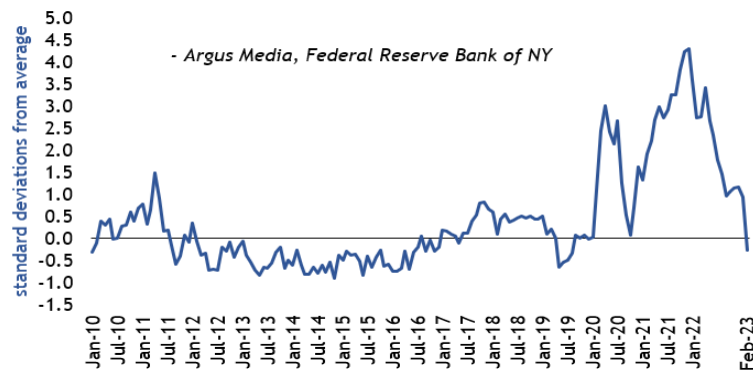


The post-2020 economy: from demand shock to supply crunch & back

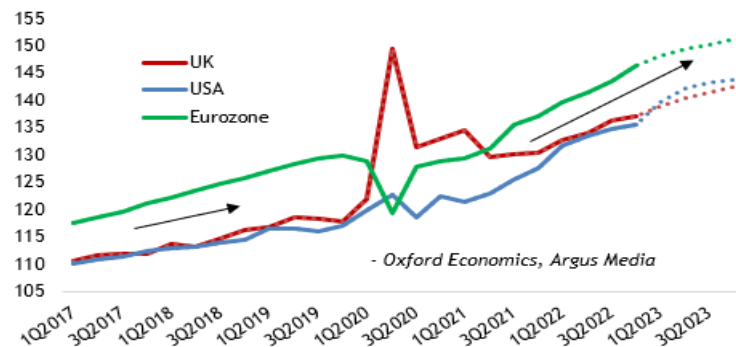
Global trade's post-Covid recovery fading



