KAPSARC Oil Market Outlook (KOMO)

Q1, 2023

Summary

This quarter's highlights:

On the demand side, seasonality tends to play an important role as it keeps oil demand growth stagnating or in decline relative to its previous quarter. However, this quarter will also witness an added layer of downward pressure as several European Union (EU) countries, among others, are expected to see their second or third consecutive gross domestic product (GDP) quarterly declines. Indeed, Brazil, Canada, Malaysia, Mexico, and the United Kingdom are all expected to have their second to third consecutive declines in GDP this quarter. Furthermore, although 2023 may witness a deceleration/decline in inflation, there is still the expectation of continued persistent inflation in several commodities, particularly energy. However, despite all these variables, Asia is expected to see healthy demand for energy, counteracting the other negative factors.

As a result, quarter-on-quarter (QoQ) growth for oil demand is expected to reach 150 thousand barrels per day (Kb/d), with OECD countries witnessing a decline of 220 Kb/d and non-OECD growing by 370 Kb/d. Overall, OECD Americas and Europe are expected to witness declines of 190 Kb/d and 320 Kb/d, respectively, whereas OECD Asia is expected to witness an incremental rise, driven by Japan and South Korea's high winter oil demand of 280 Kb/d.

A silver lining for non-OECD countries in demand this quarter is China's easing of its zero-COVID-19 policy. China tends to witness demand declines in its first quarter every year. However, this year, it is expected to see growth in its first quarter. Hence, despite declines from both Eurasia and the Middle East, Asia will grow by around 1.01 million barrels per day (MMb/d) followed by 160 Kb/d from Africa.

Surprisingly, supply-side growth is also expected to be at a similar level as demand at roughly 160 Kb/d. While OPEC members will gradually increase production by roughly 360 Kb/d, followed by 255 Kb/d from non-OPEC+ countries, we expect the sanctions and price cap on Russian oil to start taking effect around February, or as early as January, leading to a quarter-on-quarter (QoQ) production decline of roughly 500 Kb/d - 600 Kb/d.

All eyes will be on supply chain resilience. Supply will be assisted by the recovery from the initial shock of the crude price cap, and developing alternative insurance, tankers, routes, and buyers for Russian supply. It is also expected that Russian diesel exports will also increase in the short term, before further actions are taken against Russia. Shale producers and OPEC+ are the only entities that could balance a potential demand shock to the upside. Nevertheless, shale supply has limited upside potential due to various constraints, and OPEC+ will only balance the market incrementally.

As such, supply/demand balances will remain in deficit this quarter by around 1.1 MMb/d. Since this figure is similar to Q4 of 2022 and Europe stocks are abundant, we should not expect severe changes in the price environment. However, it is also noteworthy that winter has been late this year, and a stronger winter or a prolonged one can create a change in demand.

Summary continued...

Total global oil consumption is expected to increase year-on-year (YoY) by 1.80 MMb/d in 2023 to 101.95 MMb/d (roughly 100 Kb/d less than our estimation last quarter). In 2024, however, demand is expected to experience a spring effect, with slightly higher growth of 2.07 MMb/d.

YoY, the OECD is expected to witness limited growth of 310 Kb/d, while non-OECD countries should represent 83% of the demand growth in 2023 (1.49 Kb/d). This figure is expected to decline in 2024 to 69% as OECD countries recover from the expected economic deceleration in 2023. Indeed, the KOMO model indicates that OECD countries should witness an overall decline in demand growth over the first two quarters of 2023, and non-OECD countries should carry the growth. However, in the second half of 2023, it is expected that OECD countries will start recovering economically, translating into higher demand, while non-OECD countries stagnate.

Non-OECD countries have regularly witnessed continual demand growth in each quarter of the year except the first, where it either declines or stagnates. However, non-OECD Q1 demand will be different this year for two reasons. The first is China easing its lockdowns. We are not sure how the relaxation of its zero-COVID-19 restrictions will unfold, but we remain hopeful that China's demand will not follow its regular seasonal path and will grow in the coming two quarters. Indeed, the manner in which the Chinese New Year plays out could indicate China's oil demand trajectory in 2023. However, on the upside, Chinese refiners are expected to increase crude oil demand and oil product exports in early 2023 after receiving a generous allocation from Beijing. Several outlooks are expecting China to carry a significant portion of oil demand growth this year, but we are capping it at 540 Kb/d, with the possibility of revisions throughout the year. The second and most significant aspect of oil demand this year has to do with the energy transition. Historically, a Q3 demand surge for electricity and cooling generation in the Gulf Cooperation Council (GCC) countries has offset a seasonal slowdown in non-OECD countries, despite India and China's declines in demand. However, the impact of the energy transition, including switching to gas and having energy efficiency programs, is starting to show. It is capping peaks in oil demand and, as a result, capping total demand growth for the Middle East region.

KOMO's latest survey results show a pessimistic view of demand in 2023, which ameliorates over time. Indeed, there is a high consensus on an economic slowdown and continued inflation in 2023, with 87% of our respondents believing that a recession is likely in 2023. Eighty-seven percent of the respondents also believe that social unrest is likely as inflation persists, while only 53% believe that tourism levels will return to pre-pandemic levels. Although one can look at these numbers negatively, they can also be seen as an indicator that the demand growth risk for 2023 and 2024 is to the upside. While several factors could cap growth, such as inflation, interest rate hikes, a rising United States (U.S.) dollar, reemergence of restrictions in China due to COVID-19, the ongoing conflict between Russia and Ukraine, protectionist policies, the risk of other geopolitical crises, recession, etc., a short-lived period for any of these variables, or the possibility of them not happening at all, could increase our current demand projections.

Summary continued...

Nevertheless, economic growth expectations remain the greatest driver of KOMO's oil demand projections. The International Monetary Fund (IMF) predicts global economic growth of around 2.7% in 2023 and 3.2% in 2024. The OECD has maintained its global growth forecast of 2.2% in 2023 and expects 2024 to witness growth of 2.7%.

The December 2022 outlooks by OPEC and the U.S. Energy Information Administration (EIA) estimate demand growth for 2023 to be 2.22 MMb/d and 1 MMb/d, respectively. Other agencies' projections for 2023 range between these two. A great part of that divergence has to do with the outlook for China. Just like in 2022, China's demand projections remain opaque, so all eyes will be on the deflating measures of its construction sector, its economic projections for 2023 and 2024, its travel polices and, last but not least, the lifting of its COVID-19 restrictions.

Total global oil supply is expected to grow by about 2.68 MMb/d in 2023 (about 40 Kb/d more than our Q4 2022 forecast), and by 2.31 MMb/d in 2024. In Q3 of 2022, spare capacity from OPEC+ members represented roughly 3.47 MMb/d, with Saudi Arabia and Russia representing 3.3 MMb/d of that. This means that the November OPEC cuts and maintaining the status quo up to February was a necessary move, as most OPEC+ members were probably estimated to be producing at full capacity and it was only a matter of time before they would run out. Although the United Arab Emirates (UAE) and Iraq have pledged to increase production by the late 2020s, these countries' projects are expected to grow gradually, with estimated increments realized after 2025 at the earliest.

As a result, 2023 should witness a modest increase from OPEC members of around 1 MMb/d. However, the price cap and sanctions on Russia should see OPEC partners' production declining by roughly 730 Kb/d. As a result, most of the growth that we expect to witness in global production for 2023 should come from non-OPEC+ countries.

The main production story this quarter, in addition to shale production and investments, as we have focused on in previous reports, is the normalization of the parallel oil market. A couple of years ago, Iran stood alone under sanctions before Venezuela and now Russia joined that group. Our previous reports focused on upstream and downstream, but we will likely add a focus on midstream in 2023 and 2024. Will Russia find alternative insurance provisions? Will additional oil be sold in non-dollar denominations such as Indian rupees, Chinese yuan or Russian rubles? And how will Türkiye enforce seaborne tankers passing through the Bosporus Strait? All these questions come to mind when forecasting supply.

Past OPEC+ agreements to cut production were intended to revert by the end of 2022, with all members producing at pre-agreement levels. However, given the lack of investment and prolonged periods of low prices, some members have witnessed deteriorating levels of production. Indeed, in our latest survey results, we asked if Nigeria or Angola would reach pre-pandemic levels of production and 80% of respondents answered "no." As a result, OPEC+ cuts are expected to continue throughout 2023. If energy markets wish for more muted volatility, then the need for more capital investment will continue to take center stage.

Summary continued...

The 27th Conference of the Parties to the United Nations Framework Convention on Climate Change (COP 27) statement this year shied away from addressing the apparent need to mitigate fossil fuel use as boldly as they did in Glasgow last year, with heads of state seeming to have re-discovered the importance of energy security. Nevertheless, 2022 has sent mixed signals to investors, with policies such the windfall tax in the United Kingdom (U.K.) and the re-emergence of the No Oil Producing and Exporting Cartels Act (NOPEC) in the U.S.

Shale production, the main driver of growth from non-OPEC+ members, seems to have recovered in 2022. However, producers are expected to continue to focus on financial discipline. Hence, it is expected that shale production will grow by roughly 60%-70% of what it did in 2022, at around 600 Kb/d-700 Kb/d for 2023 and 2024, respectively, and possibly higher if energy prices increase further.

The supply/demand balance is expected to reach equilibrium in 2023, with a minor surplus of roughly 40 Kb/d overall. Although we expect Q1 of this year will continue to see a deficit, mostly from Russia as the price cap for fuels takes effect, we expect the following quarters to be in surplus. 2024 is also expected to witness a surplus of 270 Kb/d. However, this expected surplus is not enough to replenish inventories nor the strategic petroleum reserves (SPR). This indicates that decisions about storage may continue to influence prices outside of what fundamentals might otherwise indicate. The price risk may be mitigated to some extent by the U.S. proposal to allow fixed-price forward purchases of crude oil. These forward purchases will help to replenish the U.S. SPR and encourage short-term production.

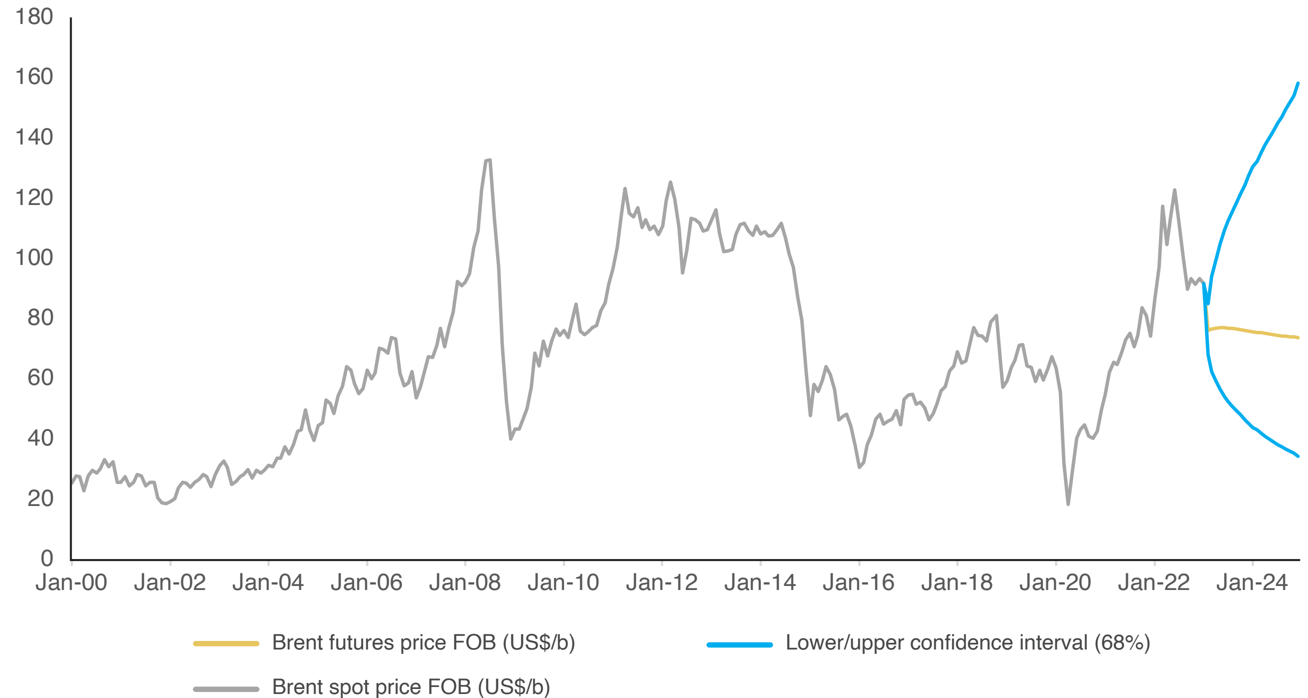
Under these assumptions, target inventory levels for the OECD would be expected to increase by 378 MMb to 4,557 MMb in 2023 and by an additional 36 MMb in 2024. However, with limited output from Russian liquids, these target levels are unlikely to be achieved. Hence, we expect the refilling of inventories to be gradual, despite target inventories needing to increase proportionately to offset the rising economic and geopolitical risks. Real inventory levels are expected to grow gradually from Q2 2023, remaining below the new target levels over the next two years. This indicates that inventories may be insufficient to address future shocks, adding another layer of price risk to oil markets beyond the fundamentals throughout this period.

	2019	2020	Growth	2021	Growth	2022	Growth	2023	Growth	2024	Growth
Demand	101.1	92.2	(8.8)	98.1	5.9	100.2	2.0	102.0	1.8	104.0	2.1
Supply	99.8	93.5	(6.4)	95.2	1.7	99.3	4.1	102.0	2.7	104.3	2.3
Δ	(1.2)	1.3		(3.0)		(0.8)		0.0		0.3	

Summary (Prices)

The confidence interval is derived from options market prices and the futures curve, which represent the views of a wide array of market participants, such as producers, refiners, airlines, speculators, and others.

Brent crude oil price and 68% confidence intervals US$/b



Source: KAPSARC calculations based on NYMEX data, CME Group, FINCAD, December 2022.

US$/b	Q1 2023	Q2 2023	Q3 2023	Q4 2023	Q1 2024	Q2 2024	Q3 2024	Q4 2024
Futures	81.44	76.94	76.74	76.12	75.48	74.92	74.31	73.87
50% CI	$76.27 - $87.24	$62.55 - $94.70	$58.18 - $101.24	$54.53 - $106.28	$51.52 - $110.61	$49.04 - $114.47	$46.78 - $118.05	$44.76 - $121.94
68% CI	$74.03 - $90.25	$56.71 - $104.53	$51.02 - $115.48	$46.55 - $124.53	$42.98 - $132.60	$40.11 - $139.98	$37.56 - $147.05	$35.30 - $154.67
95% CI	$67.94 - $100.41	$42.22 - $140.96	$34.35 - $171.82	$28.90 - $200.91	$24.88 - $229.21	$21.87 - $256.88	$19.37 - $285.30	$17.24 - $317.06

Note: CI = confidence interval.

Key Issues for the Oil Market in 2023 and 2024

When it comes to the key issues impacting the oil markets and the patterns of supply and demand over the next two years, there are a plethora of factors impacting demand, while on the supply side the dominant uncertainty is Russia. Demand is expected to be driven by the prospects for the global economy. Several countries are expected to face declining gross domestic product (GDP) growth during 2023. Whether the current economic situation will officially be called a recession or an economic deceleration, we can be certain that GDP growth will be smaller in 2023 than in previous years.

