

Oil Market Outlook for 2023

- Recession risk, OPEC Plus production cuts, and the Ukraine conflict -

The Institute of Energy Economics, Japan

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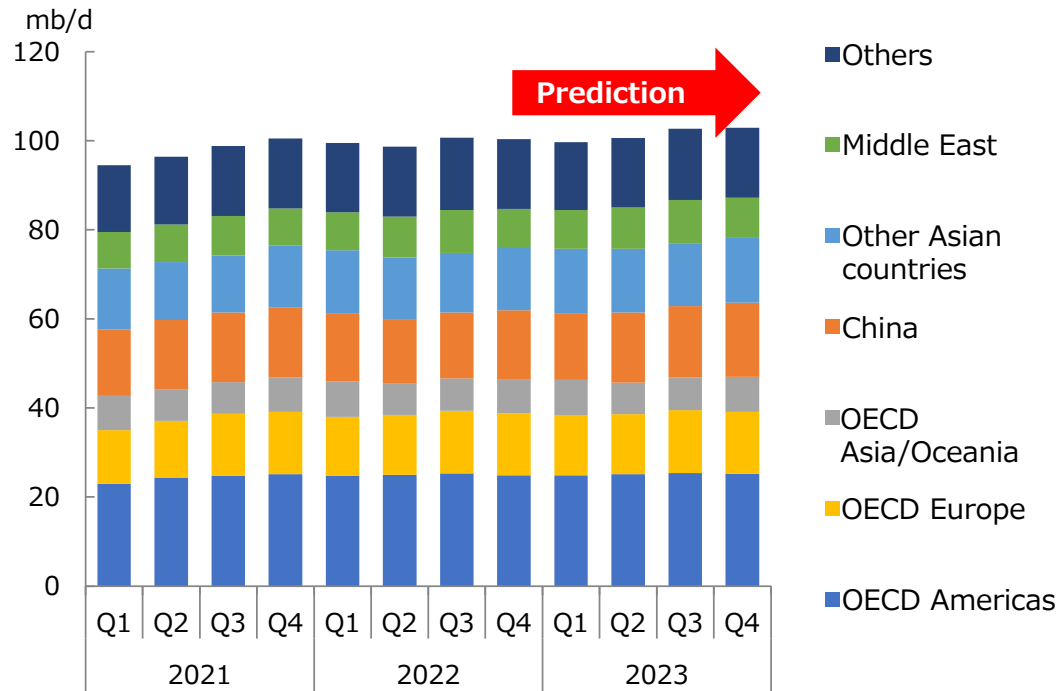
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Summary

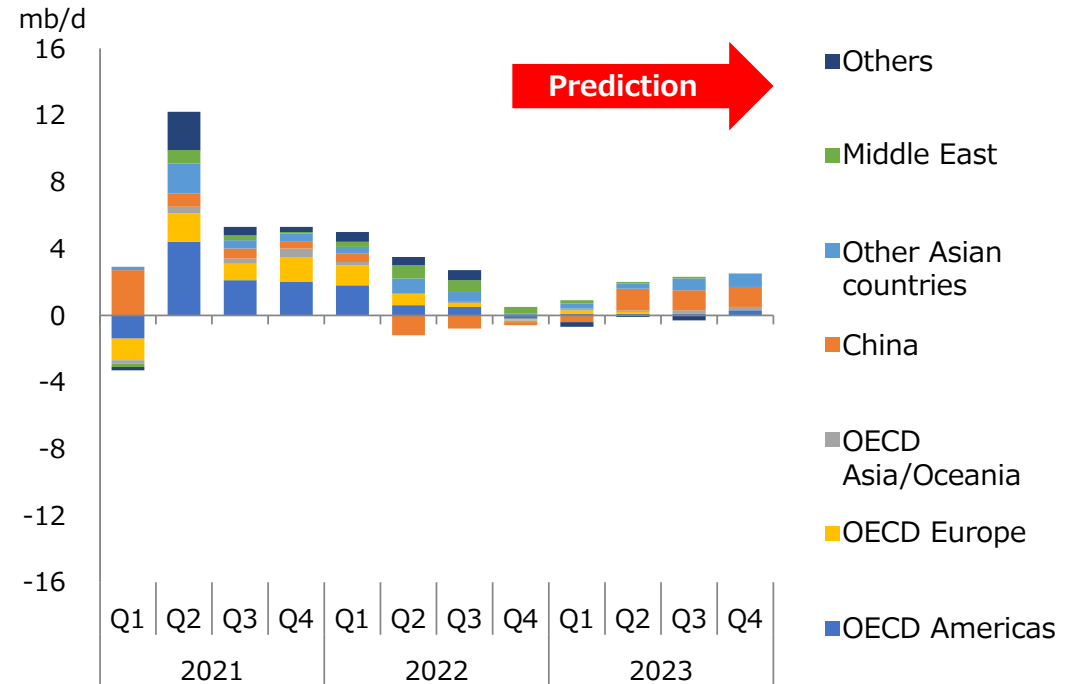
- ✓ Demand in 2023 will exceed pre-pandemic levels at 101.4 mb/d, with a supply of 100.9 mb/d. Supply-demand balance will gradually tighten due to OPEC Plus production cuts.
- ✓ Russian export volumes will remain high. The export restraint effect of price caps might be limited.
- ✓ U.S. production continues to increase moderately. Production in 2023 will reach an all-time high.
- ✓ OECD commercial inventory levels will increase due to large stockpile releases and increased U.S. production.
- ✓ Brent prices in 2023 are projected to hover around \$90/bbl. Weak demand due to economic slowdown, further OPEC Plus production cuts, and the situation in Ukraine are key uncertainties.