Supply chain pressures normalising

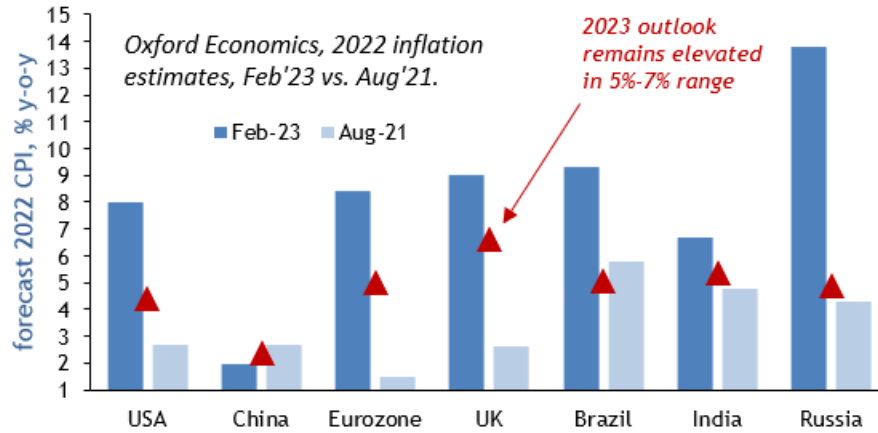


Nominal unit wage costs, 2008=100

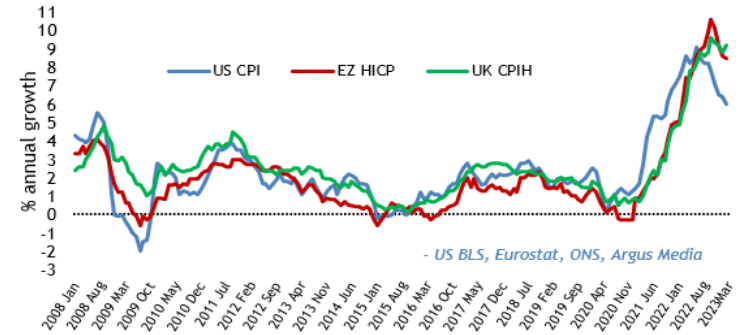


Macro headwinds: Central Banks respond to spiralling inflation

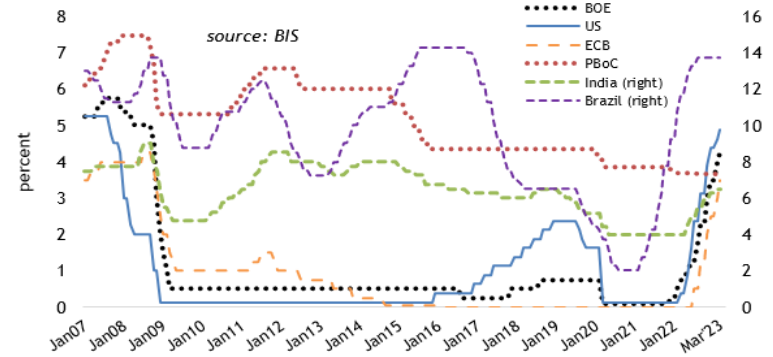
Inflation in 2022 spiralled higher



US, UK & Eurozone consumer price inflation

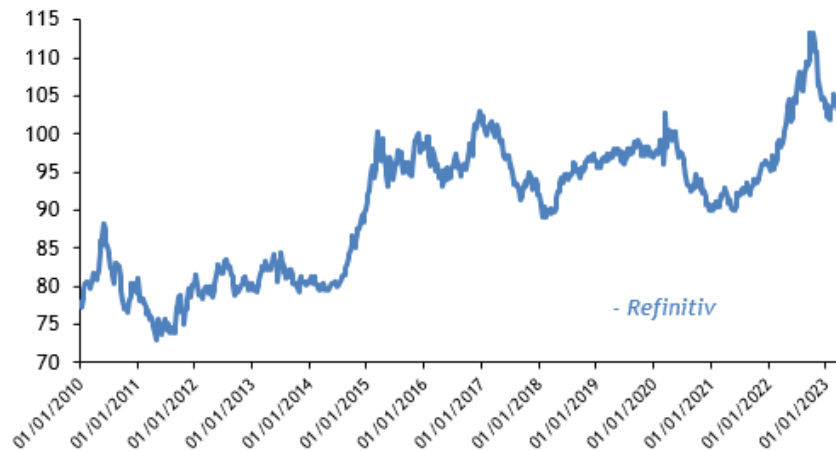


Central Bank Policy Rates

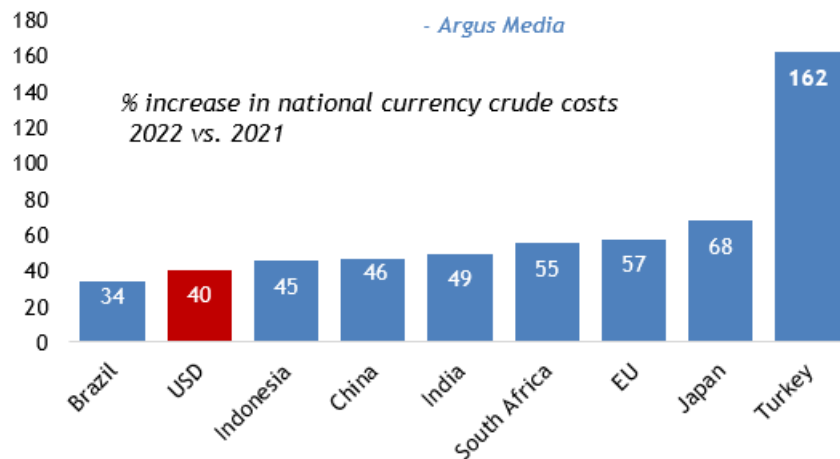


USD strength weighs on demand, raises debt servicing costs

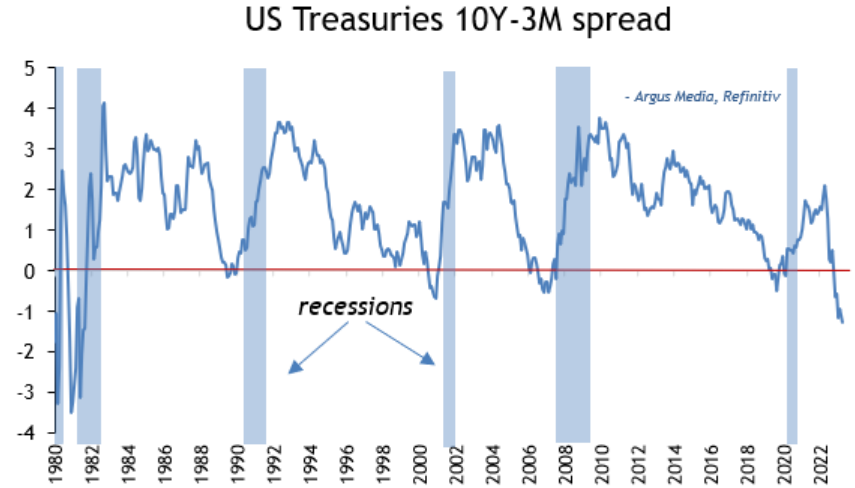
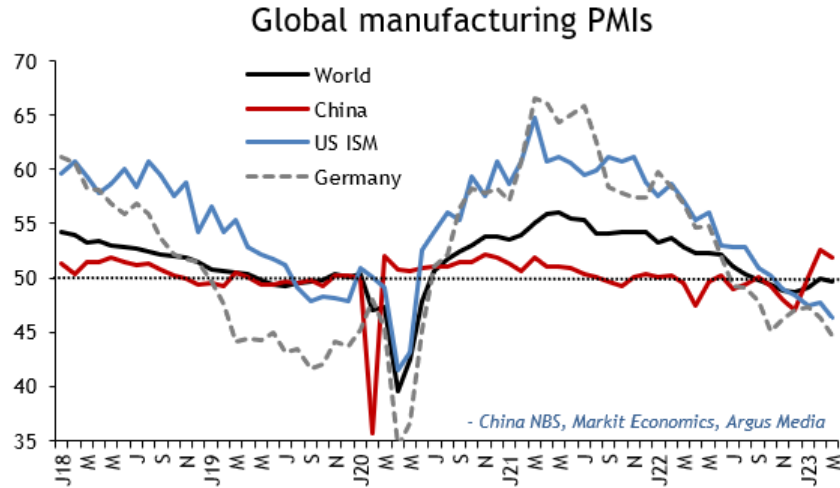
USD index is at 20-year highs



Strong USD costs crude importers dear

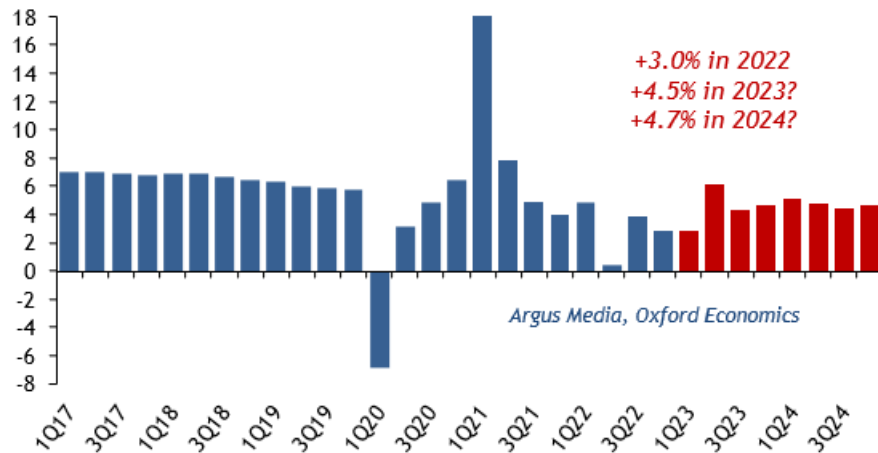


Physical & financial warning lights have been flashing for some time

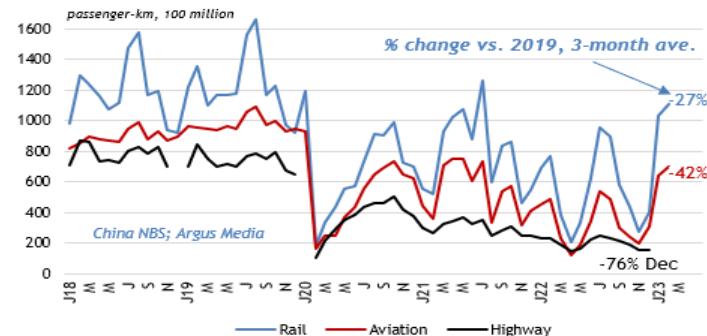


China re-opening provides some light in the gloom

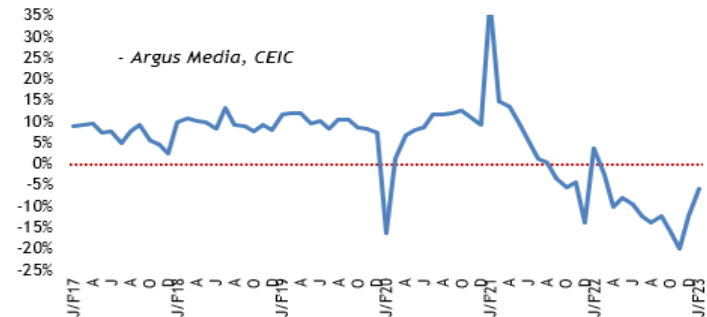
China real GDP growth, % y-o-y



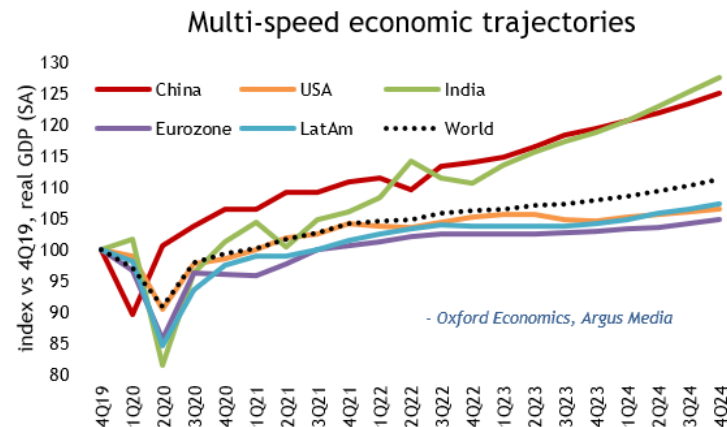
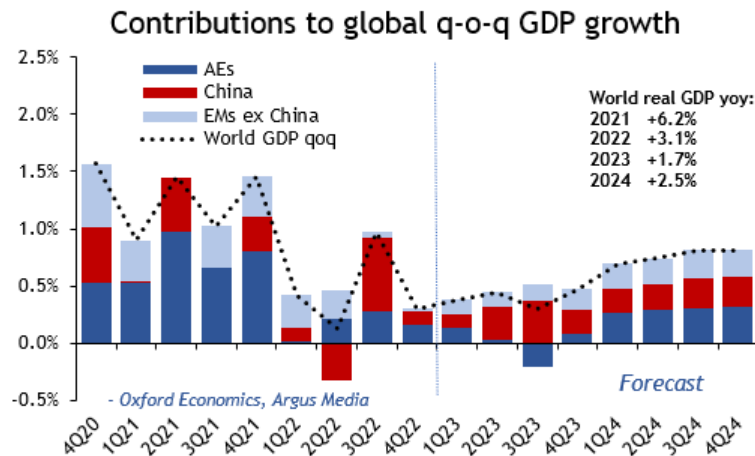
China passenger travel: recovery underway



