



THE OXFORD
INSTITUTE
FOR ENERGY
STUDIES

Short-Term
Outlook

OIES Oil Monthly

OIES OM: 02

March 2021

In Focus

The Year of the Ox is looking rather strong

China’s oil demand seemed off to a shaky start in 2021 with new COVID infections limiting travel during the New Lunar Year. But with solid economic momentum, new refining starts, and new storage tanks coming online, the Year of the Ox is looking strong. Yet unlike 2020, when buying patterns were overwhelmingly driven by storage, buying cycles in 2021 will increasingly depend on refining.

China was a bright spot for oil markets in 2020. Despite the COVID-19 economic-induced shock in the first quarter, China’s crude imports averaged 10.9 mb/d last year, a 0.76 mb/d increase from 2019 levels (7.5 per cent) and close to their 2019 increment of 0.88 mb/d (9.5 per cent). But even though crude buying was extremely strong, refinery runs and end product demand grew more slowly. 2020, therefore, was mainly about storage.

Going into 2021, despite a short respite in imports, markets were expecting another uptick. This was informed by China’s strong economic rebound, with Q4 2020 GDP expanding at 6.5 per cent y/y in real terms, bringing 2020 growth higher y/y by 2.3 per cent, and by the expected start of new refining capacity. But a resurgence of COVID-19 infections in Northern China cast a pall on the outlook. The government issued recommendations not to travel during the Lunar New Year, and the stocks of transport fuels that were expected to be rapidly absorbed, continued to pile up. A bout of cold weather also weighed on industrial activity, leaving ample diesel supplies unused and now looking for a home outside of China.

But even though markets are fretting about the slowdown in China, activity is already picking up and is set to remain strong throughout the year. However, higher global crude prices expected this year suggest that stockpiling will slow, while new refining starts will shape crude import patterns.

China’s crude hangover

In 2020, even before China had fully emerged from lockdowns, crude buying began surging, leading to a build of as much as 400 million barrels (mb) of crude¹ by September. But in Q4 2020, when crude buying slowed and runs rose sequentially (Figure 1), crude stocks drew by an estimated 50 mb, leaving the stock build for all of 2020 at around 300-350 mb.

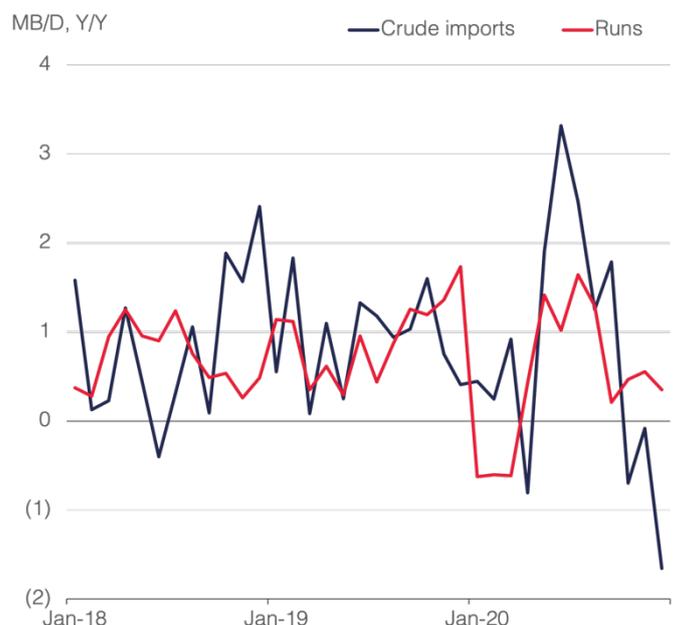
Recent reports suggest China has hit 100 days of forward cover.² But even though it has likely accumulated over 1 billion barrels in tanks, we think China is far from hitting tank tops or meeting its 90-day strategic forward cover target. On our estimates, when accounting for refiners’ operational stocks, alongside

pipeline fills, bonded tanks and other commercial storage, China now holds around 60 days of strategic forward cover. With another 30-days-worth of strategic stocks to fill (be they in designated SPR tanks or commercial storage), only a small part of the crude accumulated in 2020 will come back into the market. That said, since China has essentially doubled its forward cover in 2020, there is less urgency to stock in 2021, especially if global crude prices remain above \$50 per barrel. Nonetheless, with over 125 mb of storage capacity set to come online in 2021, some filling could still take place (Figure 2).

Is the year of the Ox a reason to be bullish?

In 2020, both crude and product stocks built, as end-product demand recovered at a softer pace. We estimate implied demand reached 13.4 mb/d in 2020, growing by 0.35 mb/d from 2019 levels, compared to a 0.55 mb/d increase the previous year. While the actual recovery in demand remains unclear, given the lack of product storage data, macroeconomic indicators and activity suggested a strong rebound, with most of the

Fig 1: China crude imports vs refinery runs



Source: NBS, China customs, Kpler, OIES

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demand coming from the real estate and industrial sectors, as well as from chemicals (**Figure 3**). In Q4 20, the boom in domestic tourism during the October national week holiday, as COVID-19 infection rates seemed under control, bode well for transport fuel demand during the Lunar New Year in February 2021.

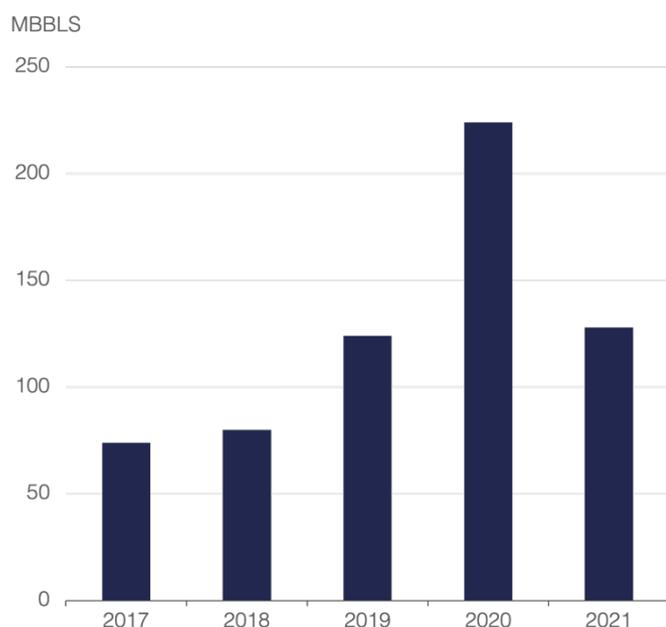
The winter, however, sent chills through global markets. China's industrial activity slowed seasonally, and the resurgence of COVID-19 infections and the government's subsequent recommendation to limit travel ahead of the Lunar New Year weighed heavily on air and rail travel. Indeed, total domestic passenger volumes in 2021 were lower by 43 per cent y/y and 76 per cent lower than the 2019 Lunar New Year period, according to the Ministry of Transport. Similarly, passenger journeys by road were 49 per cent lower y/y and 79 per cent lower than 2019 levels.

Both Chinese and international markets, that had been expecting Chinese consumers to absorb much of the pent-up supplies, were disappointed, with rising concerns about the prospects for the rest of the year. But these seem misplaced. Even though passenger travel was limited—and the recovery in jet demand will now likely only occur later in the year—consumer spending rose dramatically: during the Lunar New Year period, 660 million parcels were delivered in the country, up 260 per cent compared with the 2020 Lunar New Year period. At the same time, data from the Civil Aviation Administration of China (CAAC) showed the

number of international cargo flights during the seven-day period surged by 212 per cent y/y. China seems well on its way to shrugging off the Q1 2021 jitters.

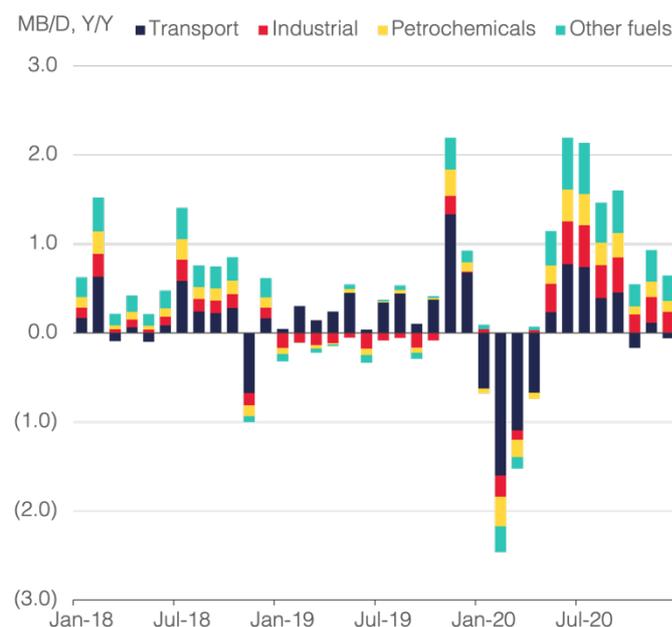
The question now is will the Chinese economy expand by closer to 7 or 9 per cent? This will depend on a number of factors including the success of the COVID-19 vaccine roll-out as well as government policies to manage the recovery. In this context, the upcoming 'Two Sessions', planned for early March, will give initial indications of the policy focus for the year ahead and indeed for the coming five-year period. There is still debate about whether the government will issue a GDP growth target for the year, with a number of key policy experts in China suggesting the country should forego the official target because it will encourage aggressive debt accumulation and encourage local governments to over-emphasize growth. A number of provinces and municipalities have already published their targets for 2021, with Beijing, Shanghai and Guangdong all suggesting their GDPs will expand by over 6 per cent. While this would be a solid outcome in terms of growth, it also points to a more cautious approach in the context of the relatively robust post COVID-19 momentum. Both central and local officials are looking to prevent the economy from overheating by focusing on high quality growth and dialing back fiscal support. Moreover, deteriorating local government finances and concerns about mounting public debts could lead local governments to slow infrastructure projects.

Fig 2: China storage capacity additions



Source: Argus, company reports, OIES

Fig 3: China demand by sector



Source: OIES

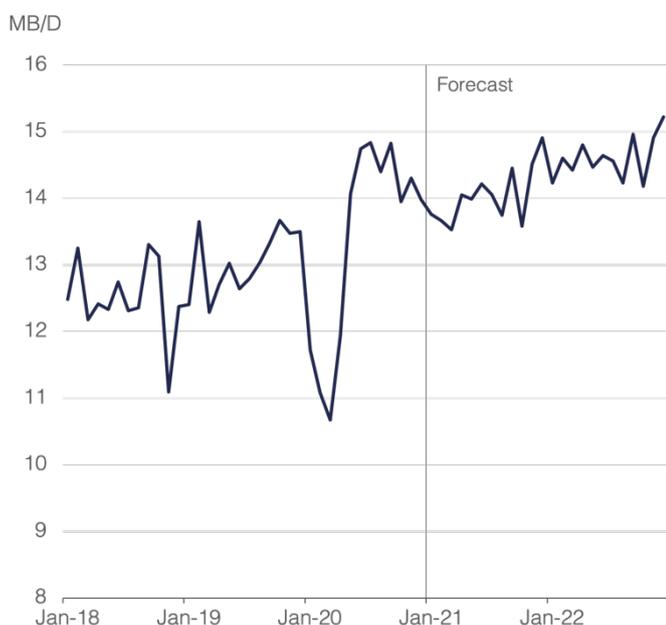
In Focus

Economic recovery will drive refinery runs

Despite some fine tuning to policy support, we still expect end product demand to rise by around 0.70 mb/d y/y, with chemicals and transport fuels leading growth even as demand for industrial fuels moderates on tighter fiscal policy (Figure 4). This suggests refinery runs will have to rise to meet domestic demand. At the same time, the policy environment is changing rapidly and the outlook for new refining additions will be a key question. The Chinese government’s ambition to peak carbon emissions before 2030 and reach carbon neutrality by 2060 is starting to show up in policy documents, but is only gradually filtering through to oil companies’ planning. Back in December 2020, China’s state-owned majors, CNPC and Sinopec, forecast that China’s refining capacity would reach 20 mb/d in 2025, from just under 18 mb/d in 2020. But on 22 February 2021, China’s State Council issued a circular calling for green, low-carbon and circular development. In it, the government announced its plans to transform the industrial structure and energy mix with the aim of reducing emissions and pollution from the manufacturing, energy and transportation sectors by 2025.³ Earlier studies have showed that in order to cap China’s carbon emissions by 2030, it will need to cap refining capacity at under 19 mb/d.⁴

But somewhat counterintuitively, the government’s February circular may not prevent new refining projects from starting up over the next few years, and there is at least 1.2 mb/d of planned capacity additions through

Fig 4: China implied product demand



Source: NBS, China customs, Kpler, OIES

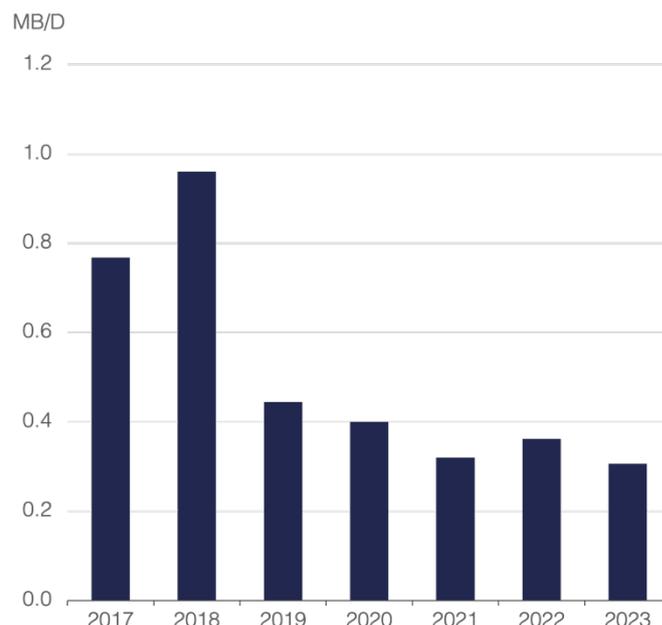
2023 (see Figure 5). If anything, refiners are looking to accelerate construction of large greenfield refineries which will focus on higher quality fuels and petrochemical integration, in line with the government’s desire to reduce its reliance on imported chemicals. This year’s planned capacity additions tick these boxes. Achieving peak emissions will then require shutting older, less efficient capacity, a political hot potato that local officials may choose to implement selectively. The Shandong authorities, for example, are planning capacity closures in the province but these will be offset by the construction of the 0.40 mb/d integrated Yulong project.⁵

New cycles

2021 crude imports are therefore expected to be more closely aligned with refiners’ purchase cycles and needs than with storage fills. In 2021, the oil market should factor in crude purchases for at least 0.72 mb/d of new CDU capacity, including Rongsheng’s 0.40 mb/d expansion, which started up in late 2020, and Shenghong’s 0.32 mb/d plant, which is scheduled to start in the second half of the year, in addition to some (limited) storage fills. Two more refineries with 0.52 mb/d of CDU capacity are penciled in for this year, but their starts have faced repeated delays and could spill over to 2022.

