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Oil Market Highlights

Crude Oil Price Movements

The OPEC Reference Basket (ORB) value declined by \$2.45, or 3.9%, month-on-month (m-o-m) in October to settle at \$59.91/b. In October, ICE Brent was on average \$2.65, or 4.3%, m-o-m lower at \$59.63/b, and NYMEX WTI fell m-o-m by \$2.96, or 5.2%, to average \$54.01/b. Year-to-date (y-t-d), ICE Brent was \$9.37, or 12.7%, lower at \$64.21/b, while the NYMEX WTI declined by \$10.46, or 15.6%, to \$56.76/b, compared with the same period a year earlier. The backwardation price structures of both ICE Brent and DME Oman flattened in October, mainly in prompt forward months, while the NYMEX WTI market structure was slightly in contango for most of October. Hedge funds and other money managers were more concerned about the outlook of crude oil prices in October than they had been in the previous month.

World Economy

The global economic growth forecast remains at 3.0% for both 2019 and 2020. Growth forecasts for all major regions remain unchanged for 2019. For 2020 a small downward revision is expected for the Euro-zone and Brazil's forecast was revised up slightly. Euro-zone growth remains at 1.2% for 2019 but was revised down to 1.0% for 2020. Japan's growth forecast is unchanged at 0.9% for 2019 and 0.3% for 2020. China and India's growth forecast were also unchanged, standing at 6.2% and 6.1% for 2019 and 5.9% and 6.7% for 2020, respectively. Brazil's 2019 growth forecast remains unchanged at 0.8%, while the 2020 forecast was revised up slightly to 1.6%. Russia's forecast remains at 1.0% for 2019 and 1.2% for 2020. Risk remains skewed toward the downside, especially with underlying trade-related issues and associated uncertainties.

World Oil Demand

In 2019, global oil demand growth was unchanged, despite some upward revisions to the Middle East in 3Q19 and 4Q19 offset by downward revision in OECD Americas, mainly to reflect weaker-than-expected demand in OECD Americas during 2Q19 and 3Q19. Global oil demand growth is estimated at 0.98 mb/d. In 2020, oil demand growth is forecast at 1.08 mb/d, also unchanged from the last month's report. Other Asia and China are assumed to be the largest contributors to oil demand growth with a combined addition of 0.68 mb/d. The OECD is projected to increase by 0.07 mb/d. Non-OECD is assumed to be the largest contributor to oil demand growth, rising by 1.01 mb/d.

World Oil Supply

Non-OPEC oil supply growth for 2019 remains at 1.82 mb/d y-o-y, as higher-than-expected oil production in Canada, the UK and Kazakhstan, was offset by downward adjusted production data for the US, and Indonesia, among others. The US, Brazil, China, the UK, Australia and Canada are the key drivers of growth in 2019 while Mexico and Norway are projected to see the largest declines. Non-OPEC oil supply growth in 2020 was revised down by 36 tb/d from last month's assessment and is now forecast to grow by 2.17 mb/d, mainly due to the US, which was revised down by 33 tb/d to now show growth of 1.5 mb/d for the year. The US, Brazil, Norway, Russia, Canada, Kazakhstan and Australia are expected to be the main growth drivers for next year, while Mexico, Indonesia, Egypt, the UK, Colombia and Egypt are forecast to see the largest declines. OPEC NGLs production in 2019 was revised down by 11 tb/d and is now expected to grow by 0.04 mb/d. For 2020, OPEC NGLs growth is forecast at 0.03 mb/d y-o-y. In October, OPEC crude oil production increased by 943 tb/d to average 29.65 mb/d, according to secondary sources.

Product Markets and Refining Operations

Product markets in October saw a mixed performance. In the Atlantic Basin, markets strengthened as heavy refinery maintenance works led to restricted product output, supporting product prices as well as refining economics. Another supporting factor this month was the recovery in naphtha markets in the US and Europe, as crack spreads for the same product trended upward for the second consecutive month, re-entering positive territory in the USGC. Meanwhile, in Asia, robust y-o-y growth in product output amid refining capacity additions in China has contributed to a rise in product inventory levels in Singapore, which weighed on Asian product markets. The sanctions applied last month on some Chinese ships and the resulting hike in freight rates led to a severe weakening in fuel oil markets in all regions, with the largest impact being felt in Asia.

Tanker Market

A host of factors in the tanker market in October pushed rates to record highs on all major routes. The market had been expecting a seasonal pickup in demand and some tightness on the tanker availability side, as tankers were scheduled to be taken out of the market to install scrubbers ahead of IMO 2020. However, geopolitical developments, such as the announcement of sanctions on two subsidiaries of one of the largest shippers in the world, China's Cosco, led to panic fixing and rates surged. While rates quickly fell back, average dirty spot freight rates in October were more than doubled m-o-m and were sharply higher y-o-y. Clean rates were also pulled higher, as some clean ships were repurposed to carry dirty freight, resulting in a lower, but still considerable, increase on average in clean spot freight rates.

Stock Movements

Preliminary data for September showed that total OECD commercial oil stocks fell by 23.5 mb m-o-m to stand at 2,945 mb, which is 87.7 mb higher than the same time one year ago, and 28.2 mb above the latest five-year average. Within the components, crude stocks fell by 13.8 mb m-o-m to stand at 12.5 mb above the latest five-year average, while product stocks also decreased by 9.7 mb m-o-m to stand at 15.7 mb above the latest five-year average. In terms of days of forward cover, OECD commercial stocks fell by 0.7 days m-o-m in September to stand at 60.8 days, which is 1.6 days above the same period in 2018, but 0.8 days below the latest five-year average.

Balance of Supply and Demand

Demand for OPEC crude in 2019 was unchanged from the previous report to stand at 30.7 mb/d, which is 0.9 mb/d lower than the 2018 level. Demand for OPEC crude in 2020 also remained unchanged from the previous report to stand at 29.6 mb/d, which is around 1.1 mb/d lower than the 2019 level.

Feature Article

Recent developments in global oil inventories

Global oil inventories consist of three major components. The first is a combination of total OECD commercial oil stocks and Strategic Petroleum Reserves (SPR). OECD commercial stocks typically serve as a key indicator of the status of the oil market, as seasonal variations are linked to oil demand through an inverse relationship. Stocks in OECD countries are covered by data routinely obtained through national government reporting systems.

The second major component is non-OECD inventories, which have become more important in recent years as non-OECD oil demand has increased, requiring more stockpiling. Inventories in non-OECD are hard to track due to the lack of complete data. In the absence of regularly reported data, estimates are arrived at using information released by companies and ministries, as well as figures published in the JODI database, which features official country data.

The final component, independent storage as well as oil-at-sea, has emerged in recent years. While the latter provides an important operational link between exporter and consumer countries, it plays a negligible role in the market as the volumes at sea only fluctuate in a narrow range.

An assessment of developments in global inventories since the inception of the Declaration of Cooperation (DoC) indicates diverging trends in OECD and non-OECD stocks. While OECD commercial inventories have fallen by 57 mb (**Graph 1**), non-OECD stocks are estimated to have seen a build of 138 mb (**Graph 2**). At the same time, the surplus over the latest five-year average has fallen massively in the OECD by 272 mb, while the overhang in the non-OECD has decreased by just 42 mb.

This is an indication that the DoC has had a stronger impact on OECD inventories compared with non-OECD stocks, as emerging and developing countries continue to build their reserves, as well as fill new refinery capacity to meet growing oil demand.

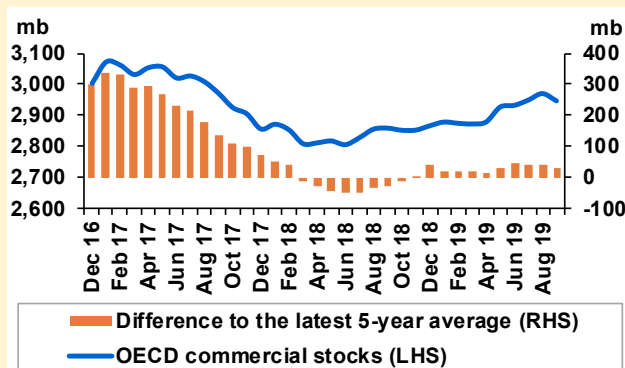
At the same time, since the beginning of the DoC to the end of 3Q19, non-OECD stocks have risen by more than 2 percentage points to now represent nearly a third of all global inventories. Meanwhile, in terms of days of forward demand cover, non-OECD inventories stood at around 42 days at the end of 3Q19, less than half of the OECD average of 92 days.

The growing share of non-OECD inventories in global stocks demonstrates the important role that non-OECD stocks play in the market, a trend that will continue as the bulk of world oil demand growth is projected to come from the non-OECD and as these emerging countries increase their inventories to reach the OECD standard for days of forward cover.

If the data of all global oil stock components are recorded accurately, the change in total oil stocks should theoretically be equal to the difference between world oil demand and global supply. Therefore, monitoring developments in non-OECD oil inventories is crucial to grasp the full picture of global oil stocks and reduce the observed discrepancies in the supply/demand balance and global inventories in recent years.

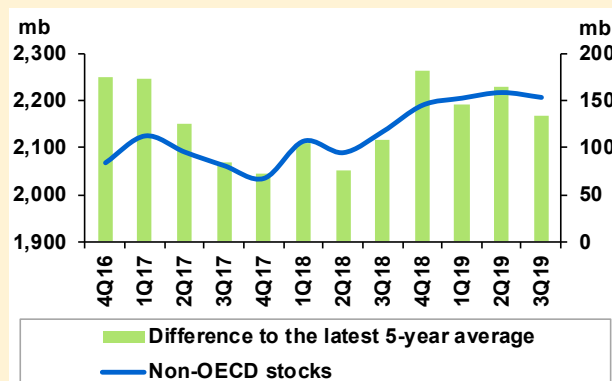
Looking ahead, the decisions taken by OPEC and participating non-OPEC producing countries in accordance with the 'DoC' have clearly played a key role in supporting stability in the oil market. Better transparency in reported data will also allow for a more accurate assessment of the state of the oil market and could help in continuing these efforts on a more sustainable path.

Graph 1: OECD commercial stocks



Sources: Argus Media, Euroilstock, IEA, METI, OPEC Secretariat and US EIA.

Graph 2: Estimated Non-OECD stocks, mb



Sources: IEA and OPEC Secretariat.

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Crude Oil Price Movements

The **OPEC Reference Basket (ORB)** value declined by \$2.45, or 3.9%, in October, erasing almost all the previous month's gains, to settle just below \$60/b, following the downward trend of all other physical benchmarks, as concerns about the oil supply disruption seen a month earlier faded and the oil market turned its focus to risks and uncertainties regarding the world economy. Oil prices declined further after the spike in freight rates to record highs in October.

Crude oil futures prices averaged lower in October on both sides of the Atlantic amid worries over a softening global economy and oil demand growth, ongoing trade negotiations and potential easing of geopolitical concerns. ICE Brent was on average \$2.65, or 4.3%, m-o-m lower at \$59.63/b, and the NYMEX WTI fell m-o-m by \$2.96, or 5.2%, to average \$54.01/b. Y-t-d, ICE Brent was \$9.37, or 12.7%, lower at \$64.21/b, while NYMEX WTI declined by \$10.46, or 15.6%, to \$56.76/b, compared with the same period a year earlier. However, DME Oman crude oil futures prices declined less than other futures benchmarks on a monthly average in October, decreasing m-o-m by \$1.60 in October, or 2.6%, to settle at \$60.26/b. Y-t-d, DME Oman was down by \$7.62, or 10.7%, at \$63.90/b, compared with the same period a year earlier.

Hedge funds and other money managers were more concerned about the outlook of crude oil prices in October than they had been in the previous month. In mid-October, speculators reduced their combined net length in both ICE Brent and NYMEX WTI to their lowest since January 2019. However, hedge funds and other money managers recovered some of their net long positions in the second part of October on rising oil prices and optimism over US-China trade negotiations.

The backwardation **price structures** of both ICE Brent and DME Oman flattened in October due to downward pressure on prompt month prices following the significant increase of freight rates to multi-year highs for the main maritime routes. The NYMEX WTI market structure was in slight contango during most of October as low US refinery utilization rates, rising US crude oil stocks and high freight rates impacted prompt prices.

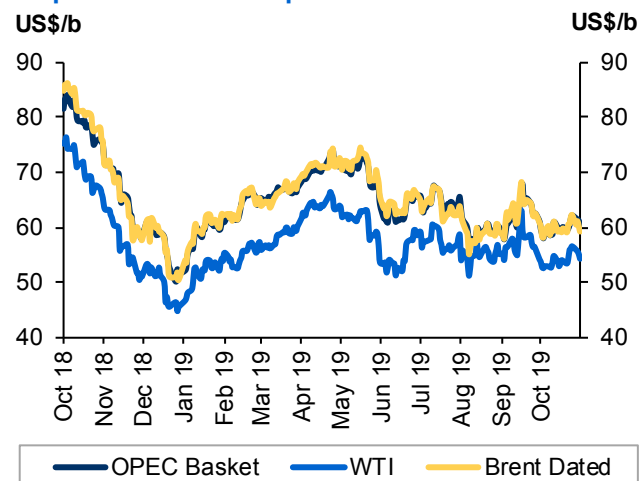
Light sweet and heavy sour crude differentials were mixed, narrowing in Europe on a tighter sour market, while widening in the US Gulf Coast (USGC) amid widening light-heavy product spreads. Sweet/sour crude differentials were little changed in Asia.

OPEC Reference Basket

The **ORB** value declined by \$2.45, or 3.9%, in October, erasing almost all of the previous month's gains, to settle just below \$60/b, following the downward trend of all other physical benchmarks as the oil market turned its focus to the risks and uncertainties regarding world economy and as concerns about the oil supply disruption seen a month earlier faded.

Furthermore, the spike in freight rates to record highs in October weighed heavily on prompt physical oil prices and limited refiners' crude demand following the decision of the US Treasury Department to impose sanctions on 25 September against subsidiaries of the China Ocean Shipping Company (COSCO), thus reducing the availability of oil tanker tonnage in the market. Lower refinery utilization rates in the US amid refinery maintenance also weighed on crude oil prices.

Graph 1 - 1: Crude oil price movement



Sources: Argus Media, OPEC Secretariat and Platts.

Crude Oil Price Movements

Rising US crude oil stocks, particularly at Cushing, Oklahoma, reached their highest level since early August 2019, further undermining oil prices. US commercial crude oil stocks were about 24 mb higher in the week to 1 November compared with the late September level, and stocks at Cushing continued to increase for the fourth consecutive week in the week to 1 November to reach around 48 mb, according to US Energy Information Administration (EIA) weekly data.

However, crude oil prices recovered slightly in the second part of October on falling shipping freight rates, which receded from their high levels, as well as on the gradual recovery in US refinery runs and expectations of higher crude demand from China after the Chinese government issued new crude oil import quotas for this year to all independent refiners.

M-o-m, the ORB value fell by \$2.45, or 3.9%, to settle at \$59.91/b on a monthly average. Y-t-d, the ORB value was \$7.40, or 10.4%, lower at \$63.91/b.

Table 1 - 1: OPEC Reference Basket and selected crudes, US\$/b

| Basket | Sep 19 | Oct 19 | Change | | Year-to-date | |
|----------------------|--------------|--------------|--------------|-------------|--------------|--------------|
| | | | Oct/Sep | % | 2018 | 2019 |
| Basket | 62.36 | 59.91 | -2.45 | -3.9 | 71.30 | 63.91 |
| Arab Light | 62.74 | 60.99 | -1.75 | -2.8 | 72.05 | 64.81 |
| Basrah Light | 61.85 | 59.52 | -2.33 | -3.8 | 70.11 | 63.53 |
| Bonny Light | 64.02 | 61.45 | -2.57 | -4.0 | 73.93 | 65.58 |
| Djeno | 59.97 | 57.13 | -2.84 | -4.7 | 70.44 | 61.43 |
| Es Sider | 62.32 | 59.78 | -2.54 | -4.1 | 71.63 | 63.47 |
| Girassol | 65.36 | 61.34 | -4.02 | -6.2 | 73.52 | 65.81 |
| Iran Heavy | 60.32 | 57.94 | -2.38 | -3.9 | 69.59 | 61.77 |
| Kuwait Export | 62.16 | 60.52 | -1.64 | -2.6 | 70.27 | 64.11 |
| Merey | 61.79 | 45.69 | -16.10 | -26.1 | 65.54 | 55.46 |
| Murban | 62.39 | 60.88 | -1.51 | -2.4 | 73.69 | 64.65 |
| Oriente | 57.47 | 54.60 | -2.87 | -5.0 | 67.99 | 60.04 |
| Rabi Light | 61.82 | 58.98 | -2.84 | -4.6 | 72.13 | 63.28 |
| Sahara Blend | 62.47 | 60.48 | -1.99 | -3.2 | 73.36 | 64.20 |
| Zafiro | 64.47 | 60.86 | -3.61 | -5.6 | 73.11 | 65.39 |
| Other Crudes | | | | | | |
| Dated Brent | 62.57 | 59.73 | -2.84 | -4.5 | 73.07 | 64.03 |
| Dubai | 61.11 | 59.46 | -1.65 | -2.7 | 71.11 | 63.50 |
| Isthmus | 62.07 | 59.13 | -2.94 | -4.7 | 70.18 | 63.40 |
| LLS | 60.39 | 57.06 | -3.33 | -5.5 | 71.92 | 62.68 |
| Mars | 58.37 | 54.79 | -3.58 | -6.1 | 68.51 | 61.05 |
| Minas | 60.18 | 57.36 | -2.82 | -4.7 | 67.34 | 60.00 |
| Urals | 61.65 | 59.28 | -2.37 | -3.8 | 71.79 | 64.12 |
| WTI | 56.86 | 53.98 | -2.88 | -5.1 | 67.32 | 56.73 |
| Differentials | | | | | | |
| Brent/WTI | 5.71 | 5.75 | 0.04 | - | 5.75 | 7.30 |
| Brent/LLS | 2.18 | 2.67 | 0.49 | - | 1.15 | 1.35 |
| Brent/Dubai | 1.46 | 0.27 | -1.19 | - | 1.97 | 0.53 |

Sources: Argus Media, Direct Communication, OPEC Secretariat and Platts.

All **ORB component values** decreased in October in line with their respective crude benchmarks, particularly those linked to Brent, as crude values in the Atlantic Basin were heavily impacted by the rise of freight rates. However, most of the heavy and sour components linked to the Dubai benchmark declined less compared to other components, as strong Asian demand and higher official selling prices for Asia limited declines. All crude oil physical benchmarks fell in October m-o-m, with North Sea Dated and WTI declining by \$2.84 and \$2.88, respectively, to settle at \$59.73/b and \$53.98/b, while Dubai fell by \$1.65 m-o-m to settle at \$59.46/b.

Light sweet crude **ORB components from West and North Africa** – including Bonny Light, Djeno, Es Sider, Girassol, Rabi Light, Sahara Blend and Zafiro – fell significantly in October, declining by \$2.92 on average, or 4.6% m-o-m to \$60.00/b, pressured by lower demand and limited arbitrage opportunities to Asia due to the spectacular increase of freight rates. The premium of some West African crude differentials to North Sea Dated declined to their lowest in several years amid higher freight rates and higher US crude volume arrivals to Europe.

Latin American ORB component Venezuela's Merey plunged by \$16.10, or 26.1% m-o-m, to \$45.69/b, heavily impacted by weak fuel oil margins, while Ecuador's Oriente declined in October to \$54.60/b, a decrease of \$2.87, or 5.0%.

The value of **multiple-region destination grades**, including Arab Light, Basrah Light, Iran Heavy and Kuwait Export, fell by \$2.03, or 3.3%, for the month to \$59.74/b, despite robust Asian demand for November loadings and higher official selling prices for the Asian market that reached multi-year highs. The Middle East physical market was strong in October as Asian refiners increased their crude demand for shorter-haul supplies amid high freight rates. The front-month Brent/Dubai Exchange for Swaps (EFS Dubai) narrowed in October and reached its lowest level since April 2019 at \$1.95/b.

Middle Eastern spot component Murban fell by \$1.51 m-o-m, or 2.4%, to \$60.88/b, performing better than other basket components. The Murban crude value was supported by strong demand, robust middle distillate margins and lower competitiveness of similar Brent-linked crude in the Atlantic Basin, like Forties, due to higher freight rates.

On 13 November, the ORB stood at \$62.48/b, \$2.57 above the October average.

The oil futures market

Crude oil futures prices averaged lower in October on both sides of the Atlantic as market participants shifted their focus from concerns about supply disruptions that had pushed oil prices higher in September to worries related to the risks and uncertainties regarding world economy this year.

ICE Brent fell by \$2.65 to \$59.63/b in October and NYMEX WTI dropped by \$2.96 to \$54.01/b. The significant spike in freight rates in late September and the first part of October pressured prompt oil prices further and limited crude demand for prompt loading months. The rise of US crude oil stocks in October amid low US refinery utilization rates also weighed on oil prices.

Nonetheless, oil prices recovered slightly in the second part of October on improving optimism regarding US-China trade negotiations and Brexit, in addition to retreating freight rates of major routes from their high levels. Furthermore, geopolitical developments in the Middle East and unplanned supply disruptions in several regions, such as the North Sea, Canada and Latin America, limited oil price declines.

In October, **ICE Brent** was on average \$2.65, or 4.3%, m-o-m lower at \$59.63/b, and **NYMEX WTI** fell m-o-m by \$2.96, or 5.2%, to average \$54.01/b. Y-t-d, ICE Brent was \$9.37, or 12.7%, lower at \$64.21/b, while NYMEX WTI declined by \$10.46, or 15.6%, to \$56.76/b, compared with the same period a year earlier.

However, **DME Oman** crude oil futures prices declined less than other futures benchmarks on a monthly average in October, underpinned by strong demand from Asian buyers, specifically from China, as higher freight rates boosted short-haul supplies and limited arbitrage opportunities for long-haul barrels. DME Oman crude oil futures prices decreased m-o-m by \$1.60, or 2.6%, in October to settle at \$60.26/b. Y-t-d, DME Oman was down by \$7.62, or 10.7%, at \$63.90/b, compared with the same period a year earlier.

On 13 November, ICE Brent stood at \$62.37/b and NYMEX WTI at \$57.12/b.

Table 1 - 2: Crude oil futures, US\$/b

| | Sep 19 | Oct 19 | Change | | Year-to-date | |
|---|-------------|-------------|-------------|------------|--------------|-------------|
| | | | Oct/Sep | % | 2018 | 2019 |
| NYMEX WTI | 56.97 | 54.01 | -2.96 | -5.2 | 67.23 | 56.76 |
| ICE Brent | 62.29 | 59.63 | -2.65 | -4.3 | 73.58 | 64.21 |
| DME Oman | 61.86 | 60.26 | -1.60 | -2.6 | 71.52 | 63.90 |
| Transatlantic spread (ICE Brent-NYMEX WTI) | 5.32 | 5.63 | 0.31 | 5.8 | 6.35 | 7.44 |

Note: Totals may not add up due to independent rounding.

Sources: CME Group, Dubai Mercantile Exchange, Intercontinental Exchange and OPEC Secretariat.

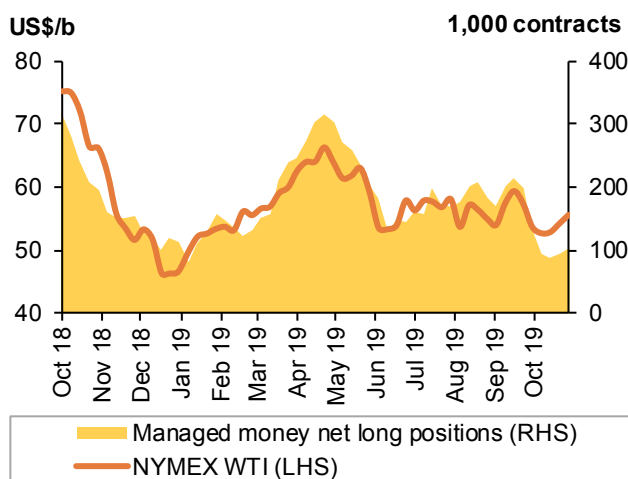
The Intercontinental Exchange (ICE) announced on 11 November that it will launch in partnership with Abu Dhabi National Oil Company (ADNOC) and nine large commodity trading companies, a new exchange in Abu Dhabi, the ICE Futures Abu Dhabi (IFAD), which will host the new Murban crude futures contract. The new futures contract is expected to be launched in the first half of 2020. According to ICE, IFAD will complement Murban futures with a series of tradable spread markets to other ICE crude oil benchmarks alongside a series of related derivative contracts including 1st lines, crude swaps and differentials.

In October, **hedge funds and other money managers** were more concerned about the outlook of crude oil prices than they had been in the previous month. In mid-October, speculators reduced their combined net length in both ICE Brent and NYMEX WTI to their lowest level since January 2019 and further increased their combined short positions amid signs of slowing global economic growth and downward revisions in oil demand growth for 2019. However, hedge funds and other money managers recovered some of their net long positions in the second part of October on rising oil prices and optimism over US-China trade negotiations.

Hedge funds and other money managers showed some concern for NYMEX WTI as they continued to raise their short positions for five consecutive weeks to reach 126,148 contracts in the week to 22 October, an increase of 86,200 contracts, or 216%, according to data from the US Commodity Futures Trading Commission (CFTC). During the same period, data showed that long positions in NYMEX WTI futures and options decreased by 33,354 lots or 13.2%.

Speculators were concerned on the outlook for NYMEX WTI prices amid rising US oil production and US crude oil stocks, particularly in Cushing. Hedge funds and money managers decreased their net long positions in NYMEX WTI futures and options during October by 30,671 contracts, or 22.7%, to 104,675 contracts.

Graph 1 - 2: NYMEX WTI vs. managed money net long positions

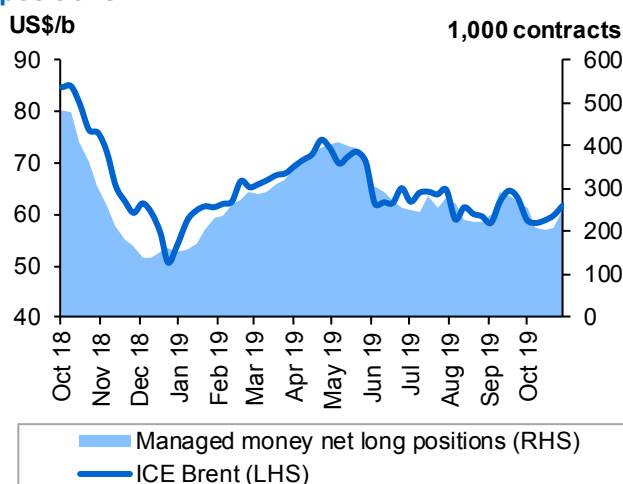


Sources: CFTC, CME Group and OPEC Secretariat.

Similarly, speculators decreased their net long positions in ICE Brent for most of October, but at a lower rate compared to NYMEX WTI. In the week to 22 October, net long positions for ICE Brent futures and options fell to 208,351 contracts, a decline of 22,805 contracts, or 8.4%, compared to the level seen in the week of 24 September. However, speculators raised their net length in the last week of October to 253,999, a rise of 635 lots, or 0.3%, compared to the early October level.