China YoY change in real estate investment



Weak growth & rates-induced 3Q slowdown are base case assumption

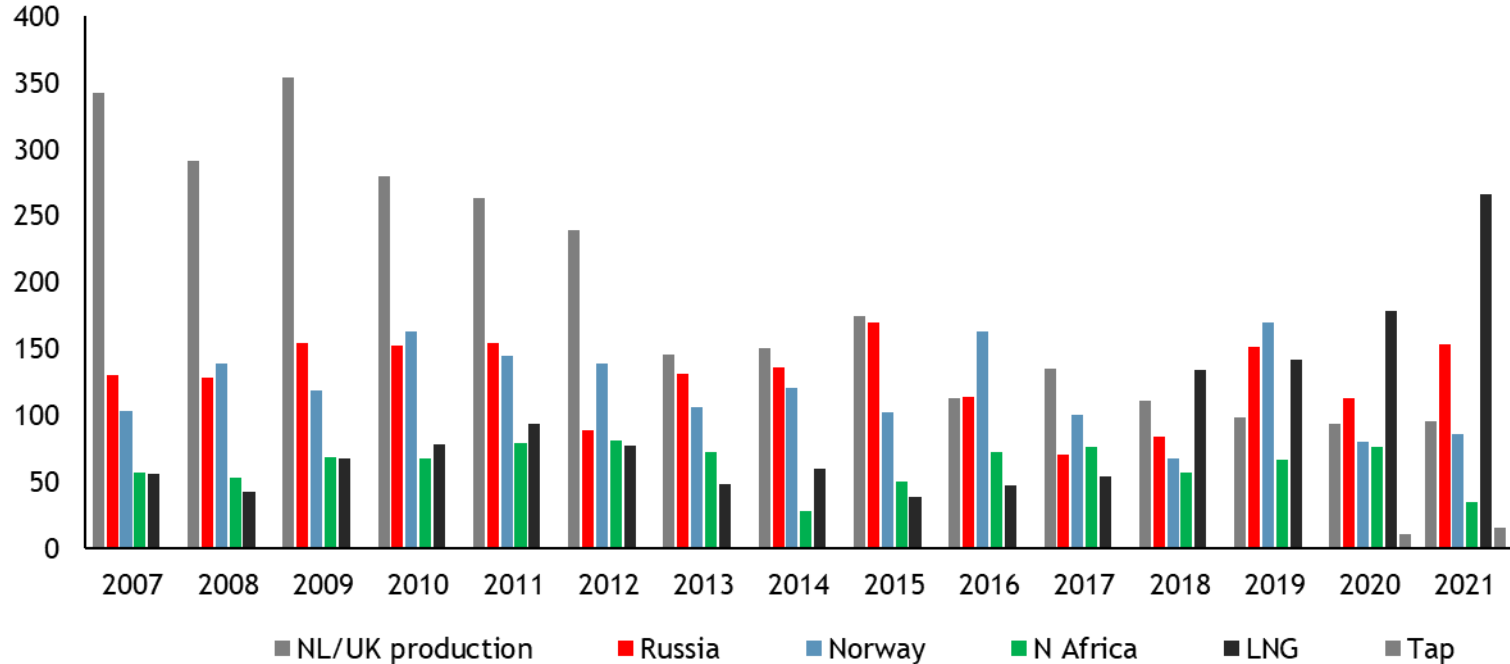


- No repeat of GFC is expected amid better capitalised banks and ample liquidity.
- Asia continues to outpace Atlantic Basin in macro & demand growth prospects.
- Dovish interest rate narrative & bullish China surprises both represent upside risks.
- But downside forecast risks are at least as significant:
 - *Central Banks miss sought-after "soft landing", triggering steeper/longer recession.*
 - *Worsening Ukraine crisis & heavier Russian energy & commodity export losses.*
 - *Further emerging market debt defaults amid strong USD/higher rates.*

3. Global natural gas markets

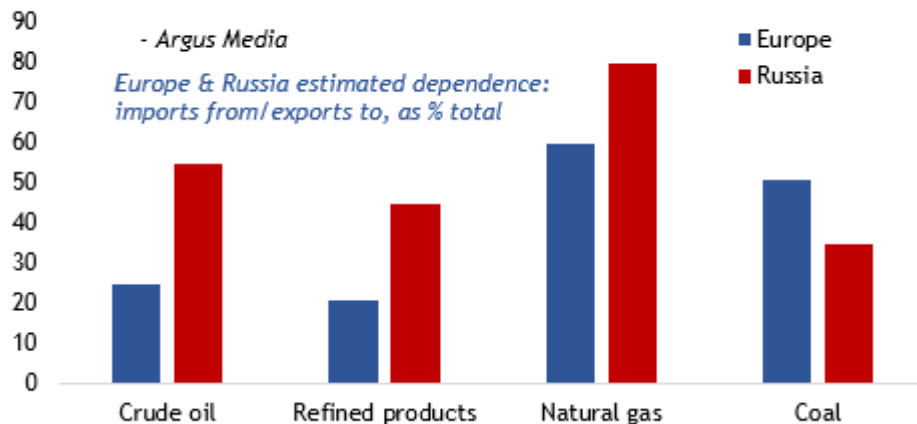
Europe's 2022 gas & power crisis was years in the making

Yearly production swing (max monthly flow less min monthly flow) (mn m³/d)

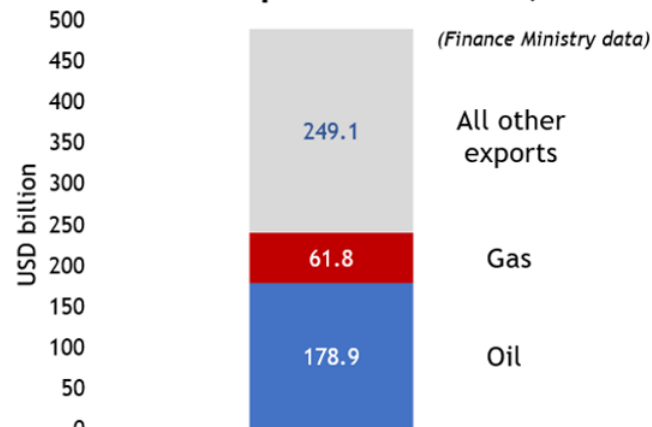


Russia's calculus for cutting off pipeline gas supply

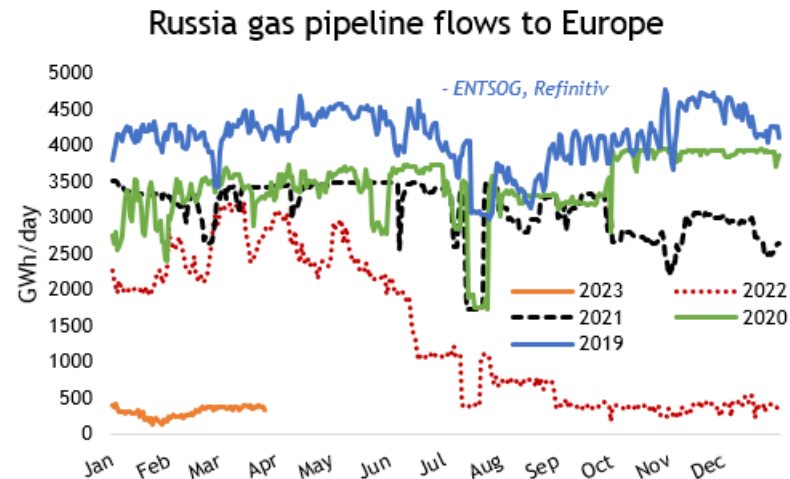
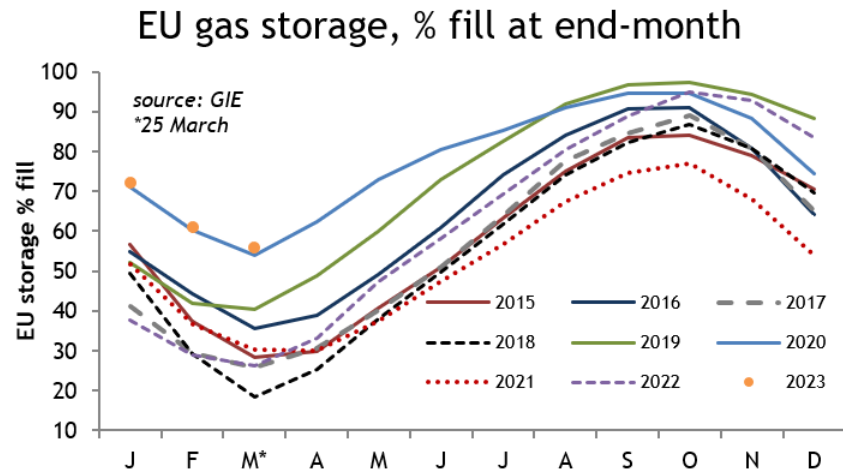
Russia-Europe interdependency is high