The questions that accompany every economic slowdown is, “how long will it last and how steep will the recovery be?” Unlike the 2008 financial crisis, institutions, people and governments have been warned of the impending downturn and have acted accordingly. The fall in stock markets suggests that investors are holding on to their money so that they can buy when prices are lower. Hence, there is increasing liquidity, but the question on everyone’s mind is where to put it, given the risk of a recession and the ever-increasing interest rates to address inflation. Bonds tend to be the safest bet, but are they the right bet?

“The composite rate for bonds issued from November 2022 through April 2023 is 6.89%.” (U.S. Treasury) While everyone is focused on maintaining financial discipline due to the wealth effect, bond yields are at recent historic highs. However, the mismatch we find between supply and demand, which we see as caused by inflation, and rising interest rates to adjust prices and reduce demand, do not encourage investors or households to invest in anything but bonds at the moment. While most policies are geared toward addressing spending and demand, we seem to forget that supply is the second half of this conundrum. Just like the calls for investments to secure oil supplies, there are also calls for investments to secure the supplies of all other commodities. However, these calls remain ignored. While the profits of publicly traded oil and gas companies rose by a significant 76% in 2022, these are being returned to investors through dividends and stock buybacks, not used for increased investment.

Nevertheless, whether the wealth effect will impact spending or people are just waiting for the right opportunity to spend, demand for commodities will fall, bringing prices down. Whether commodity prices will start to decline in 2023 or 2024 remains to be seen. However, we are optimistic that they will start to decline this year (see Figure 1).

The OECD projections for this year are similar to the ones presented last year, with the expectation that inflation rates will decline. The OECD believed in 2022 that the market would self-correct. However, commodity price inflation only exacerbated as the Ukrainian conflict began and as China continued its stringent COVID-19 policies, impacting supply chains. The reason we remain optimistic that inflation will decelerate and eventually decline is due to the added layer of pressure from increased interest rates, which will act as a catalyst in correcting the market. Hence, just as commodity prices will self-correct gradually, so will the economic situation as liquidity remains available, wages continue to do well, and China no longer implements any further COVID-19 measures.

Under these circumstances, it becomes evident that muted demand growth for 2023 and 2024 entails several simultaneous negative factors. This is why we reiterate that the upside risk to our forecast is higher than the downside risks.

Key Issues for the Oil Market in 2023 and 2024...

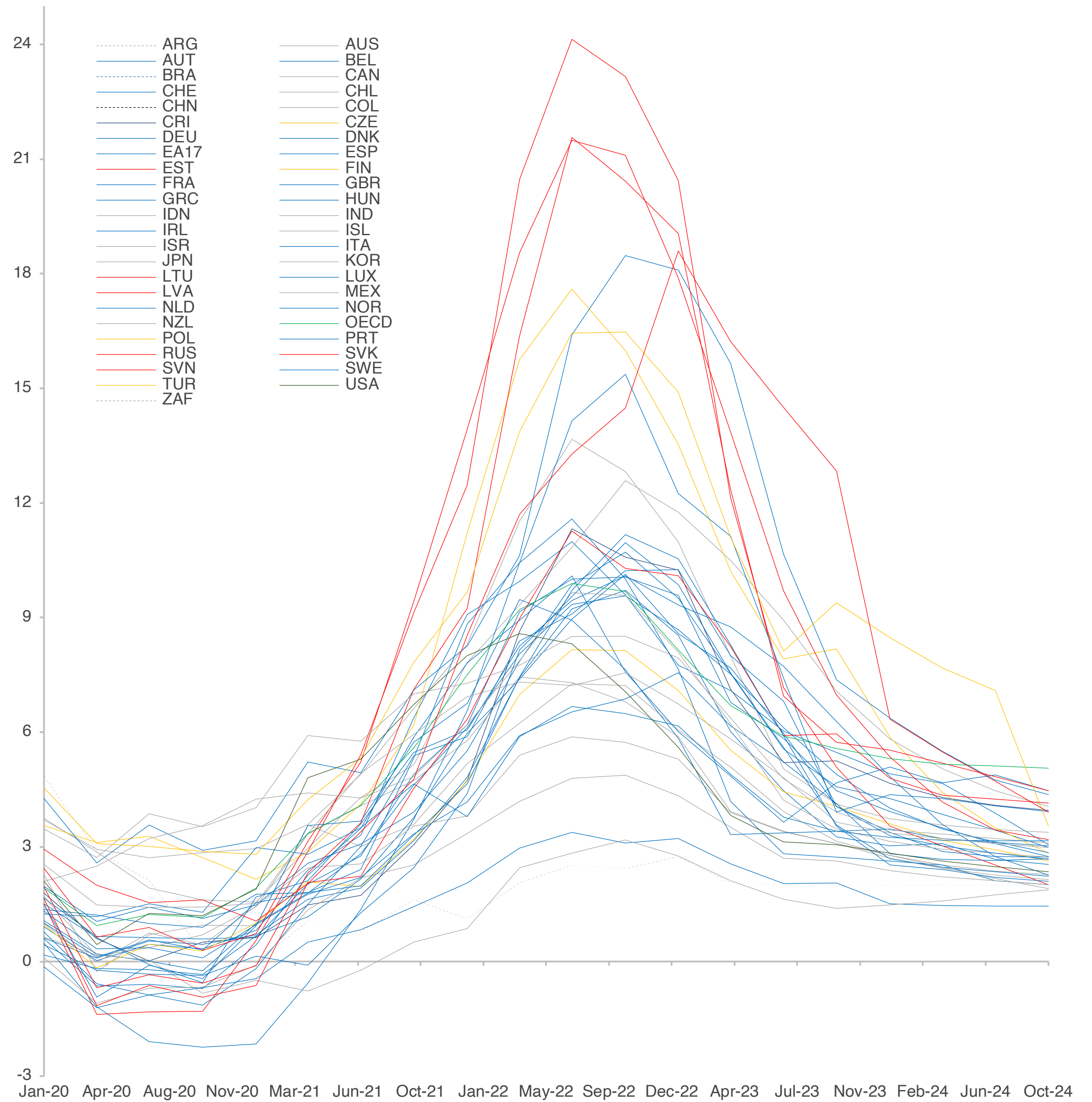


Figure 1. OECD's outlook on inflation 2020-2024.

Source: OECD (2022), inflation forecast (indicator).
doi: 10.1787/598f4aa4-en (accessed December 13, 2022)

Note that ex-USSR countries faced/continue to face the highest inflation rates and a pattern of declining rates as distance from Moscow increases.

Key Issues for the Oil Market in 2023 and 2024...

Despite several economic challenges going forward, the real risks lie in the geopolitical domain, which could produce significant effects. Indeed, economies have always recovered and downturns have remained simple blips. However, the appearance of concepts such as protectionism, populism, post-globalization, vertical globalization, and shifting alliances have more than doubled in the media throughout the past year. According to our analysis using the Meltwater Media Monitoring Platform, the use of some of these phrases in the media more than quadrupled in 2022.

Whether or not geopolitical changes that solidify new alliances or enhance regional supply chains become the status quo remains to be seen. Diversification and creating new markets are healthy practices. Indeed, since 1990, trade has cut the number of those living under extreme poverty by half (World Bank). The basis of trade back in the 1990s was finding win-win solutions to ameliorate the living and working conditions of all citizens. However, regionalism, or securing supply chains from politically affine countries, seems to come with a different perspective.

There is no doubt that there has been a blip in global supply chains due to COVID-19, and there is no doubt that economies are facing hardships with many factors exacerbating these challenges. However, it takes two to tango in a post-globalized world. While new alliances might be forming or expanding, the fear of future anti-market measures by the G7 is leading many players to secure a ‘plan B’ via diversifying their trade options. Calling for ‘NOPEC’ every time the OPEC makes an unpopular, yet necessary, action does not promote either market stability or confidence. The United States (U.S.) imposing trade embargos while simultaneously opening up a TSMC factory defies economic sense, although it does make geopolitical sense. The future remains opaque, and leaders will have to decide whether they are looking for their individual or collective wellbeing. However, seldom in the history of mankind has the individual wellbeing approach succeeded.

On the supply side, the key focus area will be on Russian oil. A price cap was placed on Russian oil on December 5, and a further cap on refined products is expected to begin in February. All eyes will be on how the implementation of the price cap will unfold, but we should also be looking at how Russian oil will seek markets for its oil, despite these restrictions. Will Türkiye, China, or India be the next maritime insurance providers? The midstream developments taking place will eventually determine how fast Russian oil production will rebound.

Another factor that has the potential to influence the supply side of oil markets is shale production. After the financial instability of the 2010s, international oil companies (IOCs) seem to have finally appreciated the security that financial discipline brings. Hence, we do not expect significant growth from them, but private firms may continue to prioritize production. Oil prices are expected to be volatile and carry a risk premium, which provides opportunities for private companies and independent producers. We therefore expect the latter to carry most of the growth in tight oil this year. However, the financial risk of doing this is great, given that inflation has also hit capital expenditure (capex) and operating expenditure (opex), and that Russian oil continuing to reach world markets could create a downward pressure on prices and hence tight oil company earnings.

OPEC and SPR decisions are expected to have minimal influence on markets for now as inventories are low and OPEC+ spare capacity, with the exception of Saudi Arabia and Russia, remains below its average. This suggests risks for greater oil price volatility in the short term.

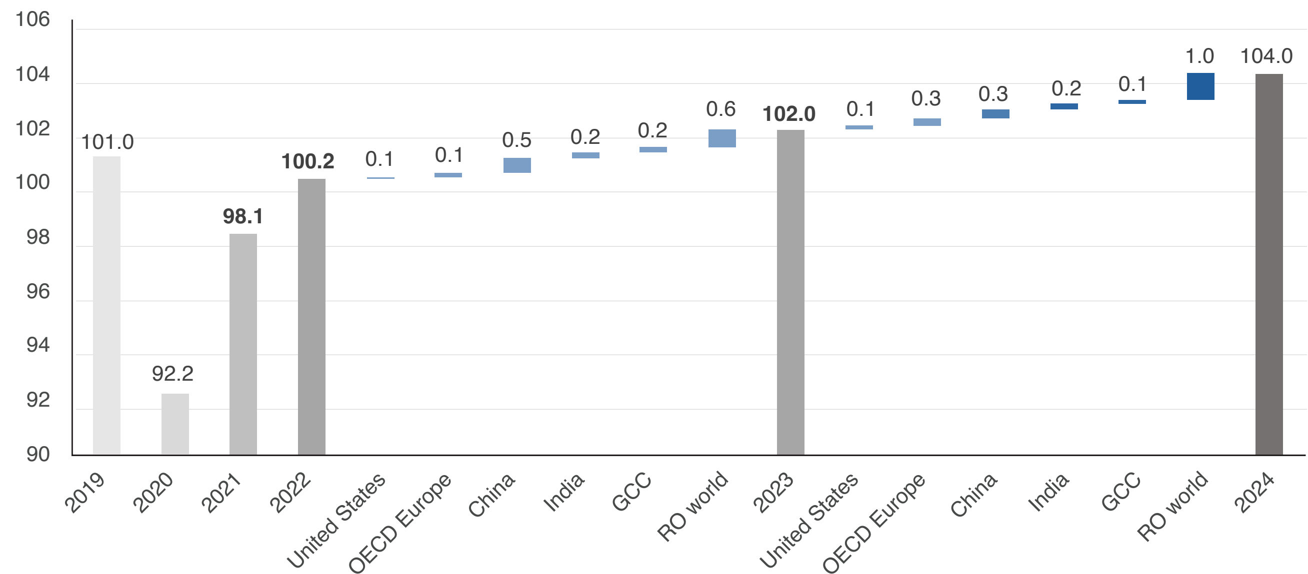
Demand Forecast

We project global oil consumption will grow by 1.80 MMb/d in 2023 and increase by an additional 2.07 MMb/d in 2024 YoY. As the drivers of demand are similar to those in the previous report, we have maintained our previous demand forecast for 2023. However, economic indicators now show several OECD countries are at a higher risk of an economic slowdown starting this quarter, so we have revised demand growth down slightly by 100 Kb/d for 2023. Nevertheless, a rebound in 2024 is likely if the economic situation improves quickly, if aviation activity resumes, or if China maintains the lifting of all its COVID-19 restrictions.

An interesting factor for 2023 demand projections is seasonality. OECD countries are expected to witness oil demand declines in the first two quarters of this year due to the anticipated economic slowdowns, before rebounding positively as GDP growth increases, summer and vacation season hits and Europe tries to rebuild its stocks ahead of the next winter season. Non-OECD countries, on the other hand, are expected to grow in the first two quarters and stagnate in the second half of the year. Non-OECD countries usually tend to grow each quarter, albeit gradually. However, given several factors impacting the dynamics of seasonality, and with the energy transition capping peak demand, particularly in the Middle East, we expect muted demand in Q3, and Q4, as demand from Asian countries, including China and India, tends to slow during these quarters.

As a result, we expect oil demand in the OECD countries to grow by 310 Kb/d in 2023, then double to 640 Kb/d in 2024. The U.S. and Japan are expected to represent one third of total OECD demand growth this year and possibly next year. South Korea is a runner-up and has the potential to increase its growth, but for now we will watch it closely. Furthermore, the non-OECD countries are expected to grow by 1.49 MMb/d in 2023, then by an additional 1.43 MMb/d in 2024. Most of the non-OECD countries will not be severely impacted by the anticipated economic slowdown. As such, China and India will continue to carry a significant portion of growth over the next two years. Eurasia's demand is expected to decline during this period, but if Russia maintains its production capacity as it did in 2022 and finds a way to continue exports, then there is the chance of higher demand growth.

Annual global oil demand growth, MMb/d, 2019 - 2024



Source: KAPSARC, December 2022.

Demand Levels, MMb/d

2020	Q1	Q2	Q3	Q4	2020
OECD	46.1	38.9	42.1	43.3	**42.6**
Non-OECD	48.3	48.9	50.3	51.0	**49.6**
Global demand	94.4	87.8	92.4	94.3	**92.2**

2021	Q1	Q2	Q3	Q4	2021
OECD	43.5	44.9	46.4	46.4	**45.3**
Non-OECD	51.5	52.7	53.5	53.6	**52.8**
Global demand	95.0	97.6	99.9	100.0	**98.1**

2022	Q1	Q2	Q3	Q4	2022
OECD	46.1	45.1	46.6	47.2	**46.3**
Non-OECD	53.4	54.0	54.1	54.2	**53.9**
Global demand	99.5	99.0	100.7	101.4	**100.2**

2023	Q1	Q2	Q3	Q4	2023
OECD	47.0	45.8	46.3	47.2	**46.6**
Non-OECD	54.5	55.7	55.7	55.7	**55.4**
Global demand	101.5	101.4	102.0	102.8	**102.0**

2024	Q1	Q2	Q3	Q4	2024
OECD	46.9	46.6	47.3	48.0	**47.2**
Non-OECD	56.0	57.0	57.2	57.0	**56.8**
Global demand	102.9	103.7	104.5	105.0	**104.0**

Non-OECD countries are expected to retain a 54% share of global oil consumption in 2023, rising to 55% in 2024. They are also expected to account for 83% and 69% of growth in 2023 and 2024, respectively. Asia-Oceania is expected to witness the largest quarter-on-quarter (QoQ) growth of around 1.4 MMb/d, with OECD Asia, China, and India all expected to increase their consumption this quarter. Eurasia and the Americas are expected to witness the strongest decline next quarter, as the former faces sanctions and the latter reduces its consumption due to seasonality.