Oil Demand

Demand



Increase/decrease in demand (y/o/y)



Source: IEA

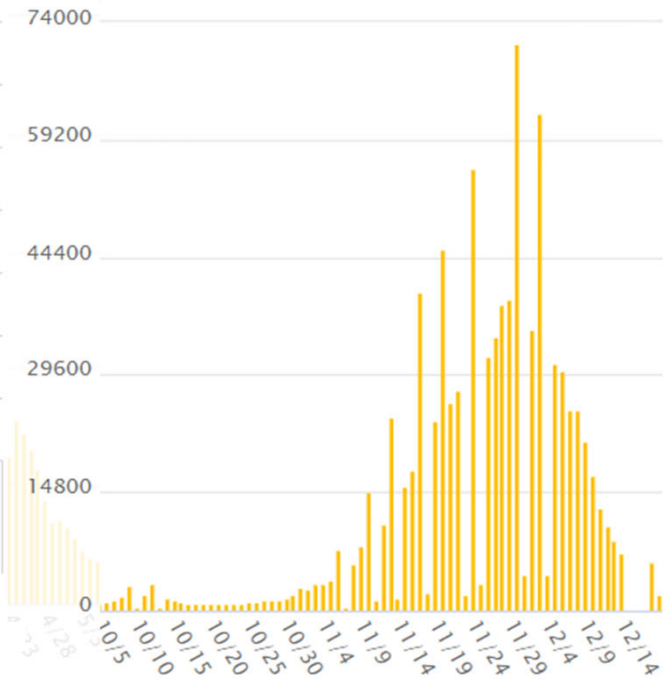
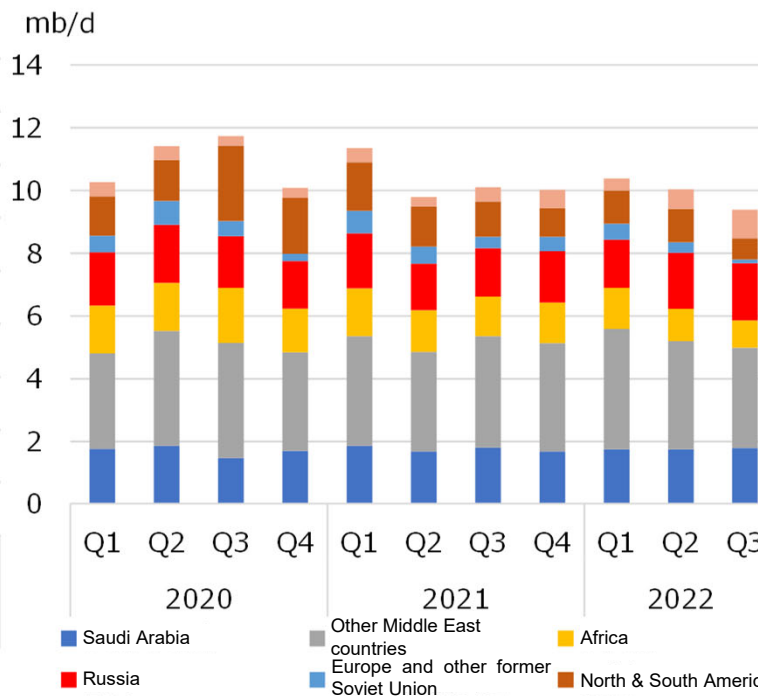
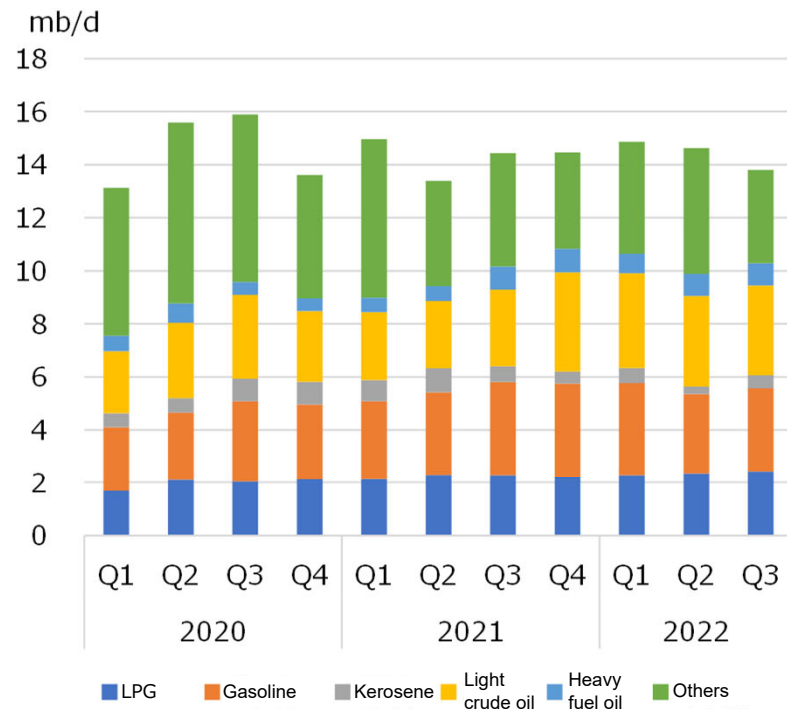
- Demand for the 3Q 2022 increased by 1.9 mb/d (1.9%) year over year to 100.7 mb/d. Demand has almost returned to pre pandemic levels.
- Demand in 2023 is projected to increase by 1.6 mb/d (1.6%) year over year to 101.4 mb/d, but economic downturn is a major risk.