Russia export revenues, 2021

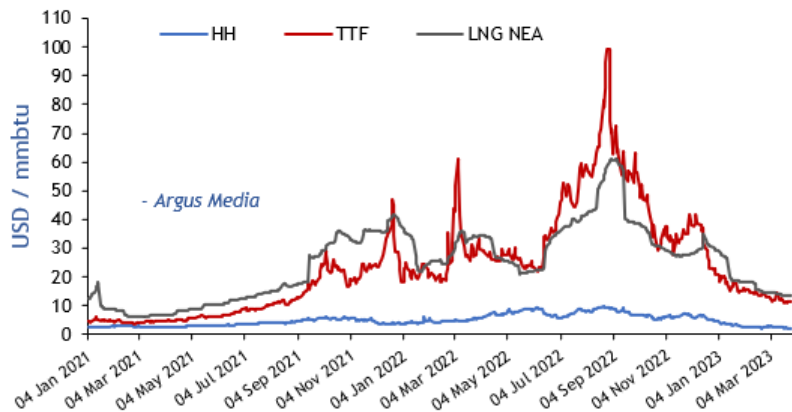


Europe began winter 2021/2022 with record low storage

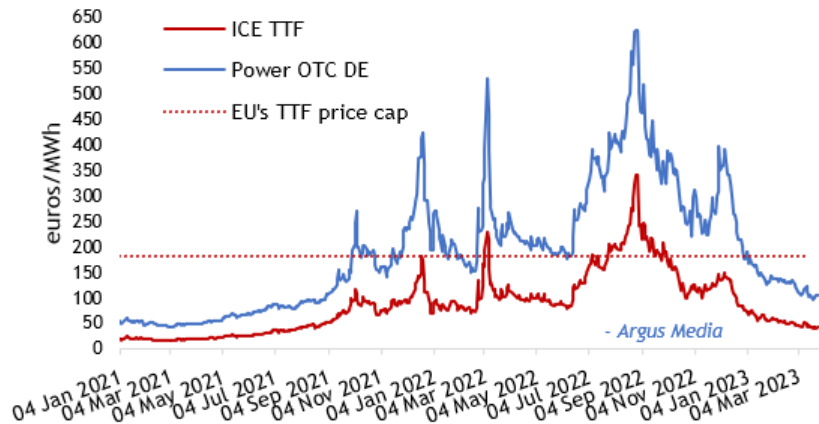


International gas prices responded

European TTF gas eases to \$11/mmbtu



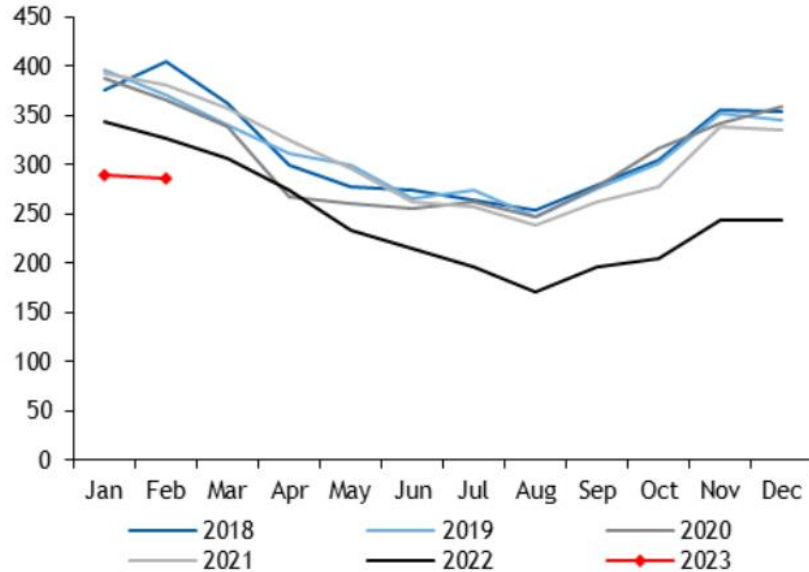
Europe gas & power back at autumn'21 levels



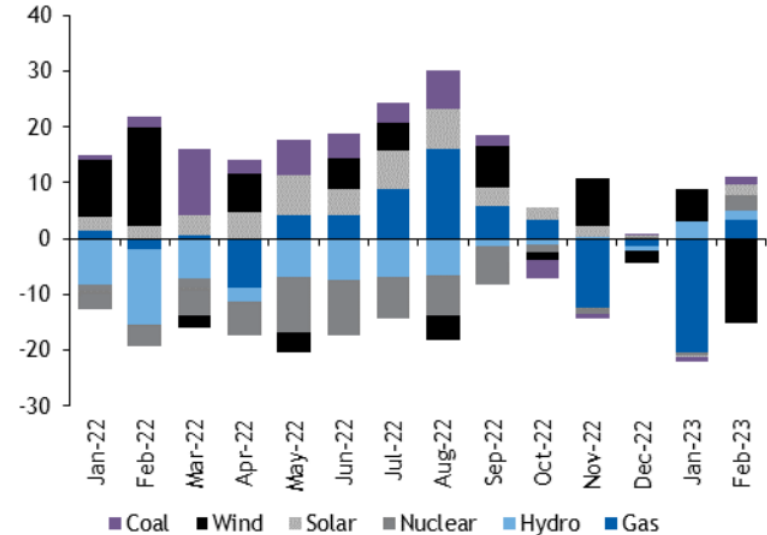
- Price extremes led to outright demand destruction & to fuel switching (coal & oil)

Industrial demand got hammered, but power generation resilient

European industrial sector gas demand, mcm/d

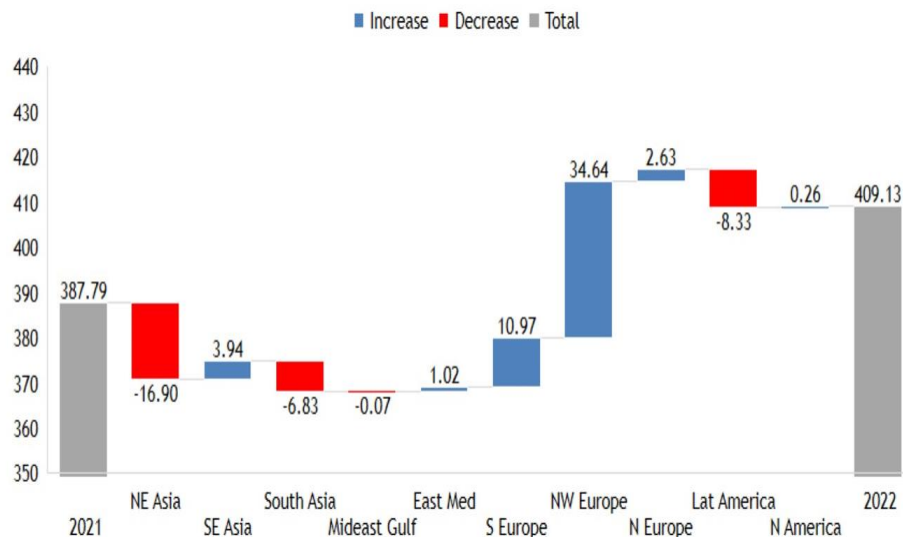


Change in European power generation by fuel, TWh

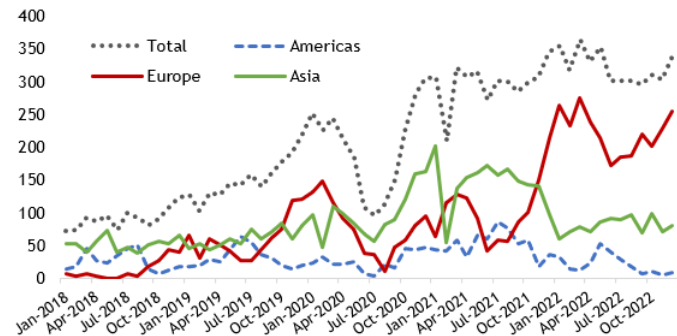


LNG helped fill the supply gap

Global LNG receipts, million tons

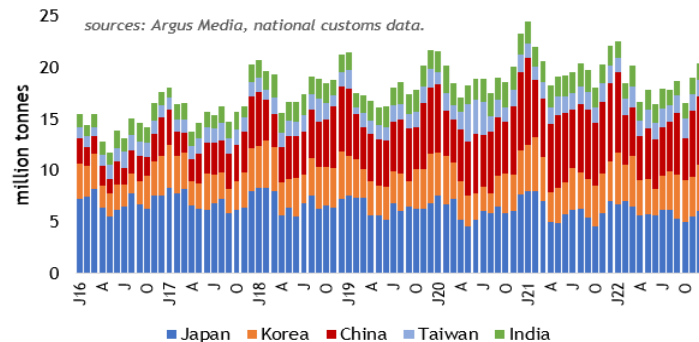


US LNG exports, bcf



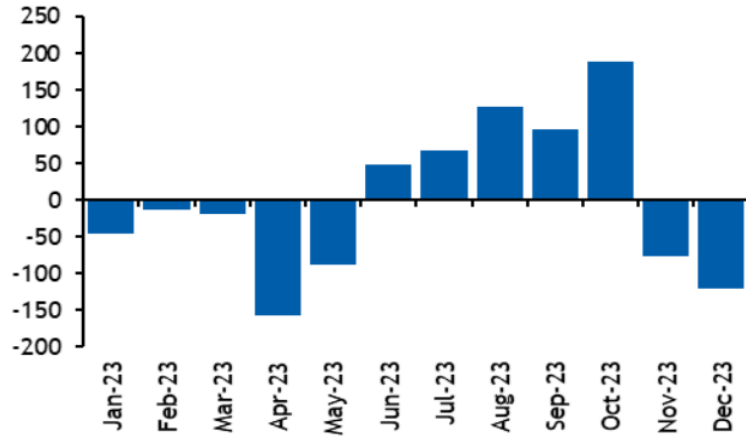
Asia "Big-5" 2022 LNG imports -9%, China -20%

sources: Argus Media, national customs data.