	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Eurasia	-0.4	0.0	0.5	-0.2	-0.4	0.3	0.5	-0.2
Africa	0.2	-0.1	-0.3	0.3	0.2	0.0	-0.3	0.3
Middle East	-0.2	0.9	0.6	-1.0	-0.3	0.9	0.5	-1.0
Asia-Oceania	1.4	-0.9	-0.9	1.5	1.3	-1.2	-0.6	1.4
Europe	-0.3	-0.1	0.4	0.2	-0.4	0.5	0.1	-0.1
Americas	-0.4	0.0	0.3	0.0	-0.3	0.2	0.6	0.1
Global demand	101.5	101.4	102.0	102.8	102.9	103.7	104.5	105.0

Source: KAPSARC, December 2022.

United States

MMb/d	2021	Q1	Q2	Q3	Q4	2023	Q1	Q2	Q3	Q4	2024
United States	20.4	20.5	20.4	20.5	20.5	20.5	20.4	20.5	20.8	20.9	20.6

2023-2024

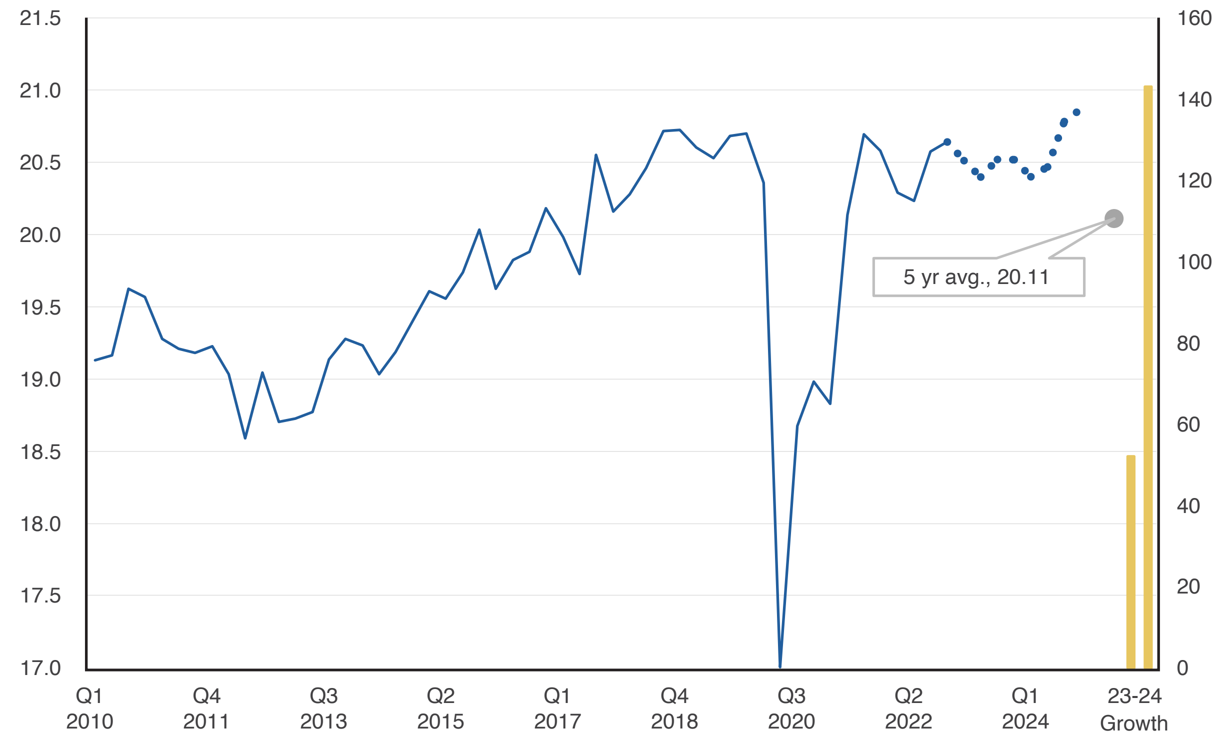
The KOMO model expects U.S. oil consumption to grow by around 50 Kb/d in 2023 and 140 Kb/d in 2024.

The modest growth for the U.S. this year correlates with its expected economic slowdown. The IMF estimates that U.S. GDP growth for 2022 will be 1.6%, 1% in 2023 and 1.2% in 2024.

Hence, we do not expect any significant shifts in its product demand. We expect very modest growth for motor gasoline and diesel, followed by liquified petroleum gas (LPG), with demand for all other products remaining stagnant.

Q1 2023

We expect U.S. demand to decline this quarter by 130 Kb/d. Although LPG demand is expected to increase by roughly 140 Kb/d followed by gas oil for heating by 50 Kb/d, gasoline demand is expected to fall by roughly 310 Kb/d. Nevertheless, the Annual Roadway Congestion Index for North America shows healthy activity, indicating that U.S. gasoline demand might not fall by as much as we expect in this report.



Source: KAPSARC, December 2022.

OECD Europe

MMb/d	2022	Q1	Q2	Q3	Q4	2023	Q1	Q2	Q3	Q4	2024
OECD Europe	13.7	13.7	13.6	14.0	14.2	13.9	13.8	14.3	14.4	14.2	14.2

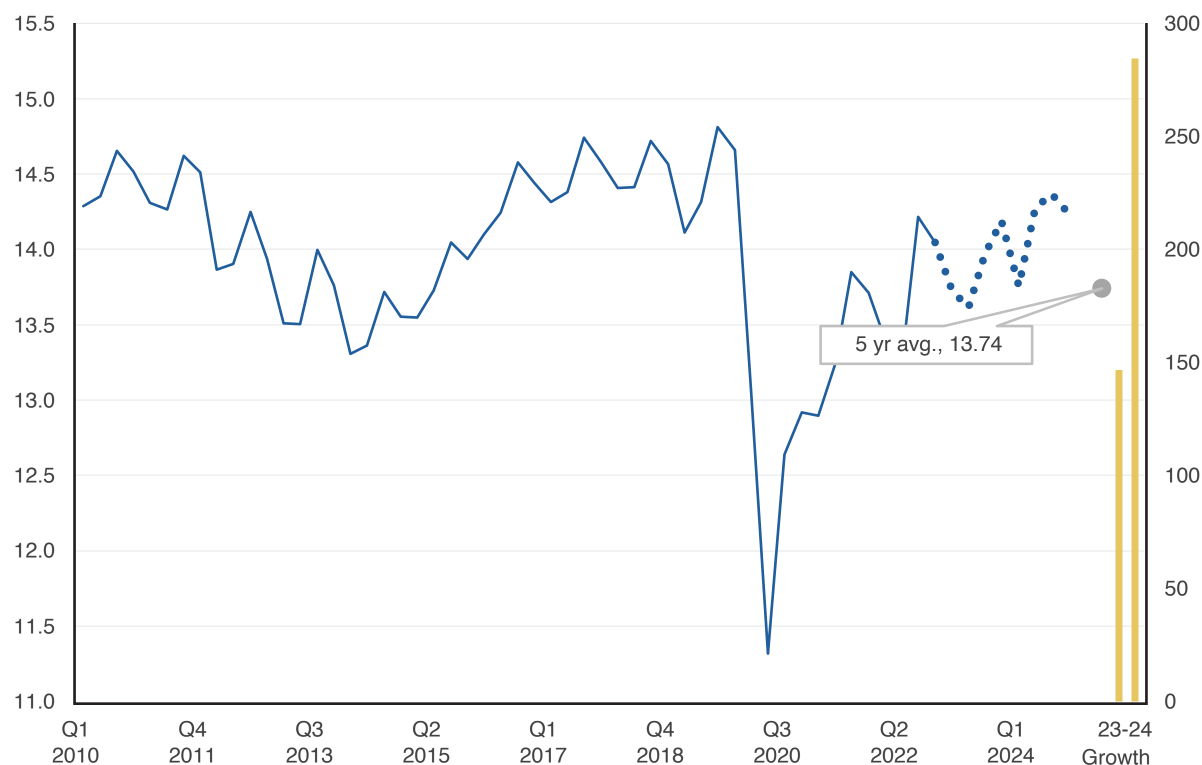
2023-2024

Despite the risk of OECD Europe having the lowest GDP growth among all regions, at around 0.5% in 2023 and 1% in 2024 (OECD Economic Outlook 2022), its oil demand is expected to improve, with a projected growth of 150 Kbd for 2023 and 290 Kb/d for 2024.

As expected, diesel is the dominant growth fuel, representing roughly one third of total growth this year. We expect fuel oil will take second place, at around 30 Kb/d, since maritime activity is expected to continue growing in the region to secure energy sources and other commodities. Facing an acute energy crisis, high natural gas prices and cold winter weather, the switch to gasoil for manufacturing has been quicker than expected and we could revise our estimations later this year.

Q1 2023

OECD Europe is expected to witness an economic slowdown this quarter, while seasonality adds another layer of downward pressure to its oil demand. We anticipate an overall QoQ decline of 320 Kb/d. Although LPG demand is expected to increase by roughly 90 Kb/d, followed by fuel oil for maritime activity and fuel switching, demand for all other fuels is expected to decline, with both jet fuel and diesel demand falling by roughly 120 Kb/d-180 Kb/d each.



Source: KAPSARC, December 2022.

China

MMb/d	2022	Q1	Q2	Q3	Q4	2023	Q1	Q2	Q3	Q4	2024
China	15.1	15.3	15.4	15.2	15.7	15.4	15.8	15.7	15.6	15.9	15.7

2023-2024

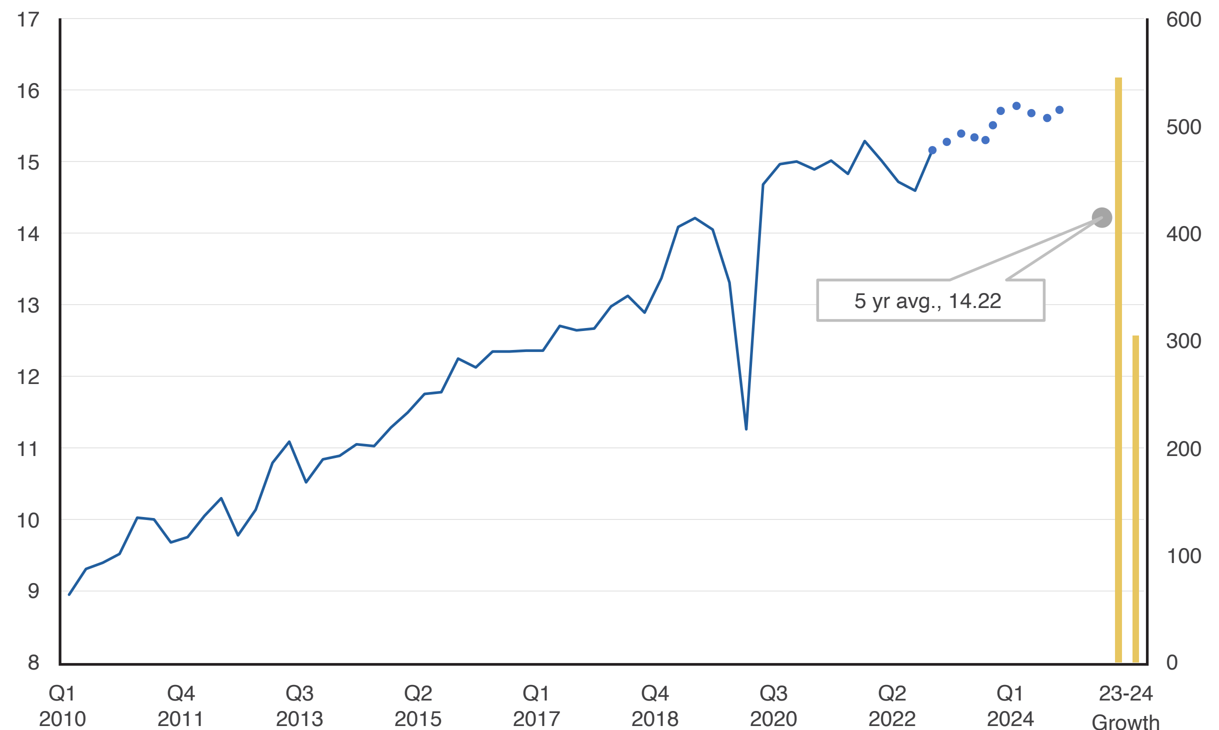
China's oil consumption is expected to grow by around 550 Kb/d in 2023 and 300 Kb/d in 2024. Out of all the scenarios the KOMO model runs, China's forecast remains the most uncertain. As stated in our editorial by Dongmei Chen, stability will play the most important role in its economic growth while it focuses on increasing domestic demand.

Diesel demand is expected to represent roughly 32% of China's oil demand growth. However, if the Chinese government opens international travel and eases its long-haul travel restrictions, China could see additional demand growth for aviation fuels between 100 Kb/d-200 Kb/d. In all scenarios, growth is expected to be gradual this year.

Q1 2023

China's demand activity for Q1 2023 is a strong indicator of how the global oil demand outlook could shape up. Historically, the first quarters of each year for China have seen modest growth. However, we are expecting growth of 140 Kb/d this quarter. Apart from demand for LPG and other heavier fuels used for infrastructure development, all other fuels are expected to witness demand growth, particularly transportation fuels as the government signals the easing of its containment policies. The preemptive actions we will witness this January in the lead-up to the Chinese New Year could be indicative of how oil demand might shape up.

China, MMb/d (L) and 2023-2024 growth Kb/d (R)



Source: KAPSARC, December 2022.

India

MMb/d	2022	Q1	Q2	Q3	Q4	2023	Q1	Q2	Q3	Q4	2024
India	5.2	5.5	5.6	5.0	5.5	5.4	5.7	5.9	5.2	5.7	5.6

2023-2024

India's oil consumption is expected to grow by around 210 Kb/d in 2023 and 230 Kb/d in 2024. Despite India's continued economic growth and healthy demand, we do not expect its oil demand growth to reach the levels it did last year for two reasons. The first is that part of its demand went into filling inventories that are now at adequate levels, and the second reason is that if India does have an economic slowdown, it will have no need for excess energy.

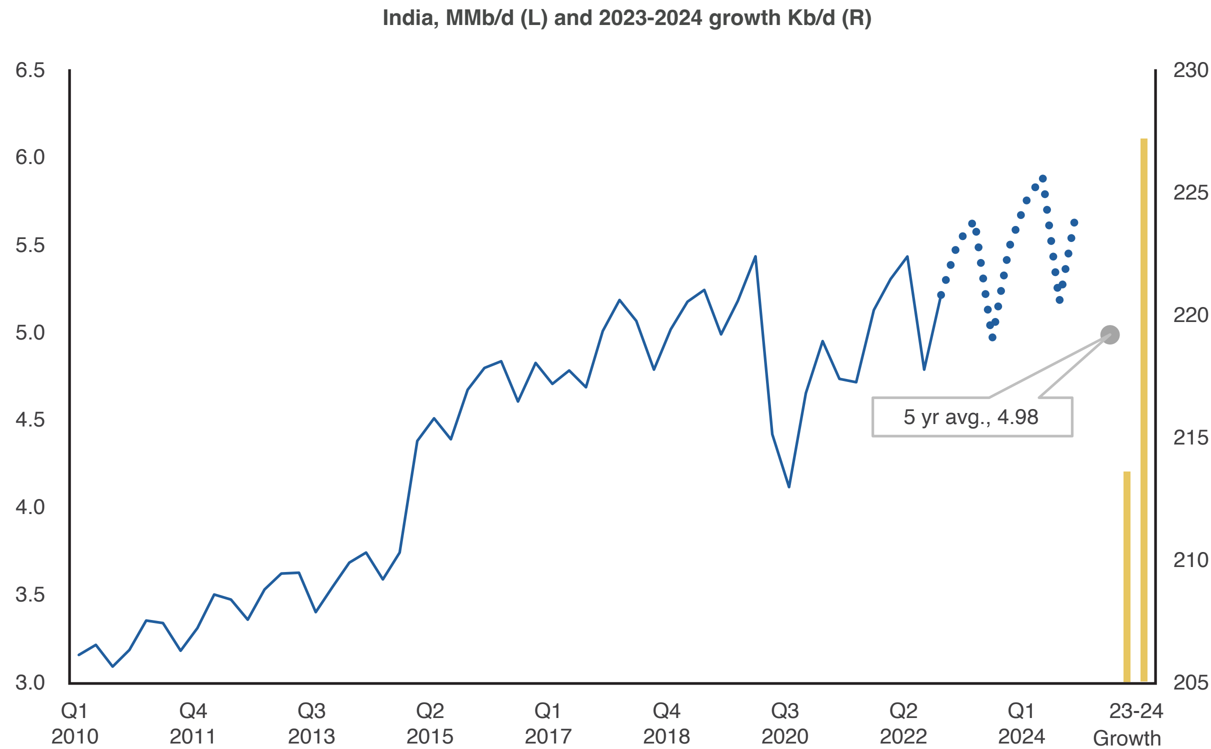
Overall, diesel demand is expected to represent 35%-38% of India's demand growth this year, followed by LPG and heavier fuels used for infrastructure development (roughly 40Kb/d each)

Depending on the price cap/sanctions that are implemented on Russia and its exports, India and China could play an important role in addressing Europe's near-term product needs, particularly diesel demand. This means that demand growth for India and China could surprise to the upside.