The ramp up of these mega refineries’ shapes buying cycles, but since it also impacts the domestic product market, it has knock on effects on the Shandong

Fig 5: China refining capacity additions



Source: Company reports, OIES

In Focus

independents' (teapots) crude buying. For example, the teapot refiners' crude buying cycle is linked to import licenses—with imports increasing after the award of quotas and drying up once these have been exhausted—as well as to international prices, but their throughput plans are sensitive to domestic price differentials as well as changes in local fiscal and environmental policies. In late 2020, the teapots sourced crude for early 2021 delivery, hoping to capitalize on the strong Lunar New Year demand in Northern China. But in January and February, despite the arrival of large volumes, they had to reduce throughputs due to the lockdowns in Hebei province given that the teapots tend to truck end-products to Hebei but transit in and out of the province was cut off. Some of them were able to sell diesel into Zhejiang province, as industrial users plagued by power shortages turned to back up diesel power generation. But going forward the Shandong independents' ability to capitalize on regional price differentials will be limited as the new mega-refineries consolidate their downstream market share: Rongsheng in Zhejiang province, 0.40 mb/d Hengli in Liaoning (north of Shandong) (**Figure 6**) and the new 0.32 mb/d Shenghong in Jiangsu.

The Shandong independents also face local environmental and fiscal challenges. In mid-February, as margins started recovering alongside industrial activity, the teapots sought to raise runs ahead of the majors' planned maintenance in March and April, before undertaking works later in Q2 21. But their maintenance

projects may need to be brought forward as local officials are now looking to reduce volatile compound chemicals (VOC) emissions between April and October. Refiners that do not start work early will be asked to install devices to control VOC discharges.⁶ The Shandong refiners are now coming under pressure to pay the windfall tax on road fuels,⁷ a charge that the government has historically levied mainly from the state-owned majors. This does not mean that Shandong throughputs will fall dramatically, but it does cap the upside for their runs in H1 2021, especially if they do not receive product export quotas this year.

At the same time, any reduction in the Shandong teapots' runs growth, will be offset by the majors and the new refiners. In 2020, the majors bore the brunt of the run cuts, but in 2021, the competition for market share could start to take a toll on the teapots, with the majors and the new mega-refineries competing for the domestic oil product and chemicals market. Any excess production will spill over to international markets, but throughput decisions are made first and foremost based on the outlook for the domestic market. And business in 2021 is currently looking good.

Footnotes:

¹ Bassam Fattouh, Andreas Economou, Michal Meidan, 'The COVID-19 Shock and the Curious Case of Missing Barrels', OIES Comment, December 2020.

² Aaron Clark, Sharon Cho, 'World's largest oil importer running out of storage capacity', Bloomberg, 26 February 2021.

³ Available at: http://www.gov.cn/zhengce/content/2021-02/22/content_5588274.htm

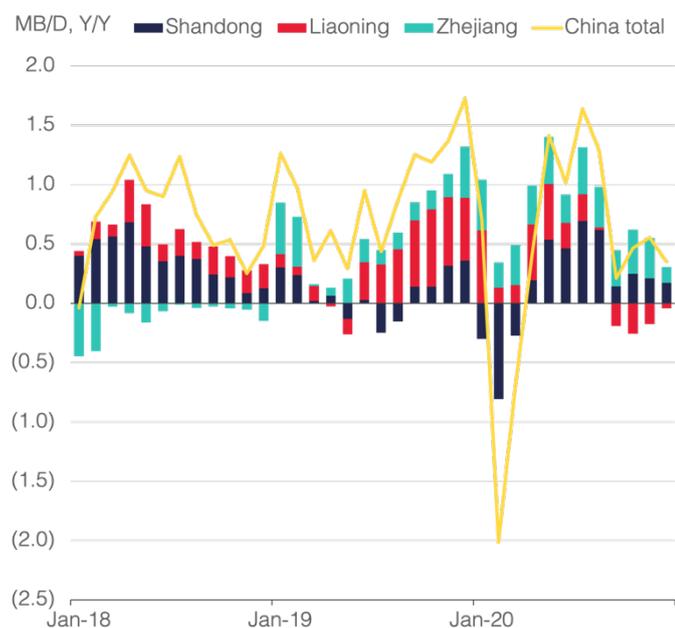
⁴ 2020 China oil cap project, Available at: <http://www.nrdc.cn/work?cid=90&cook=1>

⁵ China's Shandong province trims refining capacity, Argus, 22 January 2021.

⁶ China's Shandong further limits turnaround activity, Argus, 4 February 2021.

⁷ The windfall tax was introduced in 2016, when the government suspended retail fuel price adjustments whenever crude prices fall below \$40/bl. The profits made are paid into a special reserve fund to be used for emissions reductions, improving oil products quality and oil sector safety measures.

Fig 6: China regional runs



Source: NBS, OIES

Michal Meidan

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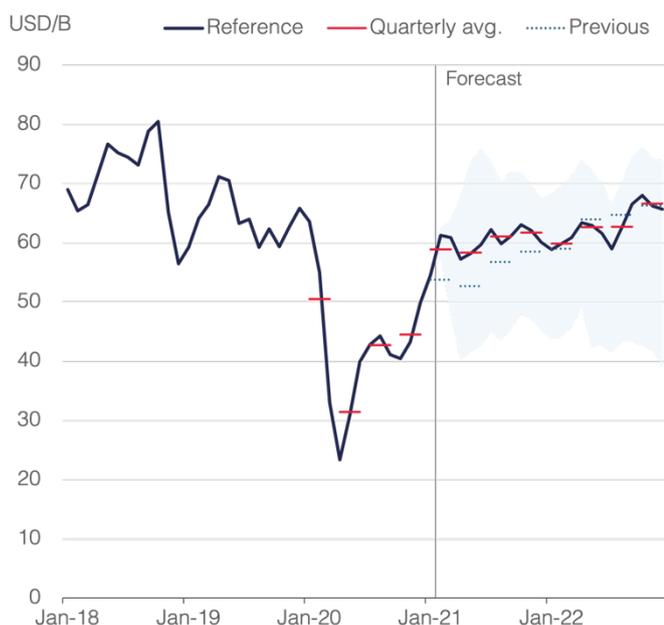
Outlook

Key insights

- **Our reference forecast for Brent in 2021 is upgraded at \$60/b and remains unchanged at \$63/b in 2022.** Greater market optimism coupled with the accelerated drawdown of surplus stocks has led to sharp price rises in recent months lifting the base price. Price potential remains supported from renewed confidence for a strong global economic recovery shaking near-term risks. Although OPEC+ next move remains a wildcard, the Brent prospect has now converged towards our reference price, indicating that price risks are more broadly balanced.
- **The balance of risks to our reference outlook remains in negative territory but price risks continue to ease.** Demand-side downside risks in 2021 are now at their lowest level since the start of the pandemic (-\$1.6/b on balance), but the near-term outlook remains sensitive to a potential fall-out from the still high level of COVID cases. Although supply driven risks related to OPEC+ compliance increase towards 2022, they are currently assigned a low probability.

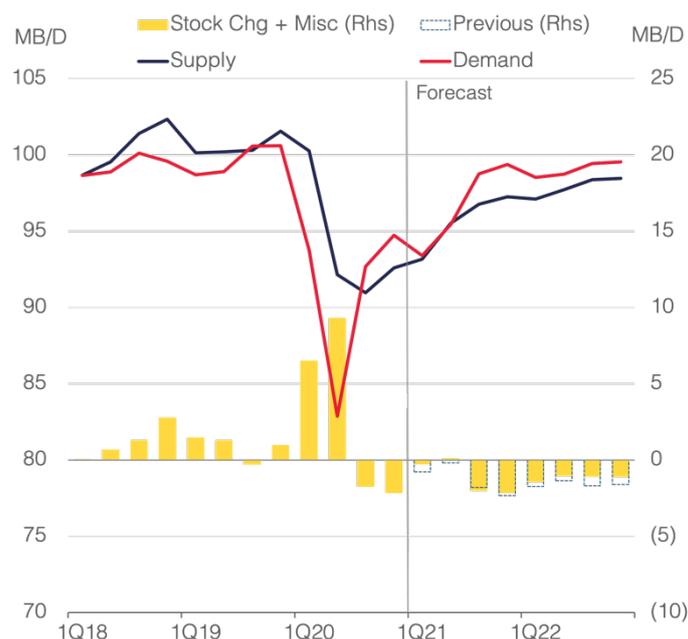
- **Global oil demand growth in 2021 is slightly upgraded to 5.7 mb/d from 5.5 mb/d forecasted previously, followed by 2.3 mb/d in 2022.** Despite a slow start to 2021, a more positive global economic outlook maintains expectations for a marked acceleration in global demand from H1 2021, but virus-induced fragilities persist. China's strong product demand prospects in 2021 continue to drive demand optimism, on the back of virus-induced demand fragilities clouding India's outlook.
- **Global oil supply growth in 2021 is little changed to 1.7 mb/d and 2.2 mb/d in 2022.** US activity is expected to grow very moderately on a more disciplined path as cash flows improve and prices recover, while Canada is leading non-OPEC growth for the year. OPEC+ next move will dictate market rebalancing in H1 2021.
- **The market is expected to fall into a 1.1 mb/d deficit in both 2021 and 2022.** The rebalancing of onshore stocks may have entered into its final stretch this year, while floating stocks are nearly balanced.

Brent price outlook



Source: OIES

Global balance



Source: OIES

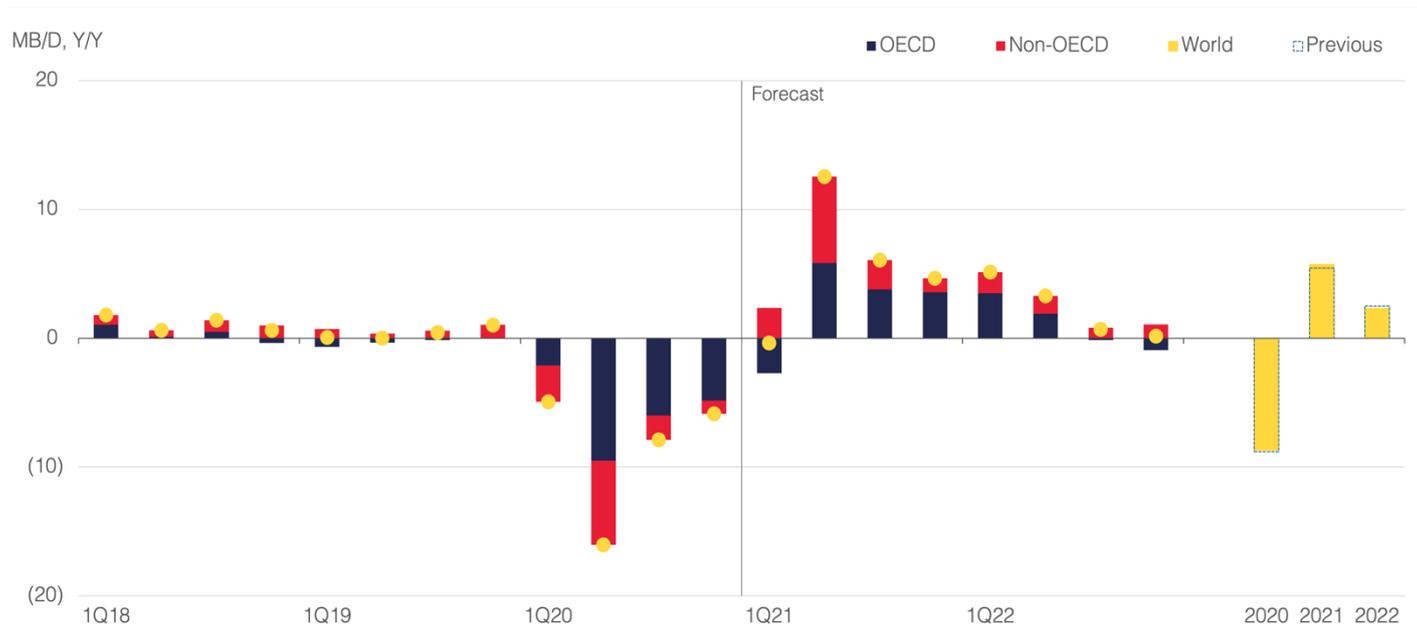
Outlook

Demand

Optimism about a strong demand recovery persists despite Q1 weakness

Despite a slow start to 2021, a more positive global economic outlook maintains expectations for a marked acceleration in global demand growth from Q2 onwards.

Global oil demand



Source: OIES

Global oil demand

MB/D

| | Total | Y/Y | vs 4Q19 ¹ |
|-------------|-------|-------|----------------------|
| 2020 | 91.0 | (8.7) | (5.9) |
| ± prev | -0.21 | +0.12 | |
| 2021 | 96.7 | 5.7 | (1.3) |
| ± prev | +0.06 | +0.27 | |
| 2022 | 99.1 | 2.3 | (0.9) |
| ± prev | -0.11 | -0.18 | |

¹ Compared to Q4 in each year.

Global oil demand growth in 2021 is slightly upgraded to 5.7 mb/d

The risks around our outlook remain to the downside reflecting concerns about the emergence of new COVID variants, the reimposition of mobility restrictions and the slow roll-out of vaccines, dampening demand growth prospects beyond Q1.

Outlook

Jet fuel demand remains the main drag

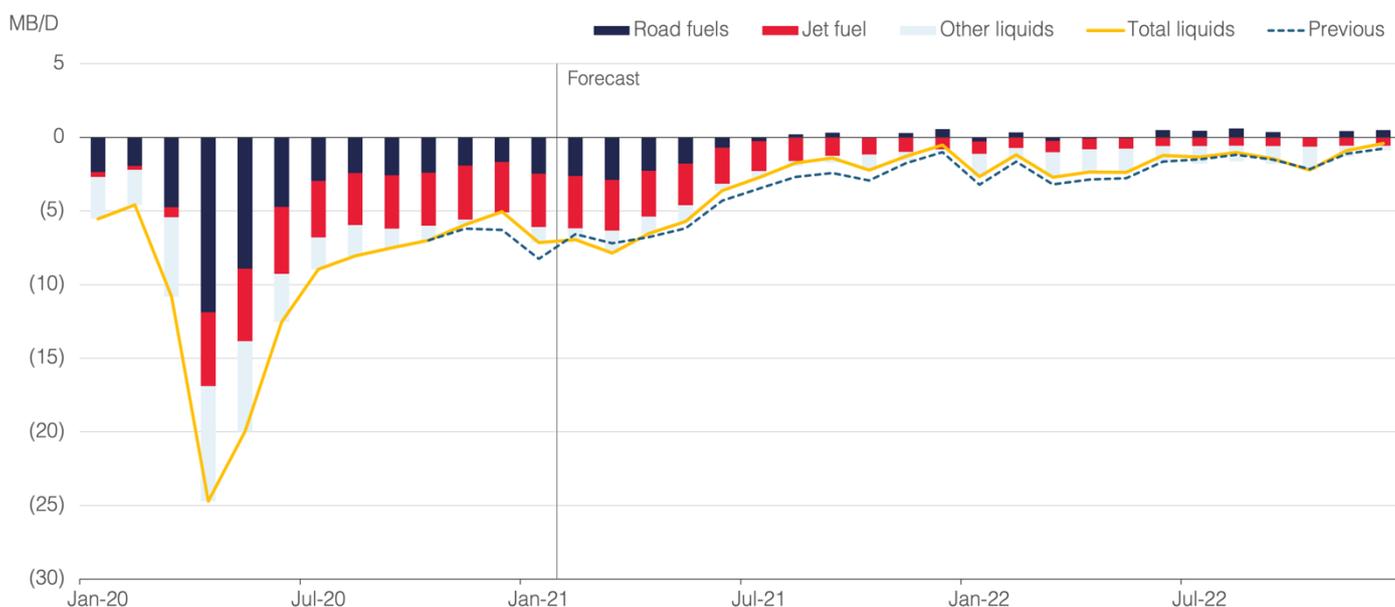
Although jet fuel consumption is set to accelerate in H2 2021, assuming that travel restrictions are lifted, in 2022 it is still seen recovering to only 9% below 2019 levels.