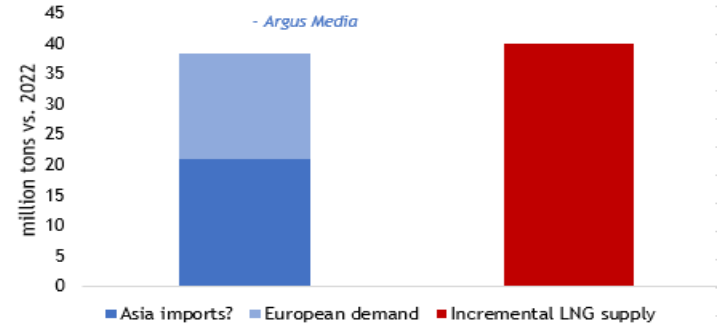


Higher nuke & hydro may limit incremental gas demand in '23, but...

European gas balance, million cu m/day



Global LNG balance could stay tight in 2023



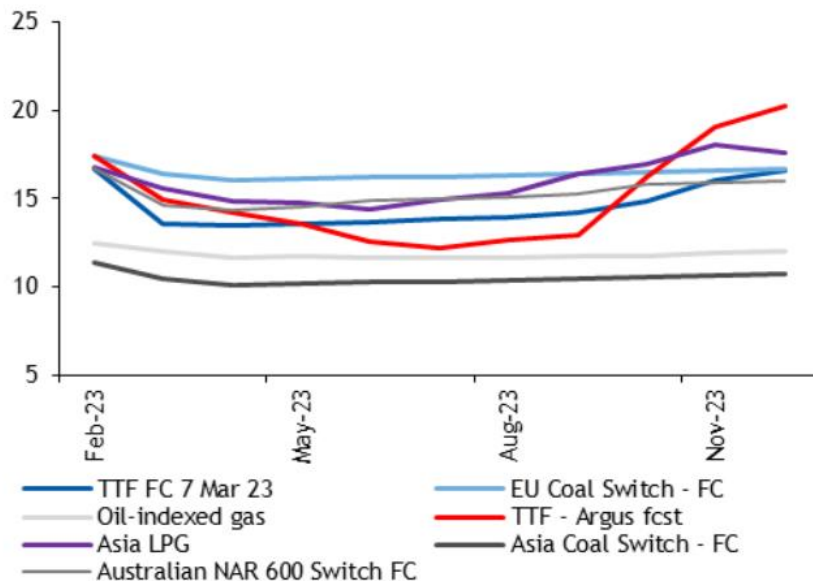
Global liquefaction capacity*, mt



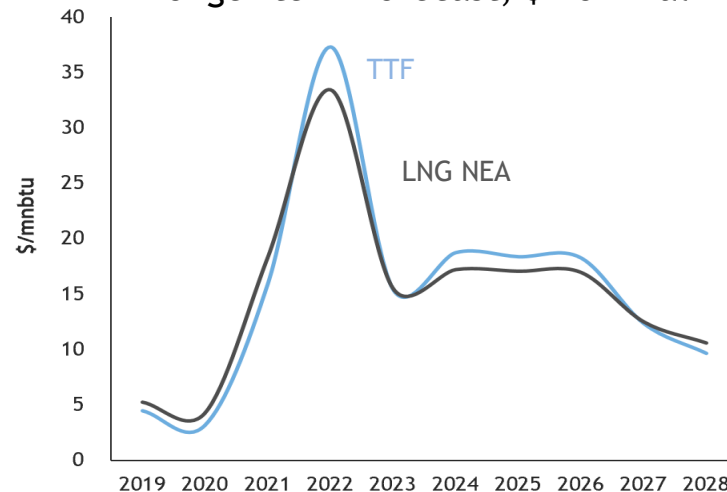
*Source: Argus analysis. Includes prospective projects that have reached FID

Repeat of 2022 price spike unlikely, but Europe/Asia stay strong

Europe TTF price forecast, \$/mmbtu



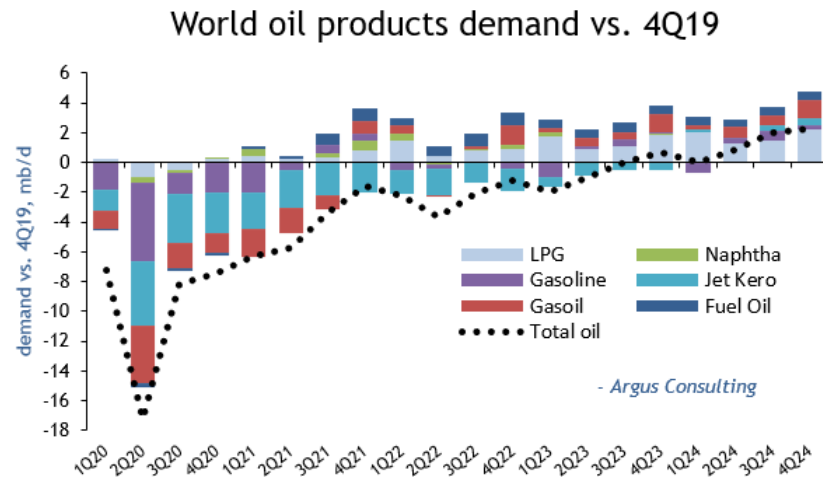
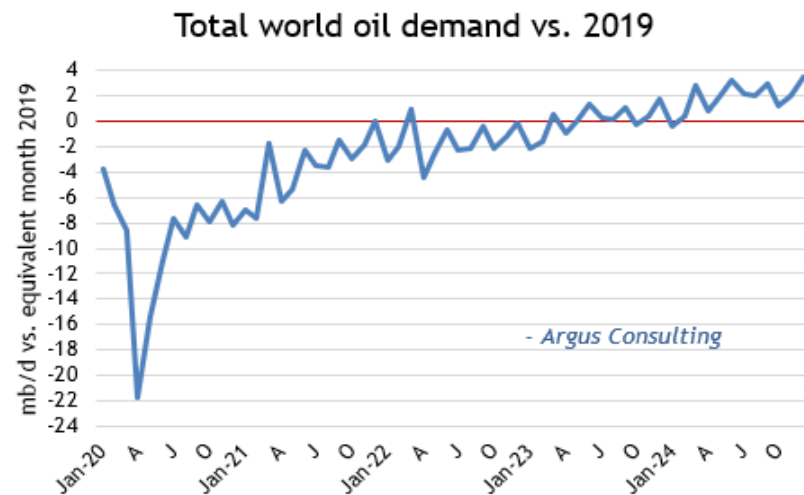
Longer term forecast, \$ nominal