Q1 2023

As this coming quarter comes to an end, so does India's fiscal year (FY). The general practice is to stock up inventories in all shapes and forms to show healthy balances. This period also signals the seeding of new crops that will continue into the second quarter, meaning that diesel demand growth is expected to be high at around 110 Kb/d. Overall, demand for all products is expected to remain strong this quarter adding up to a QoQ growth of around 300 Kb/d.

India...



Source: KAPSARC, December 2022.

Saudi Arabia

MMb/d	2022	Q1	Q2	Q3	Q4	2023	Q1	Q2	Q3	Q4	2024
Saudi Arabia	3.7	3.2	4.0	4.4	3.6	3.8	3.3	4.1	4.5	3.7	3.9

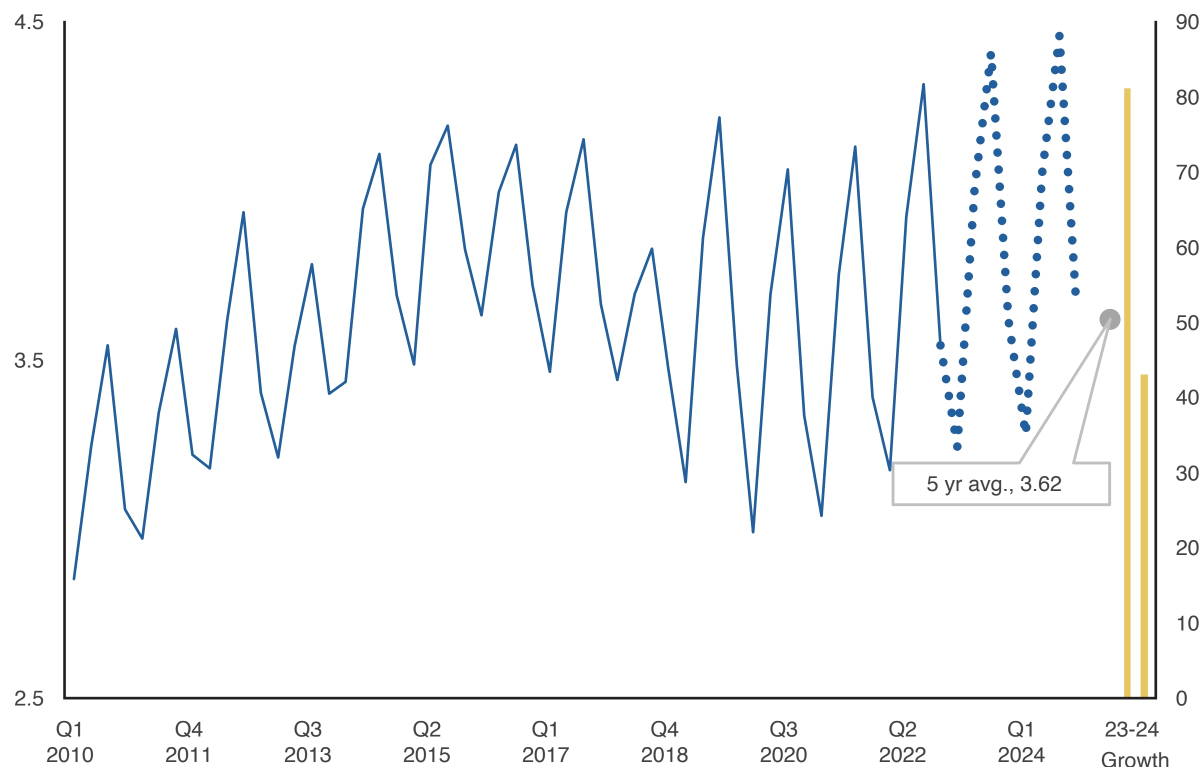
2023-2024

Saudi Arabia's oil consumption is expected to grow by 80 Kb/d in 2023 and 45 Kb/d in 2024.

Last year's significant GDP growth of 7.6% is expected to halve in 2023 to around 3.7% (IMF Data Mapper). We do not expect any deviations from historical patterns of fuel demand, and hence expect growth will be carried by transportation fuels followed by heavier fuels, if construction starts on the country's mega projects. Indeed, the mega projects and Saudi Arabia's target of having electricity generation fueled by 50% renewables and 50% gas is part of Vision 2030. Although we estimate the energy transition is taking effect in the Middle East, further gas penetration into the Saudi grid will take a few more years beyond this outlook. However, renewable generation is picking up fast.

Q1 2023

Saudi Arabia is expected to witness a QoQ demand decline of 300 Kb/d as demand for all fuels declines. Fuels such as diesel, fuel oil, and other heavier fuels are expected to represent most of the declines this quarter since they are not in high demand for electricity generation due to seasonality.



Source: KAPSARC, December 2022.

Discussion

“No nation has friends, only interests.” – Charles de Gaulle

2023 will be a year of supply chain challenges and innovation. The ‘one pool of oil’ market theory will be tested by new obstacles, including price caps, insurance, tankers, etc. However, we expect the disruptions to be overcome by mid-year as alternative supply sources are arranged. What is worrying (or exciting depending on your perspective), are the unintended consequences of these actions. Will 2023 be the year when one pool becomes two streams?

Until now, oil sanctions were mostly an on/off valve. Buying sanctioned oil was prohibited according to the sanctioner, and there was little grey area. The problem with the price cap is that it is entirely grey, with only the degree of greyness under debate in the form of a price level. That it was so difficult to set the price level (and announced so late) shows that even within the alliance there is little agreement; so why should non-G7 nations go along with it? Stating that purchasing oil outside the price cap is also acceptable but cannot be done with western insurance cover (90%+ of the market) is a hard pill to swallow, and it seems to be begging for a sovereign wealth fund or another major player to step in and fill the gap. In addition, the financial weapons employed against Russia have fueled discussions around banking alternatives to the SWIFT payments system and trading oil in currencies other than the U.S. dollar. Dollar-denominated sales and the SWIFT network are major features of the energy system and the global economy.

The oil market is an efficient machine and has developed specialized functions to support that efficiency. Trying to use those functions as levers of control is only going to force the system to change, and only in ways that undermine those levers. There has been growing debate around the possibility of deglobalization and a multipolar world for several years now, spurred on by small indications here and there. However, there may be bigger shifts afoot as the rules of the system are changed. The G7 is squeezing the oil markets hard, and one potential outcome is that it fractures into a bipolar pool. They could take a note from the OPEC+ playbook and use a gentle but steady hand to influence, not force, an outcome.

Highlights from this edition are:

- Russian supply disruption: likely temporary, but for how long?
- OPEC+ is holding steady, and for good reason.
- Shale upside is half what it once was, but maybe so is the downside.

Supply Forecast

Global liquids supply is expected to grow by about 2.68 MMb/d in 2023 to reach an average of 102 MMb/d for the year. We expect 2024 to see a further 2.31 MMb/d increase in supply, with an average of 104.3 MMb/d for the year. This is a fall from the ~4 MMb/d of rebound growth in 2022, with uncertainty around the nexus of Russia, OPEC+, and the G7 offering up- and downside possibilities.

The imposition of the price cap on Russian crude that started on December 5 has led to some short-term supply-chain difficulties, specifically around transiting the Turkish straights to enter and exit the Black Sea. We expect this to be a contributing factor into Q1 as the price cap is extended to refined fuels. The extra assurances demanded by the Turkish authorities, along with their continued purchases of Russian energy, indicate that it would not be surprising if Türkiye began to offer alternative insurance cover to the tankers, possibly in conjunction with Russia/China/India, etc. This, along with other workarounds, would ease the supply chain difficulties and lead to a slow rebound of Russian supply from H2 of 2023.

OPEC+ efforts to balance the market and hold their 2 MMb/d cut agreed at the December 4 meeting looks like a reasonable measure so far. Market pricing was generally on a downslide, but there has been some price volatility as competing news reports ping-pong expectations up and down. Our assumption is that OPEC+ will look to fundamental balances and largely match the demand curve as it slowly increases supply with a minor surplus. This would end its current cut at the end of 2023, while allowing for today's spare capacity to respond to major disruptions.

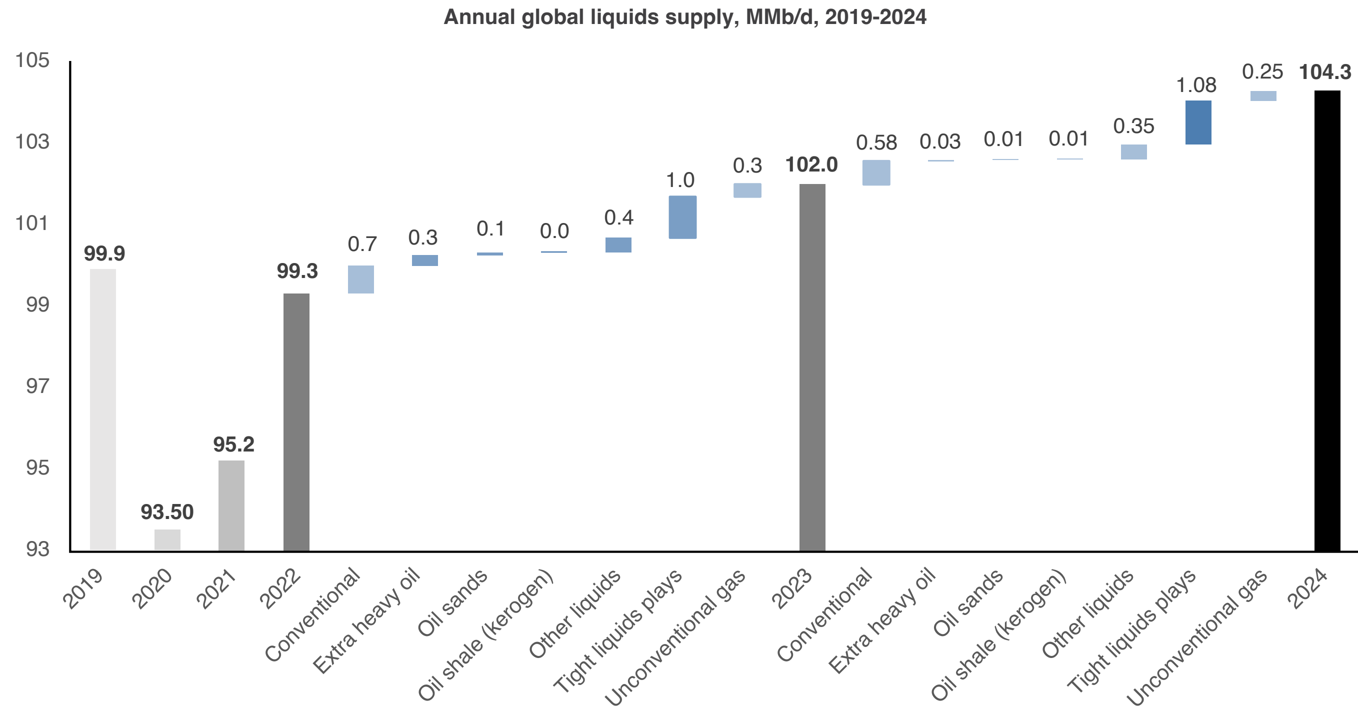
The decisions of third parties in the G7 and European Union are more difficult to predict, as they are not operating solely economically. SPR outflows and inflows could create some odd behavior, along with bi-monthly meetings to adjust the level of the price cap. They could also influence sanction adjustments and legislation, which could complicate the outlook.

U.S. shale will most likely continue operating in a two-tier system, with private firms pushing for more wells and public firms maintaining discipline. This leads to our relatively modest outlook for 600 Kb/d-700 K/d of crude and condensate supply in 2023 and 2024; half the growth rate of 2019.

Minor seasonality in the oil sands has some influence on our model from quarter to quarter. However, their production has been mostly flat, with modest growth on average. This has been the case for the last several editions of the KOMO.

The major story for this quarter is still a political one, with a more technical edge. Supply chain issues, conflicting regulatory priorities and paperwork all combine to form our view that the oil market is in the hands of technocrats now.

Supply forecast...



Source: KAPSARC, December 2022.

OPEC+

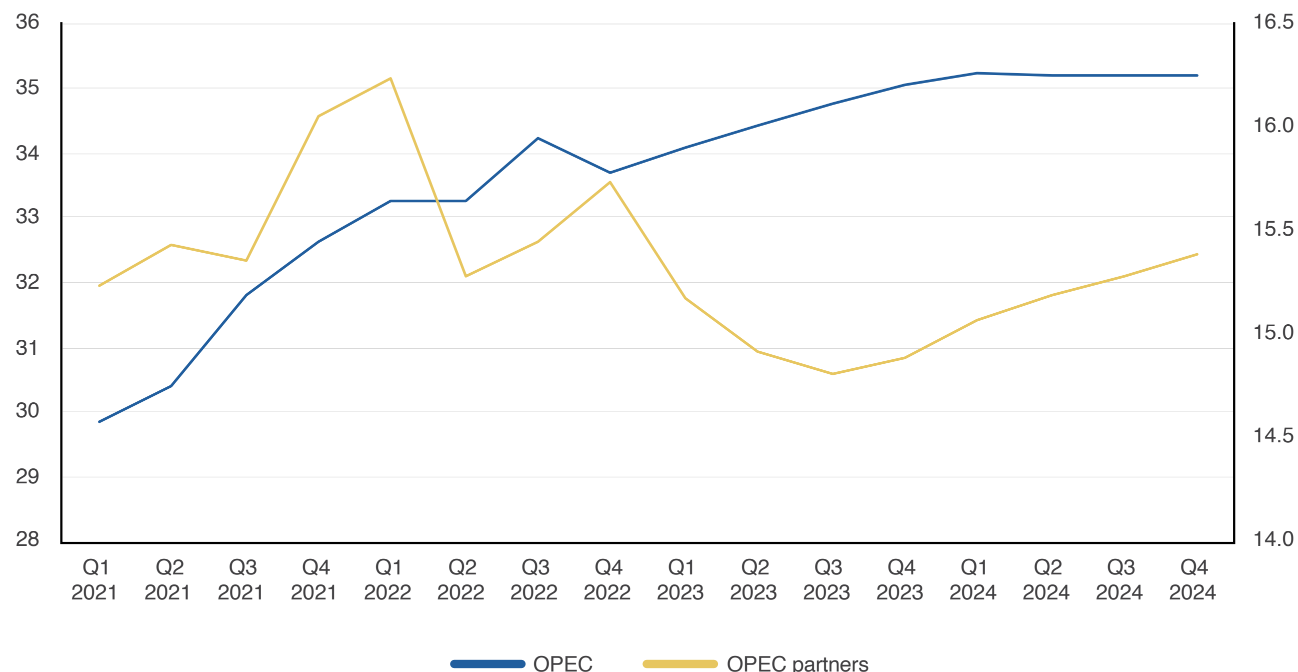
The behavior of OPEC+ as a group is always additional to the individual issues its members may experience. The most obvious example today would be Russia and the oil price cap. However, ongoing problems with the exempt members (the Joint Comprehensive Plan of Action for Iran is currently stalled, Venezuela is slowly re-engaging with the U.S., and Libya is experiencing national political troubles), and strengthening alliances with the BRICS nations (Brazil, Russia, India, China, and South Africa) should be taken into account.