Global oil demand by region vs Dec 19



Source: OIES

Global oil demand by sector vs Dec 19



Notes: Other liquids include fuels for other transport, commercial/residential use, industry and other uses. Source: OIES

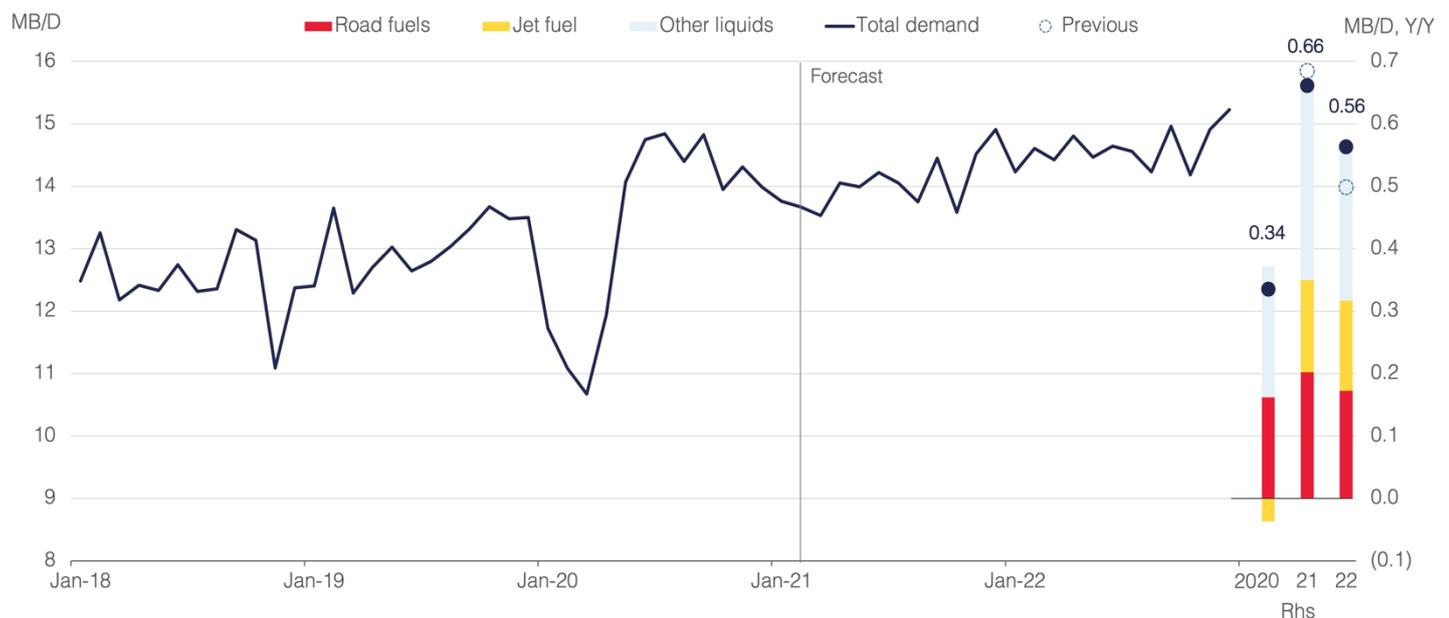
Outlook

China

Strong economic activity will support product demand growth in 2021

Despite a shaky start to the year with new COVID cases and a cold winter, strong economic activity will support product demand growth.

China implied product demand



Notes: Other liquids include fuels for other transport, commercial/residential use, industry and other uses. Source: OIES

China oil demand

MB/D

| | Total | Y/Y | vs 4Q19 ¹ |
|-------------|-------|-------|----------------------|
| 2020 | 13.4 | 0.3 | 0.5 |
| ± prev | 0.00 | 0.00 | |
| 2021 | 14.0 | 0.7 | 0.8 |
| ± prev | -0.02 | -0.02 | |
| 2022 | 14.6 | 0.6 | 0.7 |
| ± prev | +0.04 | +0.07 | |

¹ Compared to Q4 in each year.

China's product demand to grow by 0.7 mb/d in 2021 softening slightly in 2022

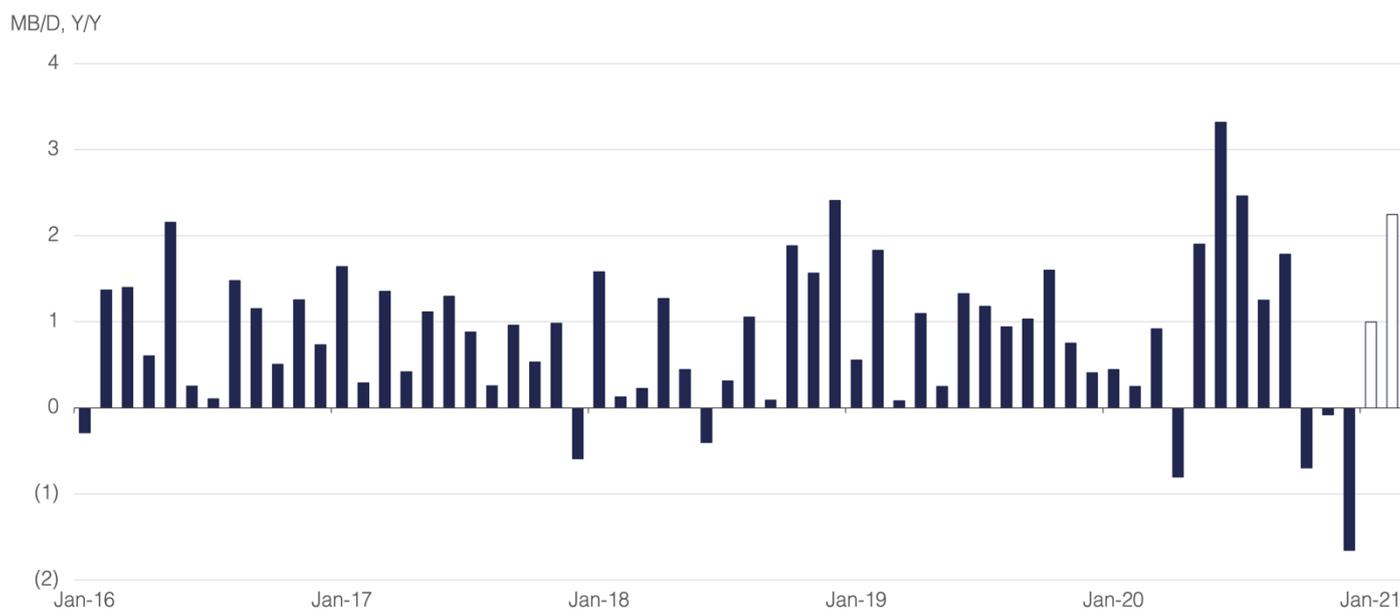
While infrastructure investments could slow, moderating demand for industrial fuels, refiners will increasingly focus on chemicals as well as transport fuels.

Outlook

China's crude buying cycles will be driven by refining rather than storage

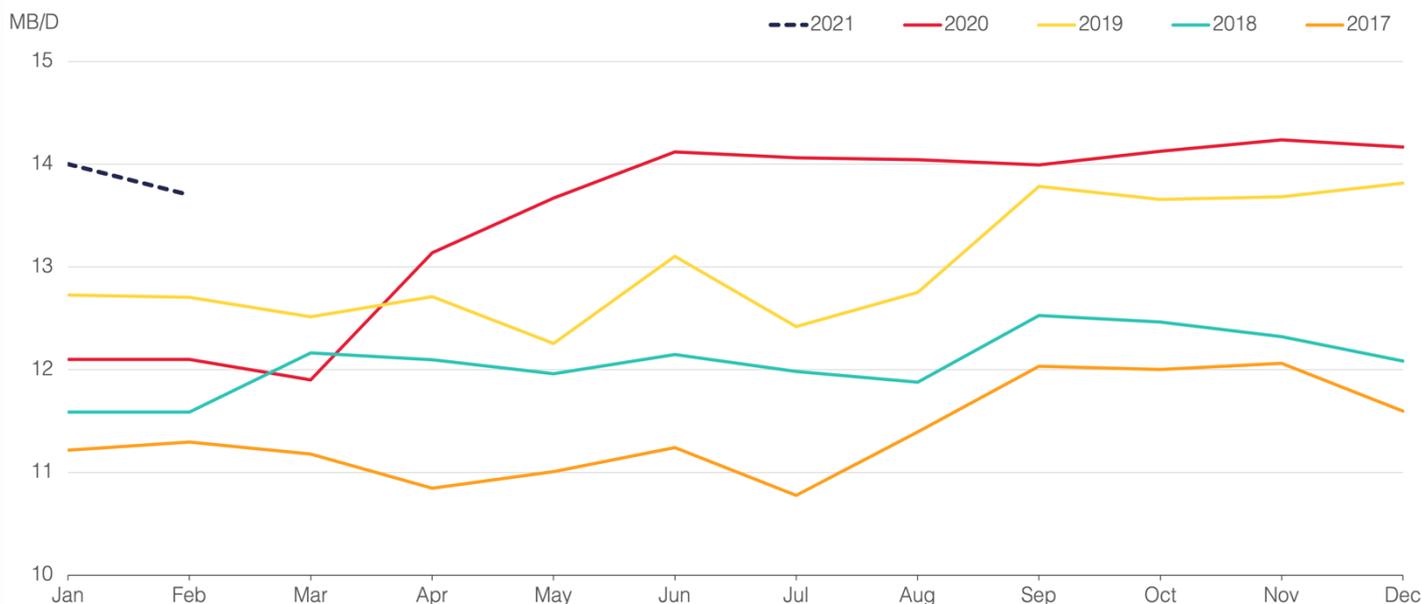
The independents have been stocking up on crude, but with peak maintenance ahead, buying could soften before recovering in H2.

China crude imports



Notes: Due to the Lunar New Year, Chinese official statistics for Jan/Feb are only released in March. The data for Jan/Feb-21 is based on Kpler and OIES estimates. Source: China customs, Kpler, OIES

China refinery runs



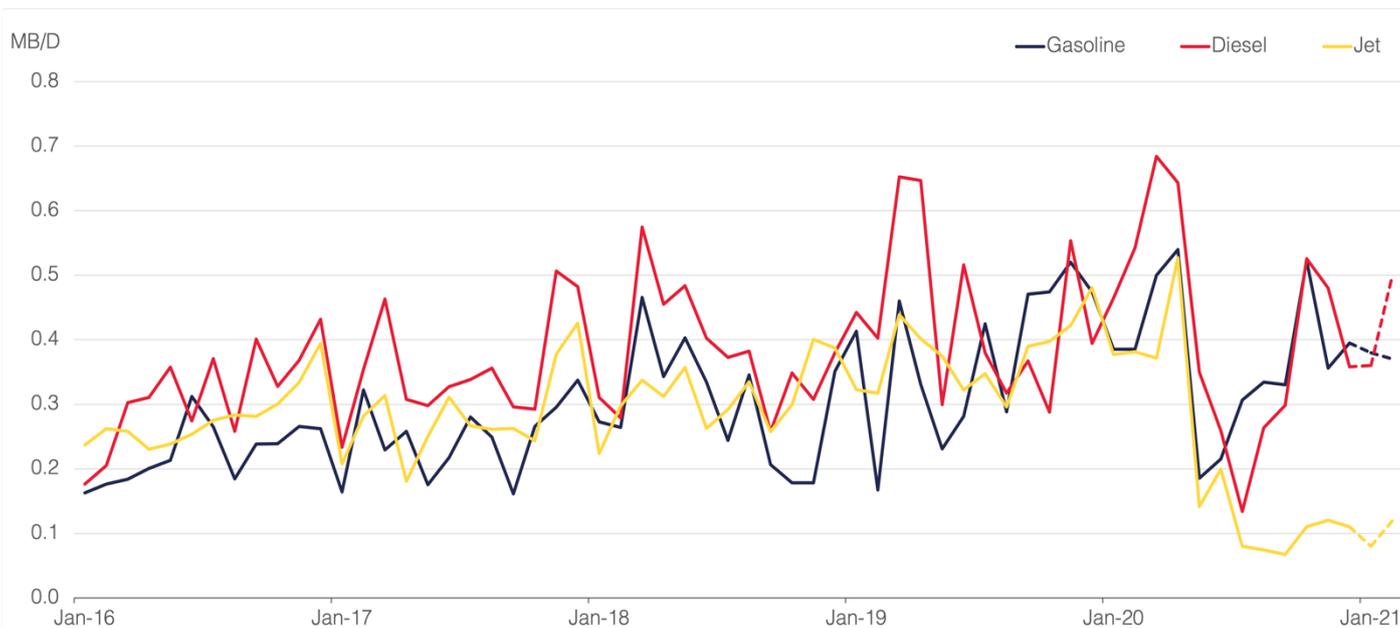
Notes: Due to the Lunar New Year, Chinese official statistics for Jan/Feb are only released in March. The data for Jan/Feb-21 is based on OIES estimates. Source: NBS, OIES

Outlook

Product exports rising on weaker demand

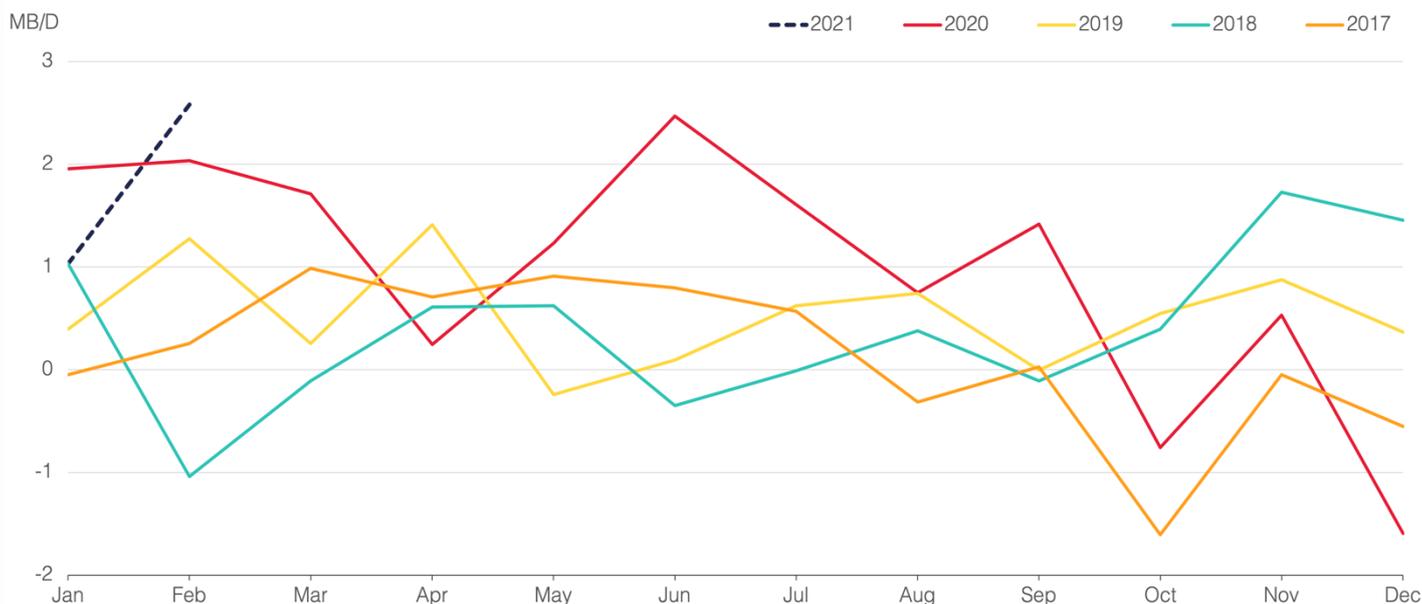
With the cold snap limiting industrial activity and travel restrictions hindering transport fuel demand, some excess will be exported, but peak maintenance will curb outflows.