The long-to-short ratio in ICE Brent speculative positions remained almost unchanged between late September and the end of the week of 29 October at 4:1, but declined to 3:1 for most of October. The NYMEX WTI long-to-short ratio declined to 2:1 for the week ending 29 October from around 5:1 in week to 24 September.

Graph 1 - 3: ICE Brent vs. Managed money net long positions



Sources: Intercontinental Exchange and OPEC Secretariat.

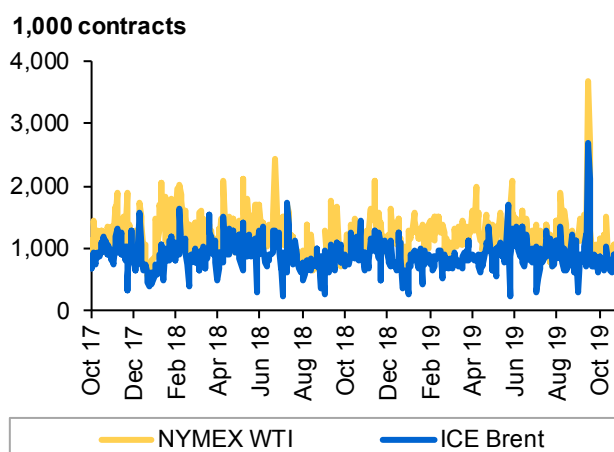
Total futures and options open interest volume in the two exchanges declined by 84,483 contracts from the beginning of October to stand at 5.6 million contracts in the week ending 29 October.

The **daily average traded volume** for NYMEX WTI contracts fell significantly in October by 325,771 lots, or 24.3%, to 1,012,958 contracts. Daily average traded volume for ICE Brent also declined by 219,494 contracts, or 22.2%, to 771,380 lots.

The **daily aggregate traded volume** for both crude oil futures markets fell by 545,265 contracts m-o-m to stand at 1.8 million futures contracts, or about 1.8 billion b/d of crude oil.

The **total traded volume** for NYMEX WTI was lower in October at 23.3 million contracts, or 17.1%, while that of ICE Brent was 14.7% lower at 17.7 million contracts.

Graph 1 - 4: NYMEX WTI and ICE Brent daily trading volumes



Sources: CME Group, Intercontinental Exchange and OPEC Secretariat.

The futures market structure

The backwardation **price structures** of both ICE Brent and DME Oman flattened in October due to downward pressure on prompt month prices following the soaring of freight rates to multi-year highs for the main maritime routes. The NYMEX WTI market structure was in slight contango during most of October as low US refinery utilization rates and rising US crude oil stocks, as well as high freight rates, impacted prompt prices.

Crude Oil Price Movements

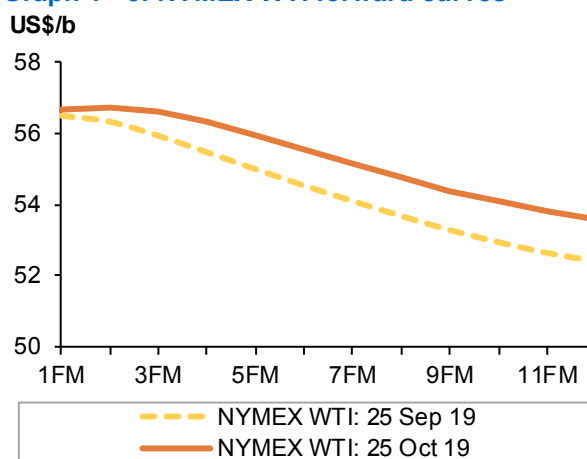
In the US, the **NYMEX WTI** forward price structure flattened in the front, and the first-to-second month spread was in slight contango for most of October amid increasing US crude stocks, particularly in Cushing, which rose to the highest level since August 2019, as well as lower refinery crude intake due to refinery maintenance. Prompt WTI Gulf Coast values were also negatively impacted by soaring freight rates to high levels during October for departures from the USGC. NYMEX WTI first-to-second month spread was at a contango of 4¢/b in October, on a monthly basis, compared to a backwardation of 12¢/b in September.

However, the NYMEX WTI first-to-third month spread remained in minor backwardation of 5¢/b in October, on monthly basis, compared to a backwardation of 46¢/b in September.

The spike in dirty tanker freight rates heavily affected demand of prompt crude cargoes in the Atlantic Basin, pushing prompt Brent-linked prices lower as arbitrage opportunities to the East of Suez market weakened. Consequently, the **ICE Brent** backwardation structure flattened, specifically in the front, but it remained almost unchanged in the back of the curve.

The backwardation structure of **DME Oman** also flattened slightly in the front in October, compared to the previous month, but it remained strong with the first-to-third month spread holding above \$2.00/b for most of October as the Middle East crude market was supported by strong Asian demand for prompt cargoes. Asia Pacific refiners boosted their crude demand for shorter-haul supplies, including Middle Eastern crudes, amid record high freight rates, which more than doubled for the main maritime routes.

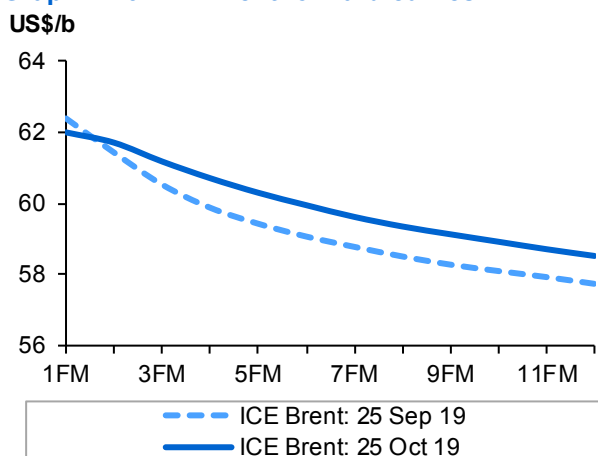
Graph 1 - 5: NYMEX WTI forward curves



Note: FM = future month.

Sources: CME Group and OPEC Secretariat.

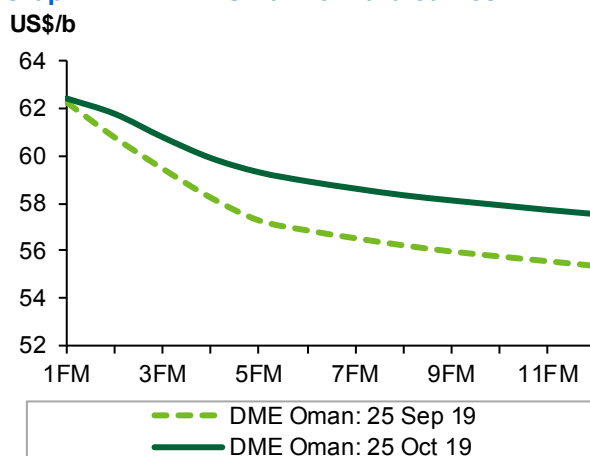
Graph 1 - 6: ICE Brent forward curves



Note: FM = future month.

Sources: Intercontinental Exchange and OPEC Secretariat.

Graph 1 - 7: DME Oman forward curves



Note: FM = future month.

Sources: Dubai Mercantile Exchange and OPEC Secretariat.

Regarding the **M1/M3 structure**, North Sea Dated M1/M3 backwardation narrowed to 94¢/b in October, a decline of \$1.11/b, due to high pressure on prompt loading cargoes in the Atlantic Basin, particularly in the West African and Mediterranean markets, following the rise of transportation freight costs. Inversely, the Dubai crude backwardation strengthened to a multi-year high in October, supported by strong Asian demand and limited arbitrage opportunities from the Atlantic Basin due to high freight rates. The Dubai M1/M3 premium increased to \$2.62/b, up by 29¢ on a monthly average. However, in the US, the WTI M1/M3 backwardation spread narrowed by 37¢ to 1¢/b.

Table 1 - 3: Crude oil futures forward curves, US\$/b

| | | 1FM | 2FM | 3FM | 6FM | 12FM | 12FM-1FM |
|------------------|---------------|--------------|-------------|-------------|-------------|-------------|-------------|
| NYMEX WTI | 25 Sep 19 | 56.49 | 56.32 | 55.93 | 54.54 | 52.43 | -4.06 |
| | 25 Oct 19 | 56.66 | 56.71 | 56.59 | 55.55 | 53.61 | -3.05 |
| | Change | 0.17 | 0.39 | 0.66 | 1.01 | 1.18 | 1.01 |
| ICE Brent | 25 Sep 19 | 62.39 | 61.43 | 60.53 | 59.07 | 57.74 | -4.65 |
| | 25 Oct 19 | 62.02 | 61.73 | 61.20 | 59.97 | 58.54 | -3.48 |
| | Change | -0.37 | 0.30 | 0.67 | 0.90 | 0.80 | 1.17 |
| DME Oman | 25 Sep 19 | 62.26 | 60.78 | 59.46 | 56.86 | 55.36 | -6.90 |
| | 25 Oct 19 | 62.40 | 61.75 | 60.76 | 58.90 | 57.51 | -4.89 |
| | Change | 0.14 | 0.97 | 1.30 | 2.04 | 2.15 | 2.01 |

Note: FM = future month.

Sources: CME Group, Dubai Mercantile Exchange, Intercontinental Exchange and OPEC Secretariat.

The **spread between the ICE Brent and NYMEX WTI** benchmarks widened in October for the second consecutive month. NYMEX WTI crude prices fell more than ICE Brent as rising US oil supply, higher-than-expected builds in US crude oil stocks and lower refinery intake amid refinery maintenance season weighed more on US crude values. On the other hand, increasing availability of crude in the USGC after the start of the new Permian pipeline and the rise of freight rates added pressure on WTI prices. On a monthly basis, the first month ICE Brent/NYMEX WTI spread widened by 31¢ m-o-m to \$5.63/b.

The light sweet/medium sour crude spread

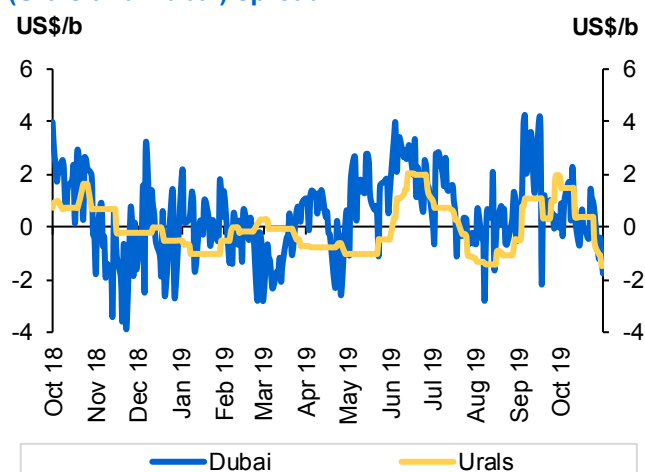
Light sweet and heavy sour crude differentials were mixed, narrowing in Europe on a tighter sour market, while widening in the USGC amid wider light-heavy product spreads. Sweet/sour differentials were little changed in Asia.

In **Europe**, the light-sweet North Sea Brent premium to Urals medium-sour crude decreased in October from its high level registered in September on a monthly average, narrowing by 47¢ to a premium of 45¢/b. The Urals crude market was supported by a tighter November loading programme and higher flows to Asia, while North Sea crude differentials of light sweet grades weakened on higher availability of light sweet crudes in the region. Increasing flows of US light sweet crude to Europe, as well as the decline of some West African crude differential values to multi-year lows due to high volumes of unsold cargoes, added downward pressure.

In **Asia**, the Tapis premium over Dubai remained wide at \$6.69/b on average, its highest level since January 2018, as regional light sweet crude values remained supported by strong demand from Asian refiners amid rising freight rates and lower flows of similar grades from the Atlantic Basin. The Tapis premium over Dubai rose by 1¢ to \$6.69/b.

On the **USGC**, the premium of Light Louisiana Sweet (LLS) over medium sour Mars increased further in October on the widening spread between light and heavy product margins ahead of the upcoming IMO 2020, as well as increasing offshore US Gulf production of sour crude quality. The LLS premium over medium-sour Mars rose by 25¢ m-o-m to \$2.27/b.

Graph 1 - 8: Brent Dated vs. sour grades (Urals and Dubai) spread

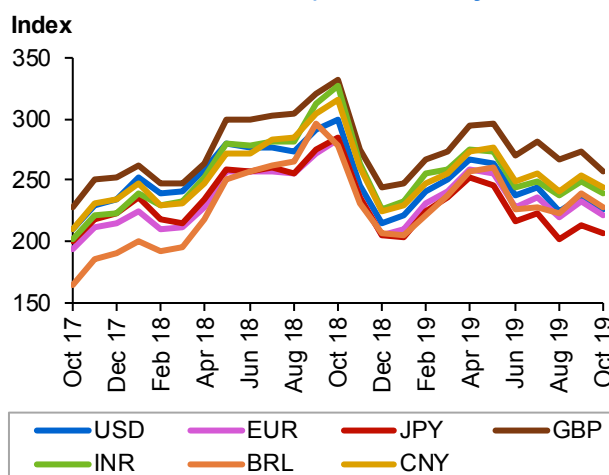


Sources: Argus Media, OPEC Secretariat and Platts.

The impact of the US dollar (USD) and inflation on oil prices

The **USD** was mixed in October against **major currencies**. Against the pound sterling and the euro, the dollar declined by 2.1% and by 0.4% m-o-m, on receding trade uncertainties as the European Union and the United Kingdom worked towards a new Brexit deal. The expectation of further monetary policy easing by the Fed that materialized at the end of the month with the third rate cut of the year also help weaken the dollar. Against the Swiss franc the dollar increased slightly by 0.3%. Against the Japanese yen, the dollar advanced by 0.6% m-o-m, as in the previous month. This was due to reduced safe haven demand receding with trade related uncertainties.

Graph 1 - 9: ORB crude oil price index compared with different currencies (base January 2016 = 100)



Sources: IMF and OPEC Secretariat.

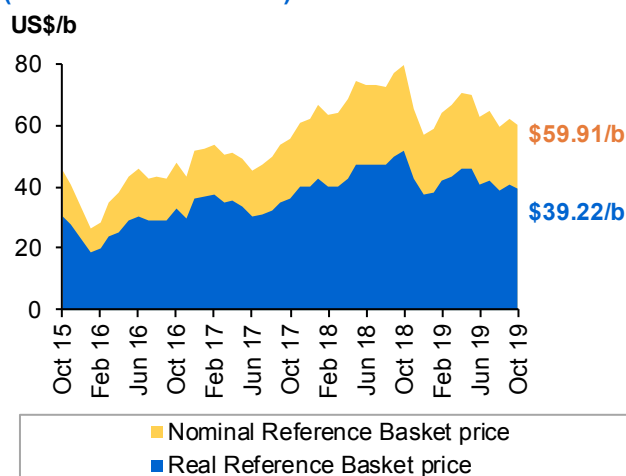
Against the currencies of the largest **emerging market economies**, the dollar declined, mainly as a result of both the de-escalation of the trade dispute between the US and China and the more accommodative monetary policy by the Fed. On average, the dollar decreased on average by 0.1% against the yuan m-o-m, however, the trend of declines extended into the beginning of November. The dollar decreased by 0.4% against the Indian rupee. Against the Brazilian real, the USD dropped by 0.8%, with the Brazilian real also supported by the expectation of the approval of the pension reform package in the country's Congress. Against the Russian ruble, the dollar was down by 0.9%. The USD advanced by 1.5% against the Turkish lira, mainly related to increased geopolitical tensions. It also increased by 1.8% against the Argentinian peso amid ongoing uncertainties regarding the country's external position.

In **nominal terms**, the price of the ORB decreased by \$2.45, or 3.9%, from \$62.36/b in September to \$59.91/b in October.

Graph 1 - 10: Impact of inflation and currency fluctuations on the spot ORB price (base June 2001 = 100)

In **real terms**, after accounting for inflation and currency fluctuations, the ORB decreased to \$39.22/b in October from a revised \$41.00/b (base June 2001=100) in the previous month.

Over the same period, the **USD** declined by 0.4% against the import-weighted modified Geneva I + USD basket, while inflation was relatively stable m-o-m.



Source: OPEC Secretariat.

Commodity Markets

Energy commodities were mixed during October, with some declines in crude oil following the quick production rebound in Saudi Arabia after attacks on its facilities, as well as in US natural gas, with significant additions to storage during the month. On the contrary, in Europe, natural gas prices advanced on the arrival of a cold weather front and some disruptions to Norwegian supplies. Coal prices were supported by strong y-o-y Chinese imports and some increase in thermal power output in the country.

In the group of **non-energy commodities**, base metals declined slightly, but the de-escalation of the US-China trade dispute and strong industrial production figures from China supported prices. Among precious metals, gold prices declined on reduced demand for safe haven assets amid declining uncertainties related to the US-China trade dispute and the new Brexit agreement between the EU and the UK.

Trends in selected commodity markets

The **energy price index** decreased by around 3.7% m-o-m in October and was down on average by 14.6% y-t-d compared with the same period last year.

The **non-energy index** was up by 0.9% m-o-m, with a slight decrease in base metals, but a positive contribution from rising agricultural prices. Y-t-d, the non-energy index has declined by 5.3% compared with the same period last year.

Table 2 - 1: Commodity prices

| Commodity | Unit | Monthly averages | | | % Change | Year-to-date | |
|-------------------------|-----------|------------------|--------------|--------------|---------------|--------------|--------------|
| | | Aug 19 | Sep 19 | Oct 19 | Oct 19/Sep 19 | 2018 | 2019 |
| Energy* | | 70.4 | 73.6 | 70.9 | -3.7 | 89.0 | 76.0 |
| Coal, Australia | US\$/mt | 65.6 | 66.0 | 68.9 | 4.5 | 108.2 | 80.1 |
| Crude oil, average | US\$/b | 57.7 | 60.0 | 57.3 | -4.6 | 70.4 | 61.3 |
| Natural gas, US | US\$/mbtu | 2.2 | 2.6 | 2.3 | -9.6 | 3.0 | 2.6 |
| Natural gas, Europe | US\$/mbtu | 3.7 | 4.2 | 5.1 | 20.3 | 7.6 | 4.8 |
| Non-energy* | | 79.3 | 79.7 | 80.5 | 0.9 | 86.1 | 81.5 |
| Base metal* | | 78.9 | 80.5 | 80.1 | -0.4 | 92.0 | 81.8 |
| Precious metals* | | 113.2 | 114.9 | 113.4 | -1.4 | 97.8 | 104.2 |

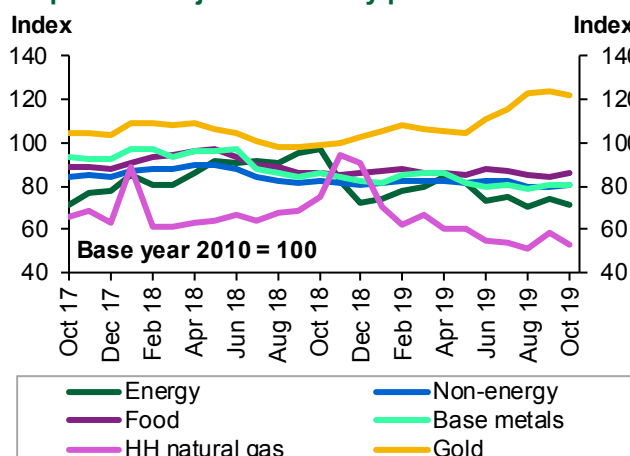
Note: * World Bank commodity price indices (2010 = 100).

Sources: World Bank, Commodity price data; OPEC Secretariat.

In October, the **Henry Hub natural gas index** decreased on average by 9.6% to \$2.33/mmbtu. Prices weakened following a stream of above average additions to storage following moderate weather at the end of September and the beginning of October. However, at the end of the month the arrival of cold weather reduced the pace of the additions, albeit expansion for the month remained robust. According to the US Energy Information Administration (EIA), utilities added 34 bcf to working gas underground storage during the week ending 1 November. The build left total working gas in underground storage at 3,729 bcf, which is 0.8% above the five-year average. In the last week of September, inventories were at 3,317 bcf and 0.5% below the then five-year average. During the storage injection season an inventory deficit of 31%, in respect to the five-year average, was eliminated. Most recently, the expectation of the arrival of an Arctic blast to the US Midwest and east coast has supported natural gas prices. **Natural gas prices in Europe** also jumped with the **Title Transfer Facility price** rising by 20.3% to \$5.1/mmbtu in October. Prices were still supported by some previous month developments including the re-imposition of restrictions to Gazprom for its usage of the OPAL pipeline, fears of potential closures to some French nuclear power plants and the earlier-than-anticipated closure of the Groningen field in 2022, alongside a lower production limit for the next 12 months. During the month, expectations of colder than average weather, and reports of some reductions in Norwegian supplies

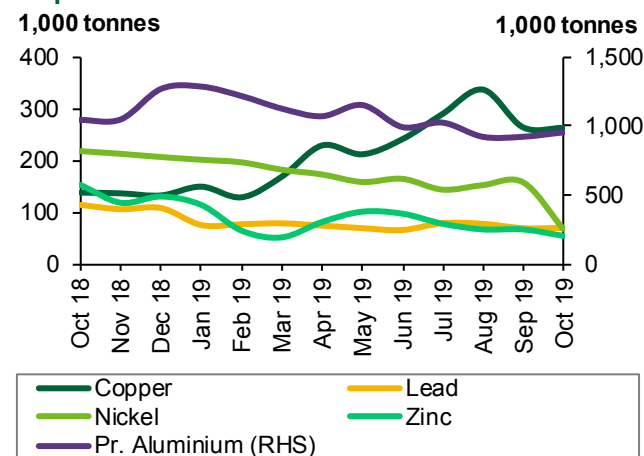
also supported prices. However, as mentioned in the September MOMR, the upside potential is limited as inventories are near full across EU Member States. At the end of October, inventories remained around 97% of capacity, the same as at the end of the previous month. This compares to 86% in the same month last year, according to Gas Infrastructure Europe.

Graph 2 - 1: Major commodity price indices



Sources: World Bank, Commodity price data; S&P Goldman Sachs; Haver Analytics and OPEC Secretariat.

Graph 2 - 2: Inventories at the LME



Sources: LME, Thomson Reuters and OPEC Secretariat.

Australian thermal coal prices advanced in October by 4.5% m-o-m to average \$68.9/mt, supported by a robust pace of exports to China. Despite a 15% deceleration from the previous month to 25.6 million tonnes, Chinese coal imports were up by 11.3% compared to the same month last year. From January to October imports are up by 9.3%. At the same time, however China's coal output has increased this year by around 4.5% y-o-y for the January–September period, according to official data. With rising local production, it is expected that some import restrictions will be added over the winter months. Meanwhile, the power sector provided some support with thermal output rising by 6.0% y-o-y in September, after being subdued for most of 2019. The 3.0% increase in electricity generation in China in the January–September period was mainly covered by rising renewables and nuclear power output.

The **base metal price index** decreased on average by 0.4% m-o-m in October, amid mixed movement across the various components. The de-escalation of the US-China trade dispute and the reduction in interest rates in the US improved financial market sentiment and provided support to metal prices during the month. However, despite some improvement in manufacturing readings in the last three surveys, global manufacturing activity remains subdued. This can be viewed in the JP Morgan global manufacturing PMI that advanced slightly to 49.8, from 49.7 the previous month.

Copper monthly average prices were stable in October compared to the previous month. However, when comparing prices from the beginning and end of the month, it is evident that prices recovered significant ground with improvements in financial market sentiment. Moreover, September industrial production figures from China were significantly better than market expectations at 5.8% y-o-y, almost 1% above consensus expectations. The International Copper Study estimates that in the first seven months of 2019, the world refined copper balance adjusted for unreported Chinese inventories showed a deficit of 297,000 tonnes. Inventories on the London Metal Exchange declined slightly during October to 263,400 tonnes from 264,400 tonnes in the previous month. Nickel prices declined by 3.5% after rising by more than 40% over the previous three months as Indonesia announced a ban on nickel ore exports starting January 2020.

Iron ore prices declined by 4.9% in October, which is down by around 28% from its July monthly average. Earlier in the year iron ore prices jumped in response to supply disruptions in Brazil after a mining accident at one of Vale's major mines, which triggered security reviews and temporary closures. Chinese import data shows that iron ore imports were down by 1.6% y-o-y in the January to October period, partly as a result of reduced Brazilian supplies, at the beginning of the year.

In the group of **precious metals**, the index decreased by 1.4%, with gold, silver and platinum down by 1.0%, 2.8% and 5.0%, respectively. Prices declined amid receding uncertainty surrounding the US-China trade dispute and the new Brexit agreement between the EU and the UK, which resulted in reduced demand for safe haven assets.

Investment flows into commodities

Open interest (OI) increased on average in October for selected US commodity futures, such as crude oil and copper, but decreased for precious metals and natural gas. On average, speculative net long positions decreased for crude oil, precious metals and natural gas, but increased slightly for copper.

Table 2 - 2: CFTC data on non-commercial positions, 1,000 contracts

| | Open interest | | Net length | | | |
|-----------------|---------------|--------------|-------------|----------|-------------|-----------|
| | Sep 19 | Oct 19 | Sep 19 | % OI | Oct 19 | % OI |
| Crude oil | 2,071 | 2,091 | 209 | 10 | 108 | 5 |
| Natural gas | 1,232 | 1,226 | -101 | -8 | -176 | -14 |
| Precious metals | 852 | 834 | 278 | 33 | 234 | 28 |
| Copper | 242 | 251 | -56 | -23 | -48 | -19 |
| Total | 4,397 | 4,402 | -293 | 1 | -166 | -1 |

Note: Data on this table is based on monthly average.

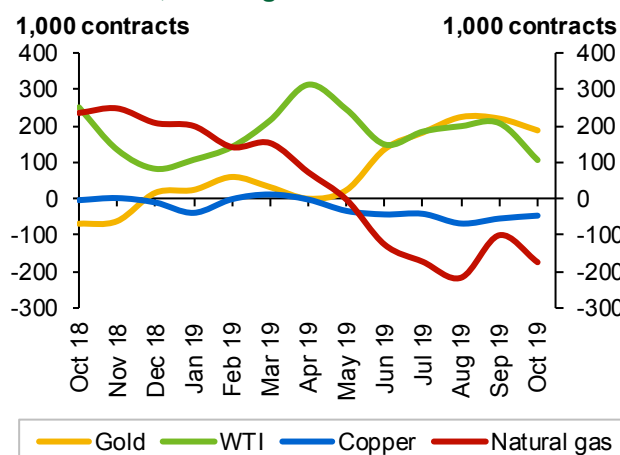
Sources: CFTC and OPEC Secretariat.

Henry Hub's natural gas OI decreased by 0.4% m-o-m in October, while money managers increased their net short position by around 74% to reach an average of 176,079 contracts from 101,225 in September, as the short covering rally faded.

Copper's OI increased by 3.7% in October. Money managers cut their net short position by around 14% to 48,179 from 56,171 contracts the previous month. This was amid improving financial market sentiment on expectations of a first phase agreement on the US-China trade dispute.