In addition to this, there are other external forces to manage. The NOPEC Act is under consideration in the U.S. Congress again, vague threats of using a similar price cap on all OPEC+ exports have been mentioned, and the architects of the price cap plan to meet on the same bi-monthly schedule as OPEC+ to adjust their maximum price for Russian crude and crude products.

Even with these issues swirling around, OPEC+ members are looking calm under pressure, with a generally united front. The reason for this calmness is likely rooted in energy security concerns from consumers and faith in an efficient market – China will eventually reopen, and Russian liquids will find a way to the market. In the meantime, OPEC+ need only pull one lever to calm and balance the market (production), but the trick will be to do it smoothly to prevent or counteract disruptions.

Factors to watch in the coming year are:

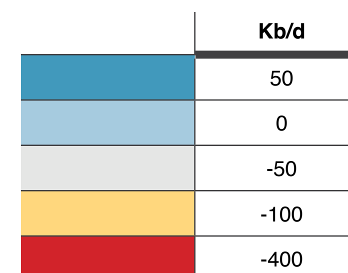
1. Russian liquids making it to market.
2. Western efforts to manage Russian flows.
3. OPEC+ actions to balance geopolitical disruptions.



Source: KAPSARC, December 2022.

OPEC and partners supply changes for 2023-2024, Kb/d

	2023	2024
Mexico	132.4	(20.8)
South Sudan	18.4	6.2
Equatorial Guinea	(16.1)	(7.9)
Sudan	(19.0)	(10.4)
Brunei	(6.6)	(3.3)
Bahrain	9.7	(1.4)
Gabon	(10.5)	(16.1)
Malaysia	63.9	(44.9)
Congo	(22.3)	(20.1)
Azerbaijan	1.2	1.4
Oman	17.3	21.5
Algeria	16.5	28.3
Nigeria	(5.4)	10.9
Kazakhstan	78.5	63.6
Kuwait	1.4	97.1
Iran	59.1	145.7
Venezuela	106.4	(9.2)
UAE	(47.4)	37.0
Saudi Arabia	340.7	177.9
Iraq	50.9	84.2
Libya	235.7	80.9
Russia	(820.4)	268.1
OPEC	750.5	506.3
OPEC partners	(524.7)	279.9
OPEC+ TOTAL	225.9	786.2



Source: KAPSARC, December 2022.

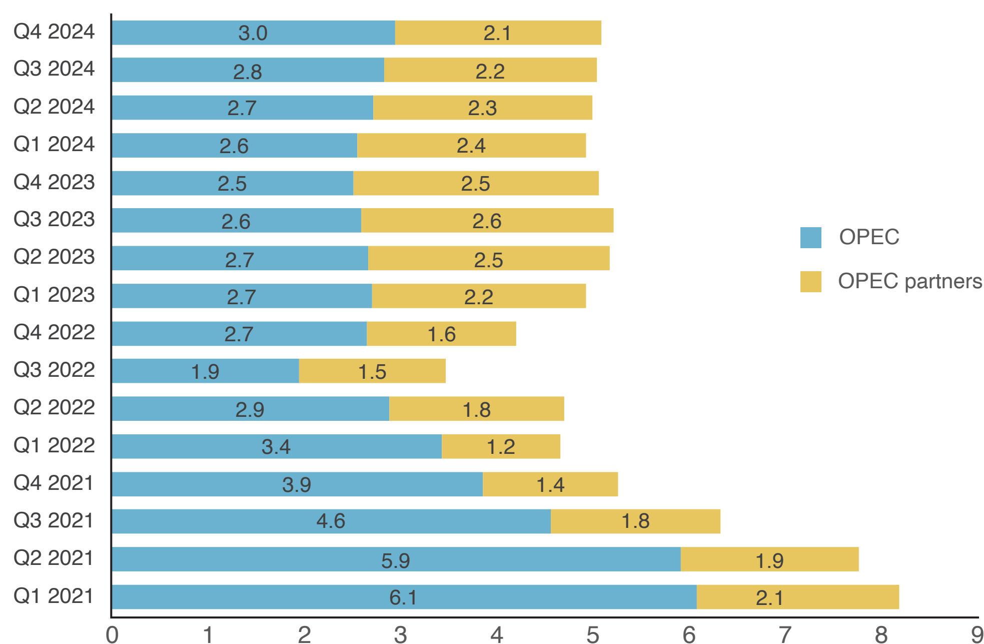
OPEC+ Spare Capacity

In Q3 of 2022, OPEC+ spare capacity was almost exhausted. Excluding Russian supply and Saudi Arabia's reserves, it is possible that less than 200 Kb/d was available. The group's decision to create a larger buffer was understandable, given the uncertainty surrounding the price cap and other geopolitical issues. Declining prices in Q4 may be divorced from some of the fundamentals (probably driven by demand worries). However, that the price did not rise significantly is a strong market vote in favor of the action of OPEC+, despite western protestations.

As we mentioned in the last edition of the KOMO report, the more irrational the market, the larger the influence of reserves. Low levels of spare capacity lead to anxiety and increased risk premiums, while higher levels calm the animal spirits by petting them with an invisible hand.

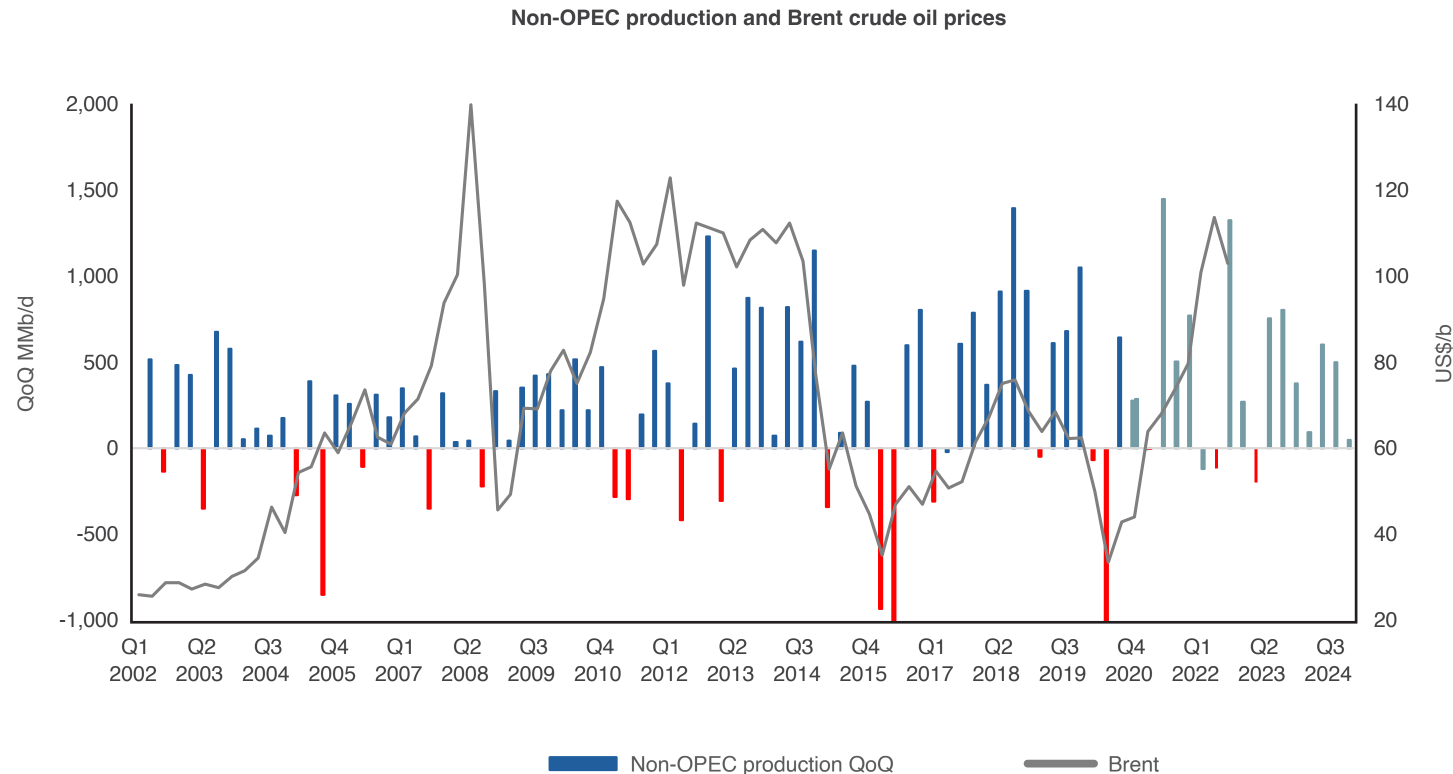
The group's current plan to review the market and make adjustments on a bi-monthly basis continues the management style they employed during the pandemic. In our model, this translates to a smooth relaxation over time that follows demand and provides balance to the market. There is some short-term disruption visible in Q4 2022 and Q1 2023, but it is primarily supply-chain driven as the price cap is imposed and some ambiguous enforcement measures surrounding the cap are resolved.

Repeated discussions on the definition of spare capacity in the KOMO has led to some secondary analysis within KAPSARC's Oil and Gas team concerning total market capacity. The latter includes traditional OPEC+ spare capacity, but also sanctioned capacity, drilled but uncompleted wells (DUCs) in the shale sector, SPRs, industrial inventories, and any other means of increasing capacity quickly through decisions by market players or governments. An initial discussion of this topic may be available as an editorial in the next edition of the KOMO and could become a regular portion of the supply discussion if it proves useful.



Source: Rystad; KAPSARC, December 2022.

Non-OPEC+



Source: International Energy Agency (IEA), December 2022; KAPSARC, December 2022.

Non-OPEC+ growth:

- In 2023, the supply of global tight oil is expected rise by 1 MMb/d (including natural gas liquids [NGLs]), and we expect unconventional gas liquids to rise by 300 Kb/d, with oil sands reclaiming 60 Kb/d.
- In 2024, the outlook for global tight oil is another rise of 1 MMb/d (including NGLs), with unconventional gas liquids growing by 250 Kb/d, and oil sands almost flat on average.
- Key issues for non-OPEC+ producers are de-risking, and ensuring the long-term resilience of their supply in the face of regulatory pressure while meeting security needs.

Non-OPEC (Tight Oil and Oil Sands)

"The house always wins." – Ocean's Eleven

The U.S. shale sector has hit its pre-pandemic highs by relying on DUCs and other short-term strategies, but constraints in investment, employment, and materials is flattening its growth rate. Large public players are more risk averse and are, so far, sticking to more modest growth plans and focusing on returning value to investors. Private players, on the other hand, are betting on continued elevated oil prices to support their drilling campaigns. This two-speed market for tight oil is resulting in about half the historic production growth we saw before the pandemic. What is interesting is that the use of DUCs as a buffer may lead to a less volatile sector overall, with less prominent decline rates as well.

Counter-cyclical investment has been a common strategy among large NOC players that take advantage of lower development costs during downcycles. By maintaining consistent drilling budgets instead of responding to prices, the economics of drilling should improve and allow for better control of production and cashflows. Add to this the assets acquired when private firms overextend themselves and go bankrupt, and public firms will likely dominate the future of shale.

Private shale firms will always exist, and fortunes will still be won and lost by their bets on the oil market, but it appears that shale will be an increasingly smaller source of market movement. Instead, a drive for consistent returns and reduced risk may flatten the wild swings of the last decade into a more modest ripple in the future. For now, expect a taming of the shale market under new management, with some surprises (CCUS and related technologies) from the larger independents.

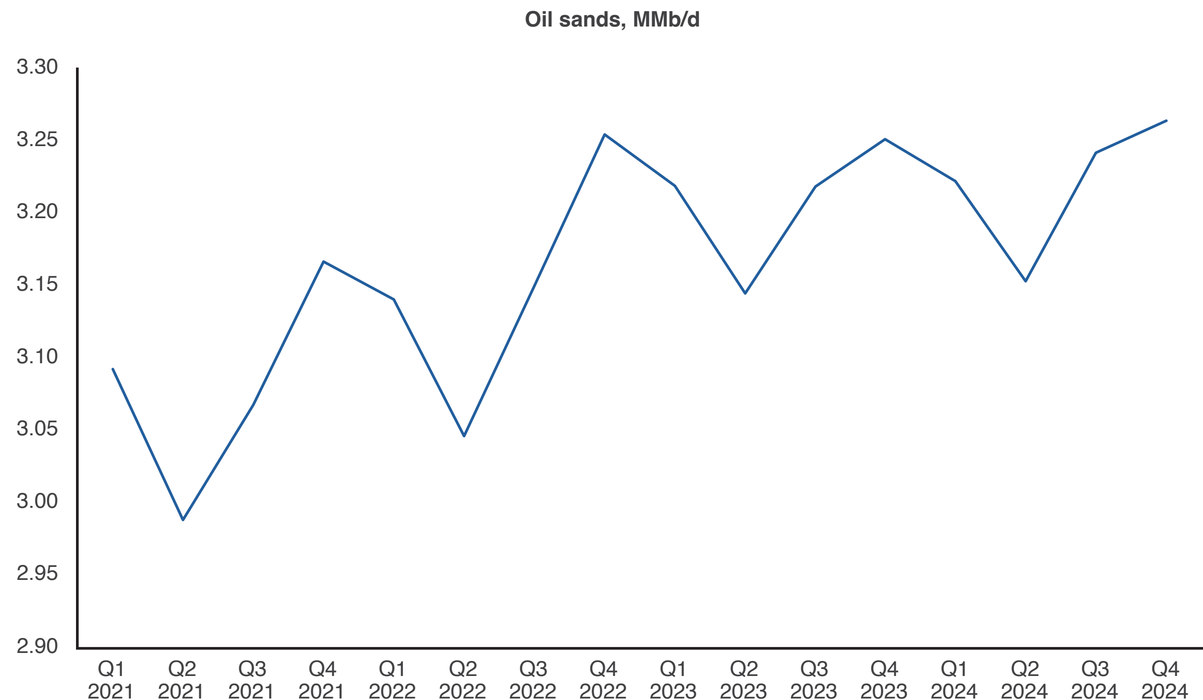
Source: KAPSARC, December 2022.

Non-OPEC (Tight Oil and Oil Sands)...

Ongoing regulatory pressure in Canada is leading to interesting results from the oil sands. Divestiture by risk-averse firms is nothing new, but the concentration of risk by some firms is becoming more pronounced. Suncor Energy, one of the four largest producers, is divesting from wind and solar assets to lean into hydrogen and renewable fuels as part of their drive for net-zero by 2050. This is an alternative risk-reduction strategy as part of the Pathways Alliance (including Suncor, Chevron, and the other major oil sands producers) to meet their emissions targets while still producing oil by means of carbon capture utilization and storage (CCUS).