China product exports



Notes: Due to the Lunar New Year, Chinese official statistics for Jan/Feb are only released in March. The data for Jan/Feb-21 is based on Kpler and OIES estimates. Source: China customs, Kpler, OIES

China implied stocks



Notes: Due to the Lunar New Year, Chinese official statistics for Jan/Feb are only released in March. The data for Jan/Feb-21 is based on Kpler and OIES estimates. Source: China customs, Kpler, OIES



Outlook

India

India demand outlook facing headwinds

A resurgence in COVID cases in some states and slower-than-expected vaccine uptake has led to whispers of regional lockdowns, clouding demand prospects.

India implied product demand



Notes: Other liquids include fuels for other transport, commercial/residential use, industry and other uses. Source: OIES

India oil demand

MB/D

| | Total | Y/Y | vs 4Q19 ¹ |
|-------------|-------|-------|----------------------|
| 2020 | 4.8 | (0.5) | 0.0 |
| ± prev | 0.00 | 0.00 | |
| 2021 | 5.4 | 0.6 | 0.1 |
| ± prev | -0.06 | -0.06 | |
| 2022 | 5.7 | 0.3 | 0.4 |
| ± prev | -0.03 | +0.03 | |

¹ Compared to Q4 in each year.

India's product demand outlook for 2021 is slightly lowered to 0.59 mb/d

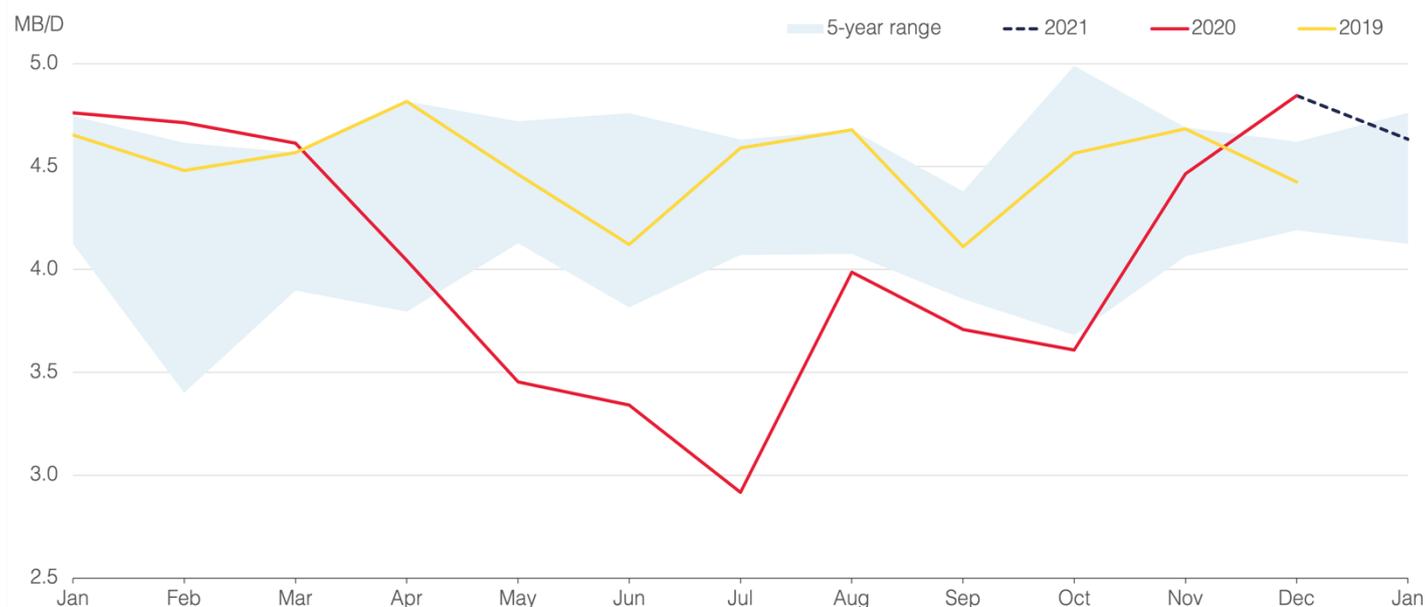
Despite a slow start to the year for road fuels demand, jet fuel demand continued to rebound as flight schedules continue to show a gradually improving profile, albeit as of February remaining 25% lower than levels a year ago, prompting us to upgrade y/y demand for jet fuel in 2021 to 0.1 mb/d.

Outlook

India's crude imports remain strong as runs resume

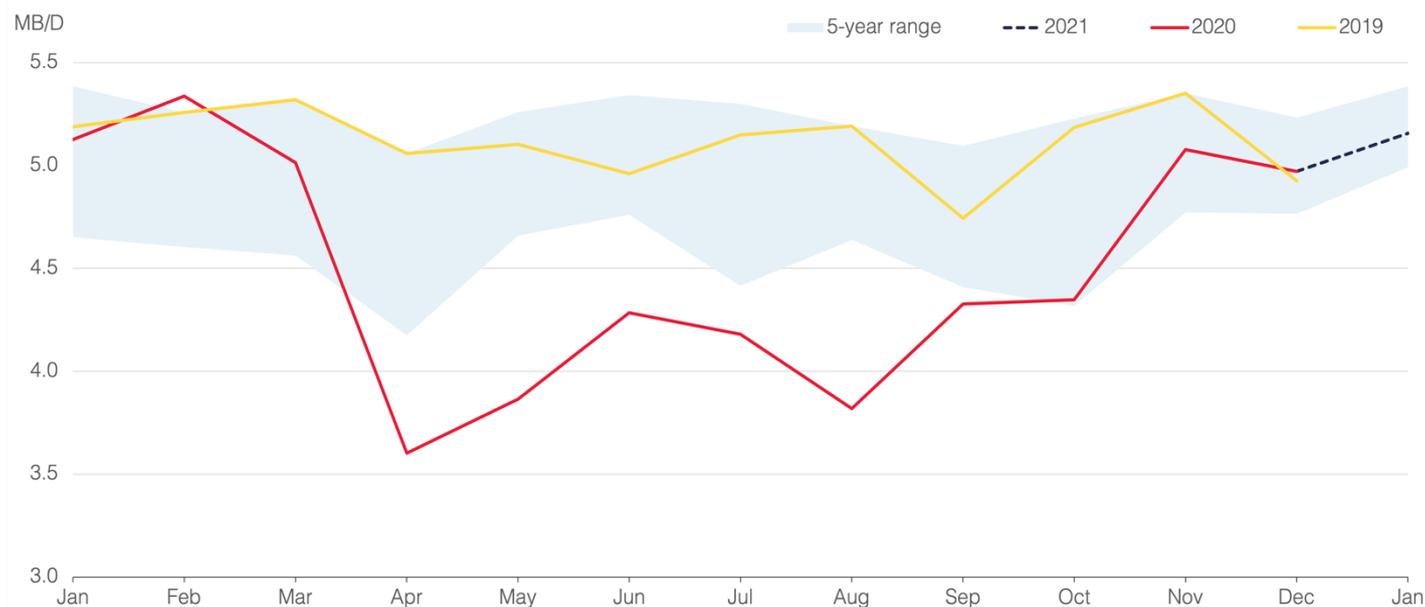
Record prices at the pump hamper demand for road fuels with the Q1 outlook slightly lowered, but the government could ease the pain by cutting taxes to control the rise.

India crude imports



Source: PPAC, OIES

India refinery runs



Source: PPAC, OIES



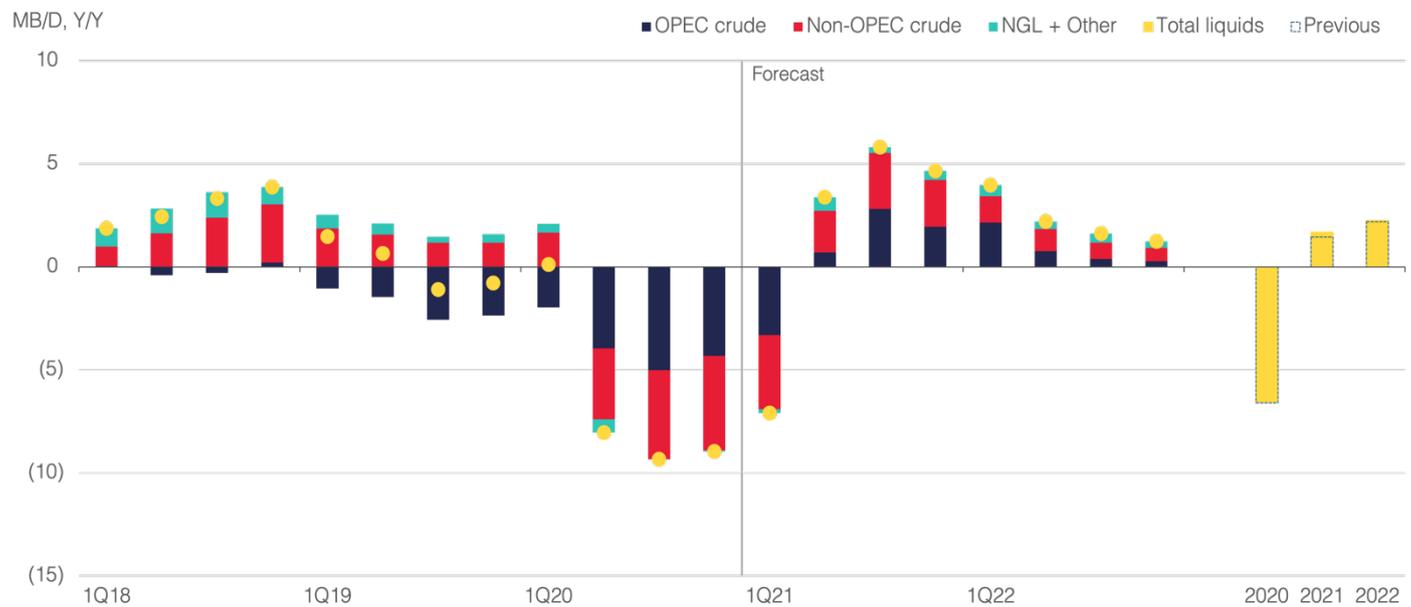
Outlook

Supply

Supply response to higher crude prices remains muted

Non-OPEC supply is expected to grow moderately, while the OPEC+ output release in 2021 may be more gradual than expected.

Global oil supply



Source: OIES

Global oil supply

MB/D

| | Total | Y/Y | vs Dec-19 ¹ |
|-------------|-------|-------|------------------------|
| 2020 | 94.0 | (6.6) | (8.2) |
| ± prev | +0.03 | +0.04 | |
| 2021 | 95.7 | 1.7 | (4.2) |
| ± prev | +0.27 | +0.25 | |
| 2022 | 97.9 | 2.2 | (3.1) |
| ± prev | +0.34 | +0.07 | |

¹ Compared to December in each year.

Global supply growth in 2021 is little changed to 1.7 mb/d from last month's 1.4 mb/d

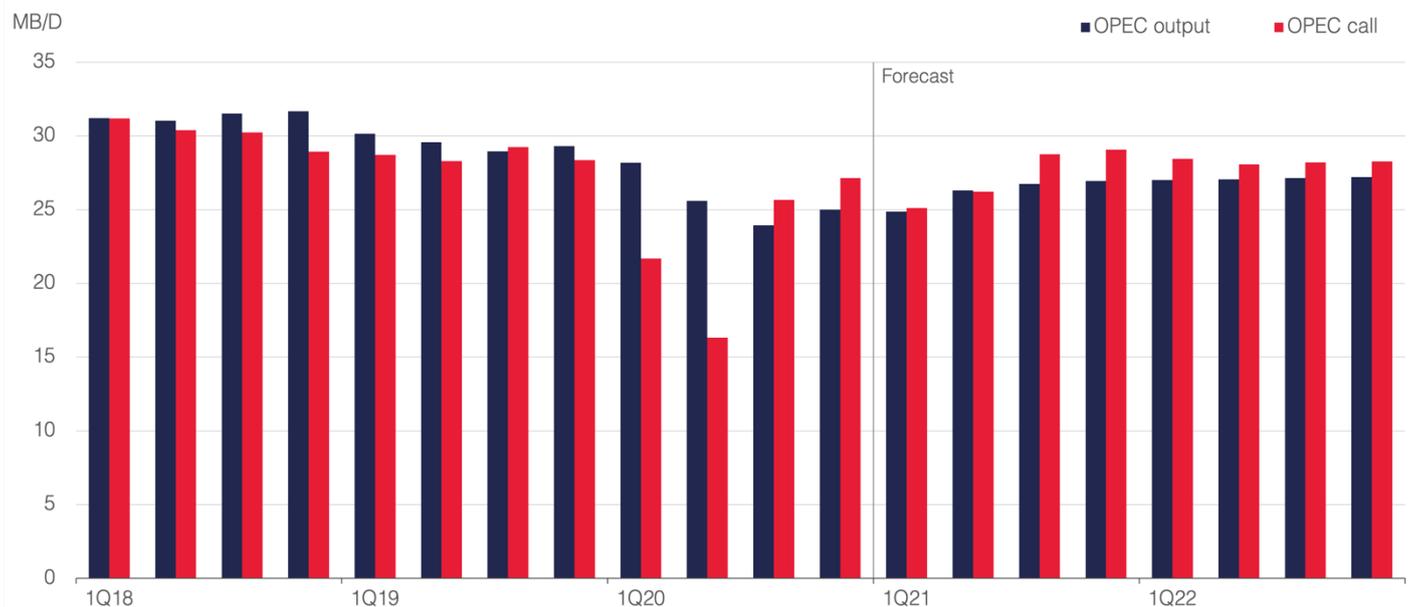
Although the supply outlook outside OPEC+ continues to improve, growth is expected to remain subdued despite higher oil prices.

OPEC

OPEC+ crunch time

Predicting the next move by OPEC+ has become increasingly challenging, but balances favour a more gradual rather than aggressive taper of the cuts.