China

Demand

Import volume

Number of COVID-19 cases

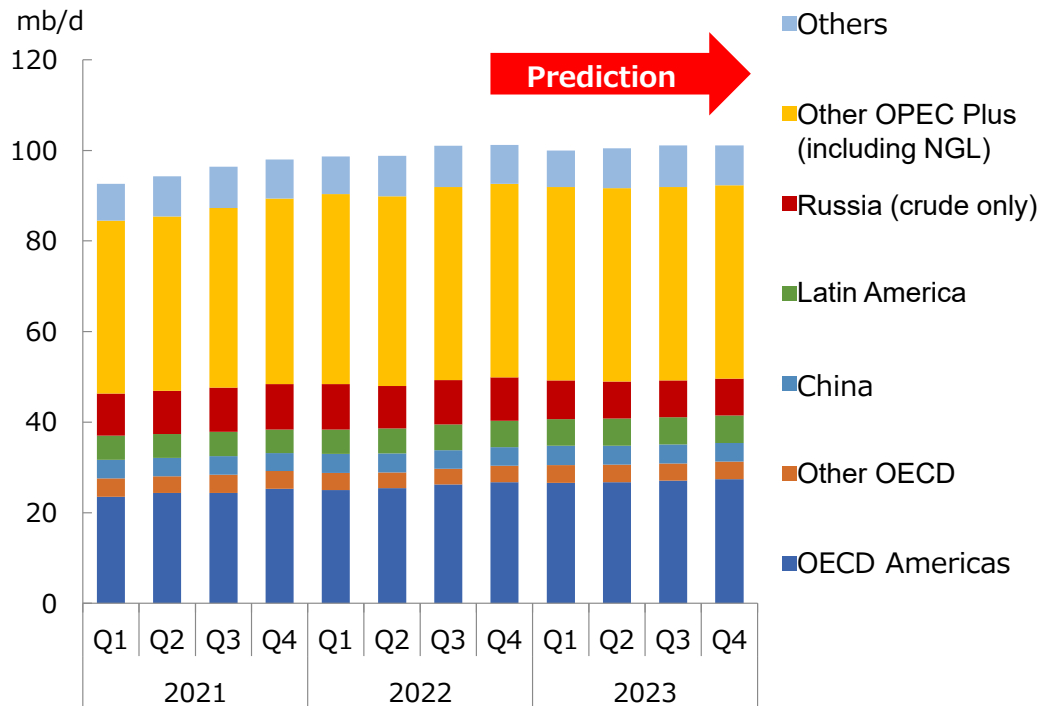


Source: China OGP, NHK

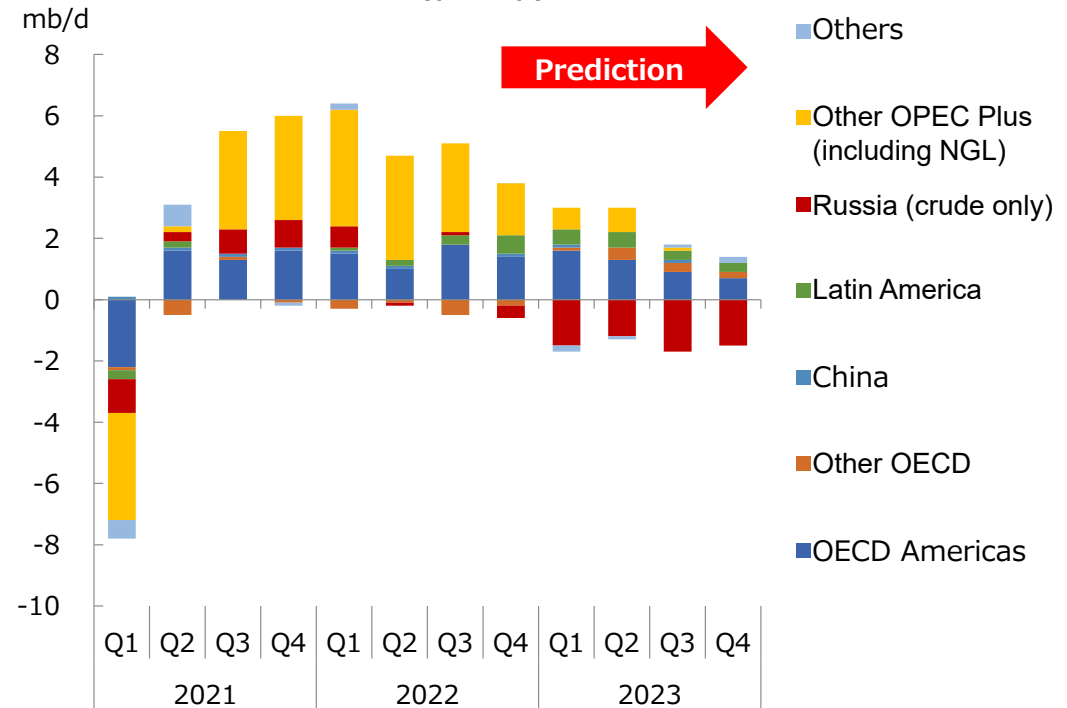
- Demand in the 3rd quarter of 2022 was down 0.6 mb/d (4.3%) year over year to 13.8 mb/d.
- Weaker demand due to economic slowdown and frequent lockdowns.
- Russian crude oil imports have surged and in the 3Q 2022 were on par with Saudi Arabia.