- Argus Consulting

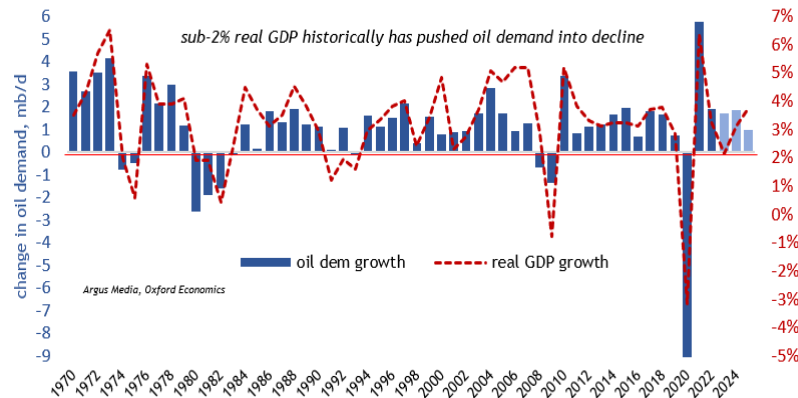
4. Global crude markets

Post-Covid demand recovery continues, but slowed in 2022

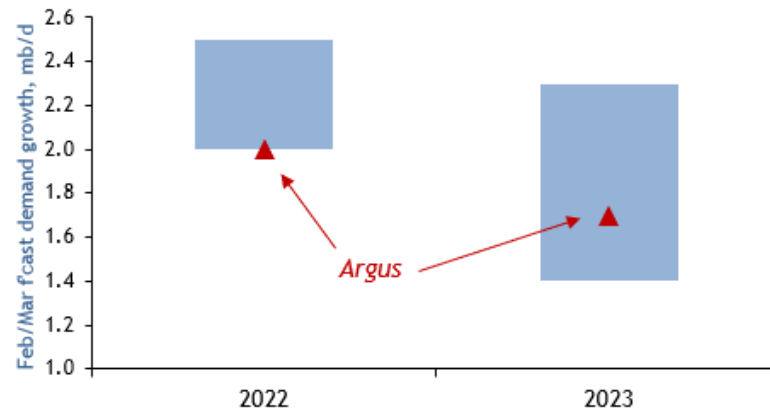


Weak macro in 2023, but oil demand could remain robust

Oil demand hinges on GDP, despite crises loosening link



2023 demand growth expectations diverge

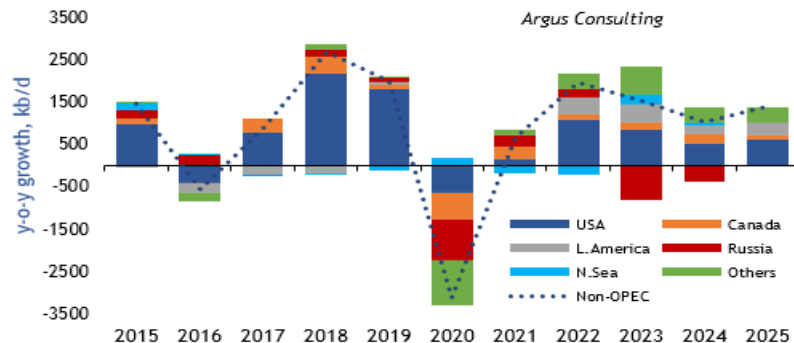


	GDP (PPP), %	oil, mb/d
2020	-3.2	-9.4
2021	6.3	5.8
2022	3.3	2.0
2023	1.9	1.7
2024	3.3	1.8

China rebound & jet fuel recovery
offset impact of weaker GDP

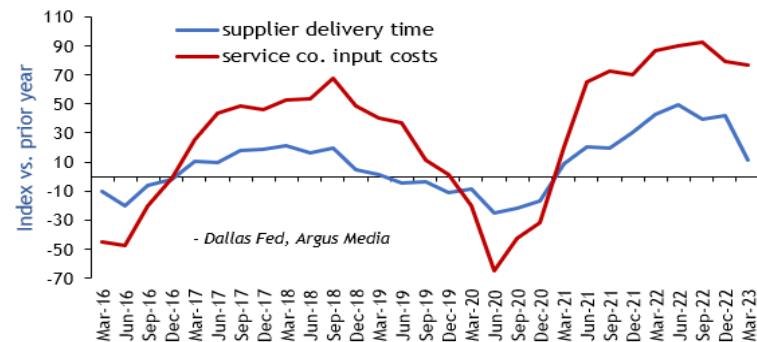
Renewed competition for OPEC+ as post-Covid demand surge eases

Non-OPEC supply growth now broader based

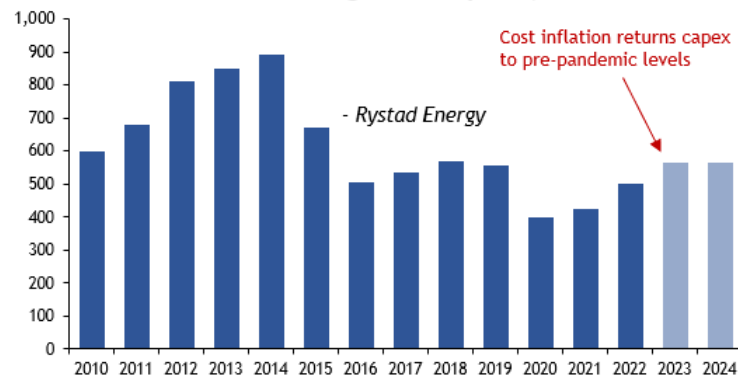


- US producers now focus on capital discipline at expense of prior volume growth rates.
- Labour & materials constraints plus rising costs are a further drag on growth.
- But ~500 kb/d annual growth mid-term is *the* key source of incremental global supply.
- Anaemic global upstream capex may be storing up capacity crunch longer-term.

Upstream bottlenecks ease, cost inflation persists

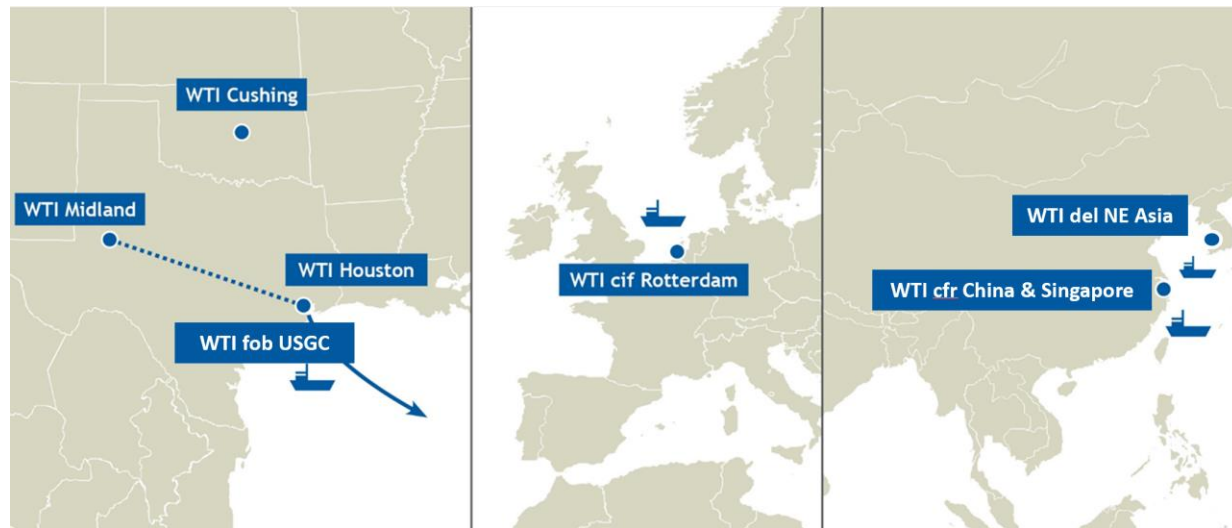
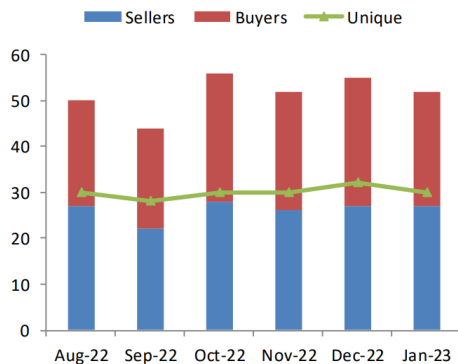


Global oil and gas E&P spend, \$bn



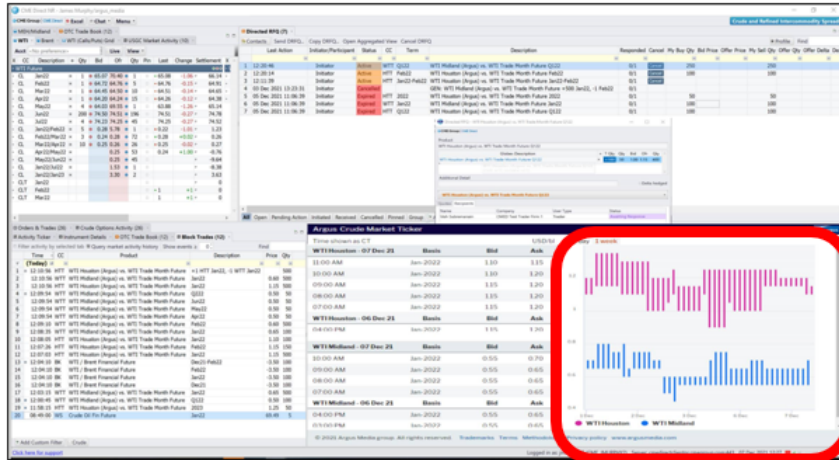
WTI deals at Houston (MEH) now guide global light crude prices

Argus WTI Houston market participants



- Argus WTI Houston has an exceptional number of participants (> 50) and higher volume of trade (> 500,000 b/d) than all BFOET grades combined.
- CME's HTT financial contract, which settles on Argus WTI Houston, is the most widely-used hedging tool at the Gulf coast.