OPEC supply



Notes: Assumes 100% compliance with OPEC+ deal. Source: OIES

OPEC supply

MB/D

| | Output | Call | ± dif. |
|-------------|--------|-------|--------|
| 2020 | 25.7 | 22.7 | 3.0 |
| ± prev | 0.00 | -0.24 | |
| 2021 | 26.2 | 27.3 | (1.1) |
| ± prev | -0.08 | -0.29 | |
| 2022 | 27.1 | 28.2 | (1.1) |
| ± prev | +0.09 | -0.36 | |

The call on OPEC crude in 2021 is lowered by 0.3 mb/d to 27.3 mb/d

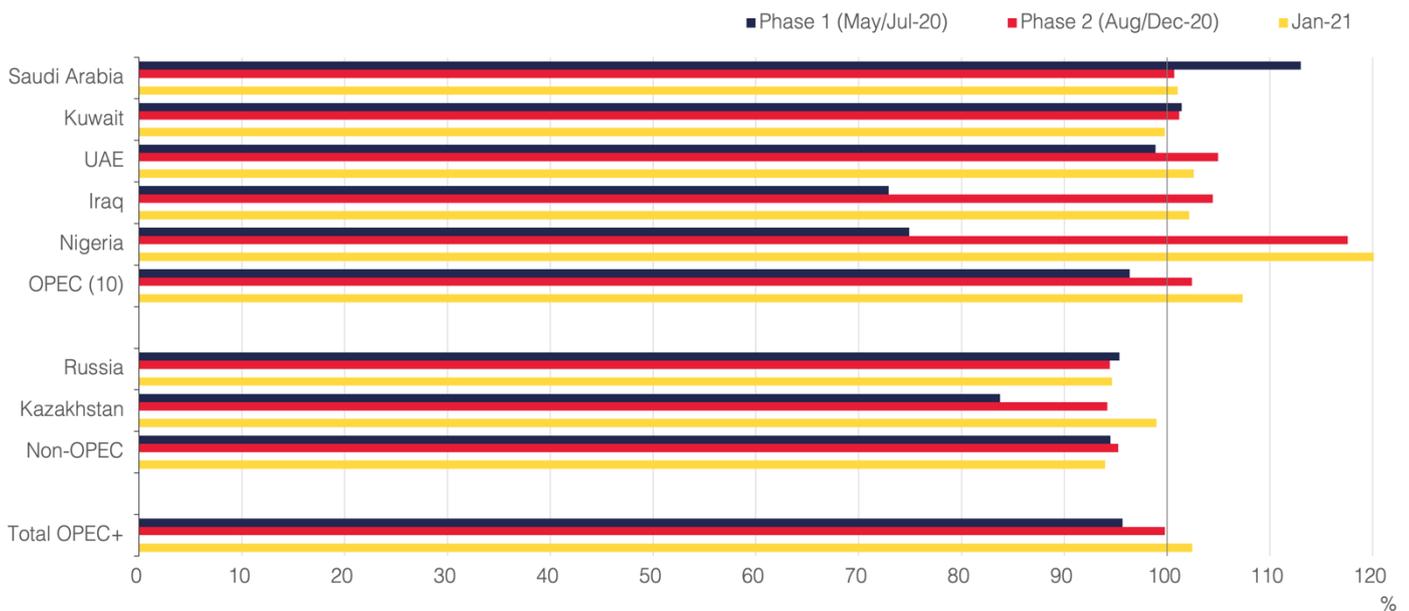
OPEC+ Ministers will meet on March 4 to decide on whether they should adjust output policy to restore 2.5 mb/d of oil production into the market and at what pace. Balances suggest that current demand/non-OPEC supply conditions in Q2 do not favour the immediate return of the entire 2.5 mb/d in the quarter.

Outlook

No signs that OPEC+ cohesion is at risk

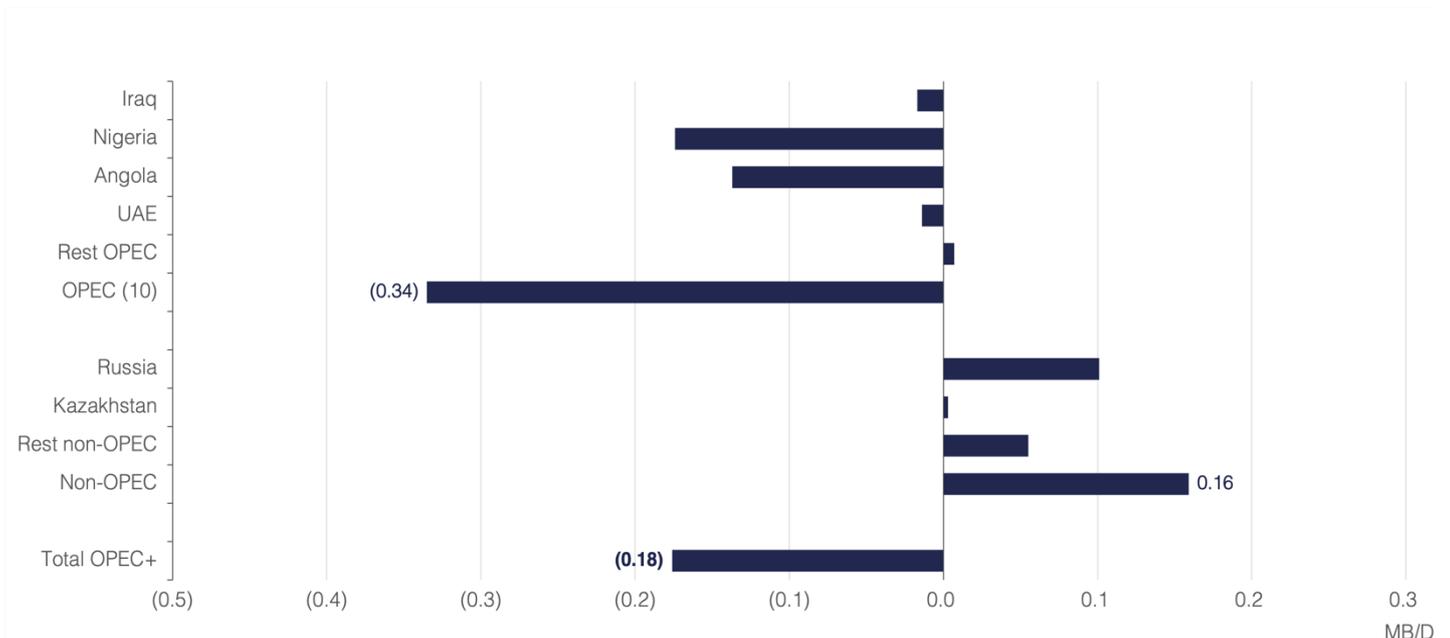
OPEC+ producers continued to show restraint in January despite higher crude prices, lifting compliance to their new quotas to 102%.

OPEC+ output compliance



Source: OIES

OPEC+ over/under production in January 2021



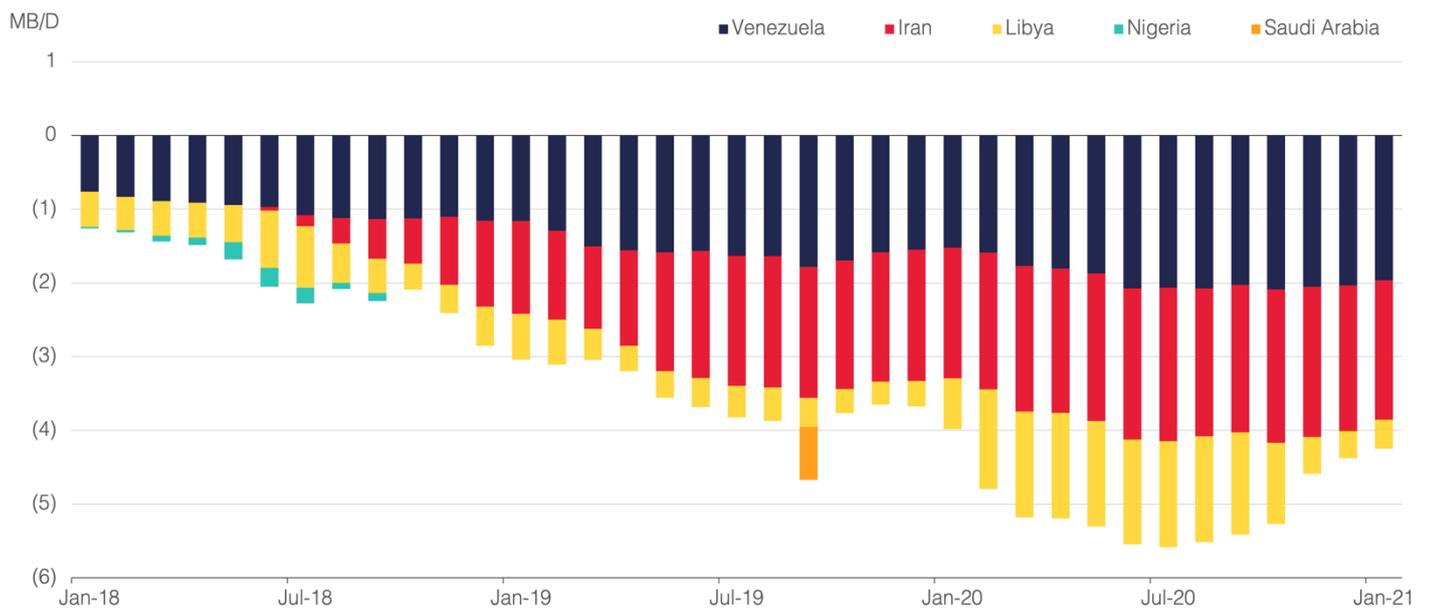
Source: OIES

Outlook

Geopolitical risks are broadly balanced

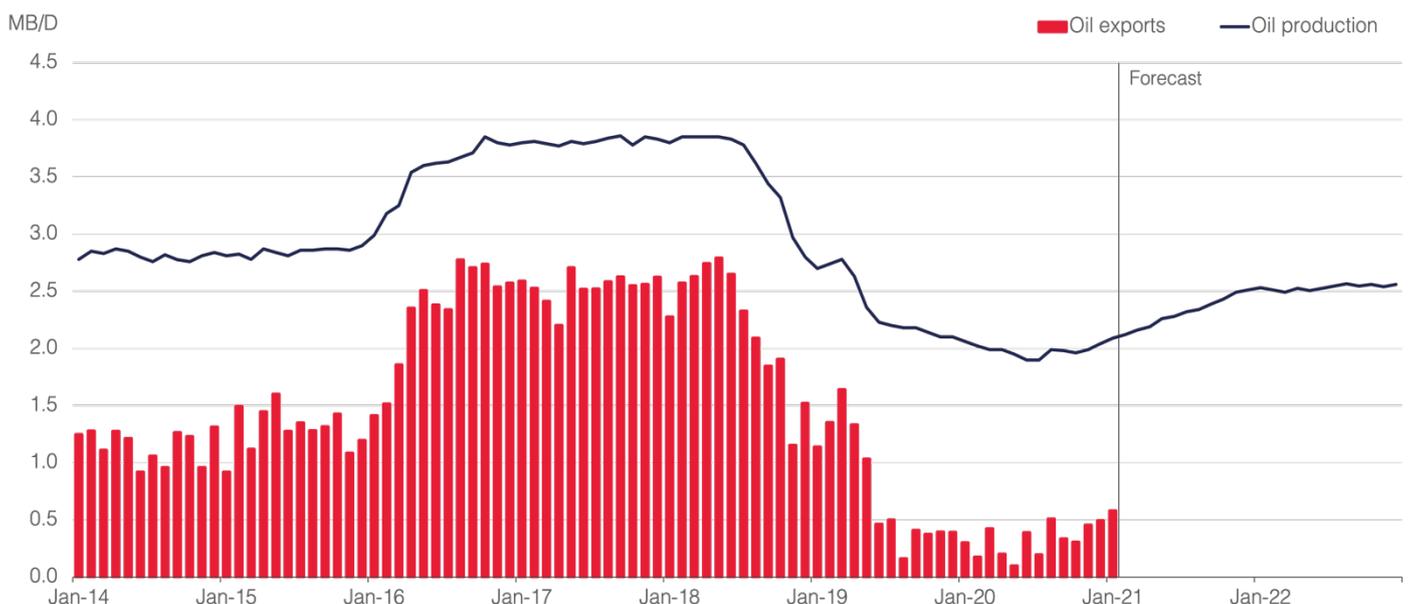
A meaningful recovery in Iranian oil production in 2021 is unlikely and its return might be softer than expected as exports are likely higher than often reported.

OPEC geopolitical supply disruptions



Source: OIES

Iran crude oil production and exports



Source: IEA, Kpler, OIES



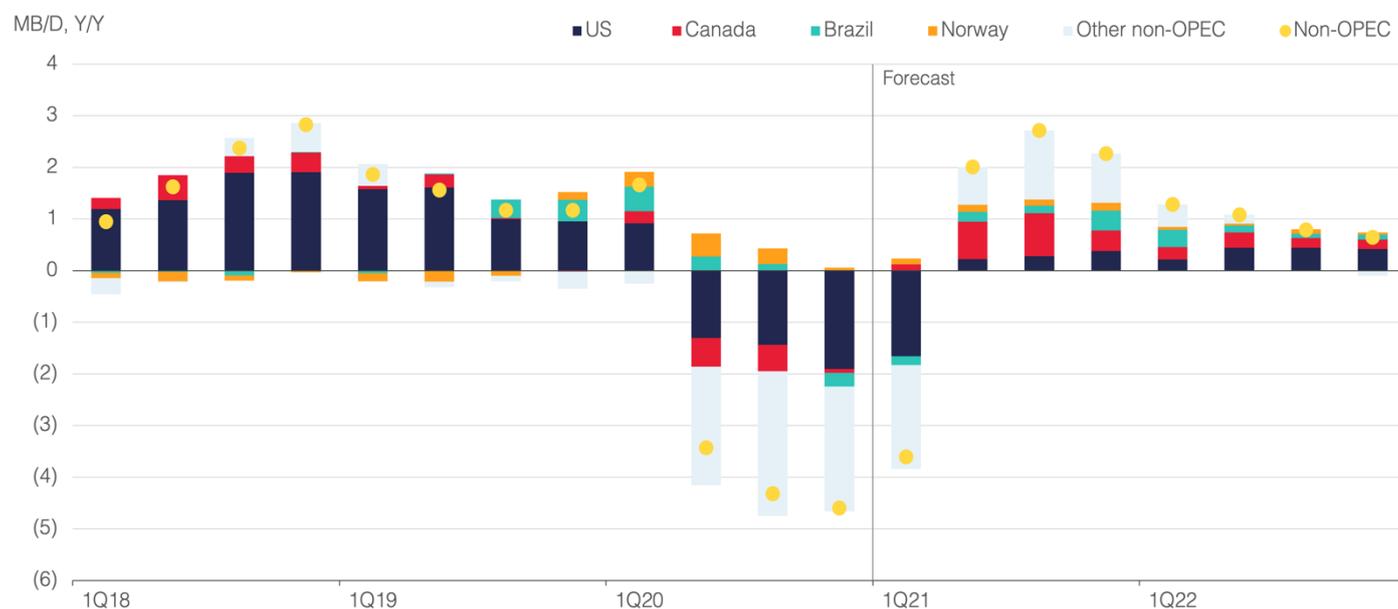
Outlook

Non-OPEC

Non-OPEC supply growth remains modest

Although the supply outlook outside OPEC+ continues to improve, the recovery is expected to remain modest despite higher oil prices.