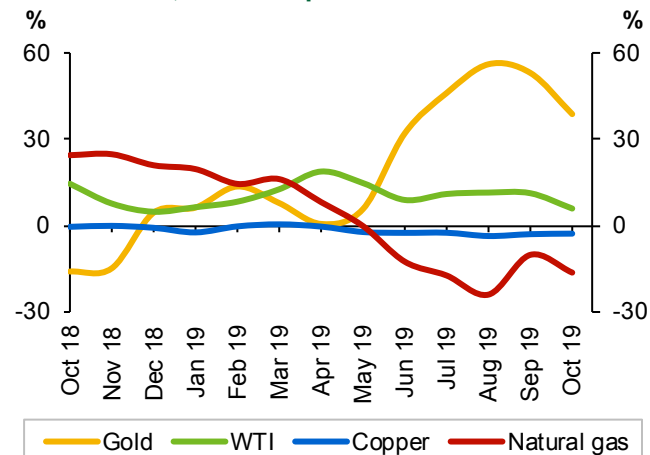
Precious metals' OI decreased by 2.1%. Money managers' net long position declined by 15.7% to 234,348 from 277,880 contracts the previous month. This was on the back of receding uncertainties in financial markets, and the expectation that no further interest rate cuts from the US Federal Reserve will be warranted this year.

Graph 2 - 3: Money managers' activity in key commodities, net length



Note: Data on this graph is based on monthly average.
Sources: CFTC and OPEC Secretariat.

Graph 2 - 4: Money managers' activity in key commodities, as % of open interest



Note: Data on this graph is based on monthly average.
Sources: CFTC and OPEC Secretariat.

World Economy

The **global economic growth forecast** remains unchanged at 3.0% for both 2019 and 2020. On a positive note, signs of improving trade relations between the US and China, a potential agreement on Brexit after the UK's general election, fiscal stimulus in Japan, and a stabilisation of the downward slope in major emerging economies could stabilize growth at the current forecast level. However, trade-related issues and the associated uncertainties remain. While monetary policies are accommodative across the globe, high debt levels in several important economies pose some risk. Factors such as Brexit, fiscal issues in some EU Member Countries, Japan's slowdown, and some slowing momentum in the US, pose additional challenges. Also, fiscal imbalances in selective emerging and developing economies and the associated consequences may negatively impact global economic growth.

OECD growth remains at 1.6% for 2019 and 1.4% for 2020. The 2019 US economic growth forecast remains at 2.3%, while the ongoing slowdown was also confirmed by recent 3Q19 activity. This factor, in combination with continued trade restrictions, leads 2020 US GDP growth to an unchanged 1.8% level. Euro-zone growth remains unchanged at 1.2% for 2019, but was revised down slightly to 1.0% for 2020, amid the likelihood of slowing 2H19 growth carrying over into 2020. Japan's 2019 growth forecast remains at 0.9% and at 0.3% for 2020, while it remains to be seen to what extent fiscal stimulus measures in 2020 will be able to stimulate the economy. The UK's 2019 forecast remains at 1.1% for 2019. However, given the ongoing Brexit-related uncertainties in the UK, business activity is forecast to continue slowing, a trend that is expected to carry over into 2020, which is forecast to grow by 1.0%.

In the **emerging economies**, China's 2019 growth forecast remains at 6.2%. 2020 growth remains at 5.9%, with the economy expected to experience a further slowdown due predominantly to the US-China trade dispute, while ongoing negotiations will need to be carefully monitored. India's growth numbers were unchanged as well, showing an expansion of 6.1% for 2019 and 6.7% for 2020. Brazil's 2019 growth forecast remains at 0.8%, while some fiscal measures after the approval of the pension reform are forecast to lift growth to 1.6%, compared to a forecast of 1.4% in the previous month. Russia's growth forecast for 2019 remains at 1.0%, followed by growth of 1.2% in 2020, also both unchanged from the previous month.

Table 3 - 1: Economic growth rate and revision, 2019-2020*, %

| | World | OECD | US | Japan | Euro- zone | UK | China | India | Brazil | Russia |
|----------------------------|------------|------------|------------|------------|---------------|------------|------------|------------|------------|------------|
| 2019 | 3.0 | 1.6 | 2.3 | 0.9 | 1.2 | 1.1 | 6.2 | 6.1 | 0.8 | 1.0 |
| Change from previous month | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 2020 | 3.0 | 1.4 | 1.8 | 0.3 | 1.0 | 1.0 | 5.9 | 6.7 | 1.6 | 1.2 |
| Change from previous month | 0.0 | 0.0 | 0.0 | 0.0 | -0.1 | 0.0 | 0.0 | 0.0 | 0.2 | 0.0 |

Note: * 2019 = Estimate and 2020 = Forecast.

Source: OPEC Secretariat.

OECD

OECD Americas

US

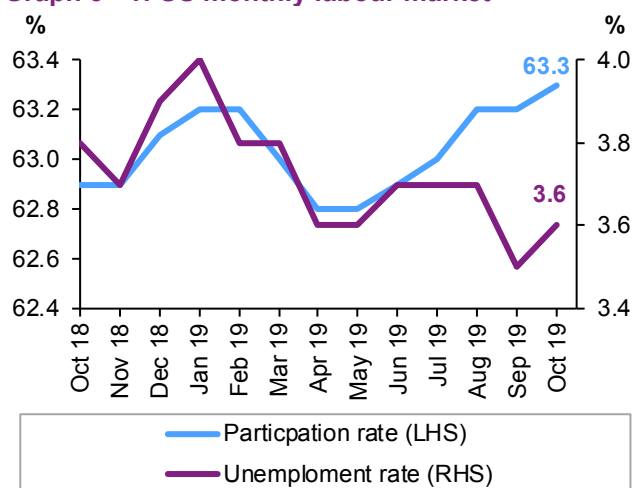
Recent developments and indicators have confirmed the **ongoing deceleration in the US** economy. US GDP grew at a seasonally adjusted rate (SAAR) of 1.9% in 3Q19, according to the first estimate of the Bureau of Economic Analysis. This compares to 2.0% q-o-q SAAR in 2Q19 and 3.1% q-o-q SAAR in 1Q19. Following a 6.1% q-o-q SAAR decline of investment in 2Q19, 3Q19 investments fell again by 1.5% q-o-q SAAR. This may reflect the outcome of the ongoing domestic and external political uncertainties, while the tapering off of the fiscal stimulus package may also have had a negative impact. Positively, growth remained well supported by

consumption. Consumption continued to enlarge the economy, expanding by 2.9% in 3Q19, after a 4.7% q-o-q SAAR in 2Q19. This relatively positive development in demand was obviously coming from a buoyant services sector, while the manufacturing side of the economy continues to weaken. However, as a deceleration in the services sector is also taking hold, the near-term development in domestic demand remains to be seen. In the meantime, monetary policies of the US Federal Reserve (Fed) remained accommodative as the Fed lowered interest rates again at its latest meeting in October, having lowered its key policy rate three times and by 75 basis-points in the current year. This may to some extent support growth at the current level, albeit trade uncertainties may continue to negatively impact economic growth. Even with this support via monetary policies, there is limited capacity for improvement in the labour market, given a multi-decade low unemployment rate, which is also providing little room to the upside, particularly as productivity growth remains relatively low.

The **labour market** experienced mixed developments in October, with the unemployment rate rising to 3.6%, compared to 3.5% in September.

Non-farm payrolls in October increased by 128,000 after job additions were revised upward to 180,000 in September. Average hourly earnings for the private sector stood at 3% or higher for about a year now as it was revised upward for September from 2.9% to 3.0%, the same level it now achieved as well in October. This solid number indicates that support from the labour market to the economy seems to continue in the very near term. Positively, long-term unemployment declined again to stand at 21.5%, compared to 22.7% in September. The participation rate also rose, reaching a level of 63.3% in October, a 0.1 pp rise from September and the highest level since 2013.

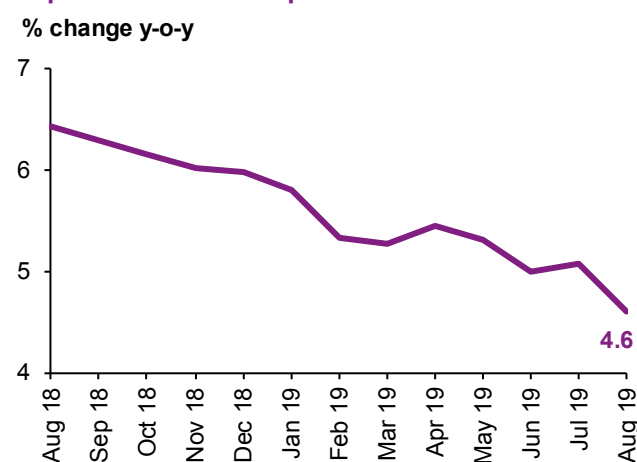
Graph 3 - 1: US monthly labour market



Sources: Bureau of Labor Statistics and Haver Analytics.

Total inflation remained almost unchanged in September to stand at 1.7% y-o-y, compared to 1.8% y-o-y in August. Core inflation – excluding volatile items such as food and energy – remained at 2.4% y-o-y in September for the second consecutive month, compared to 2.2% y-o-y in July and 2.1% in June. This may also be supported by the healthy trend in the labour market wage growth. The Fed's favoured inflation index, the personal consumption expenditure price index (PCE index), however, fell to 1.2% y-o-y in September, compared to 1.4% in August. The critically important **housing sector** exhibited mixed developments in the sense that while price growth continued to decelerate, home sales held up well. The yearly change in the **house pricing index** of the Federal Housing Finance Agency (FHFA) retracted to stand at 4.6% y-o-y in August, compared to 5.1% y-o-y in July. This is the first time that price growth was below 5% since the beginning of 2015.

Graph 3 - 2: US house prices

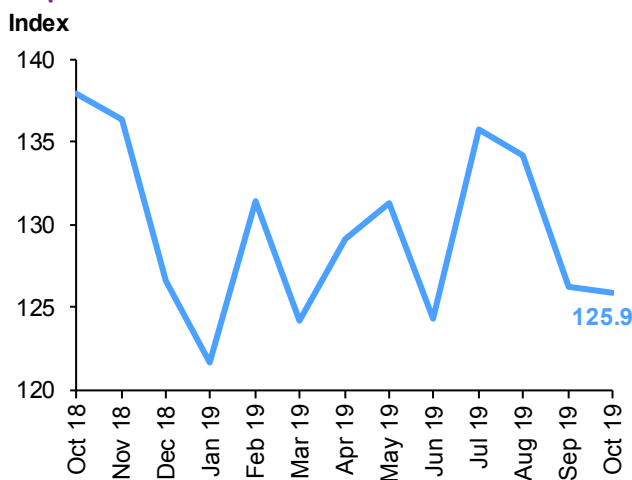


Sources: Federal Housing Finance Agency and Haver Analytics.

Existing home sales remained relatively strong in August, while declining slightly at an annualized level of 5.38 million in September, compared to 5.50 million in August. Also, new home sales held up well, rising by 701,000 in September, following the 706,000 rise in August. The S&P CoreLogic Case-Shiller Home Price Index Composite 20 for metropolitan areas remained stable, reaching 2.0% y-o-y in August, the same level as in July. It is important to highlight that this is the lowest level since 2012.

After some ups and downs in the past months, **consumer sentiment** retracted again. The lead indicator, published by the Conference Board, fell to 125.9 in October, compared with 126.3 in September, 134.2 in August and 135.8 in July.

Graph 3 - 3: US consumer confidence index

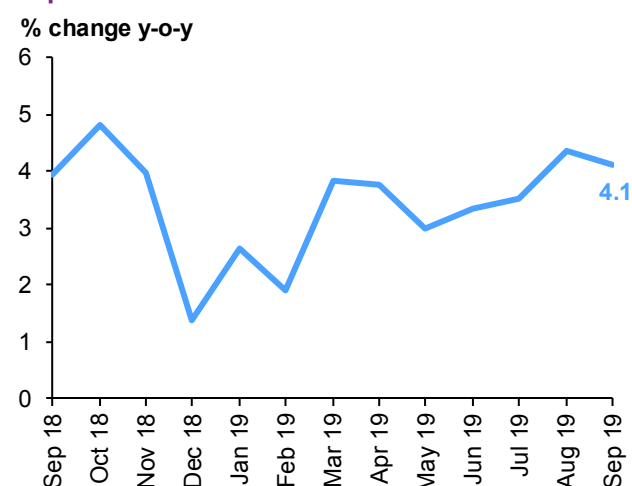


Sources: The Conference Board and Haver Analytics.

The trend in consumer sentiment is to some extent reflected in **retail sales** growth, which retracted slightly in September, but generally is still at a good level, rising by 4.1% y-o-y, compared to 4.4% y-o-y in August and 3.5% y-o-y in July. However, this compares to 2018 levels that were significantly higher – annual growth of retail sales stood at 4.9% y-o-y on average in the last year.

Industrial production (IP) decelerated further in September, continuing a trend that began in 2018. IP declined by 0.1% y-o-y, after rising by 0.4% y-o-y in August. This trend shows a clear deceleration from 1Q19 numbers, when quarterly average growth stood at 2.9%. This is also the lowest level in almost three years.

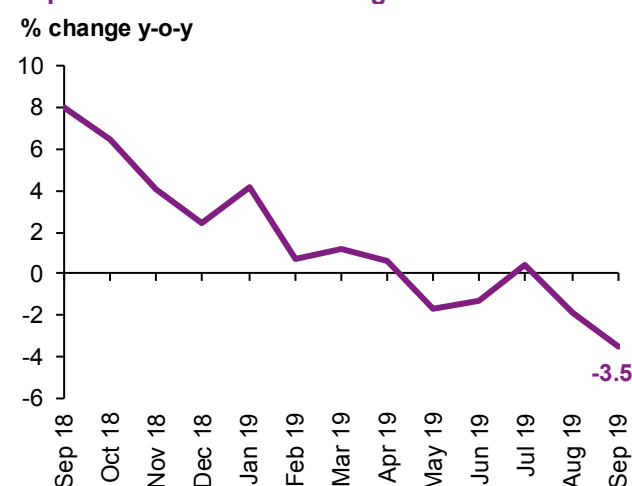
Graph 3 - 4: US retail sales



Sources: Census Bureau and Haver Analytics.

Manufacturing orders, a good lead indicator of future manufacturing activity, declined considerably in September, dropping by 3.5% y-o-y, after a significant decline of 1.9% y-o-y in August. This also marked the steepest monthly decline since 2016.

Graph 3 - 5: US manufacturing orders

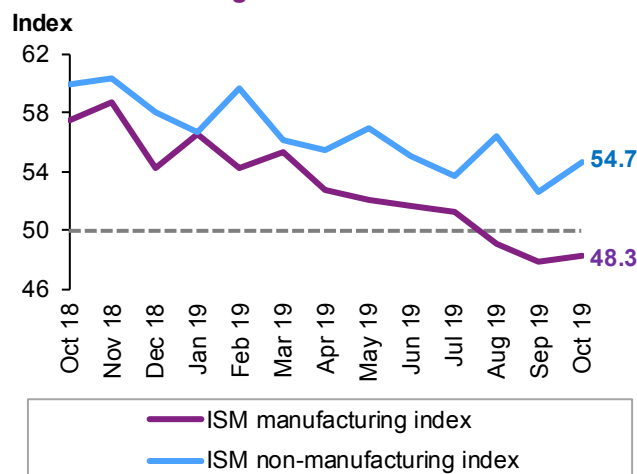


Sources: Census Bureau and Haver Analytics.

October's **Purchasing Managers' Index (PMI)**, as provided by the Institute for Supply Management (ISM), indicated a continued contraction in the manufacturing sector, while the services sector remained recovered again.

The manufacturing PMI remained below the growth-indicating level of 50 to stand at 48.3 in October, compared to 47.8 in September and 49.1 in August. The services sector index increased to 54.7, compared to 52.6 in August. Despite a solid level, it is below the past months. Moreover, it remains to be seen for how long services will outperform manufacturing at the current rate, given the ongoing weakness.

Graph 3 - 6: US-ISM manufacturing and non-manufacturing indices



Sources: Institute for Supply Management and Haver Analytics.

The **GDP growth** forecast for 2019 is unchanged at 2.3%. Taking into account the ongoing trade issues and weakening growth trend in the US economy, the GDP growth forecast for 2020 stands at 1.8%, unchanged from the previous month. While monetary policies are expected to remain relatively accommodative, domestic policy issues will continue and underlying domestic demand is expected to slow. Trade-related matters in particular will require close monitoring as it remains to be seen if the ongoing trade negotiations between the US and China will lead to an improvement in the current situation.

Mexico

The **Mexican economy** seems to continue to slow down. Industrial production is in decline and exports remain sluggish. Some support is coming from domestic demand. **Industrial production** fell again in September, declining by 2.0% y-o-y, compared to -0.9% y-o-y in August and -2.2% y-o-y in July. This decline is very much influenced by the softening trend in the mining sector, whose largest contributor is the oil, which was again in steep decline, down 5.2% y-o-y. Also, the construction sector was considerably impacted by the ongoing economic slowdown, declining by 7.3% y-o-y in September. The latest **PMI** index for manufacturing points to some potential recovery in the near-term. The October PMI level moved mildly above the growth-indicating level of 50 for the first time in five months, reaching 50.4, after a level of 49.1 in September and 49.0 in August.

The weak 1H19 GDP numbers and the ongoing decline in industrial output confirm the GDP growth forecast of only 0.4% for 2019. Tentative signs of improvement in the near-term in combination with the expectation of a bottoming-out of sluggishness in recent months lead growth for 2020 to stand at 1.1%.

OECD Asia Pacific

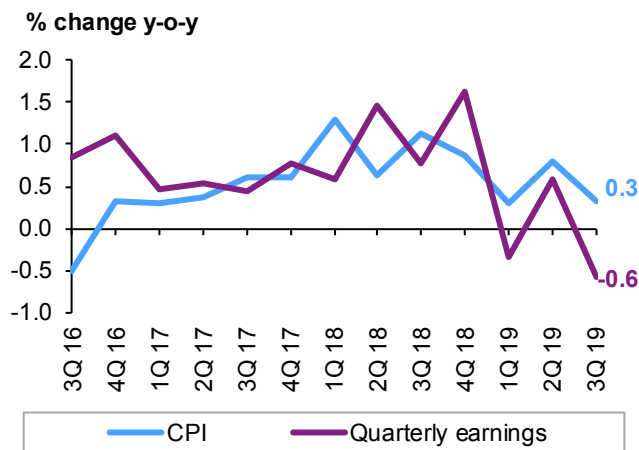
Japan

Japan continues to be impacted by **downward momentum** in the current quarter that is exacerbated by the decline in domestic demand due to the sales tax increase. After relatively strong growth numbers in 1H19, more recent GDP data highlights that the Japanese economy seems to be less strong in 2H19. Following the sales tax increase from 8% to 10% in October, 4Q19 growth is forecast to decline, impacted by weakening domestic demand. This comes in combination with a slowing global economy that reflects a softening trend in global trade. As exports are having a variety of channel effects on the Japanese economy, the challenging export environment is also hurting the economic development in the economy. Another drag came from Typhoon Hagibis which disrupted production and supply in key sectors, including automotive manufacturing. In the meantime the government announced that it would introduce a fiscal stimulus package to counterbalance the negative short-term effects of the current slowdown. While the government did not indicate the magnitude, it said the stimulus package would be financed through borrowing, using the current ultra-low interest rate environment, and that it should be done via a 15-month supplementary budget. This should support the economy until early 2021. In order to stretch the financial burden to future generations, 50-year

bond borrowing is being considered, according to the finance minister. This would also have a positive effect on the Bank of Japan’s ability for quantitative easing, as it would provide more ammunition for the central bank to especially support long-term interest rates.

Total **inflation** decelerated considerably, standing at 0.2% y-o-y again in September. Core inflation remained relatively stable during the past few months, standing at 0.6% y-o-y in September compared to 0.5% in August. The **labour market** remains tight with the unemployment rate standing at 2.4% in September, compared to 2.2% in August. This should provide at least some support for wage growth and inflation. Earnings rose 1.0% in September, providing at least some real earnings growth, given the low inflation level. The BoJ is expected to continue its accommodative monetary policies given the economic growth trend and low inflation. There is some possibility that the BoJ will increase its monetary support further, as it may move its interest rates deeper into negative territory.

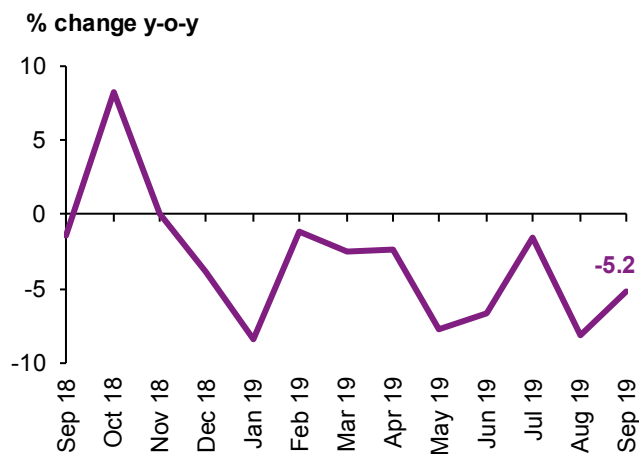
Graph 3 - 7: Japan’s CPI vs earnings



Sources: Ministry of Internal Affairs and Communications; Ministry of Health, Labour and Welfare; Haver Analytics.

Given ongoing trade disputes and the rising fragility of the global economy, **export** growth slowed again in September, declining by 5.2% y-o-y. This compares to a decline of 8.2% y-o-y in August and -1.6% y-o-y in July.

Graph 3 - 8: Japan’s exports



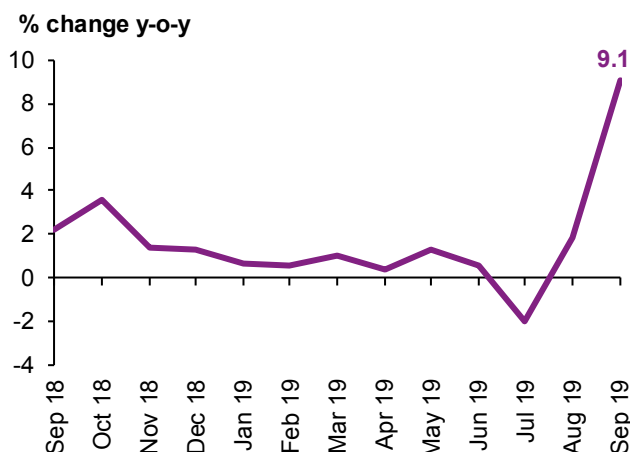
Sources: Ministry of Finance, Japan Tariff Association and Haver Analytics.

Correspondingly, **industrial production** declined as well in September, falling by 0.3% y-o-y compared to -2.0% y-o-y in August and -1.5% y-o-y in July. Machinery orders fell by 8.1% y-o-y in September, pointing at a further slowdown in the manufacturing sector, in line with declining business sentiment.

Domestic retail demand rebounded considerably in August and September, rising by 1.8% y-o-y and 9.1% y-o-y, respectively. This compares to a decline of 2.0% y-o-y in July. This strong growth was in anticipation of the sales tax increase. This is also reflected by the strong decline in consumer confidence, which shows that the underlying sentiment was not the reason for the recovery in retails sales, and it also shows that this strong trend is not likely to continue. However, the latest monthly data on consumer confidence showed slight improvement.

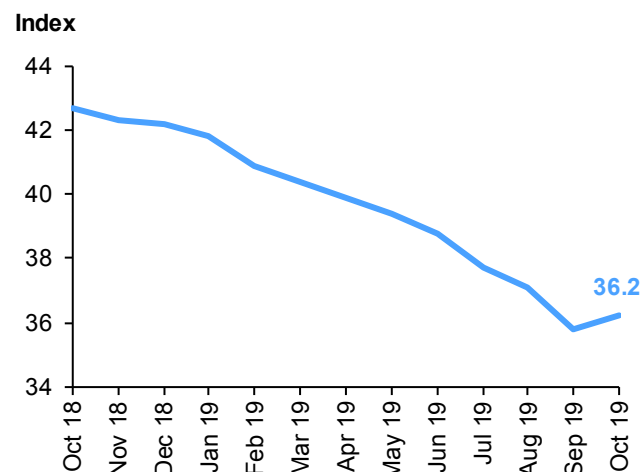
Consumer confidence recovered very slightly as the index, published by the Cabinet Office, now stands at 36.2 in October, compared to 35.8 in September.

Graph 3 - 9: Japan's retail trade



Sources: Ministry of Economy, Trade and Industry and Haver Analytics.

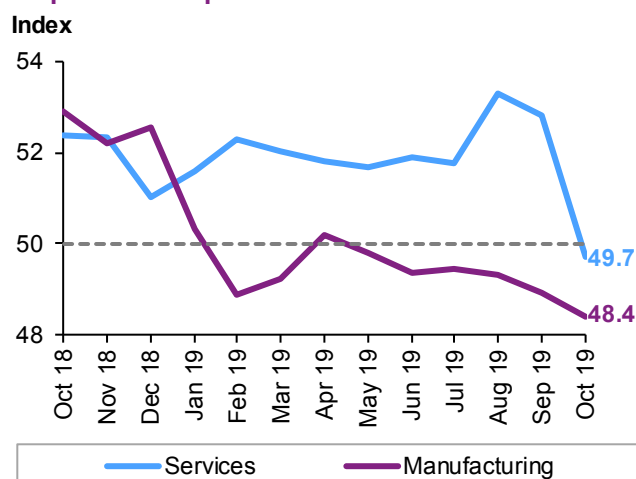
Graph 3 - 10: Japan's consumer confidence index



Sources: Cabinet Office of Japan and Haver Analytics.

The latest **October PMI numbers** confirmed the ongoing contraction in manufacturing. Given the negative impact of Typhoon Hagibis, mainly on Tokyo and the surrounding area, combined with the sales tax increase, the services sector declined significantly. The manufacturing PMI stood at 48.4 in October, compared to 48.9 in September and 49.3 in August. Hence, eight out of ten months of the year showed an index level of below 50, which amounts to a contraction in the sector. The PMI for the services sector – which constitutes around two-thirds of the Japanese economy – declined to 49.8, indicating at least a mild contraction, compared to 52.8 in September and 53.3 in August.

Graph 3 - 11: Japan's PMIs



Sources: IHS Markit, Nikkei and Haver Analytics.

Japan's 2019 **GDP growth** forecast remains at 0.9%. The underlying sluggish growth trend is expected to continue. Given the sales tax increase and the impact by Typhoon Hagibis, combined with ongoing global trade challenges, 4Q19 growth is forecast to be significantly negative. This low growth momentum is forecast to carry over into 2020. Consequently, GDP growth for 2020 is forecast at 0.3%, unchanged from the previous month.

South Korea

The **South Korean economy** continues to show negative growth in international trading, translating into a decline in industrial production, while at the same time domestic demand is holding up relatively well. Exports fell considerably again in October, down by 11.1% y-o-y, after declining by 6.1% y-o-y in September and by 7.6% y-o-y in August. Consequently, industrial production remained sluggish, but increased slightly by 0.7% y-o-y in September and 0.1% y-o-y in August. This compares to previous months of declines. The October **PMI number** for the manufacturing sector, 48.4, reflected the ongoing challenging environment. This compares to 48.0 in September and 49.0 in August. The index was below 50 for nine out of ten months so far this year, indicating a contraction in the sector.