Oil Supply

Production volume



Increase/decrease in production volume (y/o/y)

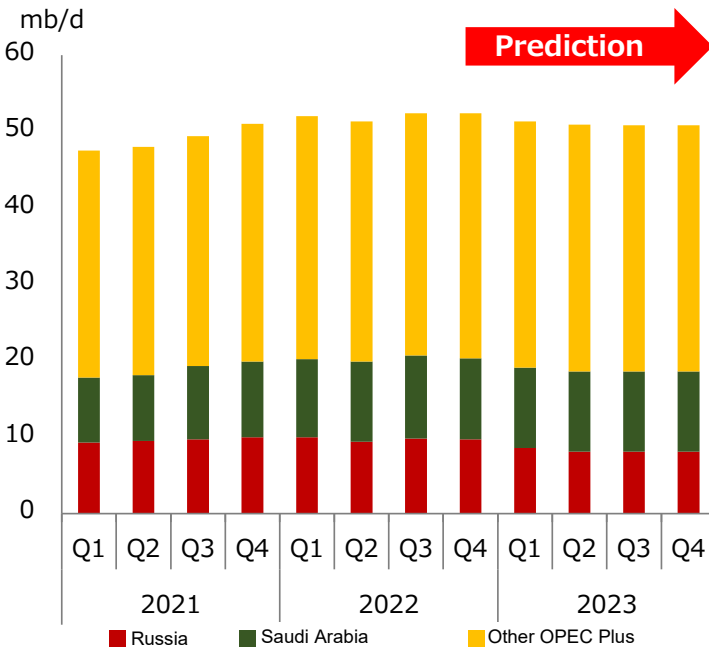


Source: IEA

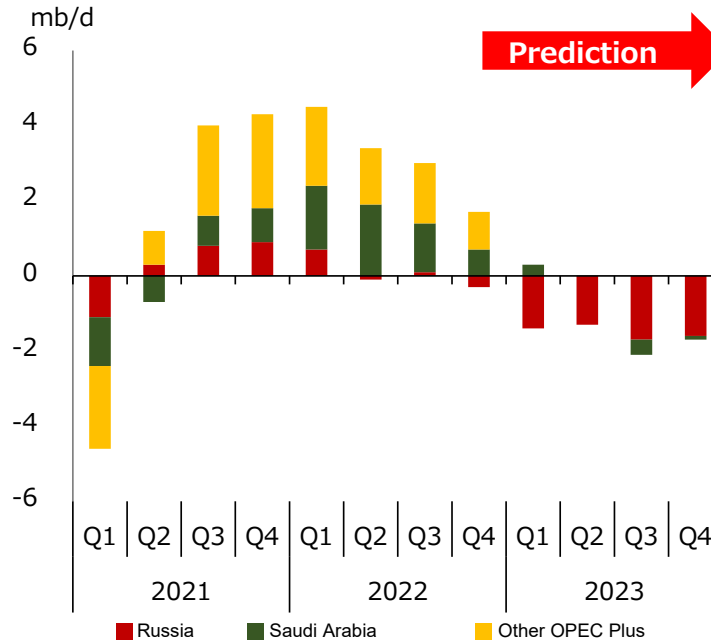
- Production in the 3Q 2022 increased by 4.7 mb/d (4.8%) y/o/y to 101.1 mb/d. Growth exceeded demand due to OPEC Plus and U.S. production increases.
- Although supply in 2023 is projected to increase by 0.8 mb/d (0.8%) year over year to 100.9 mb/d, there is great uncertainty about fluctuations in Russian production.

OPEC Plus

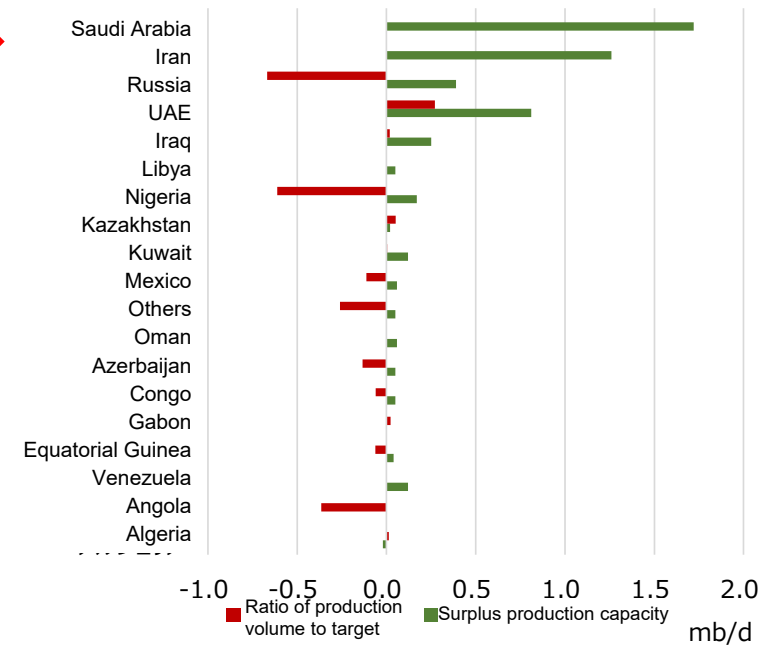
Production volume



Increase/decrease in production volume (y/o/y)



Degree of achievement of production targets and surplus production capacity (November 2022)



Source: IEA; The Institute of Energy Economics, Japan

- Decided to reduce production by 2 mb/d in October 2022. Production in 2023 is expected to decrease by 1.1 mb/d (2.1%) from 2022.
- Russian production decline limited despite sanctions.
- OPEC Plus meeting on December 4 decided to continue production cuts of 2 mb/d.