Non-OPEC supply



Notes: Crude oil only. Source: OIES

Non-OPEC supply¹

MB/D

| | Total | Y/Y | US | Y/Y |
|-------------|-------|-------|-------|-------|
| 2020 | 51.2 | (2.7) | 11.3 | (0.9) |
| ± prev | +0.02 | +0.03 | +0.02 | +0.02 |
| 2021 | 52.0 | 0.8 | 11.1 | (0.2) |
| ± prev | +0.29 | +0.27 | +0.04 | +0.02 |
| 2022 | 53.0 | 1.0 | 11.5 | 0.4 |
| ± prev | +0.16 | -0.12 | -0.05 | -0.09 |

¹ Includes crude oil and condensates only.

Non-OPEC crude supply is expected to grow by 0.8 mb/d in 2021

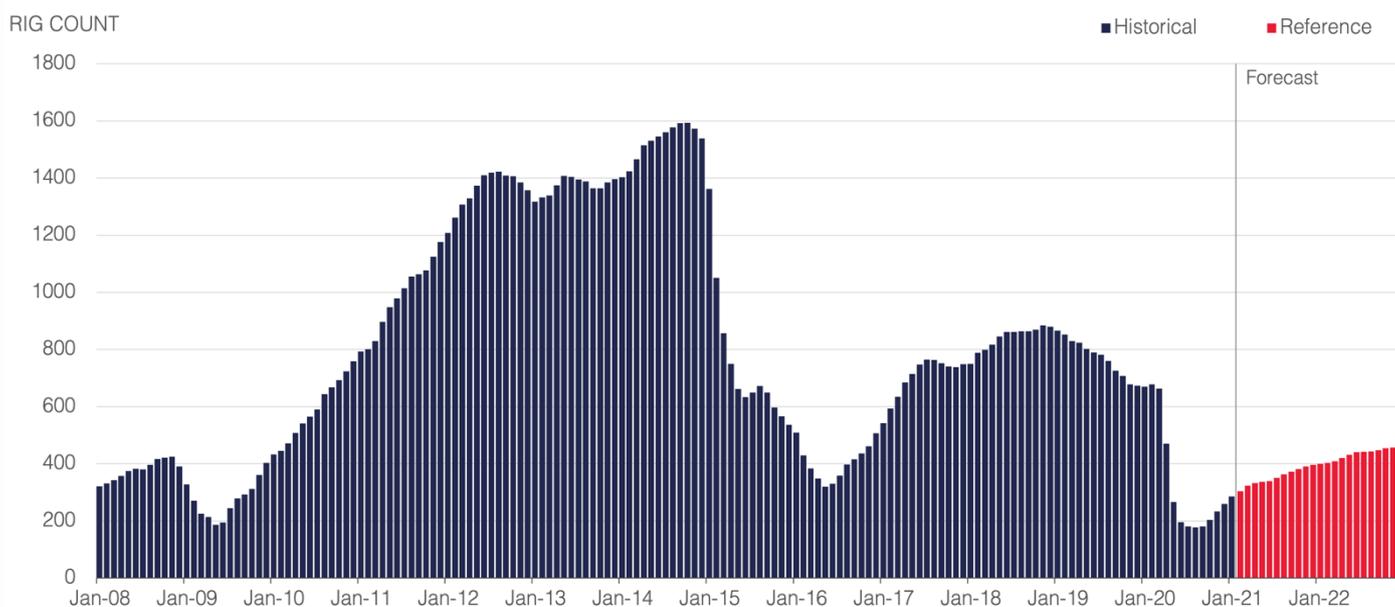
Our non-OPEC supply forecast is crude oil and condensates only. Estimates of NGLs and other liquids are global.

Outlook

Financial constraints and fragility concerns discipline US producers

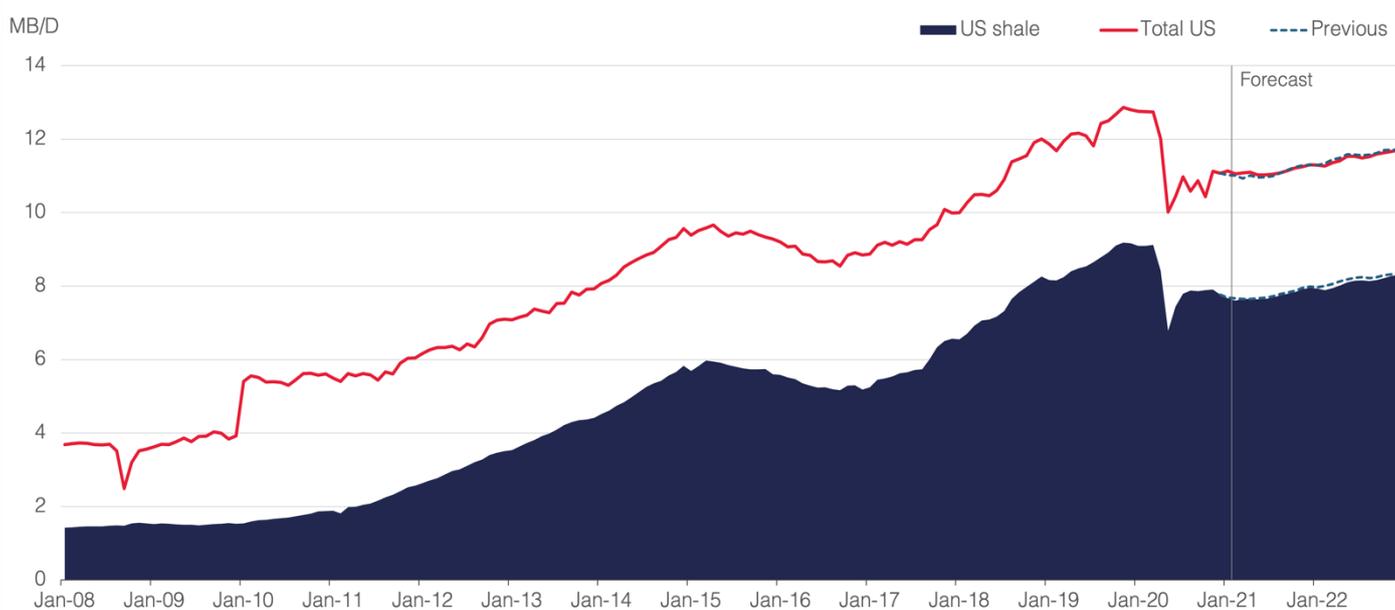
Following a temporary set-back due to the cold snap, US activity is expected to grow but on a more disciplined path despite a higher price outlook and improved cashflows.

US drilling activity



Source: OIES

US supply



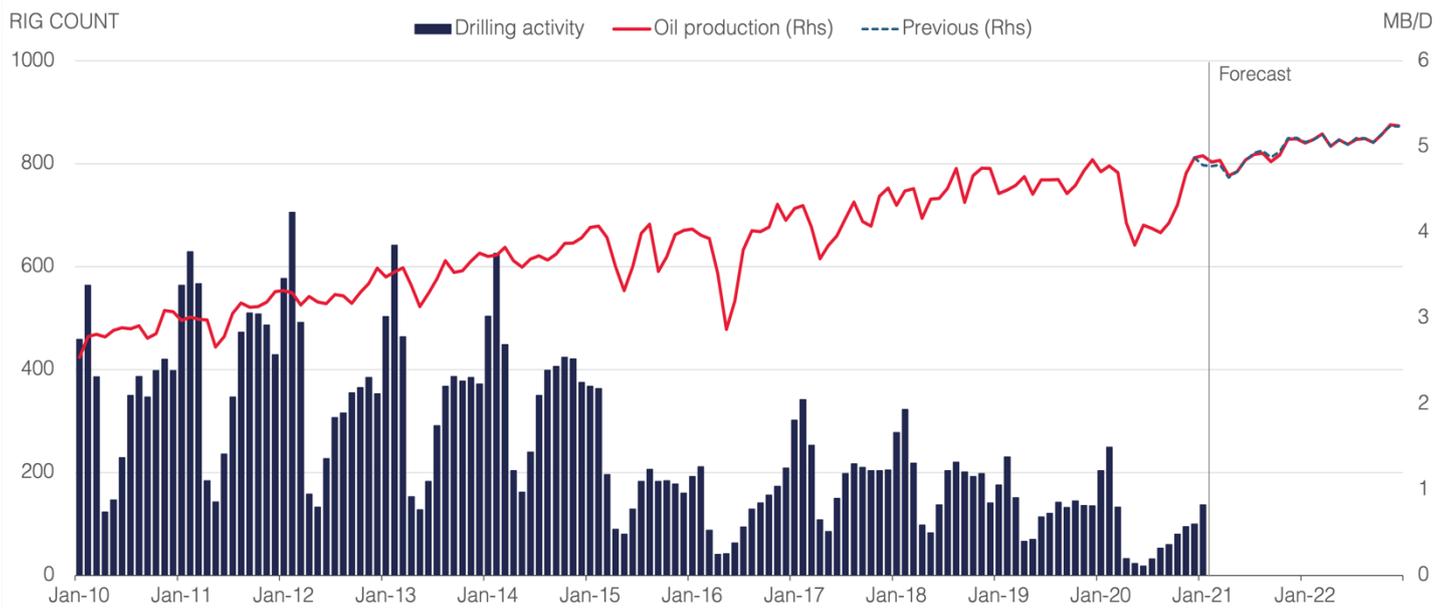
Notes: Crude oil only. Source: OIES

Outlook

Canada will lead non-OPEC growth in 2021

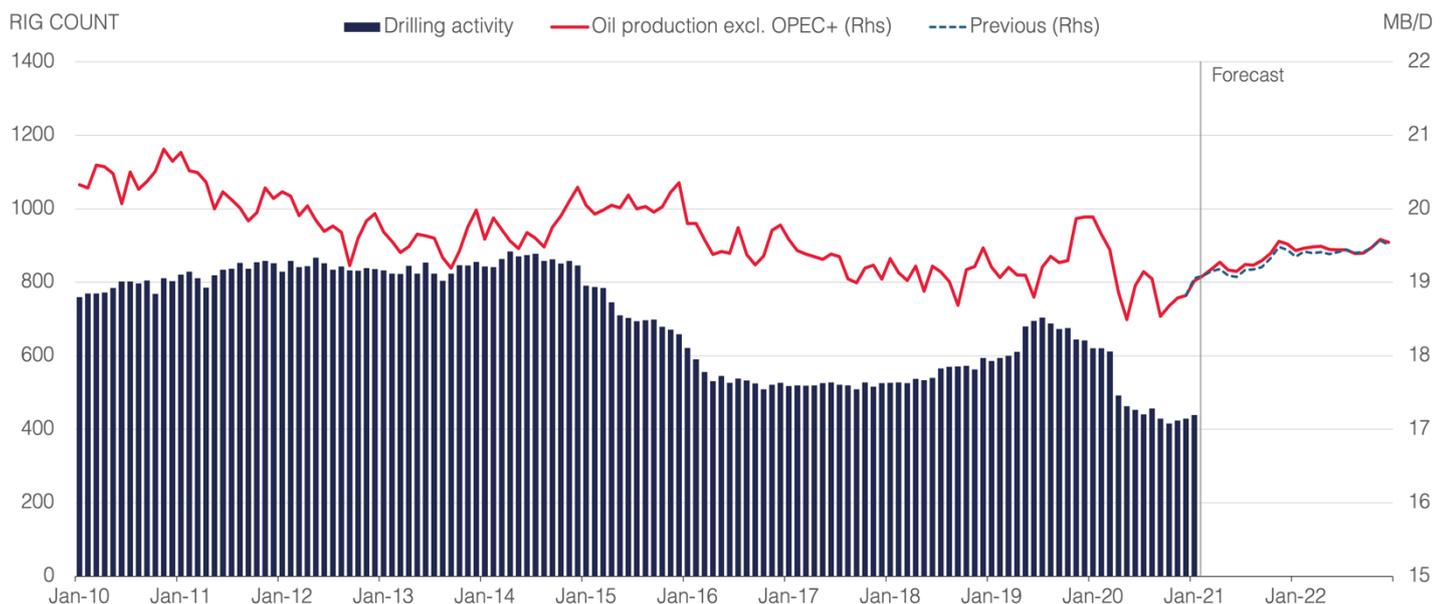
Canada continued to surprise on the upside, with production having fully rebounded in December 2020 and primed to increase to all-time highs exceeding 5 mb/d in 2021.

Canada supply



Source: Baker Hughes, OIES

Non-OPEC supply outside NAM



Source: Baker Hughes, OIES



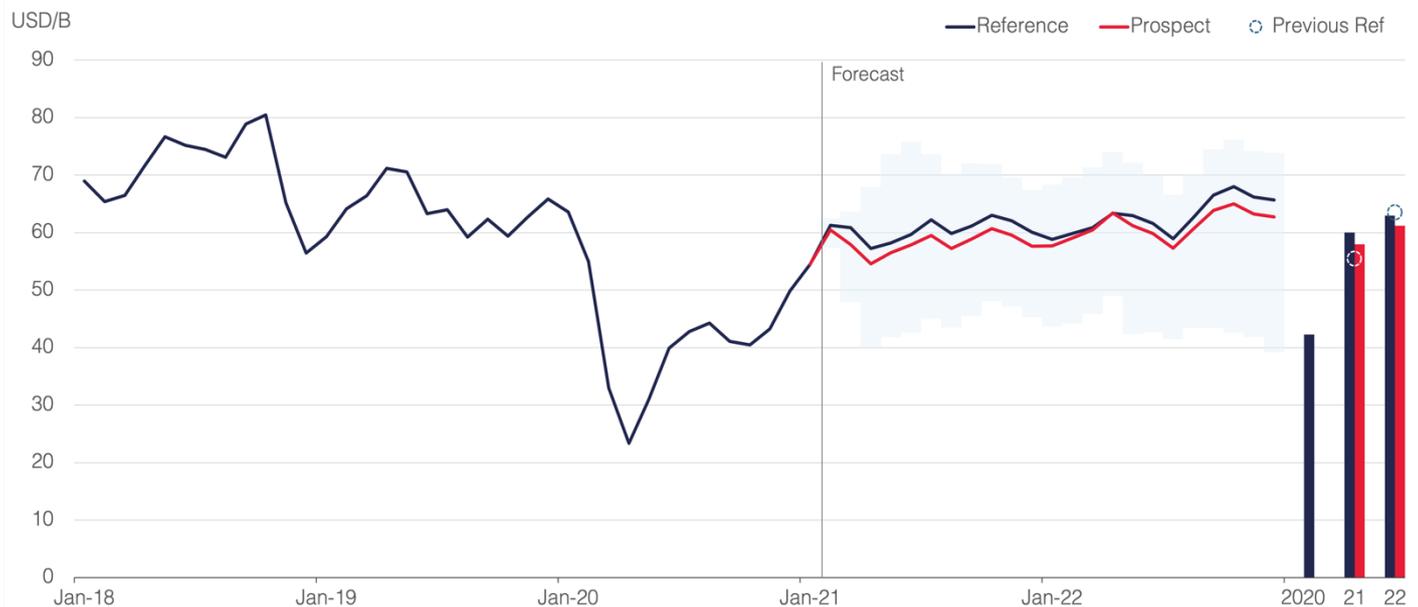
Outlook

Price Outlook

The oil price recovery has been swift

Greater demand optimism, Saudi voluntary cut and faster drawdown of surplus stocks led to a sharp price rise in recent months leaving fundamentals to chase expectations.