It remains to be seen how the ongoing trade challenges will affect the economy. For the time being, the 2019 **GDP growth** figure remains unchanged at 1.9%, while in 2020, GDP growth is forecast at 2.1%.

OECD Europe

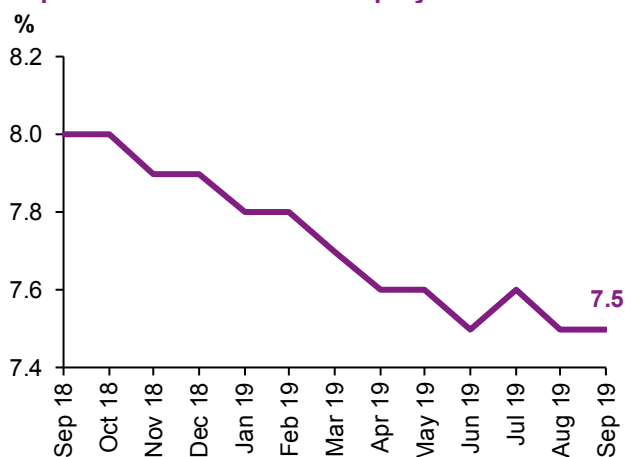
Euro-zone

3Q19 **GDP growth numbers** confirmed that to some extent the downward momentum has stabilised. GDP growth was reported at 0.2% q-o-q seasonally adjusted (SA) rate, the same level as in 2Q19. This growth level is expected to continue into 2020. However, there will be differences in growth trends in the various economies. Importantly, Germany seems to be continuously affected by the global trade challenges in general and by the global car sector slowdown in particular. However, German exports picked up again in 3Q19, rising by 0.6% y-o-y, after a decline of 0.4% y-o-y in 2Q19. While 3Q19 details from the sectors were not available, motor vehicles and parts exports declined in 2Q19 by 4.7% y-o-y, and improved in the two available months of 3Q19. In July the export decline improved to -2.2% y-o-y and in August, while the vehicle and parts exports turned positive to grow by 0.9% y-o-y. France was recently outperforming the German economy in terms of growth, due to its stimulus measures that were implemented over the last 12 months. Growth stood at 0.3% q-o-q SA in 3Q19, and while Germany's 3Q19 growth level has not yet been published, it is estimated to be only slightly in positive territory. However, this would be an improvement from 2Q19 when growth was negative at -0.1% q-o-q SA.

The support by the European Central Bank (ECB) with its ongoing accommodative monetary policy is one important factor in stabilizing the economic environment in the region and is forecast to continue with the new leadership of the ECB.

In the **labour market**, the Euro-zone's unemployment rate remained stable at 7.5% in September for a second consecutive month. Unemployment in Germany stood unchanged at 3.1% in September. France's unemployment rate improved to stand at 8.4%, compared to 8.5% in the previous five months. Spain's labour market improved again as its jobless rate declined to 14.2%, compared to 14.3% in August. Unemployment in Italy remained below 10% for a fifth consecutive month. However, it rose to 9.9%, compared to 9.6% in August.

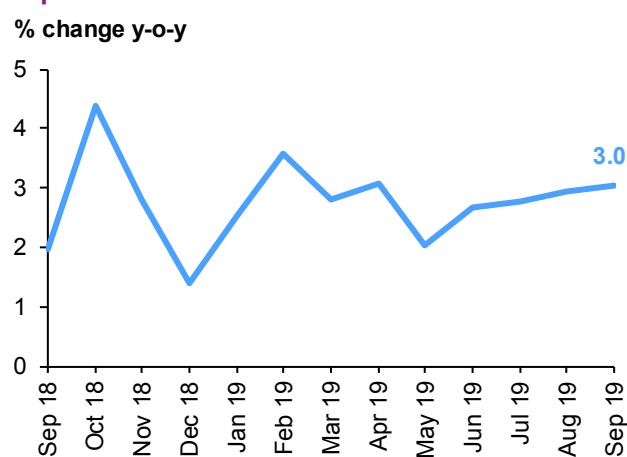
Graph 3 - 12: Euro-zone unemployment rate



Sources: Statistical Office of the European Communities and Haver Analytics.

Retail trade held up relatively well with growth in the sector remaining an important support factor for the Euro-zone economy. In value terms it stood at 3.0% y-o-y in September, compared to 2.9% y-o-y in August, 2.8% in July and 2.7% in June.

Graph 3 - 13: Euro-zone retail sales



Sources: Statistical Office of the European Communities and Haver Analytics.

Industrial production (IP) in the Euro-zone contracted again in August, the latest available month, when it fell by 2.6% y-o-y. This comes after a decline of 1.9% y-o-y in July and -2.3% in June. This continues to be very much influenced by the downward trend in Germany, where IP fell by a significant 5.3% y-o-y in September and 4.8% y-o-y in August. In Italy, IP declined by 2.1% y-o-y in September, after falling 1.8% in August. Also in France IP was weak, but still performed relatively better with IP growth at 0.1% y-o-y in September, after a decline of 1.3% in August.

The most recent manufacturing orders for the Euro-zone point at a continuation of the downward trend. Manufacturing orders declined by 5.8% in August, after a decline of 4.5% y-o-y in July and 3.5% y-o-y in June. That means that all available months in 2019 have seen negative or only flat growth in both IP and manufacturing orders in the Euro-zone.

Inflation declined again in October to 0.7% y-o-y. This compares to 0.8% y-o-y in September and 1.0% in August. This is still far from the ECB's aim to lift inflation up to around 2%. The important core inflation rate – the core CPI, excluding energy and food – stood at 1.1% y-o-y in October, after 1.0% in September and 0.9% in August, showing a positive trend, also reflected in and support by rising wages in the Euro-zone. Developments in **lending activity** – a motor for investment – continued to grow considerably in September, though at only a slightly lower level. The latest growth numbers from September stood at 3.0% y-o-y, compared to 3.1% in August. While this is indeed a positive development, it should be noted that the highest growth is coming from the real-estate sector. Mortgages account for around 40% of these activities and grew by 3.7% y-o-y in

September, the highest level in two years. This is a positive development, but it is also an indication that the availability of cheap money is fuelling the sector and this elevates the risk of deflation in future.

The Euro-zone's latest October **PMI indicators** reflected some stabilisation as the services sector improved slightly, but the – also improving – manufacturing sector remains in contraction territory. The manufacturing PMI stood at 45.9, compared to 45.7 in September and 47.0 in August, below the growth-indicating level of 50. The important PMI for services, the largest sector in the Euro-zone, recovered somewhat after a large drop in September, rising to 52.2 in October, compared to 51.6 in September and 53.5 in August.

Ongoing challenges in the Euro-zone are keeping growth at a low level. Considering the German slowdown, weaknesses in the banking sector, Brexit and high sovereign debt levels in some economies, the developments in the Euro-zone remain uncertain.

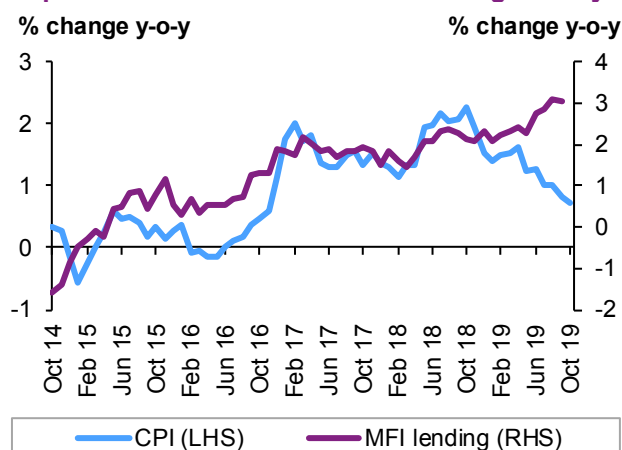
The 2019 **GDP growth** forecast remains unchanged at 1.2%. Given that growth is not expected to accelerate from the current level, GDP growth expectations for 2020 were revised down to 1.0% from 1.1% in the past month.

UK

After tumultuous developments in the **UK** Parliament in October, it was decided to hold elections on 12 December. In the meantime the Brexit deadline was extended until at least 31 January under an agreement with the EU. It remains to be seen how the elections will turn out, not only in respect to the outcome of Brexit, but also with regard to future economic policy as the economic programmes of the two major parties differ greatly.

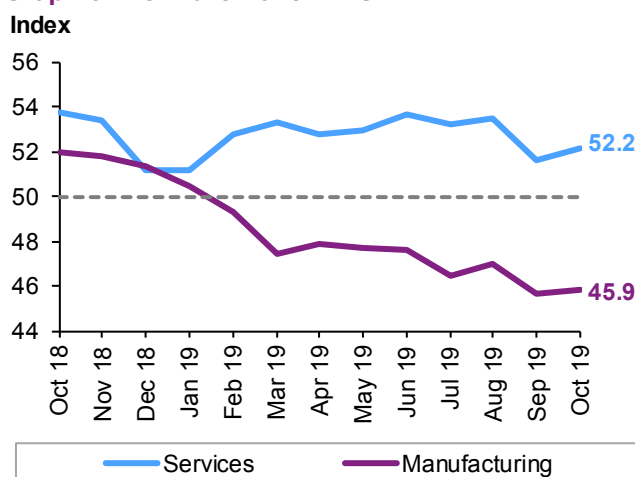
Additionally, the slowdown in the Euro-zone and global economic challenges, including those related to trade, dampen growth in the UK. However, GDP growth in 3Q19 recovered to stand at 0.3% q-o-q seasonally adjusted (SA), after it declined by 0.2% q-o-q SA in 2Q19. The very near-term developments mainly depend on what will happen with the elections and Brexit.

Graph 3 - 14: Euro-zone CPI and lending activity



Sources: Statistical Office of the European Communities, European Central Bank and Haver Analytics.

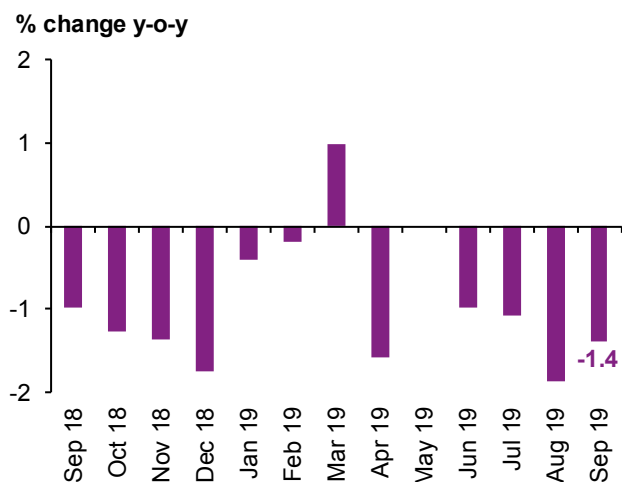
Graph 3 - 15: Euro-zone PMIs



Sources: IHS Markit and Haver Analytics.

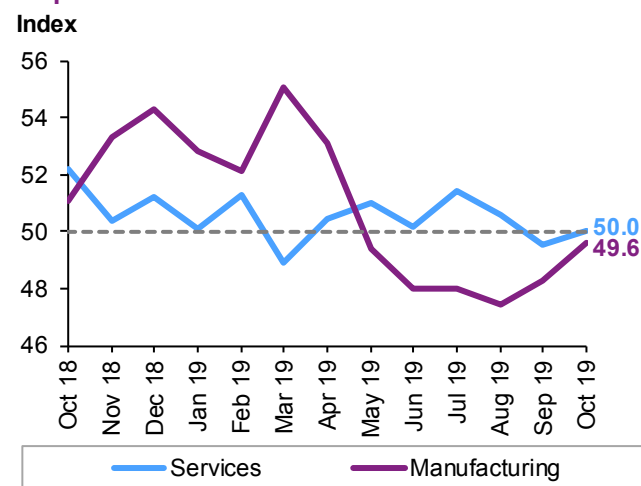
Retail sales in value terms held up well, up by 3.3% y-o-y in September, compared to 3.2% y-o-y in August, and 4.0% y-o-y in July. **Exports** picked up in September, with growth recorded at 1.7% y-o-y, compared to 1.6% y-o-y in August. **Industrial production** fell in September again, declining by 1.4% y-o-y, after a decline of 1.9% y-o-y in August.

Graph 3 - 16: UK industrial production



Sources: Office for National Statistics and Haver Analytics.

Graph 3 - 17: UK PMIs



Sources: CIPS, IHS Markit and Haver Analytics.

October **PMI lead indicators** showed a slight improvement in manufacturing, although it remained in contraction territory. The PMI for manufacturing stood at 49.6 in October, compared to 48.3 in September and 47.4 in August, indicating an ongoing contraction in the sector. The very important PMI of the services sector, which constitutes the majority of the UK's economy, recovered but remained at 50.0, compared to 49.5 in September and 50.6 in August.

2019 **GDP growth** remains at 1.1%. Given the ongoing political uncertainties and the slowdown in the economy, the 2020 growth forecast remains unchanged at 1.0%. This 2020 forecast assumes no major changes in economic policy after the elections and a non-disruptive and soft Brexit, which given the ongoing uncertainties remains to be seen. Depending on these developments, further downside risk remains considerable.

Non-OECD

BRICs

Table 3 - 2: Summary of macroeconomic performance of BRIC countries, 2019-2020*

| | GDP growth rate, % | | Consumer price index, % change y-o-y | | Current account balance, US\$ bn | | Government fiscal balance, % of GDP | | Net public debt, % of GDP | |
|---------------|--------------------|------|--------------------------------------|------|----------------------------------|-------|-------------------------------------|------|---------------------------|------|
| | 2019 | 2020 | 2019 | 2020 | 2019 | 2020 | 2019 | 2020 | 2019 | 2020 |
| Brazil | 0.8 | 1.6 | 3.8 | 3.7 | -20.8 | -27.1 | -5.7 | -4.9 | 81.8 | 83.0 |
| Russia | 1.0 | 1.2 | 4.5 | 4.2 | 121.7 | 113.7 | 2.1 | 1.5 | 9.5 | 9.4 |
| India | 6.1 | 6.7 | 3.6 | 4.2 | -45.0 | -41.2 | -3.5 | -3.4 | 47.2 | 46.6 |
| China | 6.2 | 5.9 | 2.7 | 3.1 | 92.8 | 36.4 | -4.5 | -4.5 | 18.7 | 21.9 |

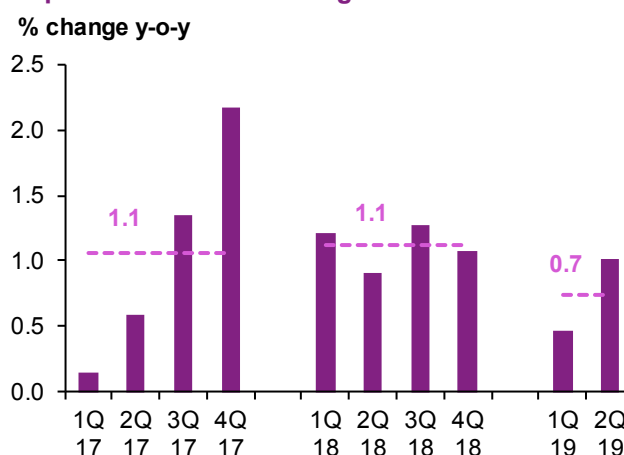
Note: * 2019 = Estimate and 2020 = Forecast.

Sources: Consensus Economics, Economic Intelligence Unit, Financial Times, Oxford Economics and OPEC Secretariat.

Brazil

Brazil's trade surplus shrank sharply in October 2019 to \$1.2 billion, compared to \$5.8 billion in October 2018, as a result of exports large decline and imports rise. **Exports** from fell by 16.7% y-o-y in October, while **imports** went up by 5.7% y-o-y. Exports to China dropped by 6.3%, to the US by 22.2%, to Argentina by 32.2% and to the EU by 14.2% in October. Exports drop was as result of slumped exports of primary goods, iron ore, soybeans, crude oil, semi manufactured goods, and manufactured products. Imports rise was a result of increase in the imports of capital and intermediate goods, whereas consumption goods imports went down. **GDP** registered growth of 0.7% y-o-y in 1H19, after the economy grew by 1.0% y-o-y in 2Q10, from a 0.5% growth in the previous quarter. Private consumption, GFCF, and exports contributed to that, relatively, faster pace of growth.

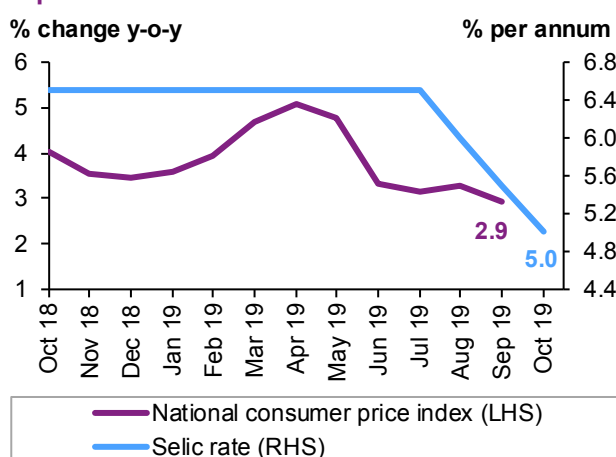
Graph 3 - 18: Brazil's GDP growth



Sources: Instituto Brasileiro de Geografia e Estatística and Haver Analytics.

In October, the **real** appreciated by 0.8% m-o-m, from a 2.5% depreciation in September. On a y-o-y comparison, the real was lower by 8.7% vs the dollar in October 2019. The real depreciated by 18% in the full 2018.

Graph 3 - 19: Brazil's inflation vs. interest rate



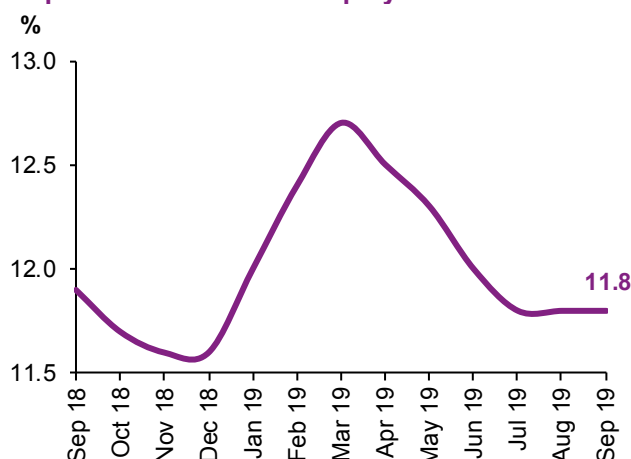
Sources: Banco Central do Brasil, Instituto Brasileiro de Geografia e Estatística and Haver Analytics.

Inflation increased by less than 3% in September, for the first time since May 2018. Inflation posted 2.9% y-o-y in September, from 3.3% y-o-y in August. In 2018, inflation average stood at 2.9%.

The central bank cut its benchmark **interest rate** in October from 5.50% in the previous month to 5.00% – the lowest on record. The lower rate came amid an economic slowdown that has been more notable than expected.

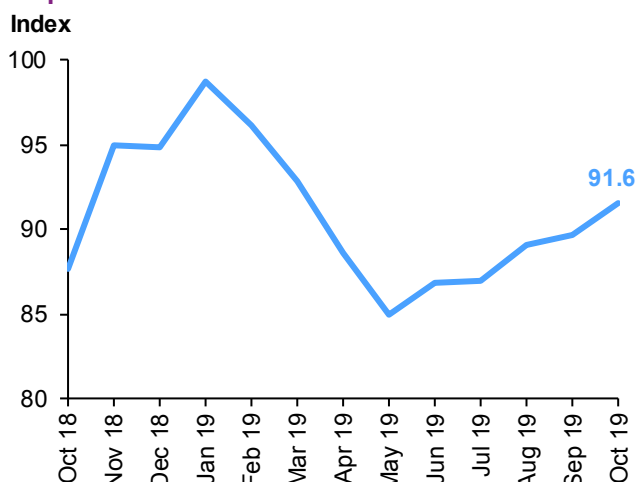
The **unemployment rate** was unchanged at 11.8% in September.

Graph 3 - 20: Brazil's unemployment rate



Sources: Instituto Brasileiro de Geografia e Estatística and Trading Economics.

Graph 3 - 21: Brazil's consumer confidence index

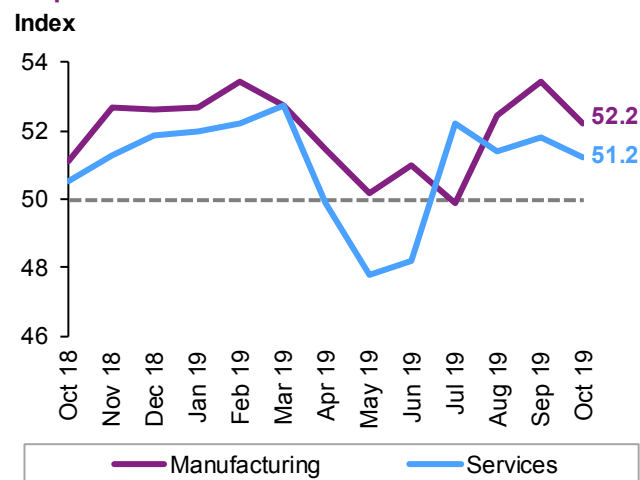


Sources: Fundação Getúlio Vargas and Haver Analytics.

Consumer confidence index improved in October to 91.6, from September's 89.7.

Operations conditions in the **manufacturing sector** continued to improve in October, according to the IHS Markit Brazil manufacturing PMI. The index registered 52.2 in October on the back of the continuation in new orders growth and production rise. The index survey showed that "Improving economic conditions and strengthening demand led to a further expansion in Brazilian factory orders at the start of the fourth quarter. In response to rising new orders, manufacturers scaled up production in October. The upturn was the third in as many months and solid, despite easing from September."

Graph 3 - 22: Brazil's PMIs



Sources: IHS Markit and Haver Analytics.

Amid slower economic growth and challenges to exports to Argentina, the **pension reform bill** was finally approved by the senate, adding sense of a much needed optimism to the medium-term economic trajectory of Brazil. In the absence of such reform, Brazil's public debt would continue to increase. The approved version of the reform is now expected to save the budget around 800 billion reais over ten years, compared to savings of 1.2 trillion real in the original bill before amendments. This development is shedding light of positivity on next year's economic outlook.

The 2Q19 **GDP** data showed that Brazil narrowly avoided recession after expanding by 0.4% q-o-q and 1.0% y-o-y. GDP growth is expected to post growth of 0.8% and 1.6% y-o-y in 2019 and 2020, respectively.

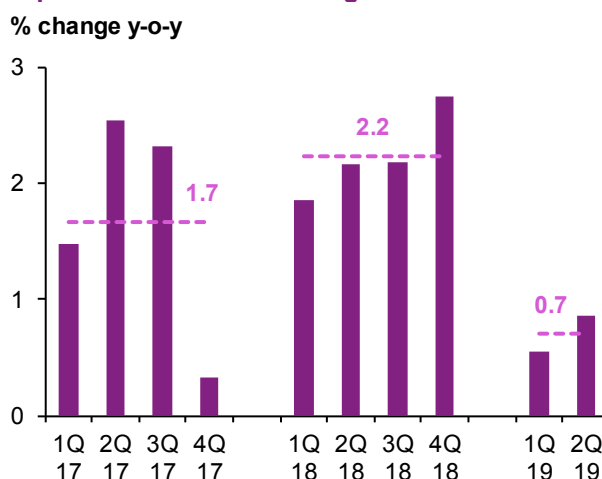
Russia

Russia's balance of trade in goods declined from \$15.8 billion in August 2018 to \$12.0 billion in August 2019. **Exports** of goods fell by 9.7% y-o-y and **imports** went up by 0.8% y-o-y in August 2019.

GDP growth stood at 0.9% y-o-y in 2Q19, from 0.5% in 1Q19. Despite being higher than the previous quarter, GDP growth in 2Q19 remains way below the long-term average growth of 3.8% y-o-y.

The **ruble** appreciated by 0.9% m-o-m in October, after a 0.8% appreciation in September 2019. On a y-o-y comparison, the ruble was 2.3% higher in October 2019 from its level a year earlier.

Graph 3 - 23: Russia's GDP growth



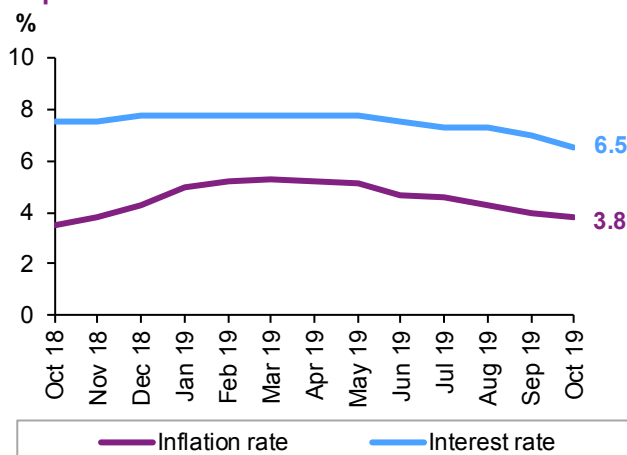
Sources: Federal State Statistics Service and Haver Analytics.

September to 3.8% y-o-y in October. In January 2019, inflation stood at 5.0% y-o-y, as a result of the VAT increase. In March 2019, inflation rose by 5.3% y-o-y, which was the highest inflation rate since December 2016.

The central bank lowered its benchmark one-week **repo rate** to 6.5% in October, from September's 7.0%. This highlights the third interest rate cut since June 2019.

October data continued to signal a deterioration in operating conditions across the **manufacturing sector**. The overall decline was driven by continued drop in production and new business, while new export orders fell by fastest pace since 2009.

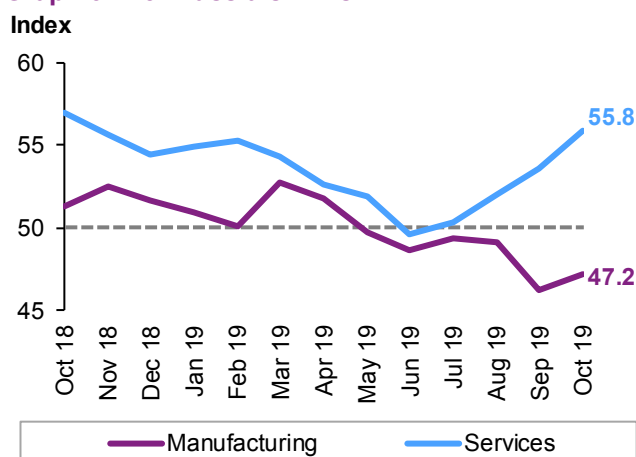
Graph 3 - 24: Russia's inflation vs. interest rate



Sources: Federal State Statistics Service, Central Bank of Russia and Haver Analytics.