Western Countries' Responses to the War in Ukraine

Oil-related sanctions

Price cap overview

Financial sanctions (Asset freeze, SWIFT exclusion, etc.)	Participating Regions/Countries	G7, EU, Australia
Embargo (Primary Sanctions)	Maximum price limit	\$60/bbl
Price cap	Price Revisions	Mid-January, then every 2 months thereafter
Embargo (Secondary Sanctions)	Subject	Russian crude oil transported by sea (Excluding pipeline transport and Sakhalin 2)

Source: EU; The Institute of Energy Economics, Japan

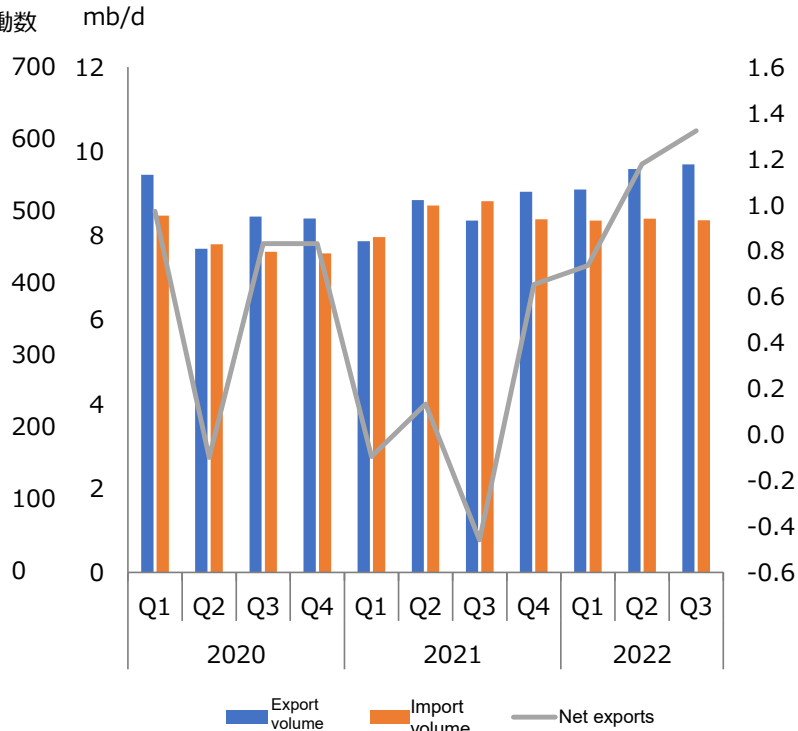
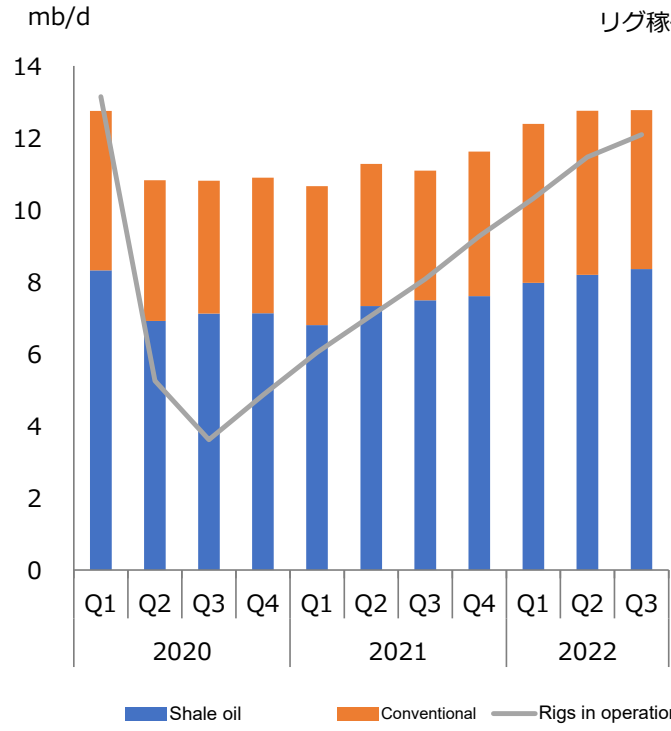
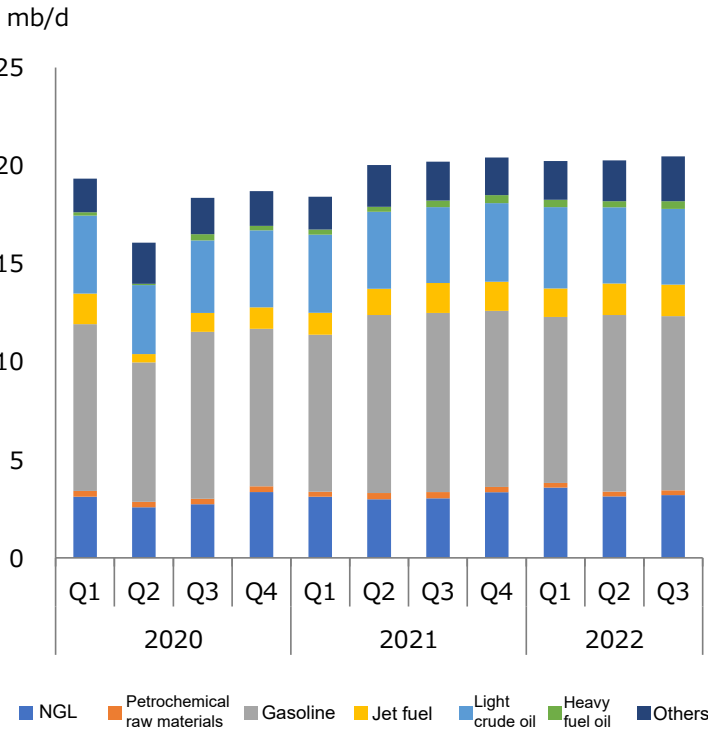
- On December 5, a price cap on Russian crude oil was put into effect. How effective will it be? Will Russia retaliate?
- The EU embargoed Russian crude oil on the same day and Russian oil products on February 5. The Middle East and the U.S. are major alternative sources of supply.