Plans for the first large CCUS project in Alberta, aiming to capture carbon from the oil sands and reinject it into geologic storage, were released in October. For investors, this should provide more confidence to stay in the sector in the long term. However, there is still significant skepticism that these plans are technically or economically feasible. To address this, the announcement included requests for regulatory and funding cooperation from the federal and provincial governments of Canada and Alberta, respectively, in support of this initiative. While the provincial government has an inherent interest in maintaining the local economy, it may be a difficult request for the federal government to action.

In the meantime, Canadian production will continue to grow at a rate commensurate with the economics, transportation, and annual patterns (note the improved seasonality in our results) that have become the hallmarks of a resilient sector.



Source: KAPSARC, December 2022.

Risk Scenarios, January 2023

**The KOMO survey is conducted on a semi-annual basis in Q1 and Q3, with results holding over to the subsequent quarter.*
KOMO's risk categories are based on current events impacting the oil industry.
KOMO uses the risk table to estimate potential impacts, taking two components into account: probability and impact.

Probability: A shaded chart at the top right of this slide shows the probability of a risk occurring (the darker the shade, the more likely it is to happen).

Impact: The impact is calculated as a percentage of exports (as domestic supply is often protected), or estimated into the demand model through a multiplier or a change in GDP.

For supply risks, we multiply the probability by the potential impact.

For demand risks, the model either (i) examines historical incidents as multipliers then applies a similar response to future demand, or (ii) estimates the potential impact on GDP and channels it through the model, via changes in the exogenous variables, to determine the implications for future oil demand.

Risk category	Item	Supply/ demand	Impact (Kb/d)	2023	2024
Producer supply risks	EU price cap on Russia crudes	Supply	↓ 985 - 795		
	Guyana and Namibia's discoveries (YoY growth)	Supply	↑ 5% BAU		
	United States shale industry growth beyond 1 MMb/d	Supply	↑ 90 - 185		
	JCPOA restoration and sanctions lifted on Iran	Supply	↑ 10 - 180		
	Venezuela's oil production increasing	Supply	↑ 40 - 85		
	UAE, Iraq and Kuwait's total production capacity to increase	Supply	↑ 0 - 300		
Demand risks	Economic downturn	Demand	↓ 834 - 415		
	Continued U.S. interest hikes	Demand	↓ 300 - 124		
	Continued inflation	Demand	↓ 174 - 82		
	China's economic growth trajectory to pre-COVID 19 levels	Demand	↑ 187 - 590		
	Aviation in Asia and long-haul travel reaching pre-pandemic levels	Demand	↑ 64 - 124		

Resolution to Russia-Ukraine conflict	No	67%
Global recession in 2023	Yes	87%
U.S. to start refilling SPR in 2023 and 2024	Yes	53%
OPEC+ cuts remain at 2 MMb/d in 2023	No	79%
OPEC+ gradual increments in production	Yes	67%
Brent to remain above $90/b in 2023	No	53%
OECD energy transition acceleration due to elevated prices	Yes	60%
Tourism activity to resume to 2019 levels	Yes	53%
U.S. dollar to continue strengthening	No	53%
Euro exchange rate against U.S. dollar to weaken	Yes	93%
Possibility of domestic unrest	Yes	87%
Africa new hub for oil demand	No	67%
Nigeria and Angola's production to return to pre-pandemic levels	No	80%
Supply chain issues negatively impacting oil production	Yes	67%
U.S. to take further measures to control elevated fuel prices	Yes	80%

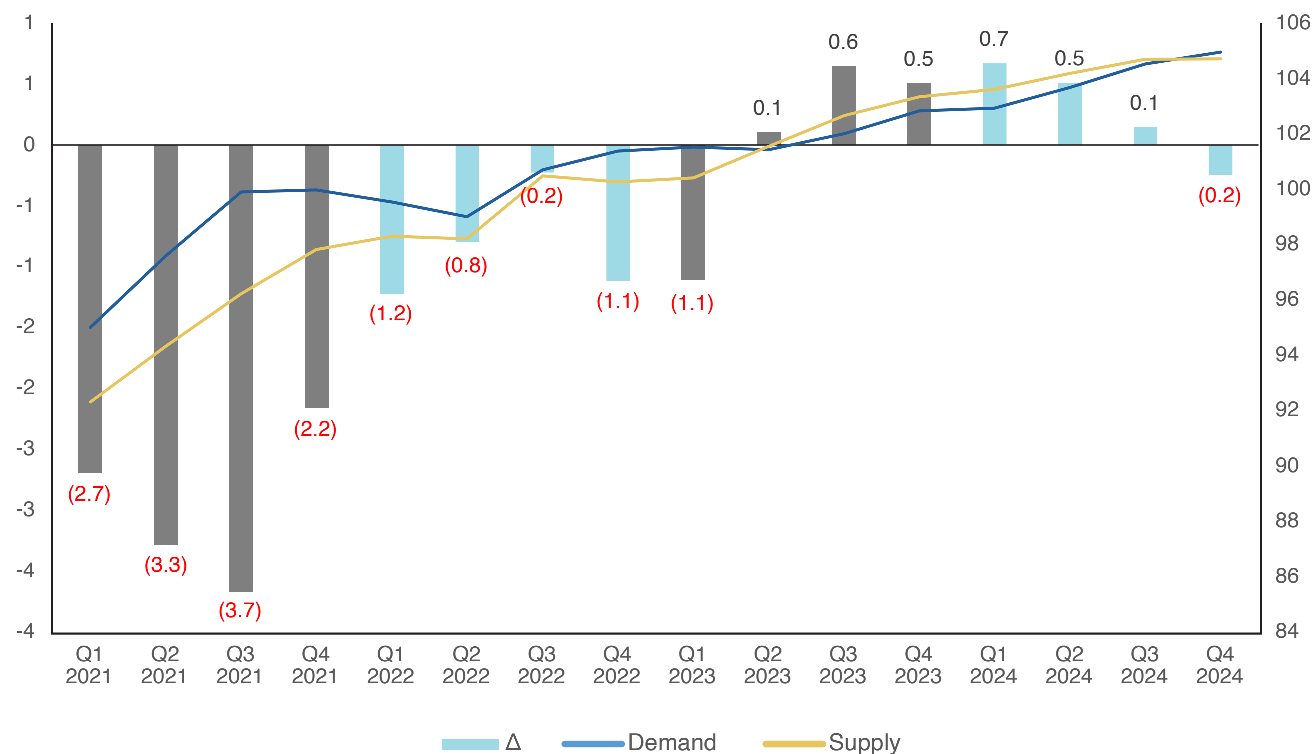
The results are based on a survey conducted biannually.

2022 and 2023 Balances

Given the recent changes to KOMO's supply/demand balances and the current price levels, we estimate an average surplus of only 40 Kb/d in 2023, followed by an additional surplus of 270 Kb/d in 2024. We expect there to be a deficit during the first quarter of this year, similar to the levels of the previous quarter at around 1.1 MMb/d. However, we also expect little to no real change in oil balances this quarter due to several economies facing recession, low demand in winter, a general tightening in fuels such as diesel/gas fuel for heating when compared to previous years, and the price cap on Russia taking effect.

Nevertheless, going into the second quarter of this year until Q3 2024, we are expecting a surplus in each quarter, ranging from 100 Kb/d to 700 Kb/d.

As mentioned earlier, the difference in demand growth projections between the different agencies is in a range of 1.2 MMb/d, and the variance stems from divergent views over China's potential growth. The KOMO forecast assumes that demand will continue to grow modestly, despite the upside risk for demand from both China and the global economy if China's COVID-19 restrictions continue to be lifted. It also assumes that most of the oil supply will come from non-OPEC+ countries, as the production efforts of OPEC members will be overshadowed by the declines of its partners, particularly Russia.



Source: KAPSARC, December 2022.

Price Fundamentals (Inventories)

Price movements for the foreseeable future will continue to be mainly influenced by speculation around evolving inventory levels, the risk of recession, and the Russian-Ukrainian conflict, and little to do with supply-demand trends. Indeed, although spare capacity among OPEC+ members could total 5.1 MMb/d in 2023, including sanctioned Russian oil, which is sufficient to address any downward shocks, and with supply-demand balances in perfect synergy, prices are not expected to decline significantly. In our latest survey, respondents anticipated Brent would average US$93.67/b for 2023 and US$88.40/b in 2024.

We anticipate a surplus starts to be generated in the second quarter of 2023 of 40 Kb/d a day. However, with demand anticipated to slow in OECD countries, refilling the SPR and other inventories will be challenging as 40 Kb/d a day is negligible. This means that, despite having a very modest growth in inventories, prices are likely to stagnate in 2023 since inventories will remain significantly low.

As mentioned in our previous edition:

"the KOMO target inventory model is a theoretical construct reflecting the aggregated 'normal' level of inventories desired by the oil industry to meet contractual obligations, provide a cushion for the complex supply chain that tends to deliver the product in batches, and buffer unanticipated changes in the supply of and demand for crude oil. It is derived from OECD inventory data using a trend component reflecting long-term economic growth, and a seasonal component reflecting phenomena such as the winter heating season and summer driving and cooling seasons. In short, it suggests a reversion to a long-term trend that is almost linear. However, it also puts into question whether OECD inventories will return to their 2019 levels or continue their trend as if COVID-19 was a short-term supply disruption, as opposed to a long-term or permanent market disruption. In this forecast, we have it returning to its normal trend levels (a form of long-term mean reversion), but in a more gradual manner.

If this assumption is correct, then we also estimate that prices may fall gradually. However, they could decline at a faster pace if OECD SPR releases continue. So, will OECD countries deplete their inventories in the face of the current risks facing the global community? If this is the case, then shouldn't there be a cushion of spare capacity to address any future risk?"

However, a surplus of 40 Kb/d a day will hardly change anything. In this regard, target inventory levels for the OECD are expected to increase by 378 MMb to 4,557 MMb in 2023 and grow again by 36 MMb in 2024. Real inventory levels are expected to stagnate in 2023 and then increase by 109 MMb/d in 2024 to reach 4,205 MMb.

Target inventories vs. real inventories, MMb

Source: EIA; KAPSARC, December 2022.

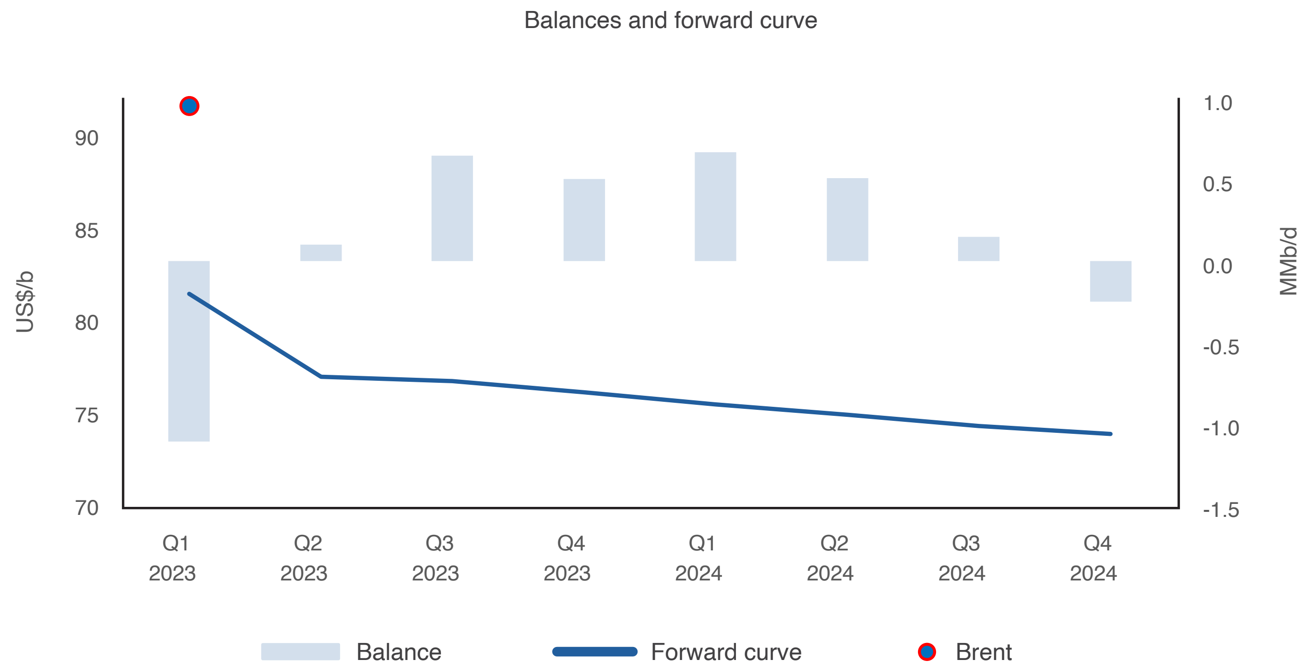
Price Fundamentals (Brent)

	Q1 2023	Q2 2023	Q3 2023	Q4 2023	Q1 2024	Q2 2024
Bloomberg	92.02	95.00	90.96	91.67	95.33	
Market sentiment	93.53	91.49	91.42	92.50	95.00	92.00

	2023	2024
Bloomberg	96.25	88.00
Market sentiment	92.20	91.80

Source: Bloomberg, December 14, 2022.

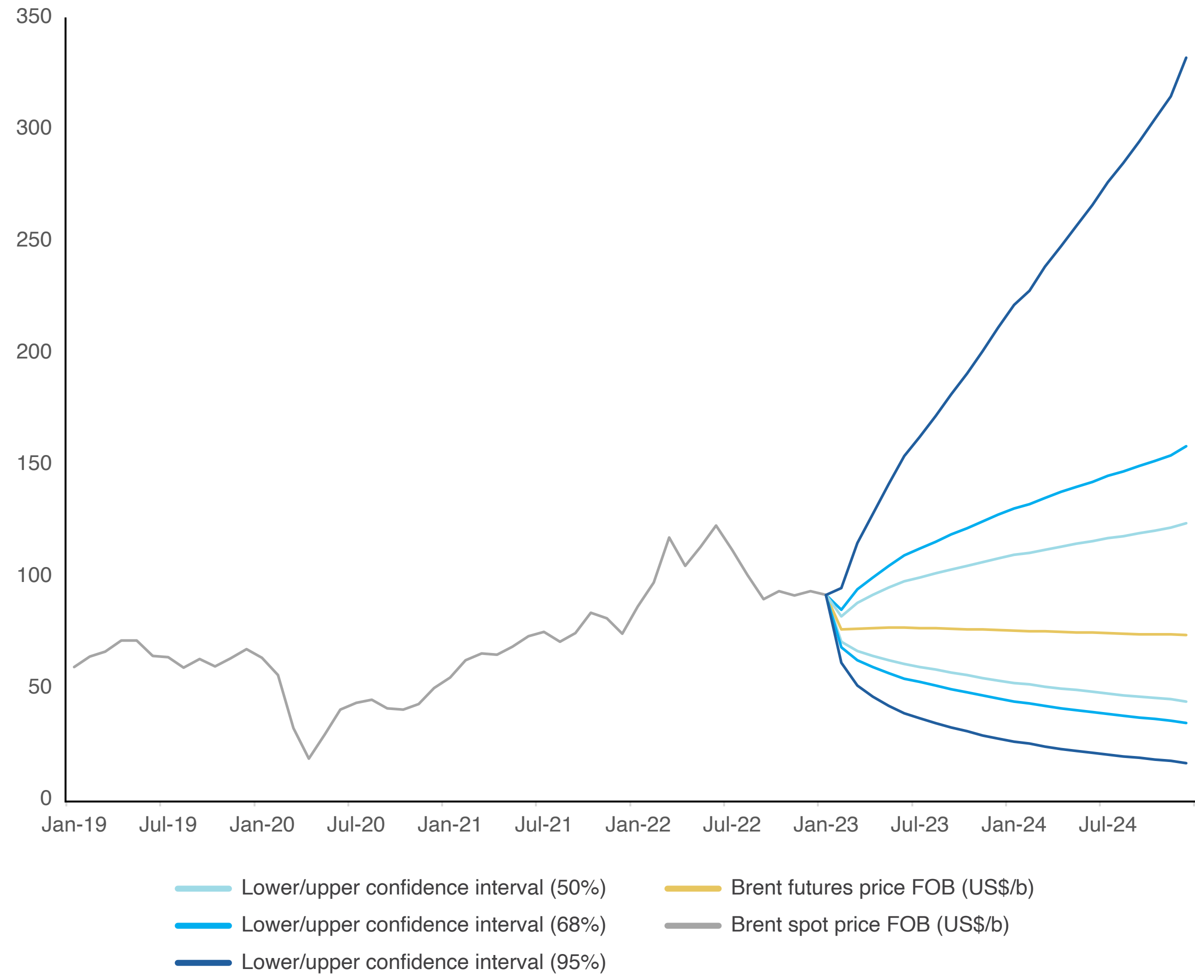
*Market sentiment is based on publicly available forecast data.