Brent price outlook



Notes: Assumes 100% compliance with OPEC+ deal and extra 1 mb/d Saudi voluntary cut in Feb/Mar 2021. Source: OIES

Key assumptions

| | | 2021 | 2022 |
|---|------------------------|------|------|
| Geopolitics MB/D | IRN | 2.30 | 2.53 |
| | VEN | 0.47 | 0.56 |
| | LBY | 1.19 | 1.27 |
| Supply %, Compliance ¹ | OPEC+ | 100 | 100 |
| | GDP² | 5.5 | 4.2 |

¹ Average OPEC+ compliance. ² Based on IMF WEO.

Our Brent price forecast is upgraded at \$60/b for 2021 and held at \$63/b for 2022

The Brent prospect that takes into account the underlying uncertainty surrounding our outlook, has now converged towards the reference price, indicating that price risks are more broadly balanced and stands at \$58/b in 2021 and \$61.2/b in 2022.



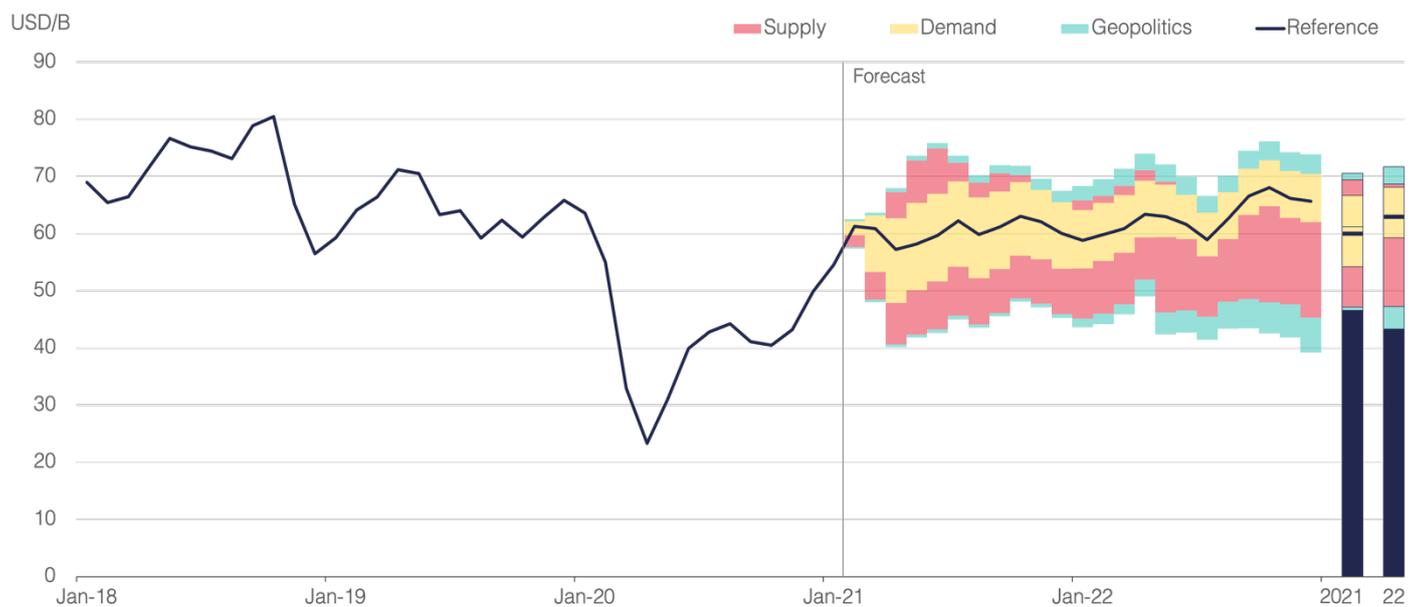
Outlook

Balance of Risks

Price risks remain in negative territory but continue to ease

Near-term virus induced demand concerns continue to dominate the risks around our outlook in 2021, but price risks in 2022 are now predominantly supply-driven.

Balance of risks



Notes: Brent price. Source: OIES

Balance of risks

USD/B

| | 2021 | 2022 |
|---------------------------------|--------------|---------------|
| Reference | 60.0 | 63.0 |
| Supply risks ¹ | (4.3) | (11.5) |
| Demand risks ¹ | (1.6) | 1.5 |
| Geopolitical risks ¹ | 0.6 | (0.9) |
| Balance or risks | (5.3) | (10.9) |

¹ On balance.

On balance, risks around our outlook are skewed on the downside in 2021 and stand at **-\$5.3/b**

Although on balance demand-side downside risks in 2021 are at their lowest level since the start of the pandemic (-\$1.6/b), COVID concerns remain persistent and our outlook remains highly sensitive to a potential fall-out from the pandemic in the coming months.



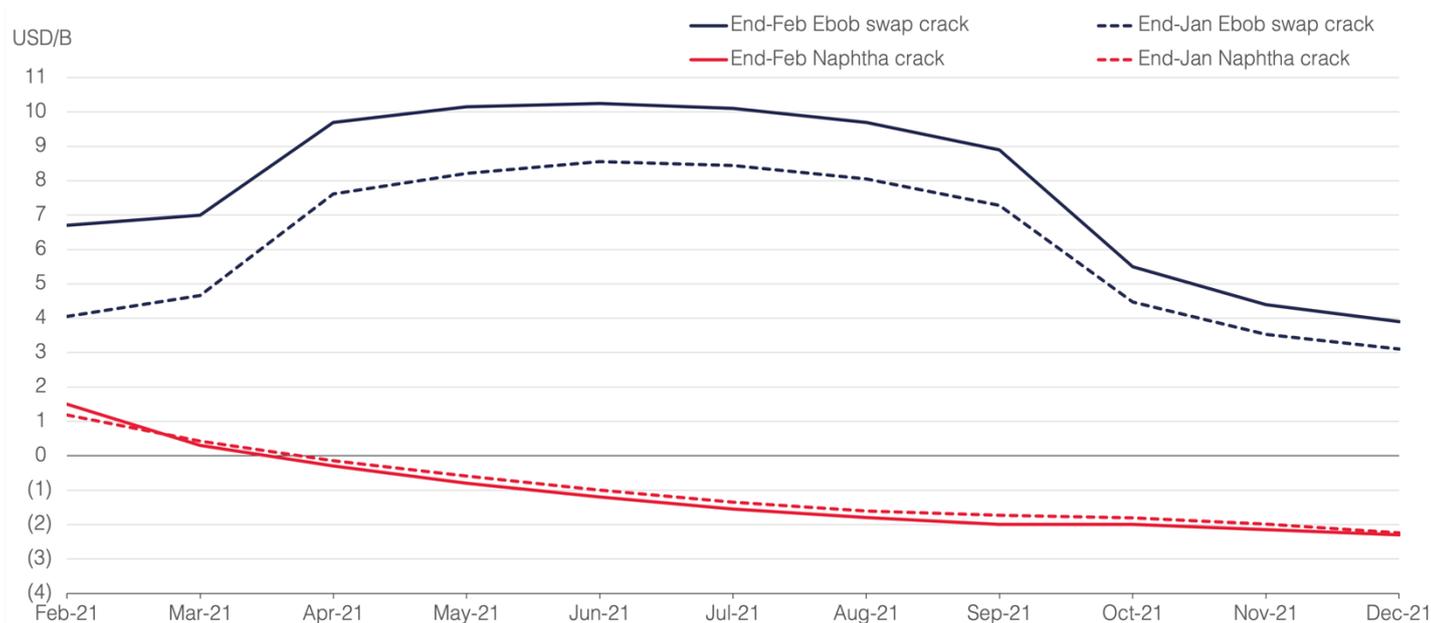
Outlook

Cracks

Overall product margins little improved despite crude prices surge

Refining margins picked up following the US big freeze that paralyzed some refining activity there.

European gasoline (Ebob) and naphtha CIF NWE cracks



Source: OIES

Key product cracks forward curves¹

USD/B

| | Gasoline | Naphtha | Gasoil | FO 3.5% |
|---------------|----------|---------|--------|---------|
| Feb-21 | 6.70 | 1.50 | 6.20 | (8.00) |
| ± end-Jan | +2.65 | +0.31 | +0.90 | -1.69 |
| Mar-21 | 7.00 | 0.30 | 6.30 | (7.60) |
| ± end-Jan | +2.34 | -0.13 | +0.55 | -1.50 |
| Apr-21 | 9.70 | (0.30) | 7.10 | (7.65) |
| ± end-Jan | +2.08 | -0.16 | +0.60 | -1.54 |

¹ NWE as they appear on the graphs. OIES estimates.

Extreme cold took a lot of LPG out of the gasoline pool, supporting both gasoline and naphtha

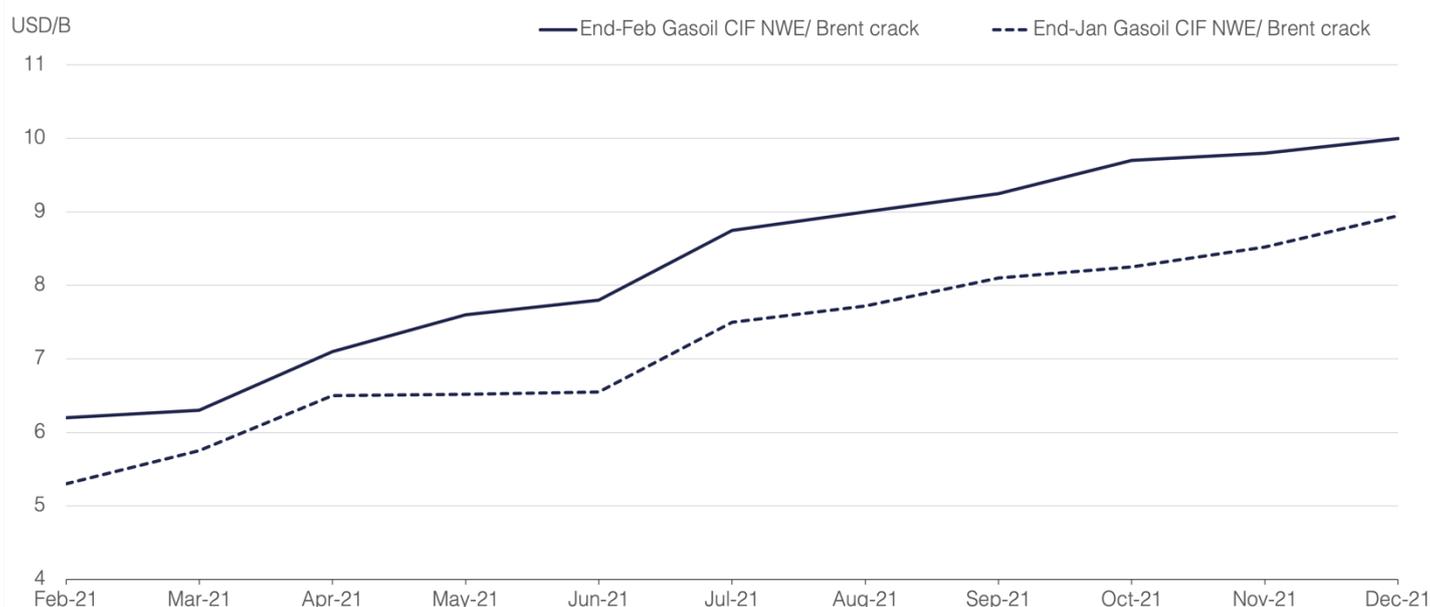
Seasonal change to the summer gasoline grade also helped, while good petrochemicals demand kept prompt naphtha cracks positive.

Outlook

Gasoil lifted on greater optimism, but FO curbed on stronger crude prices

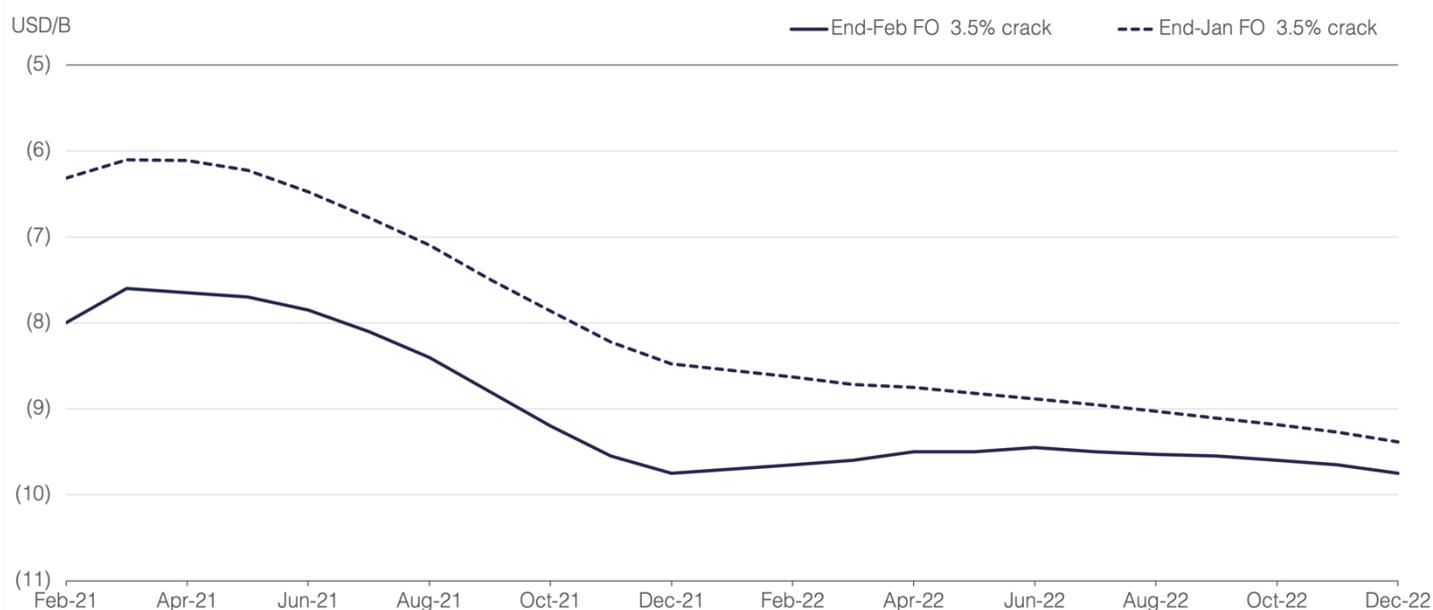
With a lot of refineries shut down in the USGC after the extreme cold, a lot of M-100 straight run FO was on offer, as US refiners are traditional buyers of this feedstock.