New Argus pricing tools support the global role of WTI



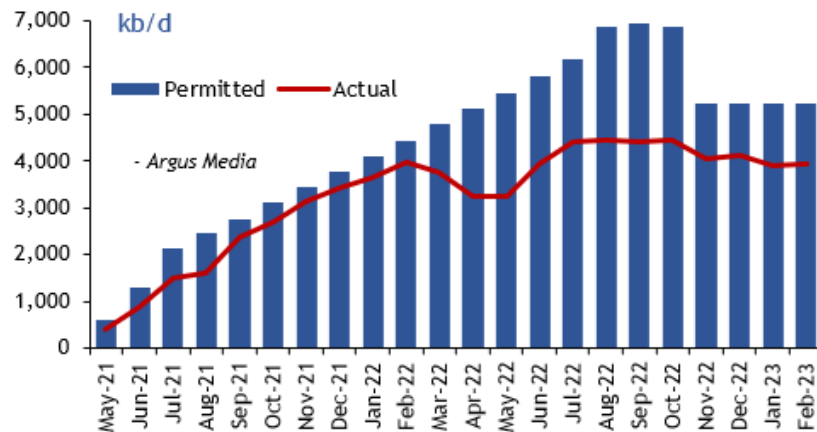
US Gulf coast waterborne				\$/bl
	Timing	Basis	Diff low/high	Low/High
WTI fob USGC	Prompt	Apr CMA Nymex	+1.52/+1.87	69.39-69.74
	Prompt	Apr WTI Houston	+0.26/+0.61	
	Prompt	Jun Ice	-4.15/-3.80	

WTI intramonth spreads				\$/bl
Load window (dates)	Timing	Basis	Diff low/high	Diff midpoint
1-10 M1	Apr	Apr WTI Houston	+0.30/+0.60	+0.45
	Apr	Jun Ice	-4.11/-3.81	-3.96
11-20 M1	Apr	Apr WTI Houston	+0.30/+0.50	+0.40
	Apr	Jun Ice	-4.11/-3.91	-4.01
21-30 M1	Apr	Apr WTI Houston	+0.30/+0.50	+0.40
	Apr	Jun Ice	-4.11/-3.91	-4.01

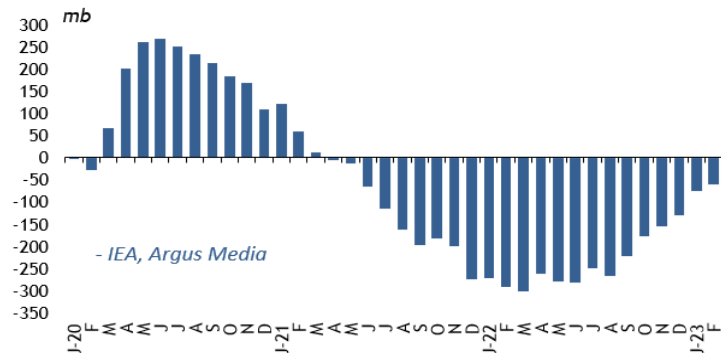
- Financial traders on CME direct can now see hourly Argus WTI physical price spreads.
- WTI intramonth assessments: The most precise timing for WTI prices at the docks.

Rising supply masks thin inventory & spare capacity buffers

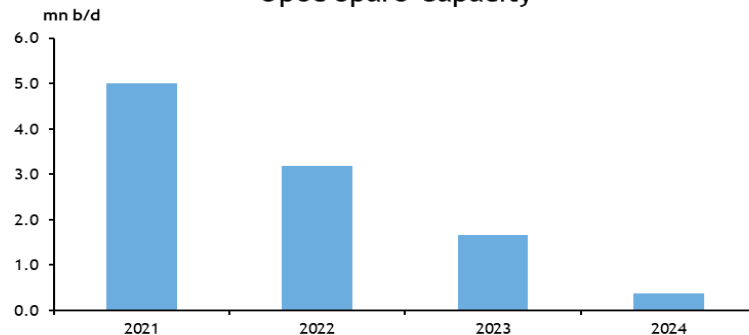
OPEC+ (partially) returns bls to market



OECD refiner oil stocks vs. 2015-2019 ave.

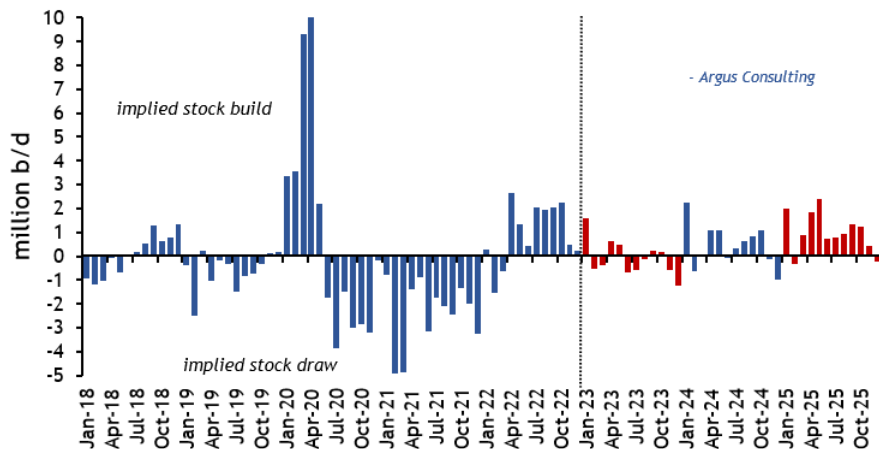


Opec Spare Capacity

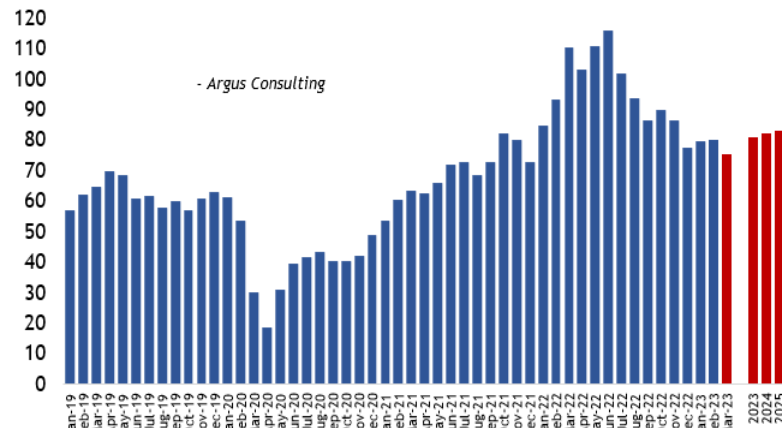


Argus March outlook - balanced crude mkt. 2023, surplus-prone 2024/2025

Implied global oil balance



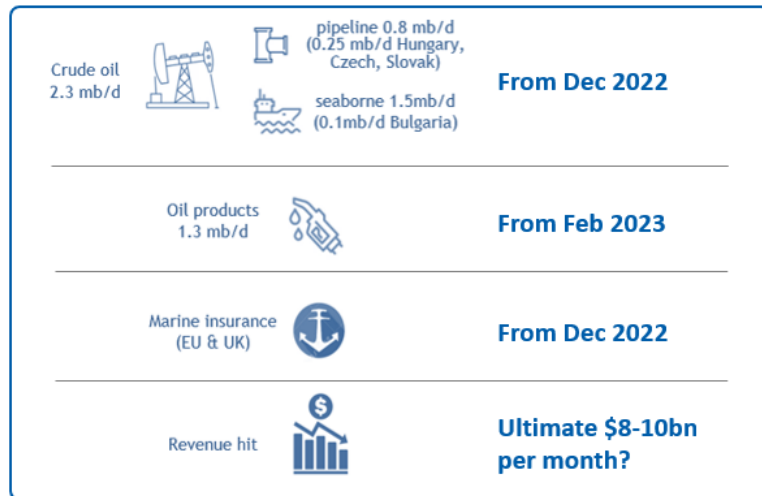
WTI Houston forecast, \$/bl



- Broadly balanced crude market in 2023 on conservative GDP/demand outlook.
- Tendency toward surplus in 2024/2025 likely to be offset by OPEC rolling over restraint beyond end-2023 (0.5-1.0 mb/d).