United States of America

Demand

Production volume

Export/Import

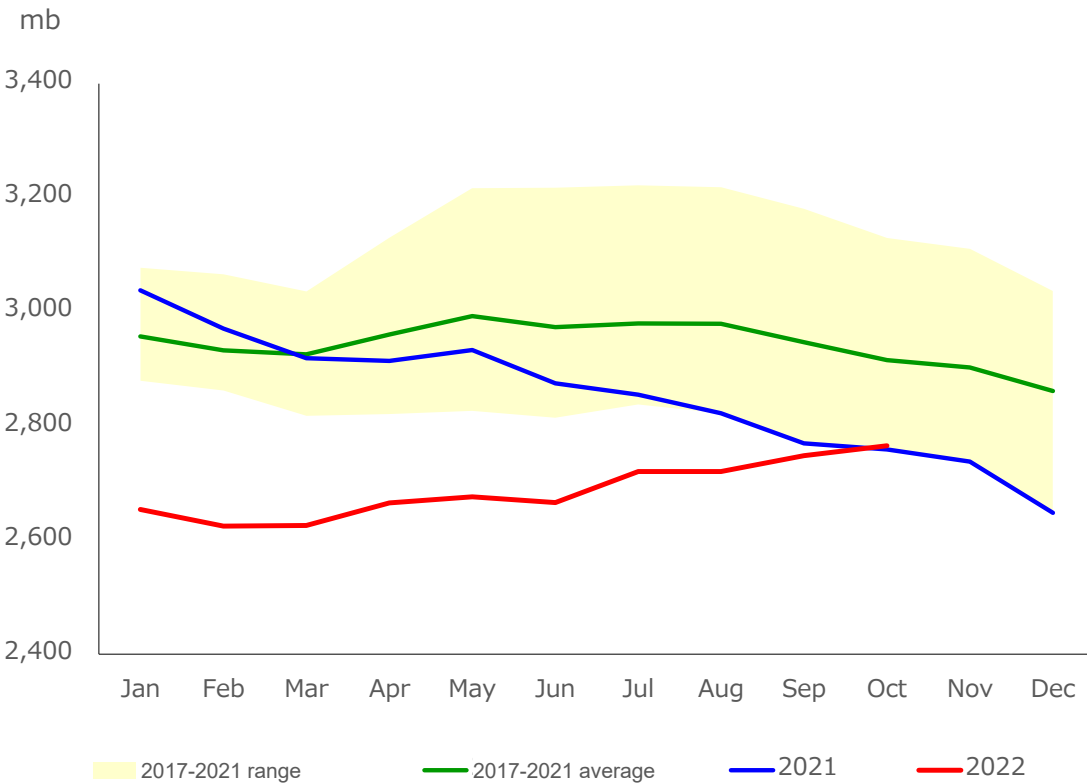


Source: EIA

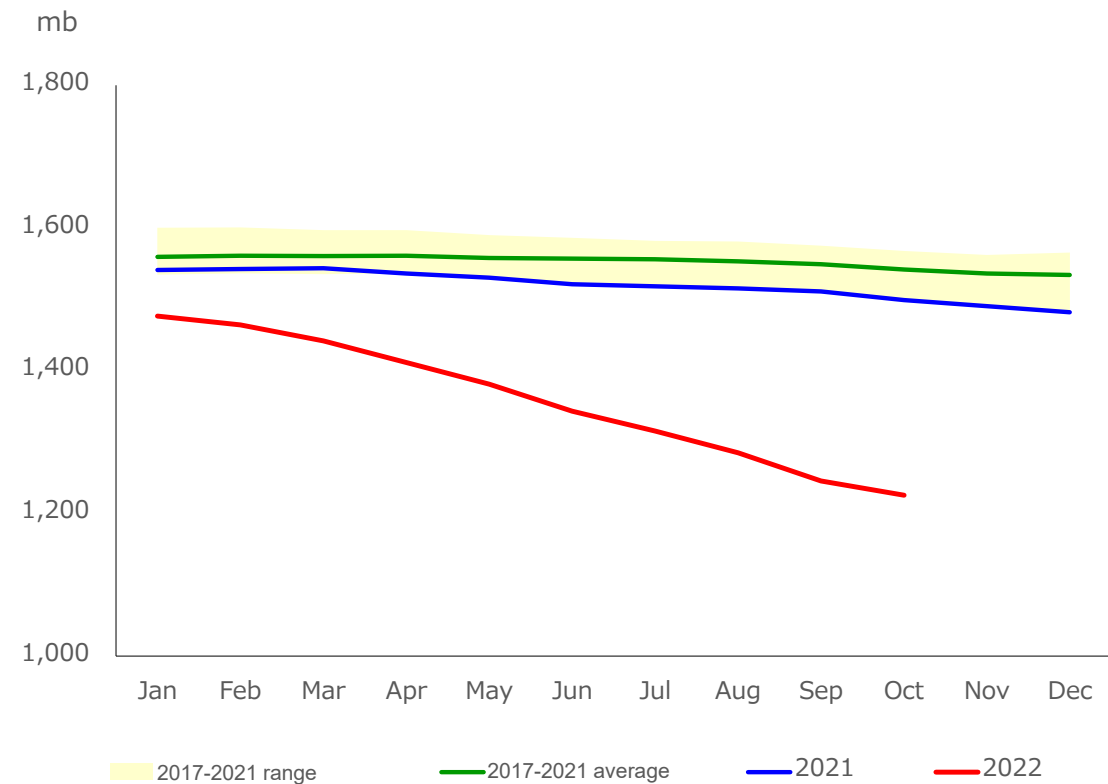
- Demand in the 3rd quarter of 2022 was 20.5 mb/d, up 0.26 mb/d (1.3%) year over year.
- Production continues to increase and the U.S. EIA forecasts a recovery to pre-pandemic levels during 2023.
- Net export volume is on the rise. Export volume increased not only to Europe but also to the Americas and Asia.