Gasoil CIF NWE / Brent crack



Source: OIES

Fuel oil barges NWE 3.5% crack



Source: OIES



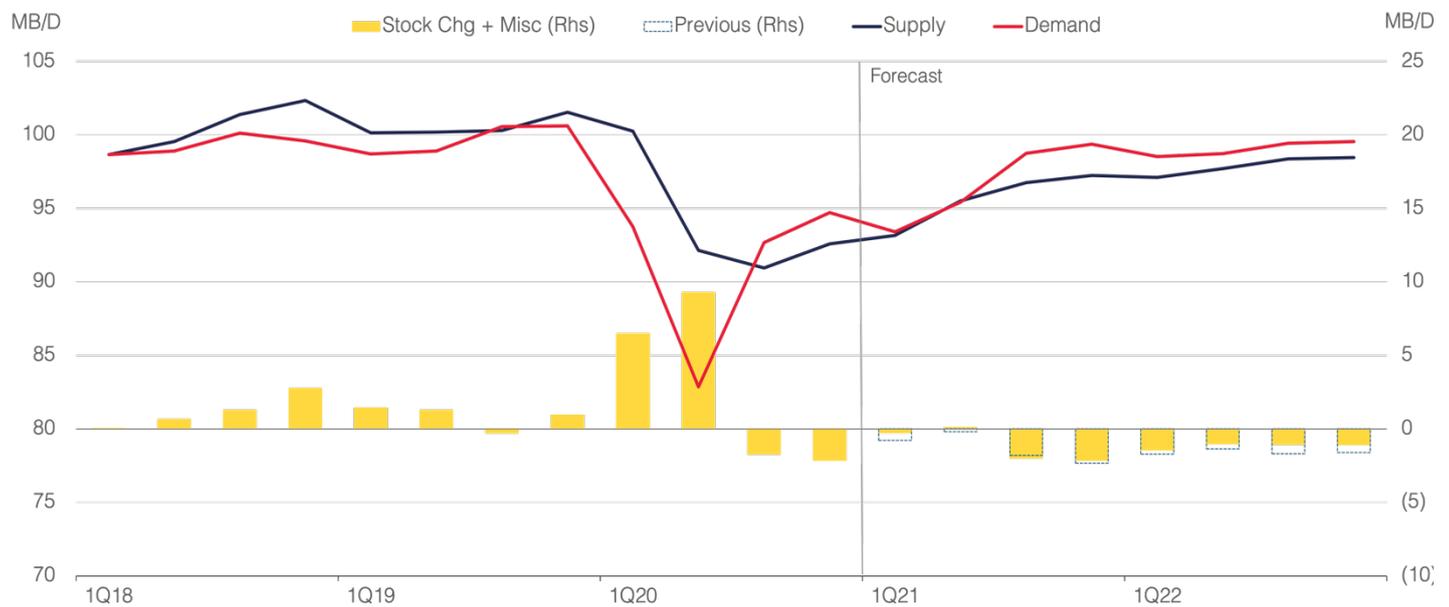
Outlook

Global Balance

Oil market hangs into balance, but fragility in H1 2021 persists

OPEC+ output policy and pandemic developments continue to dictate the market rebalancing in H1 2021, but recovery is still expected to gain pace from H2 onwards.

Global balance



Notes: Assumes 100% compliance with OPEC+ deal and extra 1 mb/d Saudi voluntary cut in Feb/Mar 2021. Source: OIES

Global balance

MB/D

| | Demand | Supply | Balance |
|-------------|--------|--------|---------|
| 2020 | 91.0 | 94.0 | 3.0 |
| ± prev | -0.21 | +0.03 | +0.23 |
| 2021 | 96.7 | 95.7 | (1.1) |
| ± prev | +0.06 | +0.27 | +0.21 |
| 2022 | 99.1 | 97.9 | (1.1) |
| ± prev | -0.11 | +0.34 | +0.45 |

We continue to project market deficits for both 2021 and 2022 by -1.1 mb/d

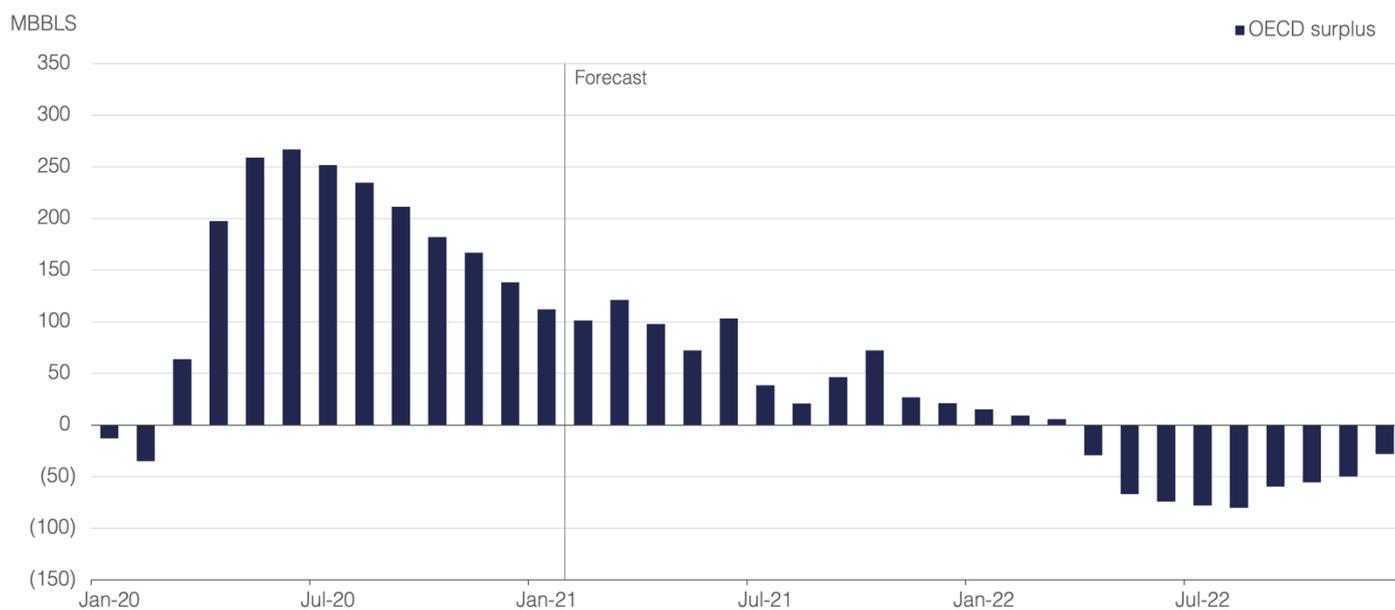
Global balance assumes 100% OPEC+ compliance with the output cut deal, the gradual return of the remaining 2.5 mb/d taper cuts in Q2 2021 and no exit from the OPEC+ deal after April 2022.

Outlook

Rebalancing of stocks enters the final stretch, as floating storage cleared

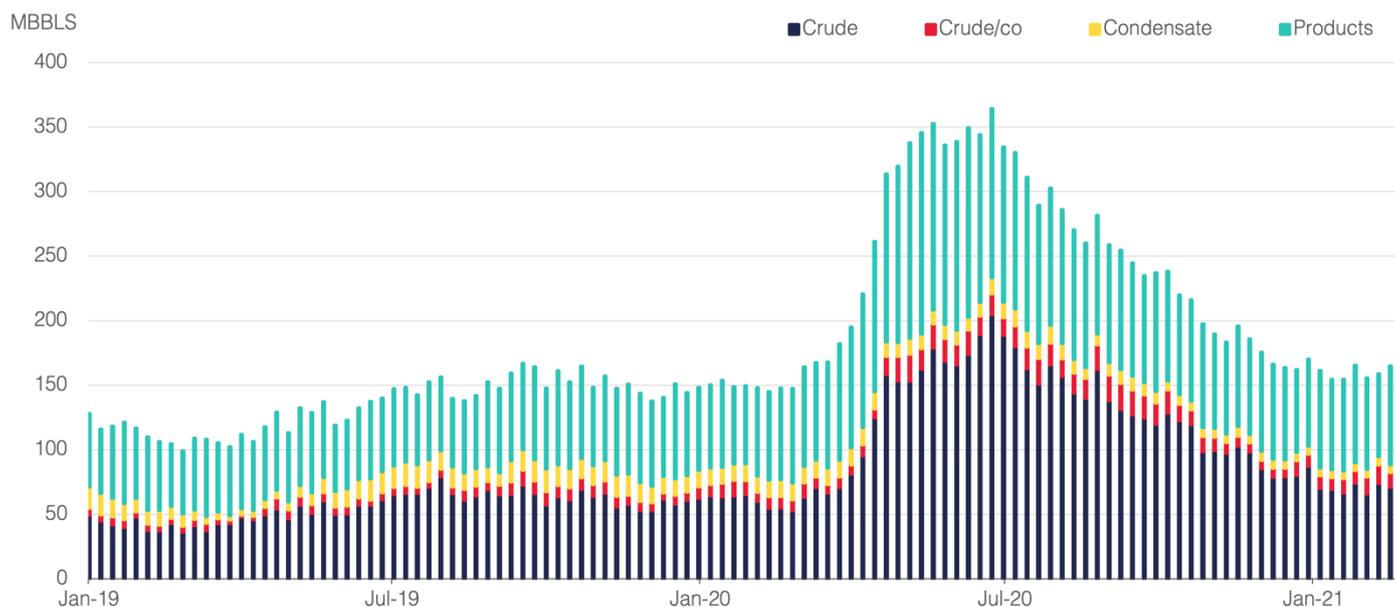
The drawdown of OECD stocks is nearing the 200 mbbls mark, down from their peak in July 2020, entering the final stretch of 100 mbbls till clearing to their 2015-2019 avg.

OECD commercial stocks vs 2015-2019 average



Source: OIES

Global floating storage



Source: Kpler, OIES



Tables

Oil prices

| | 2019 | 1Q20 | 2Q20 | 3Q20 | 4Q20 | 2020 | Forecasts | | | | | |
|----------------------|------|------|-------|------|------|--------------------|-----------|------|------|------|------|-------|
| | | | | | | | 1Q21 | 2Q21 | 3Q21 | 4Q21 | 2021 | 2022 |
| Price outlook | | | | | | | | | | | | |
| USD/b | | | | | | | | | | | | |
| Brent price | 64.0 | 50.5 | 31.4 | 42.7 | 44.5 | 42.3 | 58.9 | 58.4 | 61.1 | 61.7 | 60.0 | 63.0 |
| Brent prospect | 64.0 | 50.5 | 31.4 | 42.7 | 44.5 | 42.3 | 57.6 | 56.3 | 58.6 | 59.3 | 58.0 | 61.2 |
| Price drivers | | | | | | Price risks | | | | | | |
| USD/b | | | | | | USD/b | | | | | | |
| Geopolitics | 2.3 | 1.3 | 1.0 | -0.8 | -2.1 | -0.6 | 0.0 | 0.3 | 0.8 | 1.2 | 0.6 | -0.9 |
| Supply | 4.0 | -0.6 | 6.4 | 8.5 | 2.6 | 10.2 | -3.5 | -1.2 | -5.1 | -7.3 | -4.3 | -11.5 |
| Demand | -9.0 | -8.7 | -27.6 | 6.9 | 0.9 | -21.2 | -2.9 | -1.8 | -1.1 | -0.9 | -1.6 | 1.5 |
| Speculative | -5.3 | -4.1 | 1.1 | -3.3 | 0.4 | -10.1 | - | - | - | - | - | - |
| Balance of risks | - | - | - | - | - | - | -6.4 | -2.7 | -5.5 | -6.9 | -5.3 | -10.9 |
| Brent low | - | - | - | - | - | - | 53.3 | 41.6 | 44.7 | 46.8 | 46.6 | 43.3 |
| Brent high | - | - | - | - | - | - | 60.2 | 72.5 | 72.0 | 69.6 | 68.6 | 71.7 |

Global balance

| | 2019 | 1Q20 | 2Q20 | 3Q20 | 4Q20 | 2020 | Forecasts | | | | | |
|-----------------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|
| | | | | | | | 1Q21 | 2Q21 | 3Q21 | 4Q21 | 2021 | 2022 |
| Global balance | | | | | | | | | | | | |
| mb/d | | | | | | | | | | | | |
| OECD | 47.7 | 45.4 | 37.5 | 42.3 | 43.1 | 42.1 | 42.7 | 43.4 | 46.1 | 46.6 | 44.7 | 45.8 |
| Non-OECD | 52.0 | 48.3 | 45.3 | 50.4 | 51.7 | 48.9 | 50.7 | 52.0 | 52.7 | 52.7 | 52.0 | 53.3 |
| Total Demand | 99.7 | 93.8 | 82.9 | 92.7 | 94.6 | 91.0 | 93.4 | 95.4 | 98.8 | 99.4 | 96.7 | 99.1 |
| (y/y chg.) | 0.4 | -4.9 | -16.0 | -7.9 | -5.9 | -8.7 | -0.4 | 12.6 | 6.1 | 4.7 | 5.7 | 2.3 |
| OPEC | 29.5 | 28.2 | 25.6 | 23.9 | 25.0 | 25.7 | 24.9 | 26.3 | 26.8 | 26.9 | 26.2 | 27.1 |
| Non-OPEC | 53.8 | 55.1 | 49.8 | 49.4 | 50.4 | 51.2 | 51.1 | 51.8 | 52.1 | 52.7 | 52.0 | 53.0 |
| Of which: | | | | | | | | | | | | |
| US | 12.2 | 12.7 | 10.8 | 10.8 | 10.9 | 11.3 | 11.1 | 11.0 | 11.1 | 11.3 | 11.1 | 11.5 |
| Brazil | 2.8 | 3.0 | 2.9 | 3.0 | 2.8 | 2.9 | 2.9 | 3.1 | 3.2 | 3.2 | 3.1 | 3.2 |
| Canada | 4.6 | 4.7 | 4.0 | 4.1 | 4.6 | 4.4 | 4.9 | 4.7 | 4.9 | 5.0 | 4.9 | 5.1 |
| Norway | 1.4 | 1.7 | 1.7 | 1.7 | 1.7 | 1.7 | 1.8 | 1.8 | 1.8 | 1.9 | 1.8 | 1.9 |
| Others | 32.8 | 32.8 | 30.3 | 29.9 | 30.4 | 30.9 | 30.8 | 31.1 | 31.2 | 31.3 | 31.1 | 31.2 |
| Total crude | 83.3 | 83.3 | 75.4 | 73.4 | 75.4 | 76.9 | 76.3 | 78.1 | 78.9 | 79.6 | 78.2 | 80.1 |
| NGLs | 13.6 | 14.0 | 13.5 | 13.7 | 13.8 | 13.7 | 13.7 | 13.8 | 13.9 | 13.9 | 13.8 | 14.1 |
| Biofuels/Misc. | 3.6 | 3.0 | 3.3 | 3.9 | 3.4 | 3.4 | 3.1 | 3.6 | 4.0 | 3.7 | 3.6 | 3.8 |
| Total Supply | 100.5 | 100.3 | 92.1 | 91.0 | 92.6 | 94.0 | 93.2 | 95.5 | 96.8 | 97.2 | 95.7 | 97.9 |
| (y/y chg.) | 0.1 | 0.1 | -8.0 | -9.3 | -9.0 | -6.6 | -7.1 | 3.4 | 5.8 | 4.7 | 1.7 | 2.2 |
| Global Balance | 0.8 | 6.5 | 9.3 | -1.7 | -2.1 | 3.0 | -0.2 | 0.1 | -2.0 | -2.1 | -1.1 | -1.1 |
| Memo: | | | | | | | | | | | | |
| OPEC call | 28.6 | 21.7 | 16.3 | 25.7 | 27.1 | 22.7 | 25.1 | 26.2 | 28.7 | 29.1 | 27.3 | 28.2 |

Notes:

- 1/ OPEC estimates are based on current membership throughout. Assumes 100% compliance with OPEC+ deal.
- 2/ Non-OPEC crude supply includes crude oil, condensate and processing gains. OPEC includes crude oil only.
- 3/ NGLs and biofuels/misc. are global estimates and are excluded from OPEC, non-OPEC and country-specific crude supply estimates.
- 4/ Global balance is equivalent to global stock change.
- 5/ The OPEC Call equals the arithmetic difference between total demand and non-OPEC crude plus NGLs and other liquids.



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