Embargo & price cap augment macro & China as key market uncertainties

EU oil sanctions package

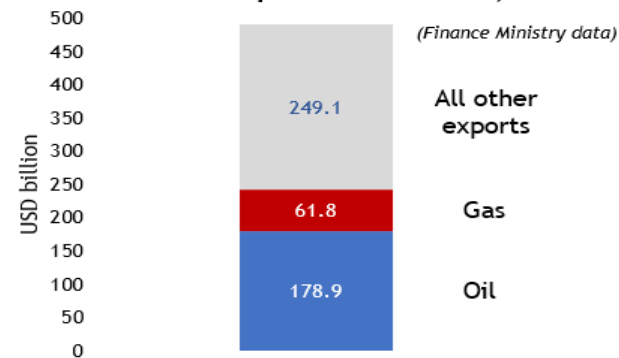


**based on 2021 exports & revenues*

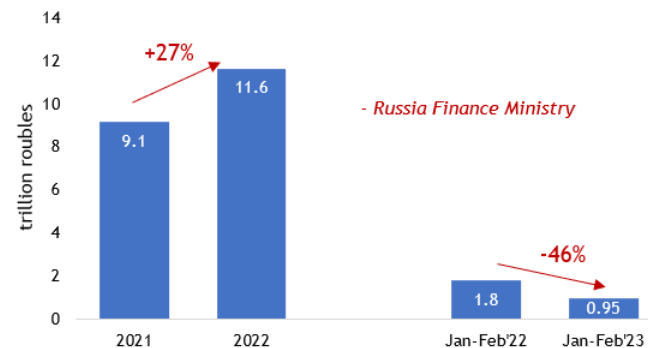
- Russia an 8mb/d oil exporter, with 45% historically flowing to Europe.



Russia export revenues, 2021

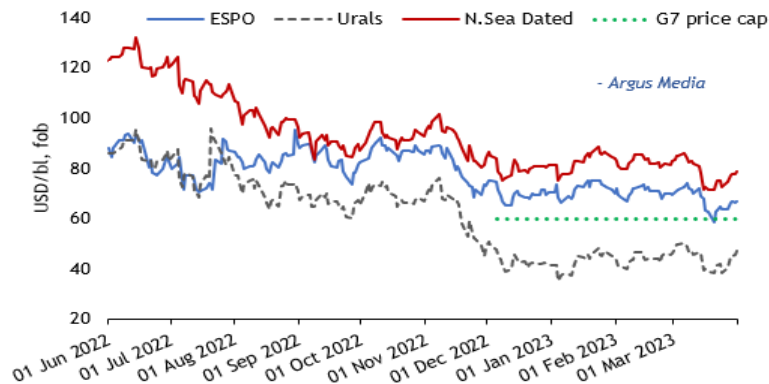


Russia oil & gas export revenue



Embargo & price cap for Russian crude

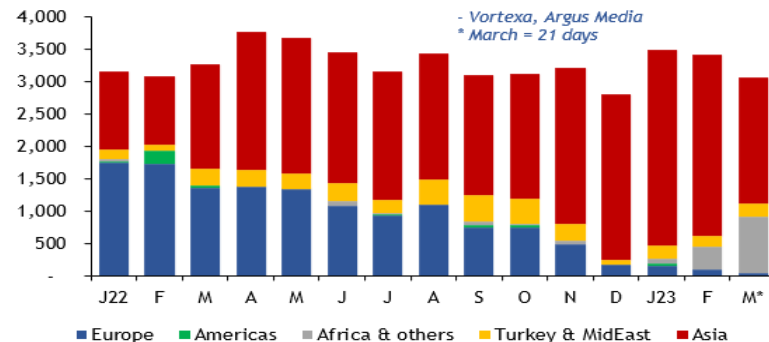
FOB Russian crudes and the G7 price cap



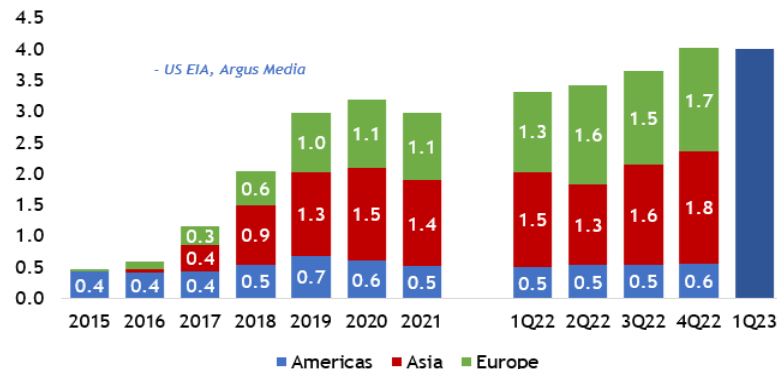
- Initial self-sanctioning, followed by the embargo, have seen Russian crude flows shift to Asia.
- Higher US volumes to Europe, but Caspian & Middle East have been *grades-of-choice* to fill the gap.
- Russian crude export flows continue, so far re-routed rather than displaced.
- But Russia cutting output 500 kb/d March to June.



Russia seaborne crude exports, kb/d

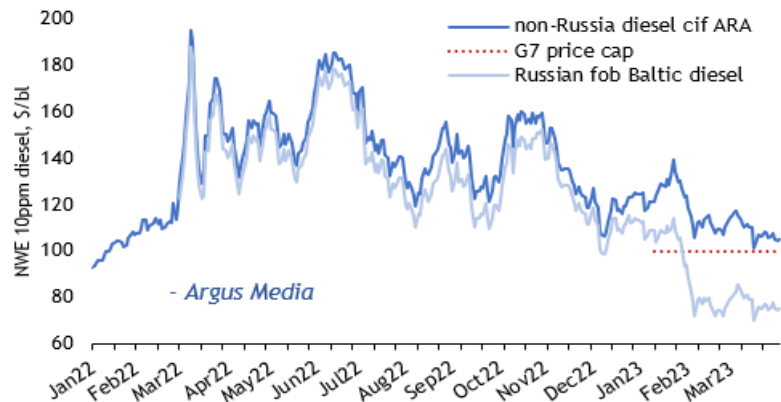


US crude exports, mb/d



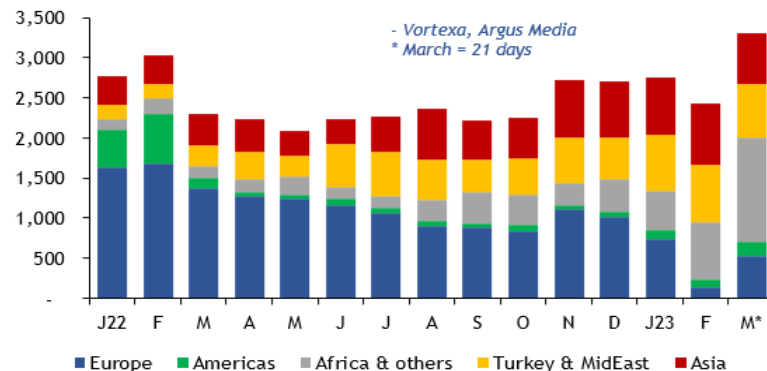
Embargo & price cap for Russian refined products

March Russian diesel -\$31 vs. ARA & -\$22 vs. cap

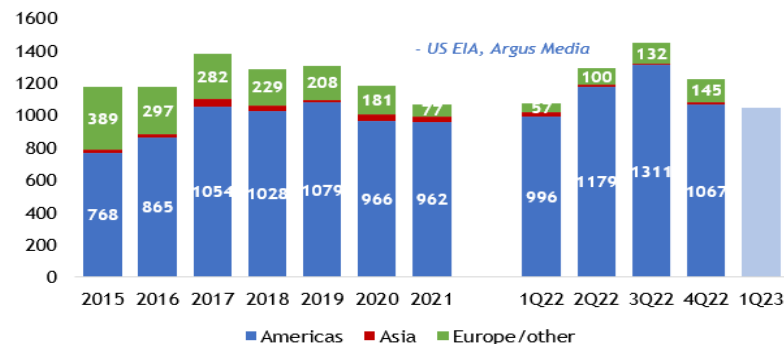


- Europe products a tougher supply issue to solve.
- Russian cargoes to N.Africa, Turkey, Middle East.
- European replacement diesel supply from USGC, Mid East, China & India, but sustained strong cracks needed to attract incoming cargoes.
- New 2-tier market: long-haul tanker availability? will Russia have to cut refinery runs?

Russia seaborne products exports, kb/d



US diesel exports, kb/d



Parting thoughts.....

- Central Banks' task in engineering a soft landing is complicated by an inflationary impulse from both demand and supply.
- Inflation could prove "sticky", even for the medium term, as tight labour markets and sub-optimal supply chains persist.
- 2023 macro prospects now hinge as much on China as they do on Ukraine, unless Russia plays hardball with commodity supply.
- Europe dodged a bullet on natural gas in 2022, but resurgent China could tighten 2023 LNG availability considerably.
- Oil demand to remain robust in 2023 as China & jet fuel offset weak macro.
- Crude market can handle modestly lower Russian exports, but products embargo trickier, sustaining strong European diesel cracks.
- Structural change: re-discovered energy policy trilemma, ongoing government market intervention, embedded inflation & elevated debt (Energy Transition re-set?)
- In crude price indexation terms, USGC becoming the global price discovery venue.



argusmedia.com

David Fyfe Chief Economist

david.fyfe@argusmedia.com
+44 (0)780 933 9777
London

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