OECD Commercial Inventories and National Stockpiles

Commercial Inventories



National Stockpiles

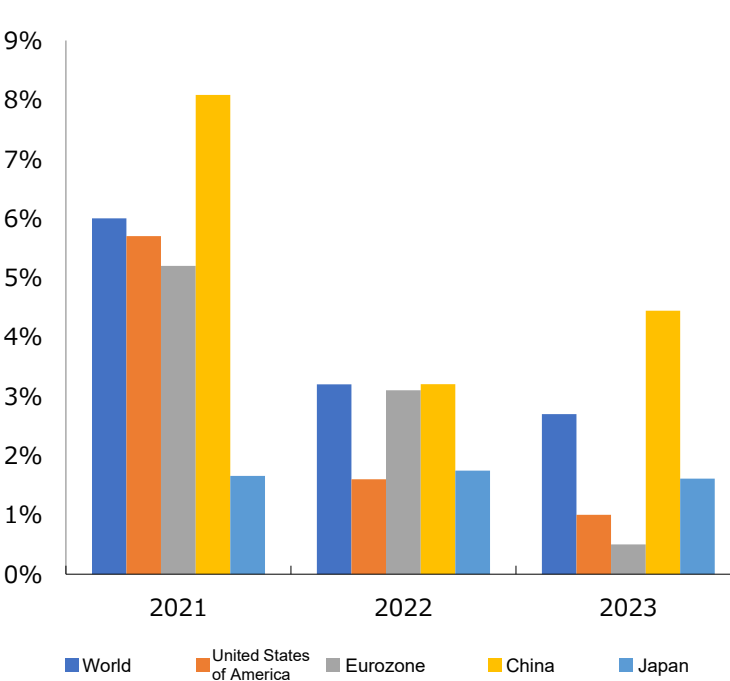


Source: IEA

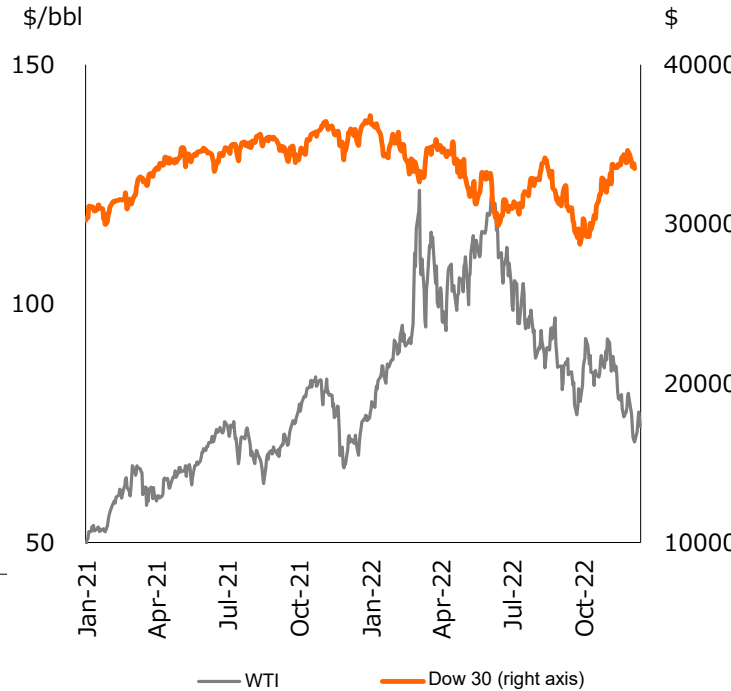
- OECD inventories in October 2022 totaled 3.99 billion barrels (2.76 billion barrels of commercial inventories and 1.23 billion barrels of national stockpiles).
- Commercial inventory levels are increasing due to large stockpile releases and increased production in the U.S.

Macroeconomic and Financial Markets

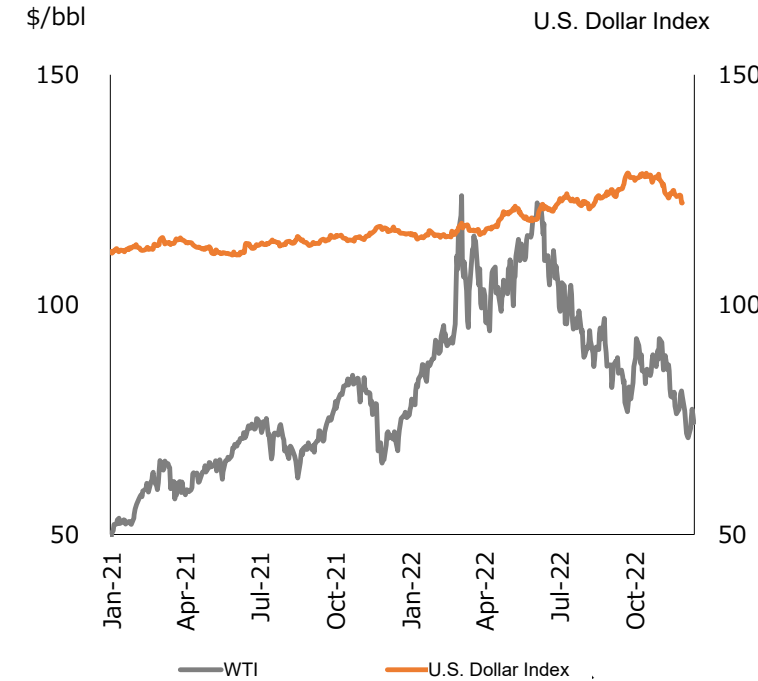
GDP growth rate



Dow Jones Industrial Average



Exchange (Dollar Index)