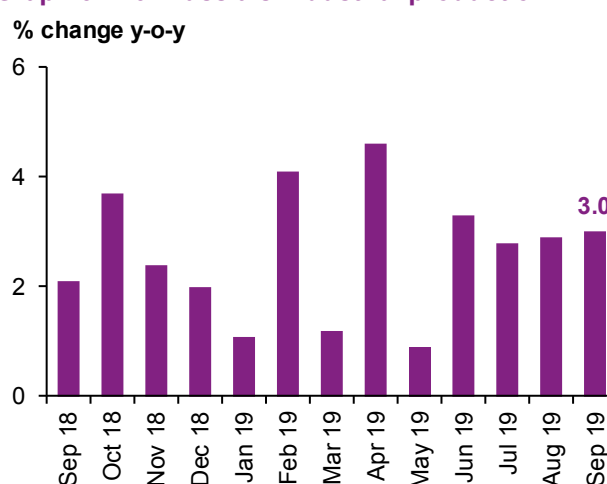
The IHS Markit Russia manufacturing PMI registered 47.2 in October, from 46.3 a month earlier. The survey report said that “manufacturers registered a further decrease in production in October. Although the rate of decline softened from September's recent record, it was solid overall and among the fastest for three-and-a-half years. The downturn in output was attributed to lower client demand and a sustained drop in new business”.

Graph 3 - 25: Russia's PMIs



Sources: IHS Markit and Haver Analytics.

Graph 3 - 26: Russia's industrial production



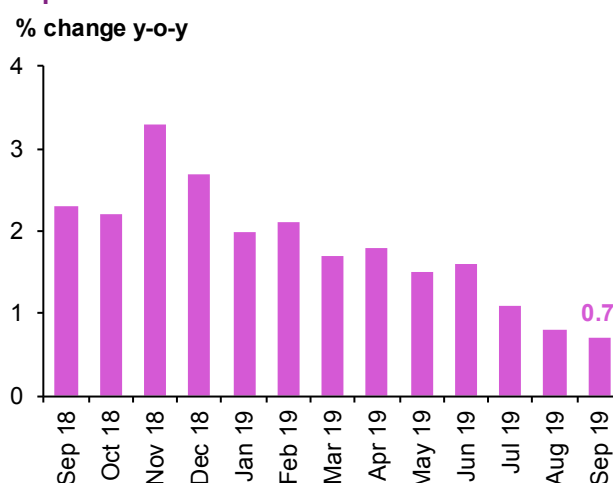
Sources: Federal State Statistics Service and Haver Analytics.

Industrial production increased by 3.0% y-o-y in September, from a 2.9% growth in August. Industrial production stood in the expansion territory since January 2018.

Retail trade posted an expansion of only 0.7% y-o-y in September, from 0.8% y-o-y in August and 1.1% growth in July. Retail trade stood in the expansion territory since February 2017.

The ongoing deceleration in the manufacturing sector accompanied by weak growth in **retail sales** and declining new orders for exports are casting shadow of downbeat momentum on growth prospects for 2019, especially after registering GDP growth of only 0.7% y-o-y in 1H19.

Graph 3 - 27: Russia's retail sales



Sources: Federal State Statistics Service and Haver Analytics.

The **GDP growth** forecast points to 1.0% in 2019 and 1.2% in 2020, y-o-y.

India

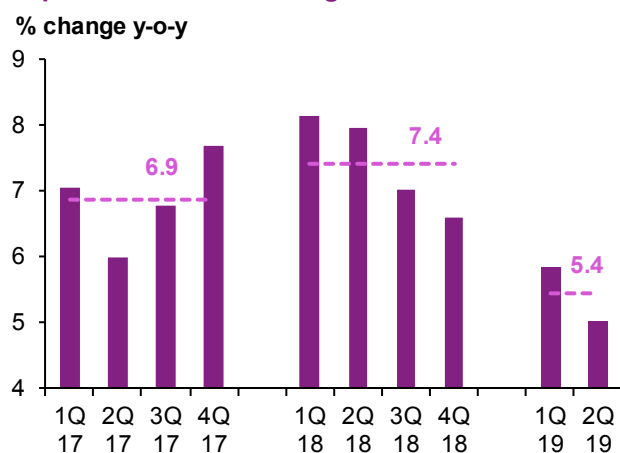
India's GDP growth decelerated sharply in recent quarters. To counter this, the government has considered several tools. In 4Q19 and all of 2020, India's GDP growth will be supported by monetary policy stimulus as well as a corporate income tax reduction which has already been announced.

The Reserve Bank of India (RBI) decreased its **benchmark repo rate** by 25 basis points (bps) to 5.15% in October. This was the fifth straight rate cut in 2019, made in an effort to boost India's slowing consumption, as well as its GDP growth.

Several drivers are likely to exacerbate inflation in the country's economy. The outlook for food CPI inflation has improved significantly since August. However, an RBI survey shows that private and public consumption weakness is continuing, with indications of softening in output prices in 3Q19, 4Q19 and all of 2020. CPI price pressure, excluding food, agricultural products and fuel, is likely to be muted. Finally, crude oil and commodity prices may continue to be volatile in the short term; while global demand is slowing. Continuing geo-political uncertainties pose some upside risk for India's CPI inflation outlook.

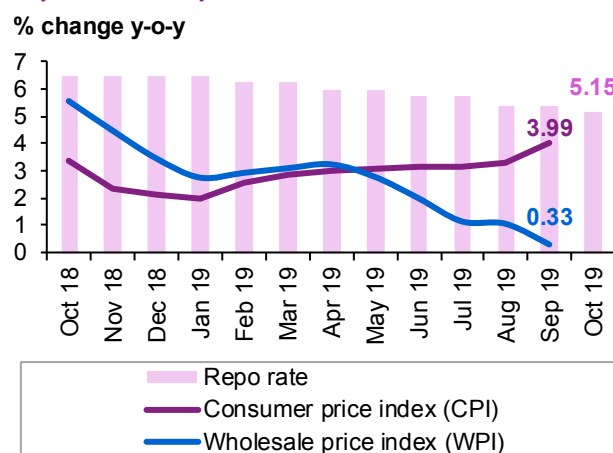
The RBI takes into accounts these factors, and for this reason has recently cut policy rates. But it seems India's economy will be threatened by some elements. India's 1H19 GDP growth was at about 5.4% and is now falling below the RBI forecast (~6.1%). Separate from the availability of credit, costs remains alarming. Despite 135 bps in policy rate cuts over the year by the RBI, the interest rate for fresh new lending declined by just 29 bps.

Graph 3 - 28: India's GDP growth



Sources: National Informatics Centre (NIC) and Haver Analytics.

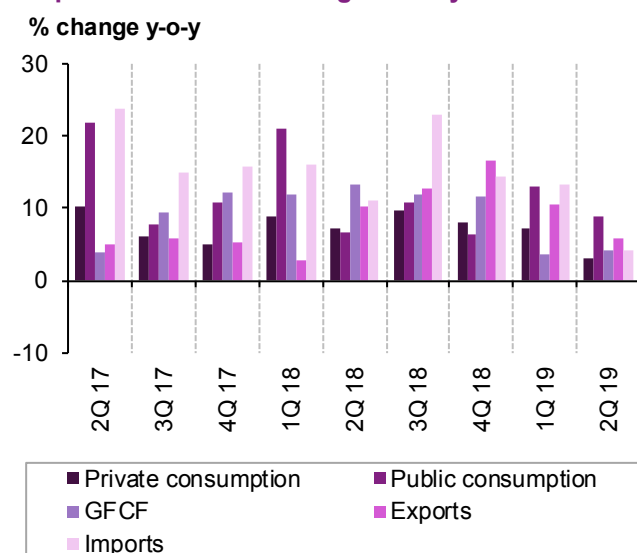
Graph 3 - 29: Repo rate and inflation in India



Sources: Ministry of Commerce and Industry, Reserve Bank of India and Haver Analytics.

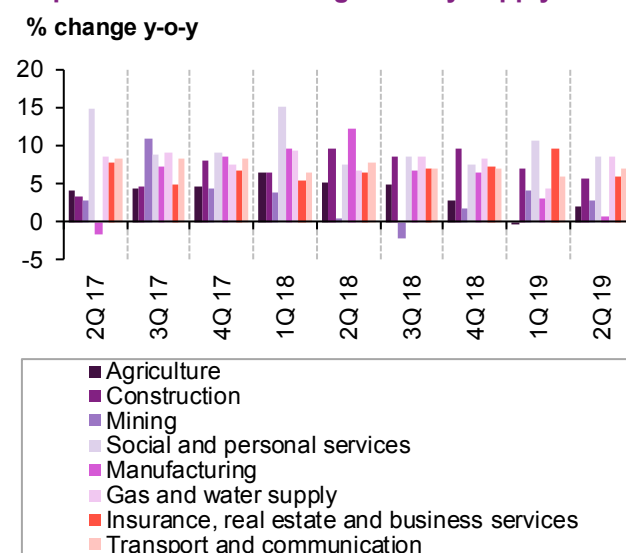
India's **CPI** inflation increased to 3.99% y-o-y in September. The country's Wholesale Price Index (**WPI**) sharply decreased to 0.33% y-o-y in September, following 1.08% the previous month. It was the lowest WPI rate since 2016, as the cost of food rose more slowly and a decrease took place in manufactured products and fuel prices.

Graph 3 - 30: India's GDP growth by demand side



Sources: Central Statistics Office and Haver Analytics.

Graph 3 - 31: India's GDP growth by supply side

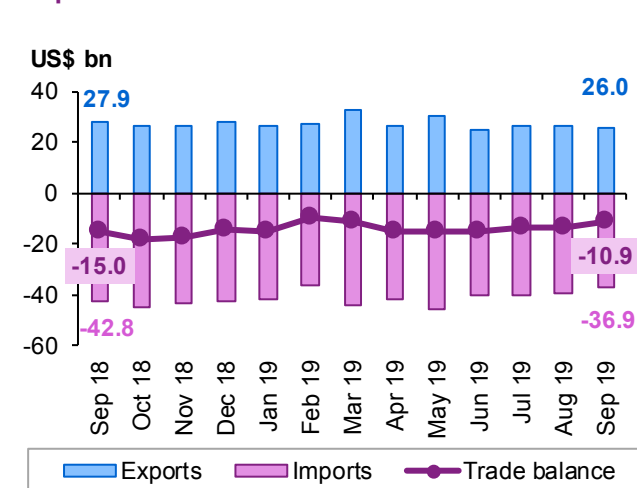


Sources: Central Statistics Office and Haver Analytics.

India's **trade balance** deficit narrowed to \$10.9 billion in September 2019 from \$14.9 billion in September 2018. **Exports** decreased to 6.7% and \$26.03 billion, led by a decline in sales of electronic goods. India's **imports** dropped by 13.9% to \$36.9 billion, led by a drop in the purchase of coal, coke and briquettes.

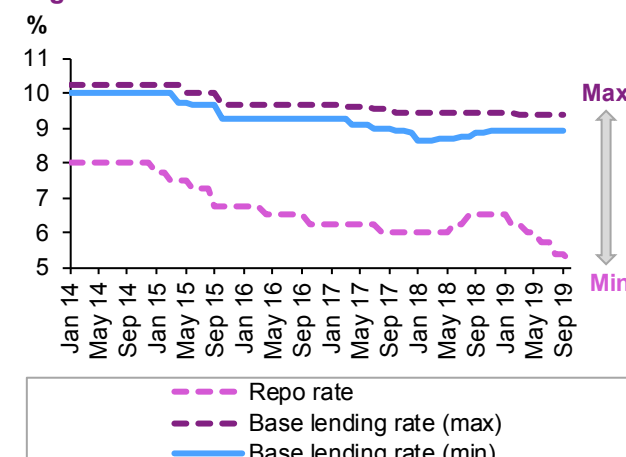
Shadow banking seems to be a main concern in India's economy and money supply to the economy is weak and may mean India's economy requires more liquidity.

Graph 3 - 32: India's trade balance



Sources: Ministry of Commerce and Industry and Haver Analytics.

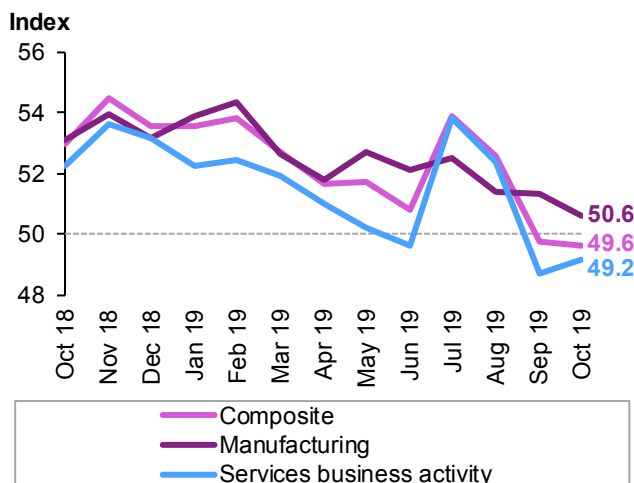
Graph 3 - 33: India's repo rate vs. lending rate range



Sources: Reserve Bank of India, Haver Analytics and OPEC Secretariat.

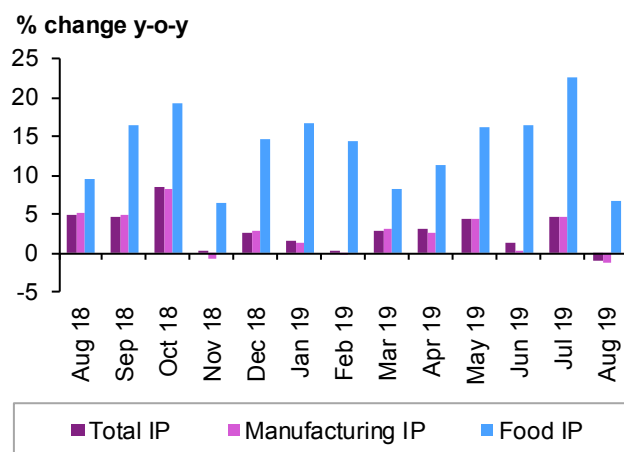
According to the IHS Markit report, India's manufacturing sector was heading towards stagnation in October. Cooling manufacturing sector conditions in India continued in October, with both factory orders and production rising at their weakest rates in two years. The headline seasonally adjusted IHS Markit India's **Manufacturing PMI** fell from 51.4 in September to a two-year low of 50.6 in October, highlighting only a marginal improvement in the health of the manufacturing industry. It seems fading private and public demand has had a domino effect in the manufacturing industry.

Graph 3 - 34: India's PMI



Sources: Nikkei, IHS Markit and Haver Analytics.

Graph 3 - 35: India's industrial production (IP) breakdown



Sources: Ministry of Statistics and Program Implementation of India and Haver Analytics.

India's government is also looking to various financial policies and as well as a drop in tax collections due to the country's GDP growth deceleration.

Notwithstanding India's high GDP potential (~7.1%–7.3% according to an in-house study, in which factors such as labour dynamic, productivity and investment are surveyed), it seems final consumption is still weak and financial or monetary government policies are not expected to have an immediate or short-term impact on India's economy.

India's **GDP growth** remained unchanged at 6.1% for 2019 and 6.7% for 2020.

China

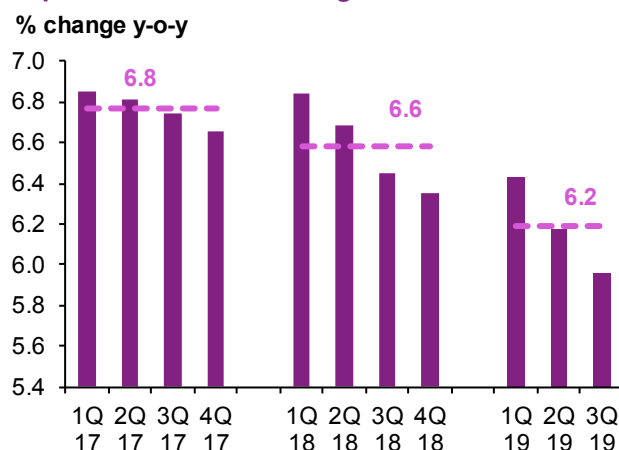
China's **GDP growth** rate slowed more than expected to 6.0% y-o-y in 3Q19, the weakest pace in almost 30 years, impacted by soft factory production which was amplified by the China-US trade dispute as well as sluggish demand in the domestic market. There is a great deal of risk and uncertainty regarding US-China trade talks.

The last International Monetary Fund meeting in October 2019 warned that the US-China trade conflict will cut 2019 global growth to its slowest pace since the 2008–2009 financial crises, but emphasised output would rebound if duelling tariffs were removed. However, in recent months, US and Chinese negotiators have made "significant progress" toward concluding the first stage of an agreement, although no deal has been completed. The agreement covers Chinese purchases of US agricultural products and other steps to open its market to agricultural goods.

The China-US trade dispute, along with weak global demand, was partly compensated by China's policy easing in the domestic market in 2019. It seems China's could manage a GDP slow down.

In terms of China's GDP contribution to the various parts of the economy, on the **demand side** when comparing 3Q19 vs 2Q19, final consumption expenditure slightly fell (3.75% vs. 3.79%), gross capital expenditure rose (1.23% vs. 1.21%), total domestic demand fell (5.00% vs. 4.98%) and net exports decreased (1.22% vs. 1.30%).

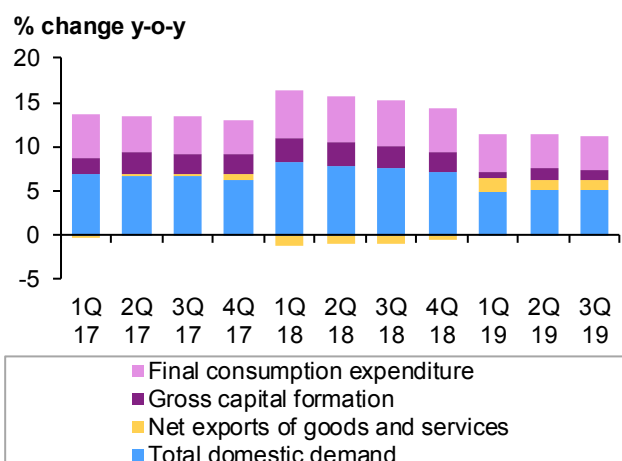
Graph 3 - 36: China's GDP growth



Sources: China's National Bureau of Statistics and Haver Analytics.

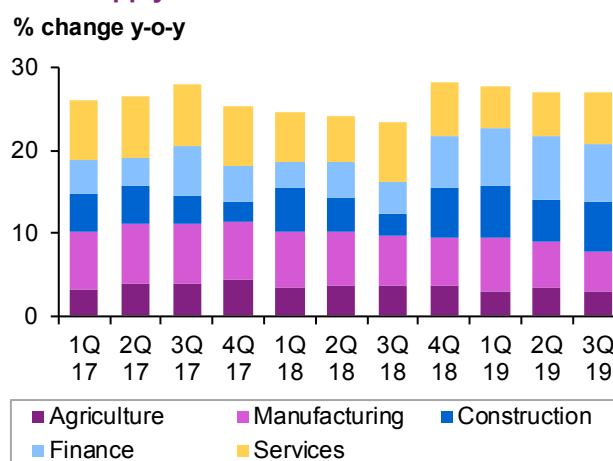
On the **supply side** and in the same comparison period, agriculture fell (2.9% vs 3.4%), manufacturing decreased (5.5% vs 4.8%) and financial services went down (6.9% vs 7.6%). In contrast, services improved (7.2% vs 7.0%) and construction rose (6.1% vs 5.1%).

Graph 3 - 37: Contribution to China's GDP growth on the demand side



Sources: China National Bureau of Statistics and Haver Analytics.

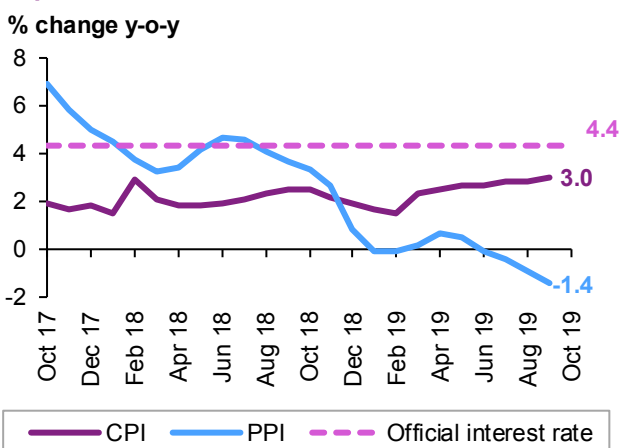
Graph 3 - 38: Contribution to China's GDP growth on the supply side



Sources: China National Bureau of Statistics, Haver Analytics and OPEC Secretariat.

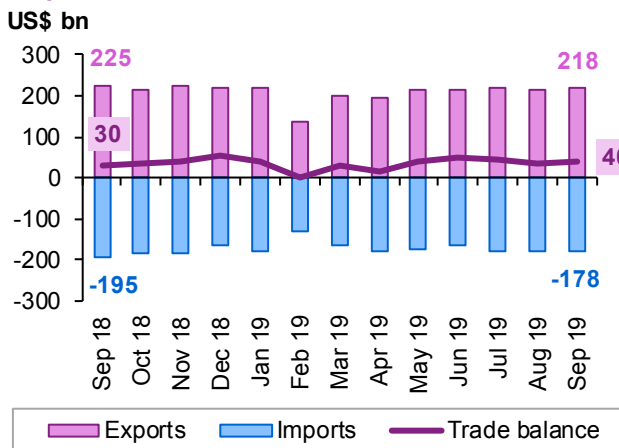
China's **CPI** inflation increased to 3.0% in September 2019, from 2.8% the previous month. This was the highest inflation since 2013. Also, the **producer prices index (PPI)** fell sharply to -1.4% y-o-y in September. It was the sharpest fall since July 2016 and is led by a drop in the price of raw materials, processing and extraction.

Graph 3 - 39: China's CPI and PPI



Sources: China Index Academy, China National Bureau of Statistics, Soufan and Haver Analytics.

Graph 3 - 40: China's trade balance



Sources: General Administration of Customs of China and Haver Analytics.

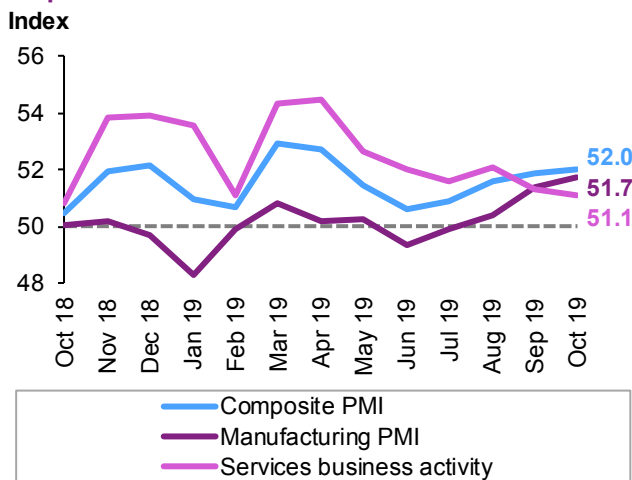
China's **trade balance** surplus widened to \$39.65 billion in September, from \$30.26 billion same time a year ago. The China's trade surplus with the US narrowed to \$25.88 billion in September from \$26.96 billion in August. **Exports** dropped by 3.2% y-o-y in September to \$218.12 billion. **Imports** slumped by 8.5% from a year earlier to \$178.47 billion in September, after seeing a 5.6% drop in August.

The official **National Bureau of Statistics' non-manufacturing PMI** sharply declined to 52.8 in October. The latest reading pointed to the weakest pace of expansion and development in the services sector since January 2016, emphasizing sluggish domestic demand and escalating pressure on China's economy.

According to the latest Markit-HIS report, the Caixin China General Manufacturing PMI in October rose to 51.7 in October.

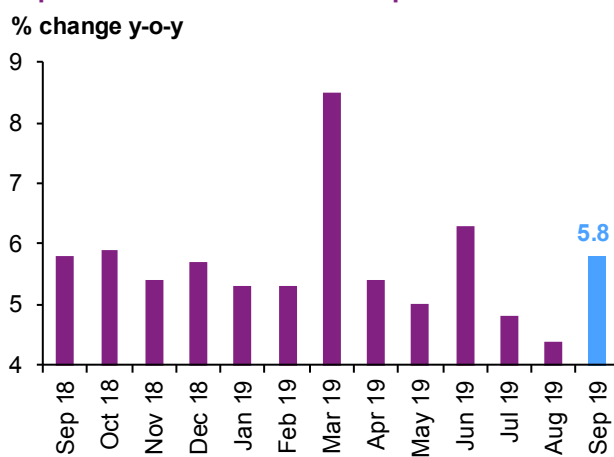
China's **industrial production** improved by 5.8% y-o-y in September from 4.4% in August.

Graph 3 - 41: China's PMI



Sources: Caixin, IHS Markit and Haver Analytics.

Graph 3 - 42: China's industrial production



Sources: China National Bureau of Statistics and Haver Analytics.

It seems China's growth has slowed and is at its lowest point in the past 30 years due to an escalating trade conflict with the US, as well as weakening domestic demand. That slowdown seems to be deepening despite a weakening currency and steps by China to provide stimulus, including cuts in taxes and fees.

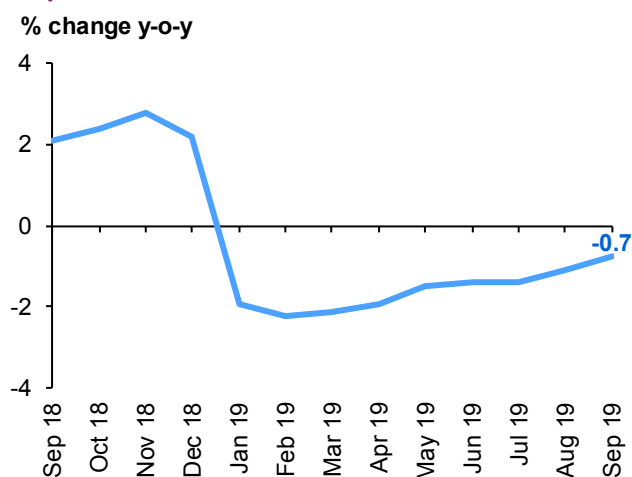
Due to the lost momentum in China's **GDP growth** in 3Q19 it seems the country's GDP growth in 4Q19 is likely to further slow, and according to the cycle, analysis expect this trend to continue in 2020. OPEC has kept China's GDP growth expectation unchanged at 6.2% in 2019 and 6.0% in 2020.

OPEC Member Countries

Saudi Arabia

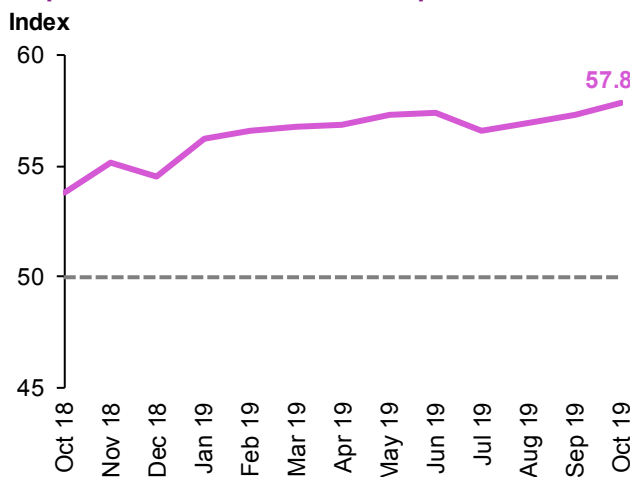
In **Saudi Arabia**, consumer price inflation eased by 0.7% y-o-y in September, from a 1.1% drop in the previous month. Wholesale prices increased by 3.1% y-o-y in September, up from 2.7% in August. Private sector worker productivity posted an increase of 0.8% y-o-y in 1Q19, its lowest since 4Q16. Cement deliveries jumped by 13.7% y-o-y during September, up from 1.0% in August. The central government run deficit of around 32.2 billion reals in 3Q19, down from 33.5 billion reals in the previous quarter. The 2Q19 deficit-to-GDP ratio stood at 1.3%. Total reserve assets at the end of September was 1.88 trillion real, from 1.90 trillion real a month earlier. GDP registered growth of 1.1% y-o-y in 1H19, as growth slowed to 0.5% y-o-y in 2Q19, from a 1.7% in the previous quarter, according to the General Authority for Statistics.