Source: CME Group , KAPSARC, December 2022.

Price Fundamentals (Forward and Future Curves)

The graph at right depicts confidence intervals at the 50%, 68%, and 95% levels derived from options market information for at-the-money options contracts.



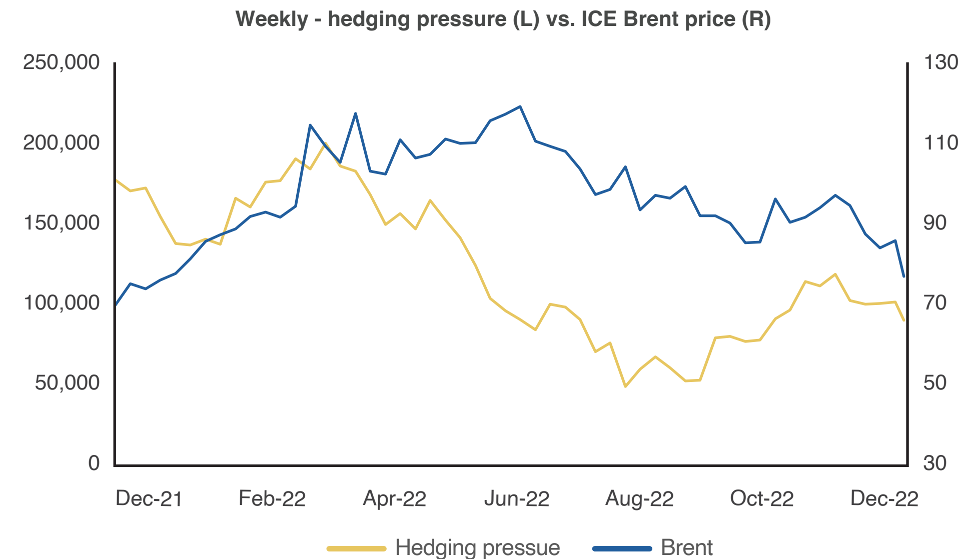
Source: KAPSARC calculations based on NYMEX data, CME Group, FINCAD, December 2022.

Note: As seen from this illustration, the bulk of the price risk appears to be squarely to the upside.

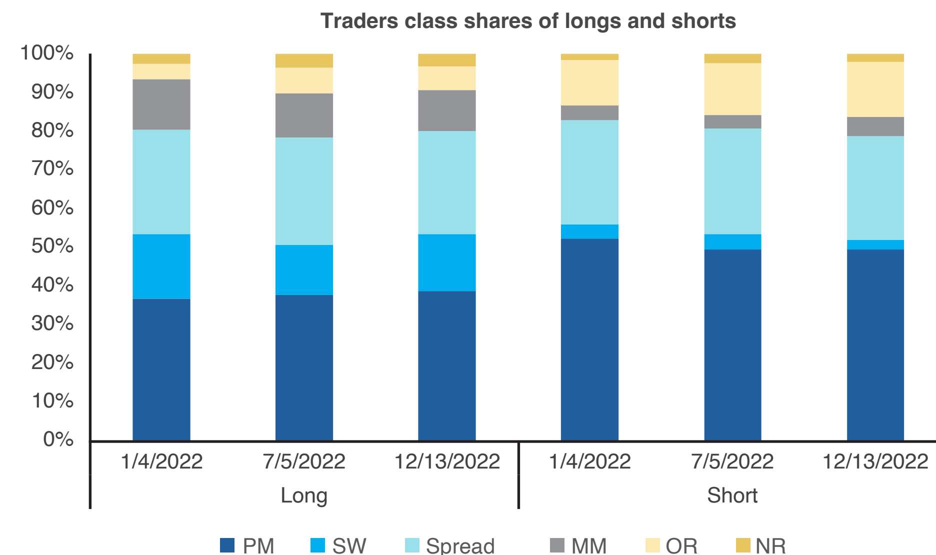
Price Fundamentals (Markets)

Hedging pressure (HP): The graph at right shows the settlement price for Brent against hedging pressure. Hedging pressure is a measure of physical commercial (producers/merchants/processors/users) net-short positions relative to net managed-money long positions. It indicates a negative relationship between Brent prices and market hedgers. The falling hedging pressure, despite elevated prices in 2022, could either mean that there are declines in the number of long positions or that short positions are on the rise. The numbers indicate that both are happening simultaneously, which indicates hedgers are expecting prices to stagnate or even decline, and producers are trying to pin a price on their sales. Indeed, the financial markets are wary of finding themselves in an underhedged position during a period of potentially falling market prices, but they are cognizant that oil markets are headed toward stability while the economy faces a slowdown, adding an additional downward pressure on prices.

Trader class shares: Despite the continued high prices of oil and other commodities, the overall number of trader positions declined until the middle of 2022 and has since stagnated. The number of daily trades between January 4, 2022, and December 13, 2022 shrank by roughly 15%. It is to no surprise that money managers have decreased their long positions by roughly 32% since the beginning of the year. This reveals either they are betting on stagnating/declining oil prices and holding on to their money and waiting for the markets to fall in order to buy at cheap prices.



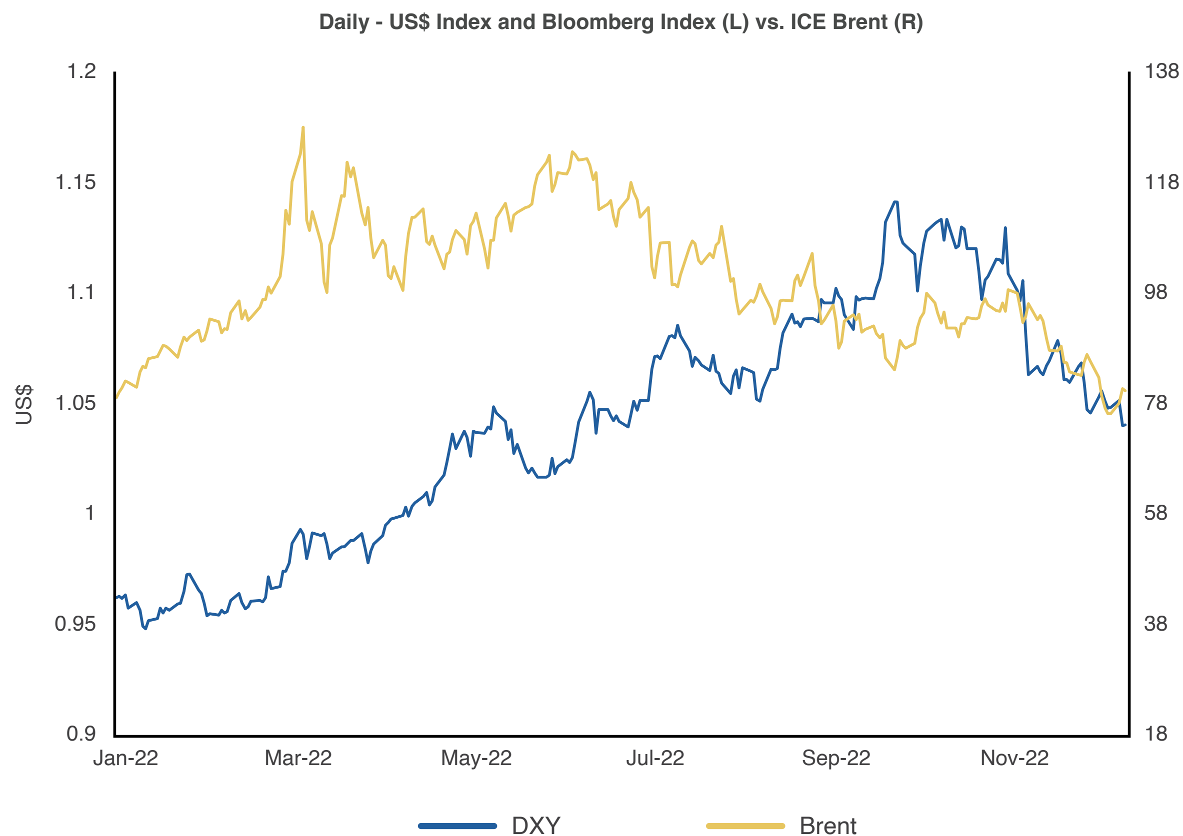
Source: Bloomberg, December 14, 2022.
Note: ICE = Intercontinental Exchange.



Note: Refer to the glossary for abbreviations.
Source: Bloomberg, December 14, 2022.

Price Fundamentals (Markets)

U.S. Dollar Index: Brent and the DXY have started to trend downward since November. This has been fueled by slowing economic growth worldwide that shifted the outlook for oil, currencies, and interest rates, despite the expectation that the U.S. Federal Reserve (Fed) will maintain its elevated interest rates throughout the coming months to combat inflation. Hence, although inflation has greatly impacted commodities since the beginning of 2022, it seems that in 2023, it will be impacted more by a potential economic slowdown.



Source: Bloomberg, December 14, 2022.

Editorial: India's Economy and its Oil Demand in 2023

Contributed by Jitendra Roychoudhury, KAPSARC

India's economy continues to remain resilient, with the Reserve Bank of India (RBI) projecting GDP growth for the fiscal year 2023 (FY23) at 6.8%, maintaining that India will continue to remain one of the fastest-growing major economies of the world. For the following two quarters of FY23, its projected growth rates for India are 7.1% and 5.9%, respectively. The Indian government estimates that oil prices next year, for the crude basket it predominantly buys, will be around $100/b with moderate inflation (The Economic Times 2022). By comparison, the Indian crude basket has seen a massive increase over the past couple of years, rising from an average of around $43.34/b in 2020 to reach a decadal high of $121/b in June of 2022, before declining to an average of around $78/b in early December 2022.

India's electricity demand is estimated to grow at over 7% in FY23 and remain strong in FY24, as per ICRA, an Indian investment information and credit rating agency. Plant utilization has also seen positive growth, from 58% in FY22 to 62% in FY23. Coal-fired electricity has maintained its generation share at 73% and continues to grow (Anand 2022).

Demand for crude has been growing, jumping 10.2% YoY in November 2022. Overall demand for crude and petroleum products has been resilient and growing in tandem with the economy as the last vestigial impacts of the pandemic seep away. Demand has also been boosted by the year-end holiday season, the end of a strong monsoon, and healthy industrial activity. Diesel sales, which account for almost 80% of India's refined fuel demand were up by almost 20% YoY. Gasoline sales also saw healthy growth of 8.1% during the same period, highlighting the robust return of demand for transport fuels.

Increasing crude imports from Russia have played a major part in supporting Indian economic growth. Russian oil supply has jumped from 0.2% of its imports share in FY22 to around 20%, vying with Iraq and Saudi Arabia to be among India's top three crude suppliers (PTI 2022). Indian Petroleum and Natural Gas Minister Hardeep Singh Puri and the Minister for External Affairs, Dr. Jaishankar, have reiterated that India will continue to buy crude oil from global sources, irrespective of the Russian price cap that the G7 has invoked.

The positive impact on growth from increased vehicle registrations can be observed in India's economy (Figure 2). A strong Indian economy, with growth rates returning to pre-pandemic levels, and moderate inflation support an overall increase in Indian oil demand.

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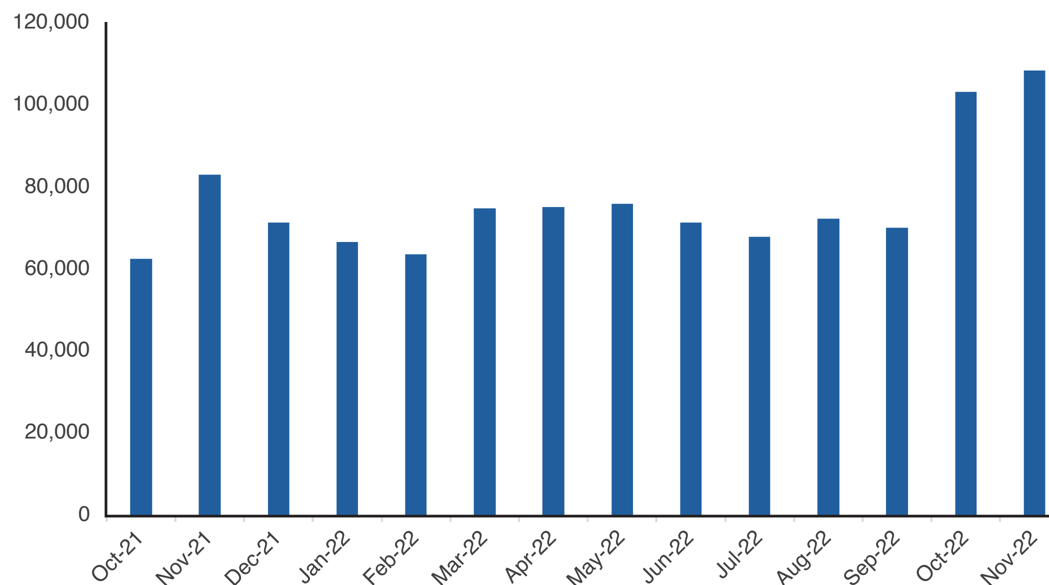
Figure 2. Trend in daily vehicle registrations.



Source: ICICI Direct Research - Macro Pulse.

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Editorial: A Forward Look into China's 2023

Contributed by Dongmei Chen, KAPSARC

As several developments take place in China at the end of 2022, three main issues can be highlighted when looking into 2023.

Economic stability will be China's top priority. Every December, the meeting of the Politburo of China's Communist Party Central Committee sets directions for the following annual Central Economic Work Conference, which decides on the economic, financial, and banking priorities for the year ahead. As with last year, stability appears to be China's top economic priority in 2023. Compared to 2021, its GDP growth was shockingly weak in 2022. It is expected to have fallen short of its official 5.5% target for 2022, as its growth in the first three quarters was only around 3%. To ensure economic stability, China will need to stimulate domestic demand and rebuild market confidence as external demand continues to face many uncertainties. Luckily, rising public calls to revive China's staggering economy and alleviate social concerns have resulted in a long-awaited relaxation of its zero-COVID-19 policy. The notice issued by the State Council on December 7 signals a shift away from the policy, allowing home quarantine for mild and asymptomatic cases, reducing the requirement of PCR tests in daily life and allowing public transport usage. Although it will take China several months to get back on track, it is a positive signal for 2023 and as of January 8 2023, the country has finally done a complete lifting of all its COVID-19 restrictions.