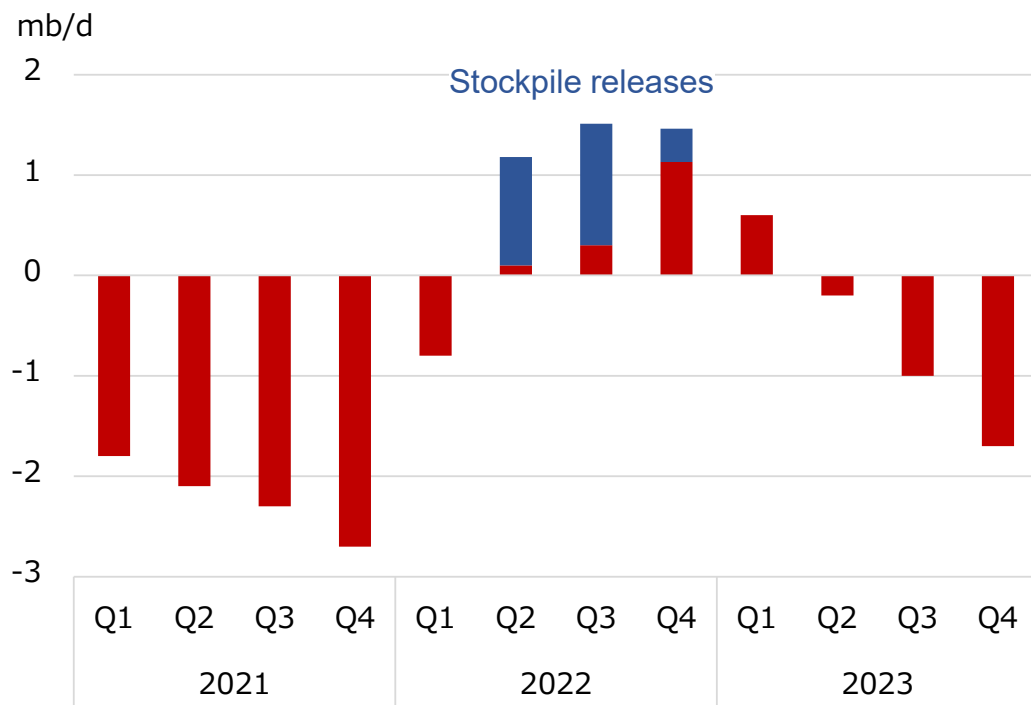


Source: IMF, FRB, CME

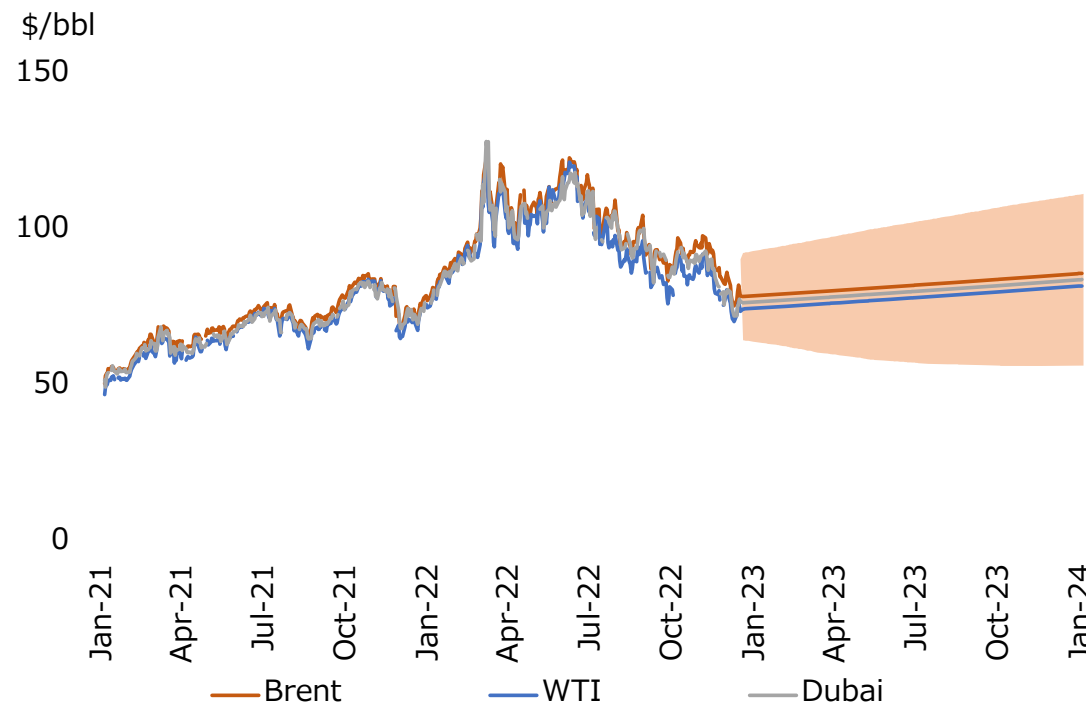
- The IMF revised the GDP growth rate downward to 2.7% for 2023. Some observers predict that Europe and the U.S. will fall into recession.
- U.S. stock prices are volatile as the FRB intends to continue raising interest rates.
- If the pace of interest rate hikes eases, a weaker dollar could support oil prices.

Oil Supply, Demand, and Price Outlook for 2023

Supply and Demand



Price



Source: IEA; CME; ICE; The Institute of Energy Economics, Japan

- The supply-demand balance is projected to shift to excess demand in the 2Q 2023.
- Brent price in 2023 is expected to hover around \$90/bbl.
- However, weaker demand due to the economic slowdown, further OPEC Plus production cuts, and the situation in Ukraine are key uncertainties.