Graph 3 - 43: Saudi Arabia's inflation



Sources: General Authority for Statistics and Haver Analytics.

Graph 3 - 44: Saudi Arabia's composite PMI



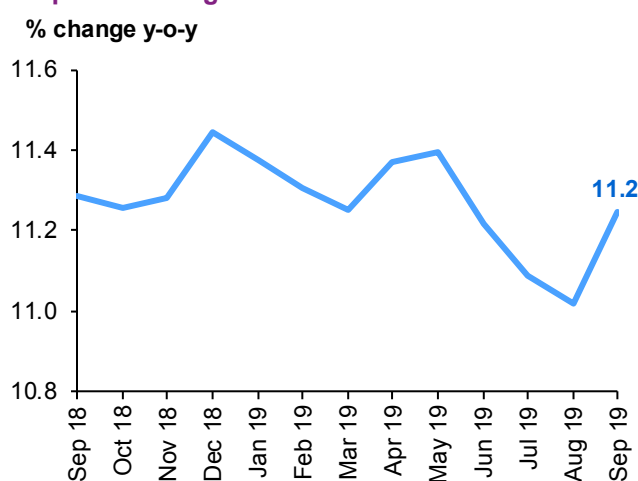
Sources: Emirates NBD, IHS Markit and Haver Analytics.

In October 2019, business conditions in the non-oil private sector improved by fastest pace since August 2015, according to the IHS Markit Saudi Arabia PMI. The index increased from 57.3 in September to 57.8 in October, highlighting a sustained growth in the private sector. The survey report showed that “the upturn in business conditions seen in October was led by a steep and accelerated increase in new business - the sharpest seen since June. Export sales also rose, though at a slower pace, indicating that the main impetus continued to come from the domestic market.”

Nigeria

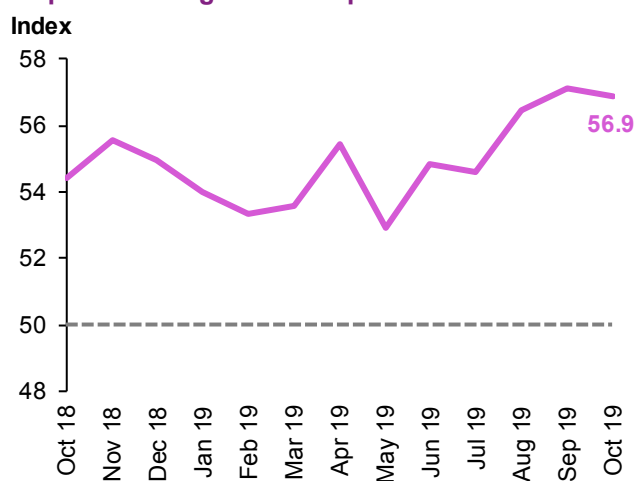
In **Nigeria**, inflation in September increased to highest rate since June. Inflation posted 11.2% y-o-y in September, following posting the lowest reading in three and a half years in the previous month. Inflation stood at 11.0% y-o-y in August. This increase in inflation was partly due to the sharp rise in food prices, especially rice. Food prices surged by 13.5% in September because of border closure with some neighbouring countries. The central bank of Nigeria kept its monetary policy rate intact at 13.50% in October. The private sector continued its strong performance in October, primarily due to output growth by highest rate in 13 months alongside strong new orders expansion.

Graph 3 - 45: Nigeria's inflation



Sources: National Bureau of Statistics and Haver Analytics.

Graph 3 - 46: Nigeria's composite PMI



Sources: IHS Markit, Stanbic IBTC Bank and Haver Analytics.

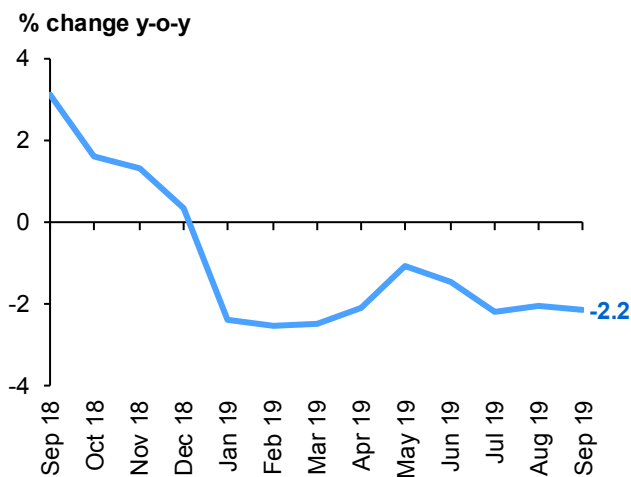
The Stanbic Bank Nigeria PMI registered 56.9 in October, from 57.1 in September. The survey report showed that “the rate of output growth quickened for the third month running in October and was the fastest since September last year. Stronger client demand reportedly fed through to higher sales and customer numbers, thereby encouraging companies to expand their business activity. New orders also continued to rise sharply amid improving demand conditions, despite the rate of expansion softening slightly over the month.”

The United Arab Emirates (UAE)

In the **UAE**, the central government registered budget surplus of 50.6 billion dirham in 2Q19, following a deficit of around 1.2 billion dirham in the previous quarter. Revenues increased from 104.8 billion dirham in 1Q19 to 145.1 billion dirham in 2Q19, whereas expenditures went from 105.9 billion dirham in 1Q19 to 94.5 billion dirham in 2Q19. Net international reserves stood at around 373.7 billion dirham in September, up from 370.1 billion dirham in August.

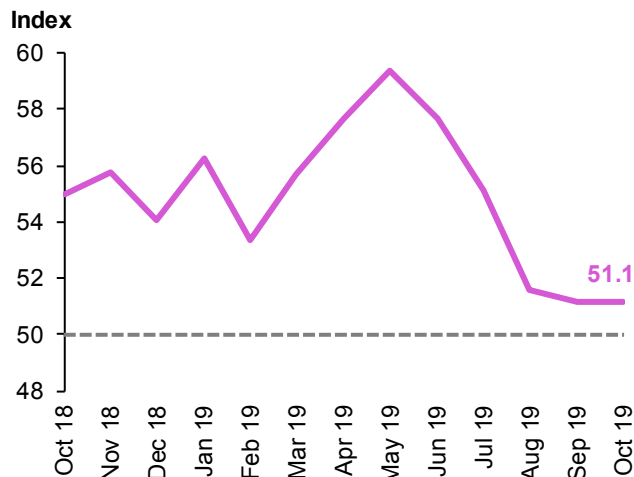
The IHS Markit UAE PMI showed a continued growth in the non-oil private sector during October, though at a much slower pace than the long-term average. The index stayed at 51.1 in October, which is the joint-lowest reading since May 2010. The survey report said that “UAE companies continued to ease back from the recent growth momentum earlier this year, with activity levels rising at the weakest rate since 2012. The amount of new work also remained subdued, as competition meant that sales increased only marginally from September.”

Graph 3 - 47: UAE's inflation



Sources: National Bureau of Statistics and Haver Analytics.

Graph 3 - 48: UAE's composite PMI



Sources: Emirates NBD, IHS Markit and Haver Analytics.

Other Asia

Indonesia

In **Indonesia**, GDP registered growth of 5.0% y-o-y in 3Q19, from 5.1% in the previous two quarters. Growth in household consumption showed slightly slower pace at 5.0% y-o-y in 3Q19, from 5.2% in 2Q19. Public consumption had a sharp drop in growth, from 8.3% y-o-y in 2Q19 to 1.0% in 3Q19. Gross capital formation expanded at a higher rate during 3Q19 of 3.0% y-o-y, up from 2.1% in the previous quarter. Exports showed no increase in 3Q19, following two declining quarters, while imports continued to decline in 3Q19. Imports fell by 8.6% y-o-y in 3Q19, from a drop of 6.8% in 2Q19. The manufacturing sector weakened in October to near four-year low, according to the IHS Markit Indonesia manufacturing PMI. The index dropped to 47.7 in October, from 49.1 in September. The index survey report highlighted that “Overall demand for Indonesian manufactured goods weakened at a faster rate at the start of the fourth quarter. Inflows of new orders fell for a third straight month in October and at the steepest pace since late 2015. Export sales also declined during the month, albeit at a slower rate. Consequently, backlogs of work decreased during the month. Reduced sales led firms to again scale back production in October. Output shrank for a fourth month running and at the quickest extent for almost four years.”

Africa

South Africa

In **South Africa**, trade surplus increased from 4.5 billion rand in August to 5.2 billion rand in September on the back of imports drop by 8.6% m-o-m. In September, exports went down by 7.8% m-o-m. During the period from January to September 2019, trade balance increased to 2.5 billion rand, from 1.8 billion rand over the same period of 2019. In 3Q19, the unemployment rate increased to 29.1%, compared to 27.5 in 3Q18. This represents the highest unemployment rate since 1Q08. Inflation went down to 4.1% y-o-y in September, from 4.3% a month earlier, due to inflation decline in the sectors of housing, utilities and transport. The private sector remained in the contraction territory in October, with the IHS Markit South Africa PMI at 49.4, from 49.2 in the previous month. The survey report showed that “new business received by private sector firms in South Africa fell again in October, extending the current sequence to 16 months. The decrease was moderate and quicker than in September. Where lower sales were reported, this was often related to poor economic conditions and a loss of competitiveness to foreign companies. New export orders fell at the fastest rate since June. As such, businesses reduced output levels for the sixth successive month, albeit with the rate of decline slowing since the end of the third quarter.”

Latin America

Argentina

In **Argentina**, a new president was elected at the end of October and will take office on 10th December. Details of the new government's economic plan is yet to be announced. A plan that needs to address challenging economic crisis, increasing unemployment rate, slumping currency, soaring inflation, and declining foreign reserves, in addition to renegotiations with international creditors. The country's foreign reserves fell by nearly 33%, \$22 billion since August, with only \$43 billion remaining in the central bank's reserves. The peso exchange rate vs the dollar has been sliding since August, when the peso depreciated by nearly 24% m-o-m on the back of primary election outcomes. In October, the peso has depreciated by about 55% y-o-y. Inflation is steadily above 50% y-o-y since the beginning of 2019, posting 53.5% y-o-y in September. Following the elections, the central bank has imposed more measures to protect international reserves, via putting another limit on dollar purchases to only \$200 per month. Nearly one third of the \$22 billion depleted since August were used to meet the strong demand for the US dollar by Argentinians seeking to protect their savings. Another third was used to try to slowdown the sharp depreciation of the peso. The final third was paid as debt services for creditors.

Transition region

Czech Republic

In **Czech Republic**, the koruny appreciated by 1.1% m-o-m vs the dollar in October. Comparing with last year, the koruny is 3.4% lower in October 2019. Inflation stood at 2.7% y-o-y in September, down from 2.9% a month earlier due to the ease in food prices. Data on construction output showed a decline by 3.8% y-o-y in August, while the apartment price index exhibited a rise of 5.2% y-o-y during 3Q19, compared to a 5.7% increase in 2Q19. The unemployment rate posted 2.1% in 3Q19, up from 1.9% in 2Q19 which is the lowest in historical data since 1Q93. Alongside the low unemployment rate, productivity increased by 2.4% y-o-y in 2Q19, while the unit labour cost also rose by 5.0% y-o-y during the same period. New car registrations went up by 8.5% y-o-y in September, after falling by 10.1% in August. The manufacturing sector showed a continued drop in production amid a notable fall in new orders. The IHS Markit Czech Republic manufacturing PMI posted 45.0 in October, from 44.9 in September. The survey report highlighted that "the rate of contraction signalled by the index remained strong overall and was among the fastest recorded since mid-2009. Production decreased across the manufacturing sector for the eleventh successive month in October, albeit at the softest pace since April. A decline in new business reportedly drove the moderate contraction. Moreover, a downturn in domestic and foreign demand led to further marked falls in new orders and new export business."

World Oil Demand

World oil demand in 2019 is anticipated to increase by 0.98 mb/d, unchanged from previous month's Monthly Oil Market Report (MOMR). This is despite some upward revisions to the Middle East region during the 2H19 almost entirely offset by downward revisions to OECD America during 2Q19 and 3Q19. Global oil demand is now projected to average 99.80 mb/d.

Oil demand growth in the **OECD** region was adjusted lower by around 0.03 mb/d in 2019, due to slower-than-expected demand in OECD America-US and Canada. Weak middle distillate demand amid an extremely high base line of comparison, along with slower manufacturing activity compared to the same period in 2018, provided justification for downward adjustments in OECD Americas during the first three quarters.

In the **non-OECD** region, oil demand growth was revised higher by around 0.03 mb/d in 2019 mainly reflecting the latest positive momentum in Middle East oil demand data. On the other hand, in Other Asia, slower-than-expected demand growth in India and other countries due to slower construction activity necessitated a downward revision of oil demand growth in the region during 3Q19. In the Middle East, around 0.04 mb/d of upward revision was recorded in light of better-than-expected oil demand growth in Saudi Arabia.

World oil demand in 2020 is now forecast at around 1.08 mb/d, unchanged from last month's projection. Total global demand is forecast to exceed 100 mb/d on an annual basis, to average 100.88 mb/d in 2020.

The **OECD** is projected to increase by 0.07 mb/d, with OECD Americas being the only region in positive territory.

In the **non-OECD** region, oil demand growth is projected to be around 1.01 mb/d with growth improving from current-year levels in Other Asia and Latin America, and marginally improving in the Middle East.

World oil demand in 2019 and 2020

OECD

OECD Americas

US

US oil demand data for August 2019 implied declines in liquid hydrocarbon requirements of approximately 0.3 mb/d y-o-y. Requirements vary across petroleum product categories: LPG/NGLs demand fell y-o-y, mainly as a result of the high historical baseline during the same month in 2018, while gasoline and residual fuel oil demand grew slightly. The high historical baseline also affected growth in demand of diesel, as well as jet/kerosene – August 2018 US oil demand growth was the highest in 2018 and exceeded 1.1 mb/d.

Growing gasoline demand was in line with rising vehicle miles travelled and total lightweight vehicle sales, which both increased by around 0.75% compared to the same period in 2018, according to Federal Highway Administration and AutoData. Yet gasoline demand was lower during the 2019 driving season as compared to last year and remains outside the main contributing products to US oil demand growth, as fuel substitution and efficiencies seem to offset higher mileage.

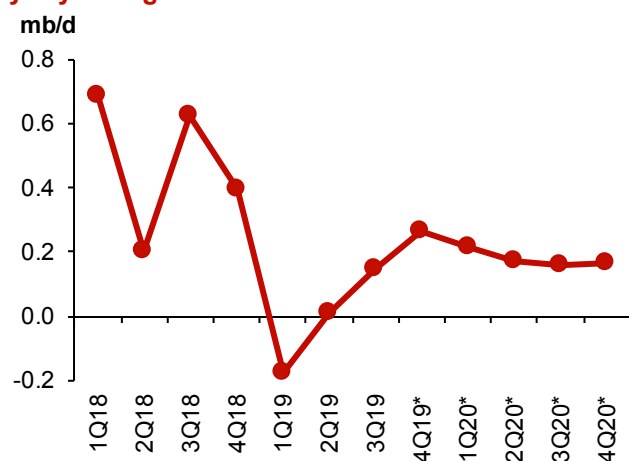
Table 4 - 1: US oil demand, tb/d

| | Aug 19 | Aug 18 | Change 2019/18 | |
|----------------|---------------|---------------|----------------|-------------|
| | | | tb/d | % |
| LPG | 2,544 | 2,735 | -191 | -7.0 |
| Naphtha | 228 | 251 | -23 | -9.2 |
| Gasoline | 9,821 | 9,778 | 43 | 0.4 |
| Jet/kerosene | 1,847 | 1,860 | -13 | -0.7 |
| Diesel oil | 4,002 | 4,196 | -194 | -4.6 |
| Fuel oil | 341 | 292 | 49 | 16.8 |
| Other products | 2,570 | 2,537 | 33 | 1.3 |
| Total | 21,353 | 21,649 | -296 | -1.4 |

Sources: US EIA and OPEC Secretariat.

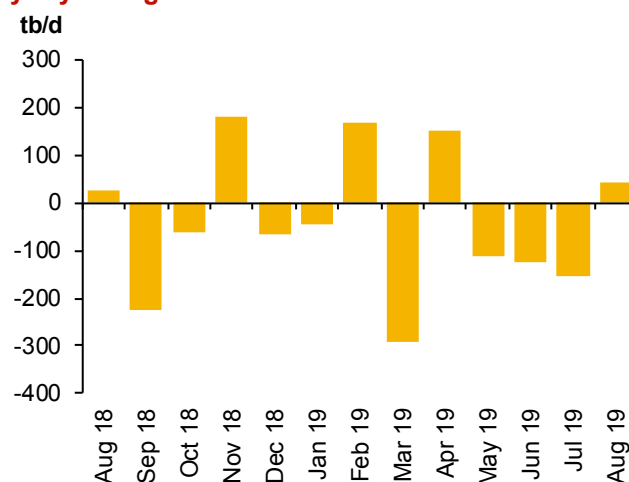
US oil demand was slightly lower in the first eight months of 2019 compared to the same period last year. The main drivers of growth during this period are NGLs/LPG, as feedstock for the petrochemical industry; diesel, mainly used in the industrial sector; and jet/kerosene, in line with rising travel activity. Gasoline demand declined and naphtha demand also shrank mainly as a result of substitution with lighter hydrocarbons.

Graph 4 - 1: OECD Americas oil demand, y-o-y change



Note: * 4Q19-4Q20 = Forecast.
Source: OPEC Secretariat.

Graph 4 - 2: US gasoline demand, y-o-y change



Sources: US EIA and OPEC Secretariat.

September 2019 oil demand, which is based on preliminary weekly data, showed an increase of around 4.1% y-o-y, with NGLs/LPG, gasoline and diesel requirements rising but being partly offset by disappointing naphtha and jet/kerosene demand.

October 2019 preliminary data indicate robust US oil demand for the majority of main petroleum product categories, with NGLs/LPG, gasoline and jet/kerosene being the growth contributors. For October, month-to-date data imply growth of around 0.8% y-o-y.

Canada

In **Canada**, August 2019 oil demand fell slightly y-o-y. Gains in LPG and diesel were more than offset by declines in required naphtha, gasoline and jet/kerosene.

Mexico

Following two months of growing oil demand, **Mexican oil requirements** shrank in September 2019 by 0.14 mb/d y-o-y. The bulk of oil demand losses during September 2019 originated in all petroleum product categories, notably in diesel, gasoline and residual fuel oil.

World Oil Demand

Going forward for the **OECD Americas**, US oil demand is anticipated to remain solid throughout the rest of 2019, with industrial and transportation fuels dominating the implied growth share. The US is projected to again remain the main contributor to 2020 OECD oil demand growth.

The overall risks for 2019 and 2020 OECD America oil demand can be estimated as balanced. Strong projected economic growth is the fundamental factor pointing to the upside; fuel substitution and developments in vehicle efficiencies are the principal factors pointing to the downside.

In 2019, OECD Americas oil demand is expected to grow by 0.12 mb/d compared to 2018, marking the lowest yearly growth since 2014 with further downward revisions appear to be likely at this stage. 2020 OECD Americas' oil demand is projected to increase by 0.18 mb/d compared to 2019.

Table 4 - 2: World oil demand in 2019*, mb/d

| | 2018 | 1Q19 | 2Q19 | 3Q19 | 4Q19 | 2019 | Change 2019/18 | |
|------------------------------|--------------|--------------|--------------|---------------|---------------|--------------|----------------|-------------|
| | | | | | | | Growth | % |
| Americas | 25.55 | 25.22 | 25.38 | 26.03 | 26.02 | 25.66 | 0.12 | 0.46 |
| of which US | 20.79 | 20.67 | 20.66 | 21.25 | 21.02 | 20.90 | 0.12 | 0.57 |
| Europe | 14.31 | 13.99 | 14.23 | 14.68 | 14.30 | 14.30 | 0.00 | -0.03 |
| Asia Pacific | 8.08 | 8.45 | 7.64 | 7.73 | 8.12 | 7.99 | -0.09 | -1.14 |
| Total OECD | 47.93 | 47.65 | 47.26 | 48.44 | 48.44 | 47.95 | 0.02 | 0.04 |
| Other Asia | 13.64 | 13.91 | 13.96 | 13.66 | 14.21 | 13.93 | 0.30 | 2.18 |
| of which India | 4.73 | 5.03 | 4.75 | 4.49 | 5.14 | 4.85 | 0.12 | 2.57 |
| Latin America | 6.53 | 6.36 | 6.58 | 6.83 | 6.49 | 6.57 | 0.04 | 0.62 |
| Middle East | 8.12 | 8.25 | 7.90 | 8.64 | 7.95 | 8.18 | 0.06 | 0.78 |
| Africa | 4.33 | 4.45 | 4.42 | 4.36 | 4.50 | 4.43 | 0.10 | 2.31 |
| Total DCs | 32.62 | 32.97 | 32.87 | 33.49 | 33.14 | 33.12 | 0.50 | 1.53 |
| FSU | 4.82 | 4.75 | 4.74 | 5.02 | 5.11 | 4.91 | 0.09 | 1.82 |
| Other Europe | 0.74 | 0.75 | 0.71 | 0.75 | 0.84 | 0.76 | 0.02 | 2.69 |
| China | 12.71 | 12.63 | 13.19 | 12.98 | 13.43 | 13.06 | 0.35 | 2.73 |
| Total "Other regions" | 18.27 | 18.13 | 18.64 | 18.75 | 19.38 | 18.73 | 0.45 | 2.49 |
| Total world | 98.82 | 98.76 | 98.76 | 100.69 | 100.95 | 99.80 | 0.98 | 0.99 |
| Previous estimate | 98.82 | 98.65 | 98.93 | 100.70 | 100.89 | 99.80 | 0.98 | 0.99 |
| Revision | 0.00 | 0.10 | -0.16 | 0.00 | 0.06 | 0.00 | 0.00 | 0.00 |

Note: * 2019 = Estimate.

Totals may not add up due to independent rounding.

Source: OPEC Secretariat.

Table 4 - 3: World oil demand in 2020*, mb/d

| | 2019 | 1Q20 | 2Q20 | 3Q20 | 4Q20 | 2020 | Change 2020/19 | |
|------------------------------|--------------|--------------|--------------|---------------|---------------|---------------|----------------|-------------|
| | | | | | | | Growth | % |
| Americas | 25.66 | 25.43 | 25.56 | 26.19 | 26.18 | 25.84 | 0.18 | 0.69 |
| of which US | 20.90 | 20.85 | 20.80 | 21.37 | 21.17 | 21.05 | 0.15 | 0.71 |
| Europe | 14.30 | 13.94 | 14.20 | 14.66 | 14.28 | 14.27 | -0.03 | -0.21 |
| Asia Pacific | 7.99 | 8.37 | 7.56 | 7.66 | 8.05 | 7.91 | -0.08 | -0.99 |
| Total OECD | 47.95 | 47.73 | 47.31 | 48.51 | 48.51 | 48.02 | 0.07 | 0.14 |
| Other Asia | 13.93 | 14.27 | 14.32 | 14.04 | 14.60 | 14.31 | 0.37 | 2.66 |
| of which India | 4.85 | 5.20 | 4.90 | 4.65 | 5.32 | 5.02 | 0.16 | 3.39 |
| Latin America | 6.57 | 6.44 | 6.66 | 6.91 | 6.56 | 6.64 | 0.07 | 1.14 |
| Middle East | 8.18 | 8.30 | 7.95 | 8.72 | 8.04 | 8.25 | 0.07 | 0.86 |
| Africa | 4.43 | 4.53 | 4.52 | 4.46 | 4.59 | 4.52 | 0.09 | 2.00 |
| Total DCs | 33.12 | 33.54 | 33.44 | 34.12 | 33.79 | 33.73 | 0.60 | 1.82 |
| FSU | 4.91 | 4.83 | 4.81 | 5.11 | 5.19 | 4.99 | 0.08 | 1.65 |
| Other Europe | 0.76 | 0.76 | 0.72 | 0.76 | 0.85 | 0.77 | 0.01 | 1.54 |
| China | 13.06 | 12.91 | 13.50 | 13.28 | 13.77 | 13.37 | 0.31 | 2.37 |
| Total "Other regions" | 18.73 | 18.50 | 19.03 | 19.15 | 19.82 | 19.13 | 0.40 | 2.15 |
| Total world | 99.80 | 99.78 | 99.79 | 101.78 | 102.12 | 100.88 | 1.08 | 1.08 |
| Previous estimate | 99.80 | 99.68 | 99.95 | 101.78 | 102.06 | 100.88 | 1.08 | 1.08 |
| Revision | 0.00 | 0.10 | -0.16 | 0.00 | 0.06 | 0.00 | 0.00 | 0.00 |

Note: * 2019 = Estimate and 2020 = Forecast.

Totals may not add up due to independent rounding.

Source: OPEC Secretariat.

OECD Europe

European oil demand data declined y-o-y in August 2019, the lowest in magnitude in 2019. The demand for the majority of countries in the region fell y-o-y, with only very few exceptions. More importantly, oil demand in the 4 Major consuming countries (Germany, Italy, France, and the UK) was also declining, y-o-y.

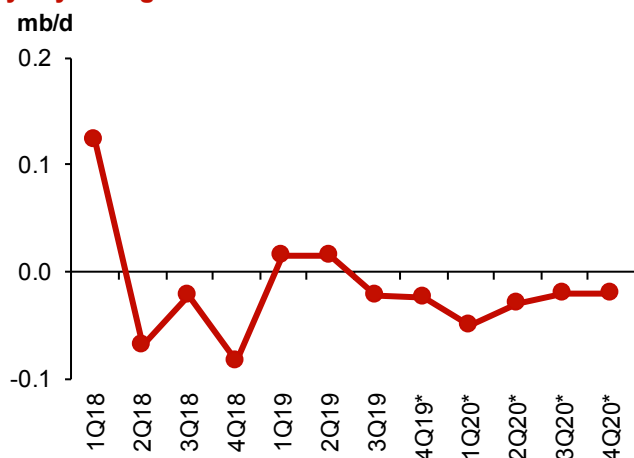
Table 4 - 4: Europe Big 4* oil demand, tb/d

| | Sep 19 | Sep 18 | Change 2019/18 | |
|----------------|--------------|--------------|----------------|-------------|
| | | | tb/d | % |
| LPG | 471 | 424 | 47 | 11.2 |
| Naphtha | 523 | 529 | -6 | -1.1 |
| Gasoline | 1,166 | 1,163 | 3 | 0.3 |
| Jet/kerosene | 929 | 938 | -9 | -0.9 |
| Diesel oil | 3,268 | 3,245 | 23 | 0.7 |
| Fuel oil | 186 | 203 | -17 | -8.5 |
| Other products | 589 | 654 | -65 | -10.0 |
| Total | 7,132 | 7,156 | -24 | -0.3 |

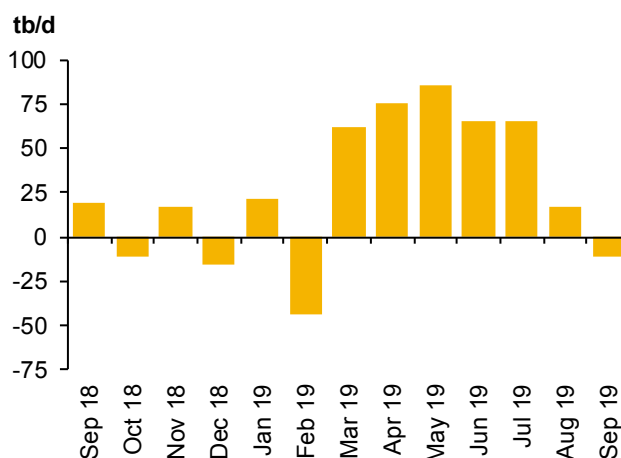
Note: * Germany, France, Italy and the UK.