National security will take center stage, according to the 20th Party Congress. China's biggest political event of the year – the 20th Party Congress – has resulted in the reshuffling of the country's top leadership. The outcome of the Congress underlined that economic development tops other priorities, and underscored the need for national action on securing food, energy and supply chains, in the context of heightened geopolitical tensions. It suggests that the Party will seek to adjust China's economic structure, increase its domestic demand, and strengthen domestic supply chains to deal with a worsening external economic environment.

In its newly released National Security Strategy, the U.S. is focused on how to win a managed competition with China in a less confrontational manner and outlined a preference for dividing its economic and political partnerships into two different tracks. Ongoing Sino-U.S. tensions pose the risk of a technology supply chains decoupling first. To what extent this would impact economic growth in China and globally remains to be seen. However, there is also the chance that both countries maintain communication and deepen their constructive efforts on critical global issues where their interests align. These include climate change, global economic stability and food security. For example, at COP 27, following the meeting of Joe Biden and Xi Jinping in Bali, the U.S. and China announced a restart of their stalled climate negotiations.

China's Belt and Road Initiative (BRI) will remain expansive. China has been cautious about its outward investment as the world shows signs of increased economic volatility and political fragmentation. It has adjusted its approach to BRI investment and project implementation in light of the challenges of ensuring environmental, social and governance accountability in the context of rising competition from European Union and U.S.-led alliances on connectivity strategies. Earlier, China stated that the BRI will continue to be an important platform for deepening its connection with global economies. Recent events have supported this statement. On the sidelines of the Shanghai Economic Organization summit in Uzbekistan in September, China, Kyrgyzstan, and Uzbekistan signed a long-anticipated agreement to construct a shorter railway route to parts of Europe affected by the Russia-Ukraine war. This is a significant step to grow the BRI's connection to Central Asia and Europe. Furthermore, during the China-Arab Summit and the China-GCC Summit in Riyadh in December, the two countries signed a comprehensive strategic partnership agreement harmonizing the plans between the Kingdom's Vision 2030 and the BRI. This was another step by China to deepen its ties with the GCC region and Arab states through BRI cooperation.

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In summary, the lifting of China's zero-COVID policies is expected to drive domestic demand and revive its industrial activities in 2023. Achieving national security by increasing the resilience of critical supply chains will be a priority for China amidst heightened geopolitical tensions and external risks. While self-sufficiency in energy, food, and technological supply chains cannot be achieved in the near future, the continued and deepened cooperation with BRI partners may help in the interim.

Appendix

World oil demand, 2022-2024 (MMb/d)

Region	Group	Country	2022	Q1	Q2	Q3	Q4	2023	Q1	Q2	Q3	Q4	2024
Americas	OECD	United States	20.4	20.5	20.4	20.5	20.5	20.5	20.4	20.5	20.8	20.9	20.6
		Canada	2.4	2.4	2.3	2.4	2.5	2.4	2.4	2.4	2.5	2.5	2.5
		Mexico	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	2.0	1.9
		Chile	0.4	0.4	0.4	0.4	0.3	0.3	0.3	0.4	0.4	0.4	0.4
		Total	*25.1*	*25.1*	*25.0*	*25.2*	*25.2*	*25.1*	*25.1*	*25.1*	*25.6*	*25.7*	*25.4*
	Non-OECD	Argentina	0.7	0.7	0.7	0.7	0.6	0.7	0.7	0.7	0.7	0.7	0.7
		Brazil	3.1	3.0	3.1	3.2	3.2	3.1	3.0	3.1	3.2	3.2	3.1
		Venezuela	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4
		RO Latin America	2.4	2.3	2.4	2.4	2.4	2.4	2.4	2.5	2.5	2.5	2.5
		Total	*6.5*	*6.4*	*6.5*	*6.7*	*6.6*	*6.5*	*6.5*	*6.7*	*6.8*	*6.8*	*6.7*
	Total Americas		**31.6**	**31.5**	**31.5**	**31.8**	**31.9**	**31.7**	**31.6**	**31.8**	**32.4**	**32.5**	**32.1**
Europe	OECD	Germany	2.2	2.2	2.2	2.3	2.2	2.2	2.1	2.3	2.3	2.2	2.2
		France	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.7	1.7	1.6	1.6
		United Kingdom	1.4	1.4	1.4	1.4	1.5	1.4	1.5	1.5	1.5	1.5	1.5
		Poland	0.7	0.7	0.7	0.8	0.7	0.7	0.7	0.7	0.8	0.8	0.7
		Türkiye	1.0	0.9	1.0	1.1	1.1	1.0	0.9	1.1	1.2	1.1	1.1
		RO OECD Europe	6.7	6.9	6.7	6.7	7.0	6.8	6.9	7.1	7.0	7.0	7.0
	Total OECD Europe		13.7	13.7	13.6	14.0	14.2	13.9	13.8	14.3	14.4	14.2	14.2
Asia-Oceania	OECD	Australia	1.1	1.1	1.1	1.1	1.2	1.1	1.1	1.1	1.1	1.2	1.1
		Japan	3.5	4.0	3.3	3.3	3.6	3.5	3.8	3.2	3.4	3.8	3.6
		Republic of Korea	2.5	2.7	2.4	2.4	2.6	2.5	2.6	2.4	2.4	2.7	2.5
		New Zealand	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
		Total	*7.2*	*7.9*	*7.0*	*7.0*	*7.5*	*7.3*	*7.8*	*7.0*	*7.1*	*7.8*	*7.4*
	Non-OECD	China	14.9	15.3	15.4	15.2	15.7	15.4	15.8	15.7	15.6	15.9	15.7
		India	5.2	5.5	5.6	5.0	5.5	5.4	5.7	5.9	5.2	5.7	5.6
		Indonesia	1.8	1.8	1.9	1.9	1.8	1.8	2.0	1.9	1.9	1.8	1.9
		RO Asia	7.0	7.5	7.3	7.3	7.2	7.3	7.7	7.5	7.5	7.5	7.6
		Total	*28.8*	*30.1*	*30.2*	*29.3*	*30.2*	*30.0*	*31.2*	*30.9*	*30.1*	*30.8*	*30.8*
	Total Asia		**36.1**	**38.0**	**37.2**	**36.3**	**37.7**	**37.3**	**39.1**	**37.9**	**37.3**	**38.6**	**38.2**
Middle East	OECD	Israel	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
	Non-OECD	Bahrain	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
		Iraq*	0.8	0.8	0.8	0.9	0.8	0.8	0.8	0.8	0.9	0.9	0.9
		Kuwait	0.4	0.4	0.4	0.5	0.4	0.4	0.4	0.4	0.5	0.4	0.4
		Oman	0.2	0.2	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3
		Saudi Arabia	3.7	3.2	4.0	4.4	3.6	3.8	3.3	4.1	4.5	3.7	3.9
		Qatar	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3
		UAE	1.0	1.0	1.1	1.0	1.1	1.0	1.1	1.1	1.1	1.1	1.1
		Total GCC	*6.5*	*6.0*	*6.9*	*7.5*	*6.5*	*6.7*	*6.1*	*7.1*	*7.6*	*6.7*	*6.9*
		Iran	1.8	1.9	1.9	1.8	1.8	1.9	1.9	1.9	1.8	1.9	1.9
		RO Middle East	0.4	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
		Total	*8.8*	*8.3*	*9.2*	*9.8*	*8.8*	*9.1*	*8.5*	*9.4*	*10.0*	*9.0*	*9.3*
	Total Middle East		**9.0**	**8.6**	**9.5**	**10.0**	**9.1**	**9.3**	**8.8**	**9.7**	**10.2**	**9.3**	**9.5**
Africa	Non-OECD	Egypt	0.8	0.8	0.8	0.8	0.8	0.8	0.9	0.8	0.8	0.9	0.8
		South Africa	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6
		Other Africa	2.7	2.9	2.9	2.7	2.9	2.8	3.1	3.0	2.8	3.0	3.0
	Total Africa		**4.1**	**4.3**	**4.3**	**4.0**	**4.3**	**4.2**	**4.5**	**4.5**	**4.2**	**4.5**	**4.4**
Eurasia	Non-OECD	Russia	3.7	3.6	3.5	3.7	3.7	3.6	3.5	3.6	3.9	3.8	3.7
		RO Eurasia	2.0	1.8	1.9	2.1	2.0	2.0	1.8	2.0	2.2	2.1	2.0
	Total Eurasia		**5.7**	**5.4**	**5.4**	**5.9**	**5.7**	**5.6**	**5.3**	**5.5**	**6.1**	**5.9**	**5.7**
	Global Demand		**100.2**	**101.5**	**101.4**	**102.0**	**102.8**	**102.0**	**102.9**	**103.7**	**104.5**	**105.0**	**104.0**

World oil supply, 2023-2024 (MMb/d)

	Q1 2023	Q2 2023	Q3 2023	Q4 2023	2023	Q1 2024	Q2 2024	Q3 2024	Q4 2024	2024
Africa	7.43	7.62	7.72	7.76	7.63	7.75	7.70	7.65	7.57	7.67
Americas	35.94	36.74	37.45	37.60	36.93	37.43	37.84	38.18	38.07	37.88
Asia	9.04	9.09	9.14	9.17	9.11	9.17	9.16	9.14	9.13	9.15
Eurasia	13.30	13.03	12.94	13.04	13.08	13.24	13.38	13.50	13.62	13.43
Europe	4.21	4.33	4.44	4.50	4.37	4.54	4.58	4.62	4.68	4.60
Middle East	30.50	30.72	30.97	31.28	30.87	31.48	31.53	31.60	31.66	31.57
Total	**100.42**	**101.54**	**102.66**	**103.35**	**101.99**	**103.60**	**104.19**	**104.69**	**104.71**	**104.30**

	Q1 2023	Q2 2023	Q3 2023	Q4 2023	2023	Q1 2024	Q2 2024	Q3 2024	Q4 2024	2024
Conventional	71.06	71.35	71.66	72.00	71.52	72.16	72.10	72.06	72.06	72.09
Extra heavy oil	3.52	3.60	3.64	3.66	3.60	3.65	3.64	3.63	3.62	3.63
Oil sands	3.22	3.14	3.22	3.25	3.21	3.22	3.15	3.24	3.26	3.22
Oil shale (kerogen)	0.05	0.05	0.05	0.05	0.05	0.05	0.06	0.06	0.06	0.06
Other liquids	6.88	7.35	7.61	7.45	7.32	7.32	7.74	7.93	7.71	7.67
Tight oil	12.92	13.20	13.55	13.93	13.40	14.11	14.38	14.61	14.82	14.48
Unconventional gas	2.78	2.85	2.93	3.01	2.89	3.08	3.13	3.16	3.19	3.14
Total	**100.42**	**101.54**	**102.66**	**103.35**	**101.99**	**103.60**	**104.19**	**104.69**	**104.71**	**104.30**

	Q1 2023	Q2 2023	Q3 2023	Q4 2023	2023	Q1 2024	Q2 2024	Q3 2024	Q4 2024	2024
Algeria	1.01	1.01	1.02	1.03	1.02	1.05	1.05	1.05	1.04	1.05
Angola	1.16	1.20	1.20	1.18	1.18	1.14	1.10	1.06	1.02	1.08
Congo	0.26	0.26	0.25	0.25	0.25	0.24	0.24	0.23	0.23	0.23
Equatorial Guinea	0.06	0.07	0.07	0.07	0.07	0.06	0.06	0.06	0.05	0.06
Gabon	0.19	0.19	0.19	0.19	0.19	0.18	0.18	0.17	0.17	0.17
Iran	2.55	2.56	2.61	2.67	2.60	2.70	2.71	2.76	2.79	2.74
Iraq	4.47	4.49	4.50	4.53	4.50	4.57	4.58	4.58	4.58	4.58
Kuwait	2.68	2.70	2.72	2.74	2.71	2.80	2.80	2.80	2.80	2.80
Libya	1.16	1.19	1.23	1.26	1.21	1.27	1.29	1.30	1.31	1.29
Nigeria	1.04	1.09	1.12	1.13	1.10	1.12	1.12	1.10	1.08	1.11
Saudi Arabia	10.48	10.56	10.64	10.71	10.60	10.77	10.77	10.77	10.77	10.77
UAE	2.98	2.97	2.99	3.08	3.00	3.04	3.04	3.04	3.04	3.04
Venezuela	0.78	0.80	0.81	0.81	0.80	0.80	0.79	0.79	0.79	0.79
Oil field production	28.80	29.08	29.35	29.62	29.21	29.76	29.72	29.72	29.68	29.72
Other production	5.28	5.37	5.42	5.46	5.38	5.48	5.50	5.51	5.52	5.50
OPEC	**34.08**	**34.45**	**34.77**	**35.08**	**34.59**	**35.24**	**35.22**	**35.22**	**35.20**	**35.22**

	Q1 2023	Q2 2023	Q3 2023	Q4 2023	2023	Q1 2024	Q2 2024	Q3 2024	Q4 2024	2024
Call on OPEC	35.19	34.35	34.12	34.57	34.56	34.57	34.71	35.07	35.45	34.95
OPEC	34.08	34.45	34.77	35.08	34.59	35.24	35.22	35.22	35.20	35.22
OPEC Partner	15.18	14.91	14.81	14.89	14.95	15.06	15.18	15.29	15.39	15.23
Non-OPEC	51.16	52.18	53.09	53.38	52.45	53.30	53.78	54.18	54.12	53.85
Total	**100.42**	**101.54**	**102.66**	**103.35**	**101.99**	**103.60**	**104.19**	**104.69**	**104.71**	**104.30**

Glossary

MMb/d	Million barrels of oil per day
Kb/d	Thousand barrels of oil per day
Target inventories	A theoretical construct reflecting the aggregated 'normal' level of inventories desired by the oil industry to meet contractual obligations, provide a cushion for the complex supply chain that tends to deliver the product in batches, and buffer unanticipated changes in the supply of and demand for crude oil. It is derived from OECD inventory data using a trend component reflecting long-term economic growth, and a seasonal component reflecting phenomena such as the winter heating season, and summer driving and cooling seasons.
Real inventories	Represents the real inventory levels based on KOMO's forecast of supply/demand and inventory surplus/deficit balances.
Hedging pressure	HP = PMnS – MMnL, where PMnS is producer/merchant/processor/user net short, and MMnL is managed money net long. Note that HP is always positive, meaning that managed money net longs are insufficient to meet all of the desired hedging of the PM traders. Also, a negative relationship between price and HP is expected. This is because as HP increases, there is expected to be downward pressure on price: more shorts seeking counterbalancing longs will put downward pressure on the price. The increased hedging pressure costs the short hedgers more because they have to accept lower prices.
PM	Producers/merchants/processors/users
SW	Swap dealers
MM	Managed money
OR	Other reporters
NR	Non-reporters
OPEC partners	Azerbaijan, Bahrain, Brunei, Kazakhstan, Malaysia, Mexico, Oman, Russia, South Sudan and Sudan

About KAPSARC

KAPSARC is an advisory think tank within global energy economics and sustainability providing advisory services to entities and authorities in the Saudi energy sector to advance Saudi Arabia's energy sector and inform global policies through evidence-based advice and applied research.

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KOMO usually uses the IMF’s GDP forecasts. However, due to the timing of this publication, Oxford Economics’ GDP forecast numbers were used, rather than those of the IMF.

Same information as of December 2022 was used in the preparation of this Report.

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