Sources: JODI, UK Department for Business, Energy & Industrial Strategy, Unione Petrolifera and OPEC Secretariat.

Year-to-date in 2019, OECD Europe oil demand is dominated by gains in gasoline, jet/kerosene and diesel, which are partly offset by declines in the demand for LPG and naphtha. The implied year-to-date slight decrease in European oil demand in line with slower manufacturing activities in the region. The high historical baseline may also have an impact.

Graph 4 - 3: OECD Europe's oil demand, y-o-y change

Note: * 4Q19-4Q20 = Forecast.
Source: OPEC Secretariat.

Graph 4 - 4: UK diesel demand, y-o-y change

Sources: Joint Organisations Data Initiative, UK Department for Business, Energy & Industrial Strategy and OPEC Secretariat.

During August 2019, auto sales fell by more than 8% with a y-t-d decline of around 3%, according to the European Automobile Manufacturers' Association (ACEA). Early indications for September 2019 showed losses in oil demand of approximately 0.02 mb/d and 0.03 mb/d in Germany and the UK respectively; oil requirements remained stagnant in Italy and grew in France by 0.03 mb/d y-o-y.

The outlook for the rest of 2019 calls for a slight decline in European oil demand. Warmer weather during September 2019 impacted negatively heating oil demand in the region. The projected oil demand growth in 2020 faces uncertainties, which mostly concern the region's high historical oil demand baseline, diminishing oil price effects on road transportation fuels, as well as economic uncertainties. Consequently, risks are rather skewed to the downside.

OECD Europe oil demand is estimated to slightly decline in 2019, while 2020 oil demand in the region will decrease by 0.03 mb/d compared to 2019.

OECD Asia Pacific

Japan

Preliminary data for September 2019 imply that **Japan's oil demand** increased marginally by 0.03 mb/d y-o-y for the second month in 2019. Gains were registered in gasoline, jet/kerosene and diesel demand, while the performance of all other main product categories was in negative territory y-o-y, particularly for LPG and naphtha.

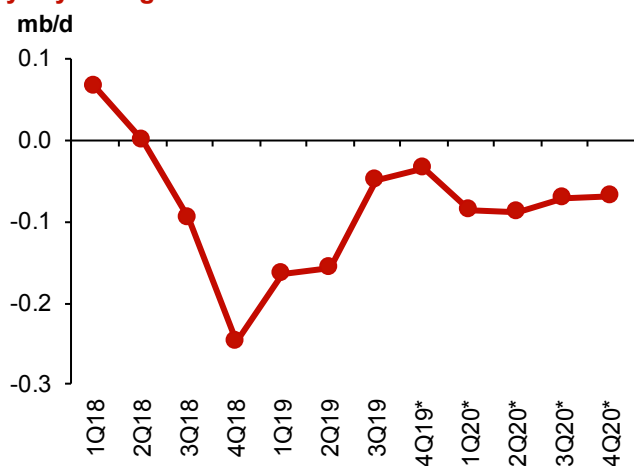
Table 4 - 5: Japan's domestic sales, tb/d

| | | | Change 2019/18 | |
|----------------|--------------|--------------|----------------|------------|
| | Sep 19 | Sep 18 | tb/d | % |
| LPG | 246 | 314 | -68 | -21.6 |
| Naphtha | 704 | 724 | -20 | -2.8 |
| Gasoline | 912 | 875 | 37 | 4.2 |
| Jet/kerosene | 404 | 368 | 36 | 9.8 |
| Diesel oil | 773 | 767 | 6 | 0.8 |
| Fuel oil | 211 | 228 | -17 | -7.6 |
| Other products | 420 | 368 | 52 | 14.1 |
| Total | 3,670 | 3,644 | 26 | 0.7 |

Sources: JODI, Ministry of Energy and Trade and Industry of Japan and OPEC Secretariat.

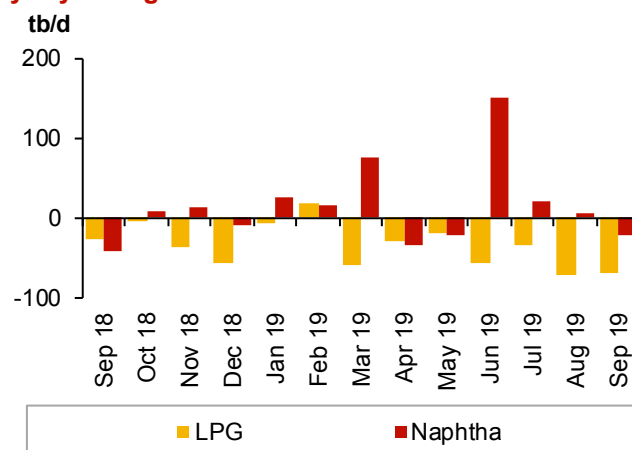
The negative y-t-d growth of overall Japanese oil demand in 2019 is generally in line with the oil demand structure and with the main economic indicators in the country. The sluggish picture is expected to continue during the remainder of 2019 and in 2020, while additional downside risks for 2020 are possible with further losses in residual fuel oil and crude direct use. The losses may be partly countered with additional volumes of oil required for the country's petrochemical industry.

Graph 4 - 5: OECD Asia Pacific oil demand, y-o-y change



Note: * 4Q19-4Q20 = Forecast.
Source: OPEC Secretariat.

Graph 4 - 6: Japan's LPG and naphtha demand, y-o-y change



Sources: Ministry of Economy Trade and Industry of Japan, Joint Organisations Data Initiative and OPEC Secretariat.

South Korea

In **South Korea**, August 2019 oil demand grew strongly for the second month in a row. LPG, naphtha, gasoline and diesel requirements in the transportation and industrial sectors, the latter particularly supported by a healthy petrochemical industry, have all posted firm gains in August 2019.

The outlook for South Korean oil demand during the rest of 2019 and in 2020 remains positive with risks skewed to the upside, resulting from a rebound of activity in the petrochemical industry.

Australia

With available data up to August 2019, **Australia's oil demand** y-t-d appears sluggish, showing declines of 0.02 mb/d, with the bulk of losses seen for gasoline, diesel and jet/kerosene.

OECD Asia Pacific oil demand is expected to decline by 0.09 mb/d in 2019, and by 0.08 mb/d y-o-y in 2020.

Non-OECD

China

In September 2019, **China's oil consumption** remained buoyant despite some slower economic activity. LPG, naphtha and jet/kerosene supported demand growth in September. On the other hand, residual fuel oil, diesel and gasoline declined. September oil demand posted an increase of around 0.20 mb/d y-o-y, significantly lower than the level of growth recorded in August 2019. Total consumption stood at 12.6 mb/d.

LPG rose the most, gaining close to 0.20 mb/d compared to September 2019, according to the Secretariat's calculation. This translates to a gain of around 11% y-o-y as ramping up and expansion in the petrochemical sector continued to lend support to the product.

Naphtha added around 0.08 mb/d in September in light of positive petrochemical margins.

Gasoline demand dropped for the first time since March 2019 amid persistently slower vehicle sales. According to statistics from the China Passenger Car Association and Haver Analytics, sales in September reached to 1.9 million units, which is a decrease of more than 7% y-o-y with sedans accounting for most of the decline. In cumulative terms, with data for three quarters, sales of passenger cars reached 15 million units, some 13% lower y-o-y. Additionally, SUV sales declined by more than 12%. The drop in vehicle sales was more profound in the MPV segment, which fell by close to 22%.

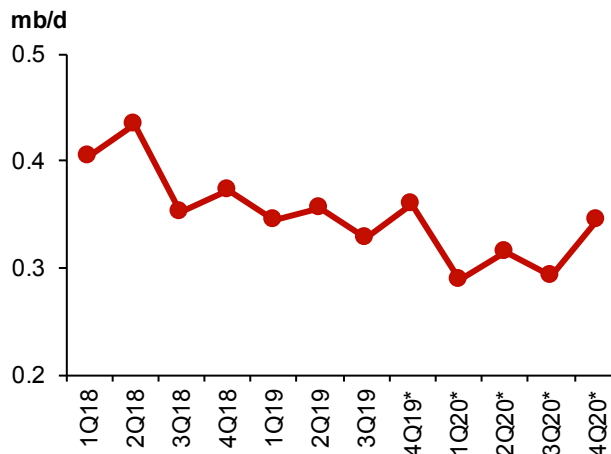
Diesel demand dropped by around 0.05 mb/d to reach a total of 3.33 mb/d, in line with slower manufacturing activities in the country. The manufacturing PMI for the month of September was 49.3, indicating a contraction of activity, according to the China Federation of Logistics and Purchasing.

Residual fuel oil declined for the second consecutive month as the product shed around 0.12 mb/d y-o-y.

The overall demand for 2019 remains the same as last month's *MOMR* with expectations of steady demand from the petrochemical and road transportation sectors. For 2020, the outlook for oil demand growth in China is in line with the Secretariat's views in the October *MOMR*. Projections are based on transportation and industrial fuels continuing to provide support to product demand; slight decline in GDP growth as compared to 2019; a continuation emission-reduction programmes; and the continuation of fuel substitution with natural gas and coal.

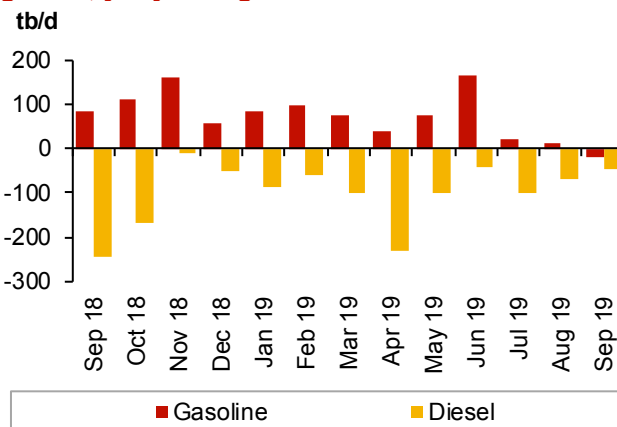
For 2019, China oil demand is anticipated to grow by around 0.35 mb/d while expectation for 2020 oil demand growth in china are in the range of 0.31 mb/d.

Graph 4 - 7: Changes in China's apparent oil demand, y-o-y change



Note: * 4Q19-4Q20 = Forecast.
Source: OPEC Secretariat.

Graph 4 - 8: China's gasoline and diesel demand growth, y-o-y change



Sources: Facts Global Energy, China OGP (Xinhua News Agency), Argus Global Markets, JODI, National Bureau of Statistics, China and OPEC Secretariat.

Other Asia

India

During September 2019, **India's oil demand** flipped into negative territory after two months of steady increases. Total oil demand growth reached 4.7 mb/d in September, posting a decrease of around 0.02 mb/d y-o-y, the second monthly y-o-y decline in 2019.

Table 4 - 6: India's oil demand, tb/d

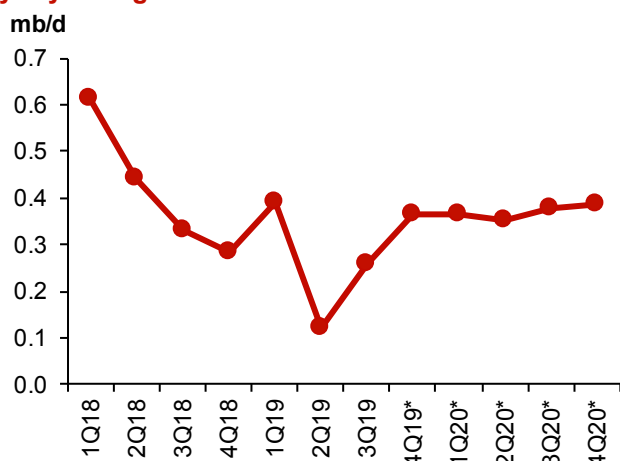
| | Sep 19 | Sep 18 | Change 2019/18 | |
|----------------|--------------|--------------|----------------|-------------|
| | | | tb/d | % |
| LPG | 932 | 879 | 52 | 6.0 |
| Naphtha | 249 | 336 | -87 | -25.9 |
| Gasoline | 718 | 676 | 42 | 6.2 |
| Jet/kerosene | 208 | 238 | -29 | -12.3 |
| Diesel oil | 1,675 | 1,726 | -52 | -3.0 |
| Fuel oil | 207 | 215 | -8 | -3.8 |
| Other products | 749 | 684 | 65 | 9.5 |
| Total | 4,738 | 4,754 | -16 | -0.3 |

Sources: JODI, Petroleum Planning and Analysis Cell of India and OPEC Secretariat.

Most products declined with the exception of LPG and gasoline. LPG requirements in the residential sector continued their positive momentum in September as LPG demand increased by 0.05 mb/d y-o-y. So far in 2019, LPG demand showed significant increases of more than 6% y-o-y in light of expansion projects in LPG supply to households as a replacement for kerosene, mainly for cooking purposes. As a result, jet/kerosene has declined by 0.03 mb/d despite some positive gains in jet fuel.

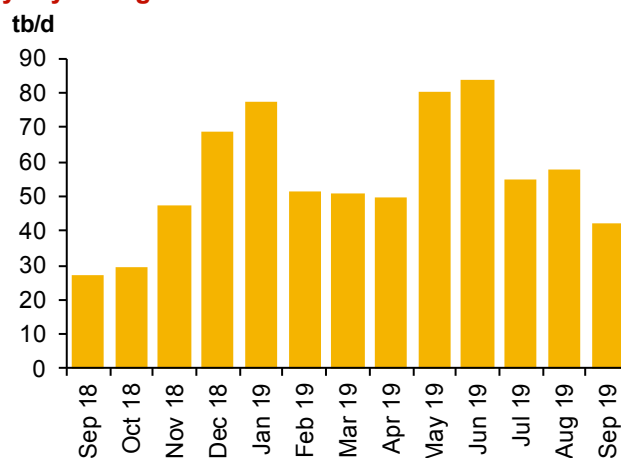
Gasoline rose by a 0.04 mb/d y-o-y in September 2019 amid lower retail prices and higher distances driven. On the other hand, passenger car sales continued to dwindle in September, falling by more than 33% y-o-y, according to the Society of Indian Automobile Manufacturers.

Graph 4 - 9: Other Asia's oil demand, y-o-y change



Note: * 4Q19-4Q20 = Forecast.
Source: OPEC Secretariat.

Graph 4 - 10: India's gasoline demand, y-o-y change



Sources: OPEC Secretariat, and Petroleum Planning and Analysis Cell of India.

Diesel dropped by approximately 0.05 mb/d in September, the second consecutive monthly decline. The decline in diesel consumption is attributed, to some extent, to slower-than-expected development in construction activities due to flooding, and heavy monsoon rains dampened demand for diesel in the industrial and agricultural sectors.

Thailand

Thailand's oil demand increased in August 2019 as product requirements rose by around 0.02 mb/d compared to August 2018. The total demand for the country stood at 1.40 mb/d. The improvement in oil consumption can be attributed mainly to stronger economic momentum.

Indonesia

Indonesia's oil demand in August 2019 was flat compared to the same month in 2018. Most of the products registered modest growth, with exception of residual fuel oil and gasoline, which recorded marginal declines y-o-y.

Going forward, risks for 2019 **Other Asian oil demand** are currently balanced after a rather a slow first half compared to the Secretariat's initial forecast. The projections will be dependent on the strength of economic activity and the y-o-y changes in retail prices, particularly for transportation fuels. In 2020, the Secretariat's projections remain unchanged from last month's MOMR with the expectation of a rise in oil demand as compared to the current year. Transportation is projected to be the largest growth sector in the region in 2020 followed by the petrochemical and industrial sectors.

Other Asia's oil demand anticipated to grow by 0.30 mb/d y-o-y in 2019 with possible further downward revisions in the coming months. As for 2020, oil demand is forecast to increase by 0.37 mb/d.

Latin America

Brazil

In **Brazil**, oil demand in September reversed direction and grew after declining in August. Oil demand stood at 2.69 mb/d, a rise of 0.05 mb/d for the month.

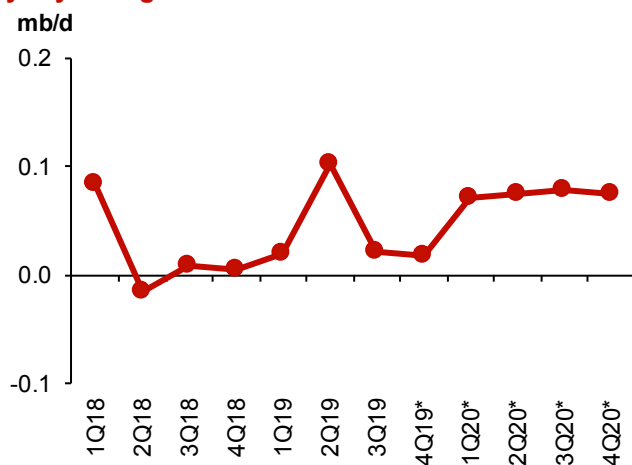
Table 4 - 7: Brazil's oil demand*, tb/d

| | <u>Sep 19</u> | <u>Sep 18</u> | <u>Change 2019/18</u> <u>tb/d</u> | <u>%</u> |
|----------------|---------------|---------------|--------------------------------------|------------|
| LPG | 230 | 229 | 1 | 0.5 |
| Naphtha | 147 | 146 | 1 | 0.7 |
| Gasoline | 648 | 606 | 42 | 6.9 |
| Jet/kerosene | 118 | 124 | -7 | -5.3 |
| Diesel oil | 1,025 | 998 | 28 | 2.8 |
| Fuel oil | 70 | 96 | -26 | -27.5 |
| Other products | 454 | 438 | 16 | 3.5 |
| Total | 2,692 | 2,638 | 54 | 2.1 |

Note: * = Inland deliveries.

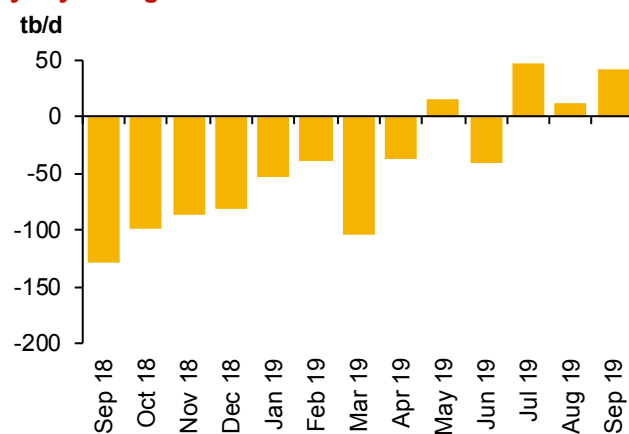
Sources: JODI, Agência Nacional do Petróleo, Gas Natural e Biocombustíveis and OPEC Secretariat.

Most products performed positively apart from residual fuel oil and jet/kerosene. Gasoline and ethanol demand increased in September, rising by more than 0.04 mb/d and 0.02 mb/d y-o-y respectively. Gasoline demand was largely affected by the very low baseline of comparison and despite higher retail prices as compared to ethanol. Retail prices for gasoline hovered around 4.33 reais per litre, according to Agência Nacional do Petróleo (ANP), while ethanol retail prices were 2.85 reais per litre for the month, providing a clear advantage over gasoline.

Graph 4 - 11: Latin America's oil demand, y-o-y change

Note: * 4Q19-4Q20 = Forecast.

Source: OPEC Secretariat.

Graph 4 - 12: Brazil's gasoline demand, y-o-y change

Sources: Agencia Nacional do Petroleo, Gas e Biocombustiveis of Brazil, Joint Organisations Data Initiative and OPEC Secretariat.

Diesel demand showed some signs of strength as it remained in the positive territory for the third consecutive month. Diesel added around 0.03 mb/d y-o-y, propelled by rising momentum in manufacturing activity. Brazil's composite output PMI stood at 52.48, the highest recorded since April 2019 as reported by HSBC and IHS Markit.

Residual fuel oil demand decreased the most during the month of September, declining by around 0.03 mb/d y-o-y amid slow power generation requirements.

Argentina

In **Argentina**, oil demand in August 2019 was flat y-o-y after 11 months of consecutive declines, growing marginally for the first time in 2019. Some gains were recorded in demand for main petroleum product categories, particularly residual fuel oil, LPG and naphtha, while requirements for diesel and gasoline declined y-o-y.

For **Latin America** in 2019, oil demand in Brazil, and most parts of the region, is relatively tilted to the downside in line with uncertainties over general economic activity in the region.

For 2020, oil demand in the region is anticipated to be slightly better than the current year as overall macroeconomic indicators are projected to improve compared to 2019. The industrial and transportation sectors are projected to provide support to oil demand growth in 2020, particularly in Brazil.

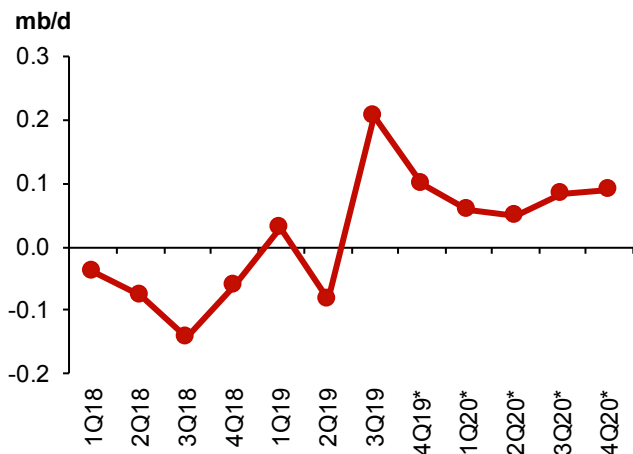
Latin American oil demand is expected to grow by 0.04 mb/d in 2019. During 2020, Latin American oil demand is forecast to increase to add 0.07 mb/d.

Middle East

Saudi Arabia

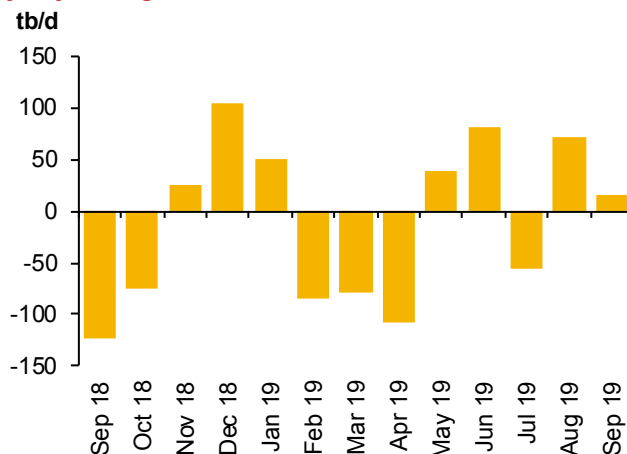
In September 2019, **Saudi Arabia's oil demand** growth was in positive territory for the third consecutive month, rising by around 0.16 mb/d y-o-y. There has been a steady increase across most of petroleum products with the exception of gasoline, which declined y-o-y. Residual fuel oil increased the most amid an uptick in power generation and desalination plant requirements. Similarly, crude oil used for power generation increased by 0.02 mb/d y-o-y.

Graph 4 - 13: Middle East oil demand, y-o-y change



Note: * 4Q19-4Q20 = Forecast.
Source: OPEC Secretariat.

Graph 4 - 14: Saudi Arabia's crude direct use, y-o-y change



Sources: Joint Organisations Data Initiative, direct communication and OPEC Secretariat.

Diesel was higher y-o-y by 0.05 mb/d as construction activities picked up pace. Jet/kerosene also increased in light of higher air travel activity, posting an increase of 0.03 mb/d compared to the same period in 2018. During September 2019, gasoline dropped by 0.04 mb/d y-o-y after rising during the summer driving season.

Iraq

Iraq's oil demand has been declining in past six months, similar trend continued in September 2019. Oil demand weakened by around 0.02 mb/d y-o-y.

Substitution with gas in the power generation sector and higher consumption data during the same period in 2018 apparently had an adverse effect on oil demand growth.

Overall declines were registered in crude oil for power generation, residual fuel oil, jet/kerosene and naphtha. Demand for gasoline, diesel, and LPG offset some of the declines.

Graph 4 - 15: Iraq's crude direct use, y-o-y change



Sources: Joint Organisations Data Initiative, direct communication and OPEC Secretariat.

Going forward in the rest of 2019 and 2020, **oil demand performance in the Middle East** is subject to some challenges in regard to substitution with natural gas, subsidy reduction in some countries, and programmes geared towards increasing efficiencies in the road transportation and power generation sectors. Conversely, progress in economic and industrial activity could provide some support for oil demand.

For 2019, Middle East oil demand is projected to increase by 0.06 mb/d y-o-y, while oil demand in 2020 is anticipated to rise by 0.07 mb/d.

World Oil Supply

The **non-OPEC oil supply growth estimate for 2019** has remained unchanged from the previous monthly report at 1.82 mb/d for an annual average of 64.30 mb/d. Indeed, the upward revisions to production data of Canada, the UK and Kazakhstan were fully offset by downward adjustments to production in the US, Indonesia, Denmark, India, Malaysia, Brazil and China. Canada's oil output averaged, 5.37 mb/d in the first three quarters of the year, and was higher than the government of Alberta's mandatory production cut. On the other hand, US liquids output in 3Q19 was stagnant compared to 2Q19 at an average of 18.3 mb/d. Hence, US oil supply growth in 2019 was revised down to 1.62 mb/d from the previous month's assessment. The US, Brazil, China, the UK, Australia and Canada are estimated to be the key drivers of growth in 2019, while Mexico and Norway are projected to see the largest declines.

The **non-OPEC oil supply growth forecast for 2020** was revised down by 36 tb/d from last month's assessment and is now projected to grow by 2.17 mb/d for an average of 66.46 mb/d. This is mainly due to the downward revision in the US oil supply forecast as well as a minor downward revision for India's supply. The US, Brazil, Norway, Russia, Canada, Kazakhstan and Australia are expected to be the main growth drivers for next year, while Mexico, Indonesia Egypt, the UK and Colombia are forecast to see the largest declines. The 2020 non-OPEC supply forecast remains subject to many uncertainties, including a continuation of investment discipline by US independent companies, pipeline constraints in Canada, drilling and completion activity levels in the US, unplanned outages, delayed start-ups and unexpected maintenance.

OPEC NGL production in 2019 was revised down by 11 tb/d based on preliminary MC production data and is now expected to grow by 0.04 mb/d to average 4.80 mb/d. In 2020, OPEC NGLs are forecast to grow by 0.03 mb/d y-o-y to average 4.83 mb/d.

In October, **OPEC crude oil production** increased by 943 tb/d m-o-m to average 29.65 mb/d, according to secondary sources. **Non-OPEC supply, including OPEC NGLs**, rose by 0.73 mb/d m-o-m, to average 69.69 mb/d, up by 1.28 mb/d y-o-y. As a result, preliminary data indicates that **global oil supply** increased in October by 1.67 mb/d m-o-m to average 99.34 mb/d.

Table 5 - 1: Non-OPEC supply forecast comparison in 2019–2020*, mb/d

| Region | 2019 | Change 2019/18 | 2020 | Change 2020/19 |
|----------------------------|--------------|-------------------|--------------|-------------------|
| OECD Americas | 25.65 | 1.57 | 27.13 | 1.48 |
| OECD Europe | 3.75 | -0.09 | 3.93 | 0.17 |
| OECD Asia Pacific | 0.48 | 0.07 | 0.55 | 0.07 |
| Total OECD | 29.88 | 1.56 | 31.61 | 1.72 |
| Other Asia | 3.43 | -0.13 | 3.39 | -0.04 |
| Latin America | 5.39 | 0.20 | 5.64 | 0.25 |
| Middle East | 3.21 | 0.00 | 3.25 | 0.04 |
| Africa | 1.54 | 0.04 | 1.57 | 0.03 |
| Total DCs | 13.57 | 0.11 | 13.85 | 0.27 |
| FSU | 14.34 | 0.04 | 14.44 | 0.10 |
| Other Europe | 0.12 | 0.00 | 0.12 | -0.01 |
| China | 4.10 | 0.09 | 4.12 | 0.02 |
| Non-OPEC production | 62.02 | 1.80 | 64.13 | 2.11 |
| Processing gains | 2.28 | 0.03 | 2.33 | 0.05 |
| Non-OPEC supply | 64.30 | 1.82 | 66.46 | 2.17 |

Note: * 2019 = Estimate and 2020 = Forecast.

Source: OPEC Secretariat.

Monthly main revisions to the non-OPEC supply growth forecast

Non-OPEC supply in 2019 is forecast to grow by 1.82 mb/d, remained unchanged from the previous assessment, and is expected to average 64.30 mb/d for the year.

The US supply growth forecast was revised down by 47 tb/d compared to last month's assessment, following downward revisions of 22 tb/d for 2Q19, 85 tb/d for 3Q19, as well as 80 tb/d for the 4Q19 forecast.

Canada's oil production was revised up by 10 tb/d on a yearly basis, as actual production levels in 1Q19, 2Q19 and 3Q19 were revised up by 50 tb/d, 44 tb/d and 59 tb/d, respectively. Therefore, oil output exceeded the mandatory production cuts by the government of Alberta.

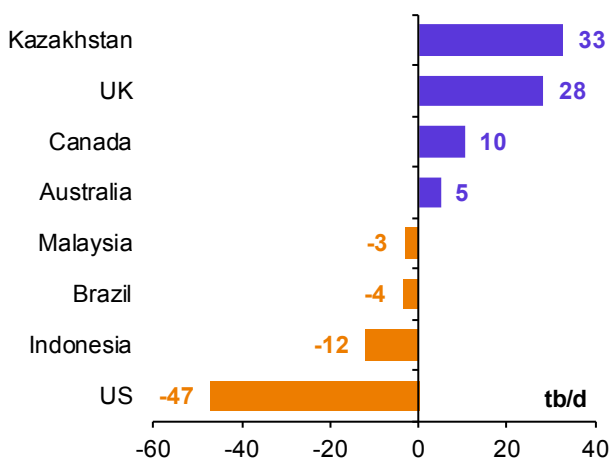
UK oil supply in 2019 was revised up by 28 tb/d, following the upward revision of oil output data by official sources by 39 tb/d in 2Q19 as well as 74 tb/d in 3Q19.

Downward revisions in actual oil production data of Indonesia by 16 tb/d and 32 tb/d in 2Q19 and 3Q19, respectively, led to a downward revision in supply growth of 12 tb/d on a yearly basis.

According to the official data for Kazakhstan's oil production in 3Q19, it seems that the shut-in period for maintenance at the Tengiz and Karachaganak fields was less than expected. Therefore, oil output in 3Q19 was revised up by 65 tb/d, which was carried over to the next quarter, leading to an upward revision of 33 tb/d in annual supply growth, resulting in a minor y-o-y growth rate of 0.01 mb/d for 2019 (**Graph 5 - 1**).

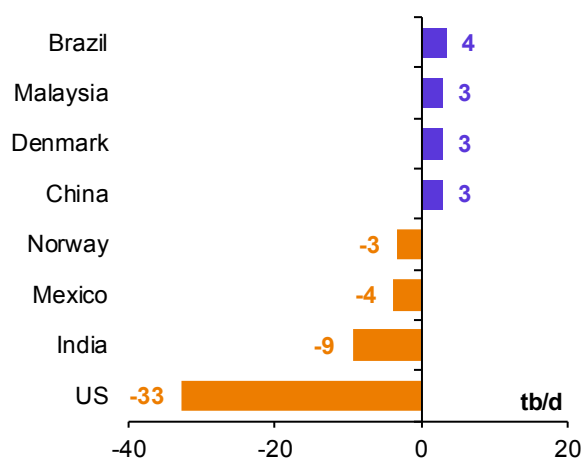
Moreover, OPEC NGLs and non-conventional liquids were revised down by 11 tb/d due to lower-than-expected output by 45 tb/d in 3Q19.

**Graph 5 - 1: Monthly oil market report
Nov 19/Oct 19 revisions in 2019*
annual supply changes**



Note: * 2019 = Estimate.
Source: OPEC Secretariat.

**Graph 5 - 2: Monthly oil market report
Nov 19/Oct 19 revisions in 2020*
annual supply changes**



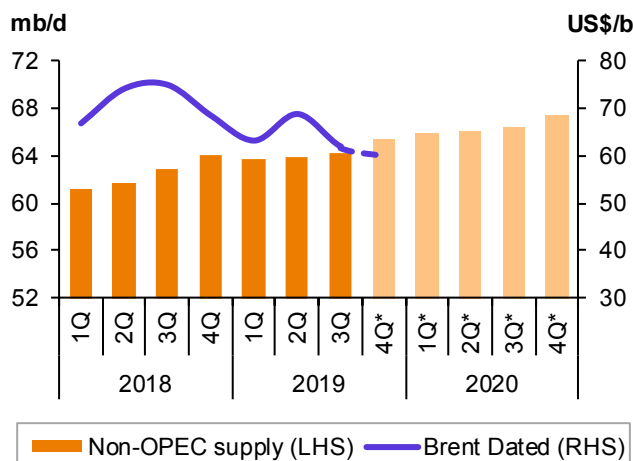
Note: * 2020 = Forecast.
Source: OPEC Secretariat.

Non-OPEC supply in 2020 is forecast to grow by 2.17 mb/d, a downward revision of 36 tb/d from the previous month's assessment, and is expected to average 66.46 mb/d for the year.

The US supply growth forecast was revised down by 33 tb/d compared to last month's assessment due to lower-than-expected production levels in 2019, which were carried over to the next year.

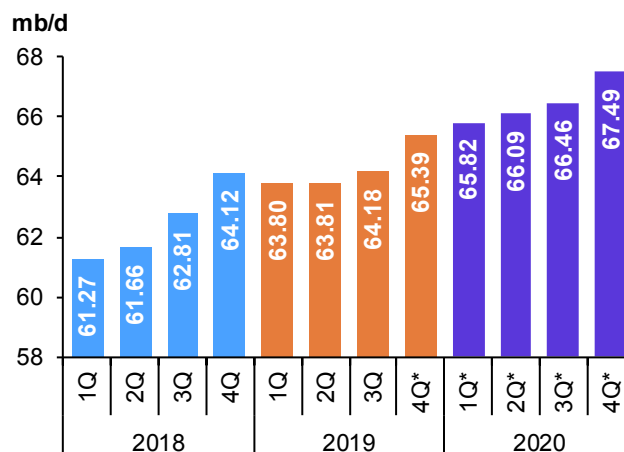
India's oil supply forecast was also revised down by 9 tb/d due to a higher production decline assessment for next year based on the current trend (**Graph 5 - 2**).

Graph 5 - 3: Non-OPEC quarterly liquids supply and Dated Brent



Note: * 4Q19-4Q20 = Forecast.
Source: OPEC Secretariat.

Graph 5 - 4: Non-OPEC quarterly oil supply



Note: * 4Q19-4Q20 = Forecast.
Source: OPEC Secretariat.

Non-OPEC oil supply in 2019 and 2020

Table 5 - 2: Non-OPEC oil supply in 2019*, mb/d

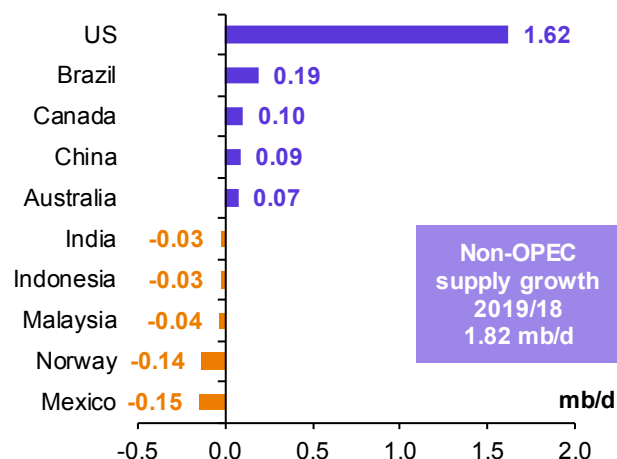
| | 2018 | 1Q19 | 2Q19 | 3Q19 | 4Q19 | 2019 | Change 2019/18 Growth | % |
|----------------------------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------------------|-------------|
| Americas | 24.08 | 25.07 | 25.59 | 25.62 | 26.32 | 25.65 | 1.57 | 6.53 |
| of which US | 16.71 | 17.78 | 18.29 | 18.30 | 18.95 | 18.33 | 1.62 | 9.69 |
| Europe | 3.84 | 3.84 | 3.61 | 3.61 | 3.94 | 3.75 | -0.09 | -2.30 |
| Asia Pacific | 0.41 | 0.43 | 0.48 | 0.51 | 0.51 | 0.48 | 0.07 | 18.11 |
| Total OECD | 28.33 | 29.34 | 29.68 | 29.74 | 30.77 | 29.88 | 1.56 | 5.50 |
| Other Asia | 3.56 | 3.51 | 3.46 | 3.32 | 3.42 | 3.43 | -0.13 | -3.58 |
| Latin America | 5.19 | 5.17 | 5.25 | 5.53 | 5.60 | 5.39 | 0.20 | 3.79 |
| Middle East | 3.21 | 3.22 | 3.22 | 3.22 | 3.20 | 3.21 | 0.00 | 0.09 |
| Africa | 1.50 | 1.51 | 1.51 | 1.53 | 1.61 | 1.54 | 0.04 | 2.40 |
| Total DCs | 13.46 | 13.41 | 13.44 | 13.60 | 13.83 | 13.57 | 0.11 | 0.81 |
| FSU | 14.29 | 14.55 | 14.16 | 14.34 | 14.30 | 14.34 | 0.04 | 0.31 |
| of which Russia | 11.35 | 11.53 | 11.36 | 11.42 | 11.34 | 11.41 | 0.07 | 0.58 |
| Other Europe | 0.12 | 0.12 | 0.12 | 0.12 | 0.12 | 0.12 | 0.00 | -2.34 |
| China | 4.02 | 4.10 | 4.13 | 4.10 | 4.09 | 4.10 | 0.09 | 2.17 |
| Total "Other regions" | 18.43 | 18.77 | 18.41 | 18.56 | 18.51 | 18.56 | 0.13 | 0.70 |
| Total non-OPEC production | 60.22 | 61.52 | 61.53 | 61.90 | 63.11 | 62.02 | 1.80 | 2.98 |
| Processing gains | 2.25 | 2.28 | 2.28 | 2.28 | 2.28 | 2.28 | 0.03 | 1.24 |
| Total non-OPEC supply | 62.47 | 63.80 | 63.81 | 64.18 | 65.39 | 64.30 | 1.82 | 2.92 |
| Previous estimate | 62.44 | 63.76 | 63.76 | 64.11 | 65.39 | 64.26 | 1.82 | 2.92 |
| Revision | 0.04 | 0.04 | 0.04 | 0.06 | 0.00 | 0.04 | 0.00 | 0.00 |

Note: * 2019 = Estimate.

Totals may not add up due to independent rounding.

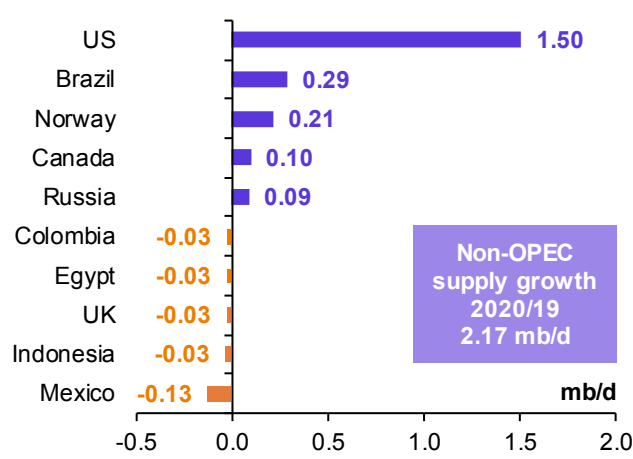
Source: OPEC Secretariat.

Graph 5 - 5: Annual supply changes for selected countries in 2019*



Note: * 2019 = Estimate.
Source: OPEC Secretariat.

Graph 5 - 6: Annual supply changes for selected countries in 2020*



Note: * 2020 = Forecast.
Source: OPEC Secretariat.

Table 5 - 3: Non-OPEC oil supply in 2020*, mb/d

| | 2019 | 1Q20 | 2Q20 | 3Q20 | 4Q20 | 2020 | Change 2020/19 Growth | % |
|----------------------------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------------------|-------------|
| Americas | 25.65 | 26.64 | 26.92 | 27.34 | 27.62 | 27.13 | 1.48 | 5.75 |
| of which US | 18.33 | 19.23 | 19.82 | 20.03 | 20.25 | 19.84 | 1.50 | 8.21 |
| Europe | 3.75 | 3.95 | 3.81 | 3.83 | 4.11 | 3.93 | 0.17 | 4.65 |
| Asia Pacific | 0.48 | 0.54 | 0.53 | 0.57 | 0.57 | 0.55 | 0.07 | 14.89 |
| Total OECD | 29.88 | 31.13 | 31.26 | 31.73 | 32.30 | 31.61 | 1.72 | 5.76 |
| Other Asia | 3.43 | 3.38 | 3.39 | 3.39 | 3.39 | 3.39 | -0.04 | -1.22 |
| Latin America | 5.39 | 5.62 | 5.59 | 5.60 | 5.74 | 5.64 | 0.25 | 4.61 |
| Middle East | 3.21 | 3.21 | 3.25 | 3.26 | 3.28 | 3.25 | 0.04 | 1.11 |
| Africa | 1.54 | 1.58 | 1.57 | 1.57 | 1.56 | 1.57 | 0.03 | 2.02 |
| Total DCs | 13.57 | 13.78 | 13.80 | 13.82 | 13.98 | 13.85 | 0.27 | 2.01 |
| FSU | 14.34 | 14.32 | 14.44 | 14.36 | 14.64 | 14.44 | 0.10 | 0.72 |
| of which Russia | 11.41 | 11.34 | 11.50 | 11.51 | 11.64 | 11.50 | 0.09 | 0.77 |
| Other Europe | 0.12 | 0.12 | 0.12 | 0.12 | 0.11 | 0.12 | -0.01 | -4.32 |
| China | 4.10 | 4.12 | 4.13 | 4.10 | 4.13 | 4.12 | 0.02 | 0.46 |
| Total "Other regions" | 18.56 | 18.57 | 18.69 | 18.58 | 18.88 | 18.68 | 0.12 | 0.63 |
| Total non-OPEC production | 62.02 | 63.49 | 63.75 | 64.12 | 65.15 | 64.13 | 2.11 | 3.41 |
| Processing gains | 2.28 | 2.33 | 2.33 | 2.33 | 2.33 | 2.33 | 0.05 | 2.37 |
| Total non-OPEC supply | 64.30 | 65.82 | 66.09 | 66.46 | 67.49 | 66.46 | 2.17 | 3.37 |
| Previous estimate | 64.26 | 65.82 | 66.08 | 66.45 | 67.48 | 66.46 | 2.20 | 3.43 |
| Revision | 0.04 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | -0.04 | -0.06 |

Note: * 2019 = Estimate and 2020 = Forecast.

Totals may not add up due to independent rounding.

Source: OPEC Secretariat.

OECD

Following robust growth of 2.62 mb/d in 2018, **OECD oil supply in 2019** is forecast to grow by 1.56 mb/d y-o-y and average 29.88 mb/d, unchanged compared with last month's assessment. OECD Americas and Asia Pacific are forecast to grow by 1.57 mb/d and 0.07 mb/d, respectively, while OECD Europe is forecast to decline by 0.09 mb/d.

For **2020**, yearly growth was revised down by 32 tb/d to 1.72 mb/d and average 31.61 mb/d. OECD Americas, Europe and Asia Pacific are forecast to grow by 1.48 mb/d, 0.17 mb/d and 0.07 mb/d, respectively.

OECD Americas

US

US liquids output in August (excluding processing gains) showed an increase of 0.73 mb/d m-o-m to average 18.47 mb/d, up by 1.06 mb/d y-o-y, while crude oil output increased by 0.60 mb/d m-o-m to average 12.37 mb/d, higher by 1.01 mb/d y-o-y. Production of NGLs in August was up by 48 tb/d m-o-m to average 4.73 mb/d, higher by 0.13 mb/d y-o-y. Preliminary data shows that the output of other non-conventional liquids, mainly ethanol, was up in August by 83 tb/d m-o-m to average 1.37 mb/d, but was lower by 72 tb/d compared to a year ago.

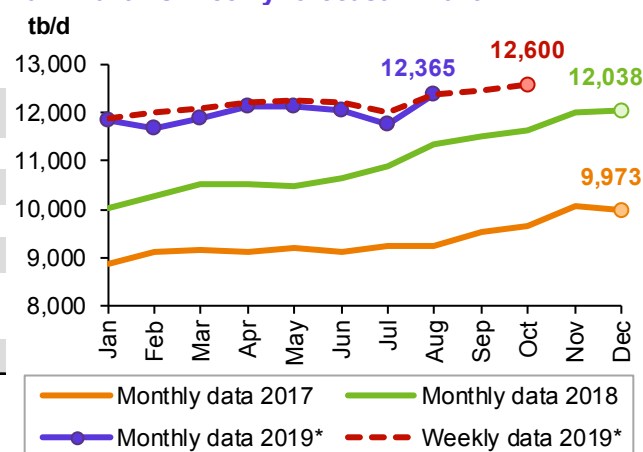
The EIA's latest US monthly production information for August 2019 showed a robust increase of 599 tb/d for crude oil production (including lease condensate) to average 12.37 mb/d, compared with the previous month. This was contrary to weekly data, which would have suggested a m-o-m increase of only 175 tb/d. The EIA revised down US crude oil output in July by 40 tb/d to 11,766 tb/d. Onshore Lower 48 production grew by 195 tb/d from July 2019 to August 2019, primarily due to increasing production from tight oil fields. Crude oil output increased in the Rocky Mountains (PADD 4), mainly in Colorado, in the Gulf Coast (PADD 3), mainly in Federal Offshore GoM, in the Midwest (PADD 2), primarily in North Dakota, while the West Coast (PADD 5) declined by 69 tb/d, mainly in Alaska's North Slope, while East Coast (PADD 1) production was steady. Production in the GoM recovered following Hurricane Barry and increased by 469 tb/d to reach a new record monthly average of 2,006 tb/d.

Table 5 - 4: US crude oil production by state, tb/d

| State | Jul 19 | Aug 19 | Change Aug 19/Jul 19 |
|--|---------------|---------------|-------------------------|
| Alaska | 448 | 382 | -66 |
| Colorado | 508 | 520 | 12 |
| Oklahoma | 561 | 563 | 2 |
| New Mexico | 893 | 936 | 43 |
| North Dakota | 1,415 | 1,443 | 28 |
| Federal Offshore - Gulf of Mexico (GoM) | 1,537 | 2,006 | 469 |
| Texas | 5,023 | 5,121 | 98 |
| Total US crude oil production | 11,766 | 12,365 | 599 |

Sources: US EIA and OPEC Secretariat.

Graph 5 - 7: US monthly crude oil production in 2017-2019 vs. weekly forecast in 2019



Note: * 2019 = Estimate.

Sources: US EIA and OPEC Secretariat.

New Permian pipelines helped companies to produce higher production levels. In August, two pipeline projects entered service in the Permian—the 0.4 mb/d EPIC NGL Conversion pipeline and the 0.67 mb/d Cactus II pipeline.

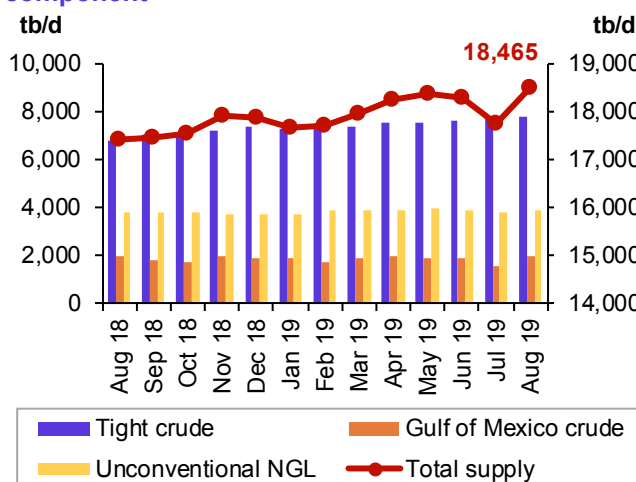
As pointed out previously, Moody’s Investors Service reports that “E&P capital efficiency gains have stalled and may weaken in 2020. And while overall services costs have eased since late 2018 because of the declining rig count, some other expenses including labour, lease and steel are still trending higher”. A further slowdown in US oil production is thus likely as shale producers remain under pressure from their investors to cut spending, in particular investments related to exploration and production (E&P).

US crude oil production in 2019 is likely to grow by 1.20 mb/d y-o-y to average 12.19 mb/d. The share of tight crude, out of the forecast growth of 1.20 mb/d in 2019, is estimated at 1.12 mb/d, to average 7.63 mb/d; and for the GoM, it is 0.13 mb/d, averaging 1.89 mb/d. Conventional crude (non-shale), including Alaska’s production, is projected to decline by 0.06 mb/d, to average 2.67 mb/d.

US crude oil production in **4Q19** is expected to increase, following the opening of new pipelines leading from the Permian Basin to the USGC. Crude output is expected to increase by 0.45 mb/d q-o-q to average 12.65 mb/d in 4Q19, and, by the end of the year, is forecast at 12.71 mb/d, while, at the same time, US liquids production is likely to stand at 19.08 mb/d in December 2019.

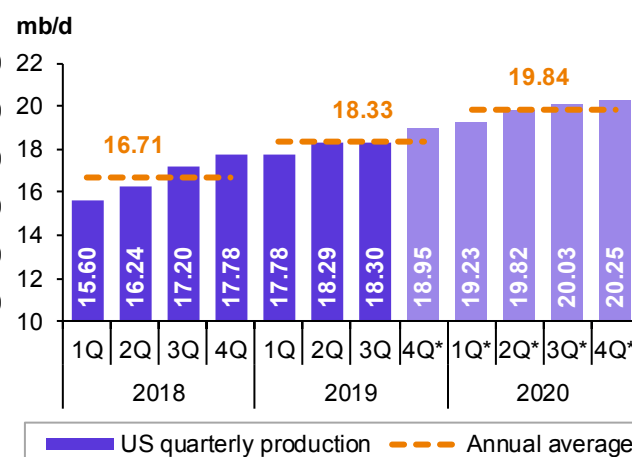
US crude oil production in 2020 is forecast to grow by 1.02 mb/d y-o-y to average 13.20 mb/d. Lower rig activity and flat capital spending in 2020 over 2019 has reduced the production forecast for next year. US Lower 48 onshore fields’ oil output is the key downgrade. Despite the opening of new pipelines in the Permian Basin, y-o-y overall tight crude growth is forecast to slow to 1.01 mb/d for next year and average 8.64 mb/d. With regard to non-tight crude, Lower 48 onshore crude oil output is forecast to decline by around 0.13 mb/d to average 2.54 mb/d, while production will grow in offshore fields of the GoM by 0.13 mb/d to average 2.02 mb/d. Indeed, y-o-y growth from the GoM will be offset by declines in onshore mature fields.

Graph 5 - 8: US monthly liquids supply by key component



Source: US EIA and OPEC Secretariat.

Graph 5 - 9: US total liquids supply quarterly

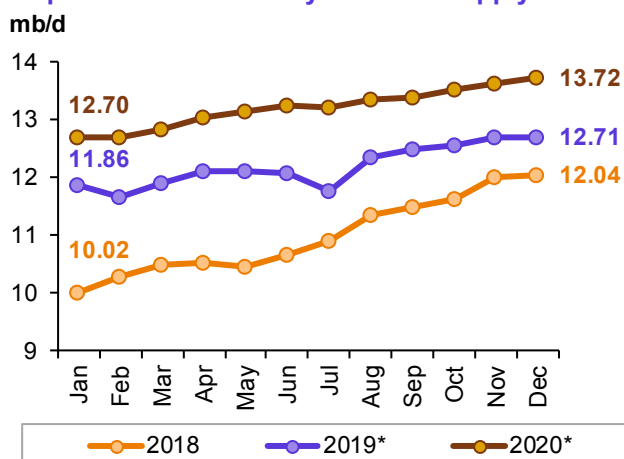


Note: * 4Q19-4Q20 = Forecast.
Sources: US EIA and OPEC Secretariat.

Monthly completions in the Permian Midland tight and Permian Delaware tight in 3Q19 have risen y-o-y by 74 wells, or 18%, to average 488 wells, more than twice the number of wells in 3Q14, according to Rystad Energy. Moreover, new wells have improved their early average production rates compared to older ones. Preliminary initial production (IP) of light oil from newly completed wells in Permian Midland tight thus far this year produced 846 b/d in the first 30 days of starting up, compared with 737 b/d in 2018 and 384 b/d in 2014. In terms of “rich gas”, initial liquids output was up from 112 b/d in 2014 to average 170 b/d in 2019, y-t-d. But base declines in most key shale plays have offset this uptick in initial production rates.

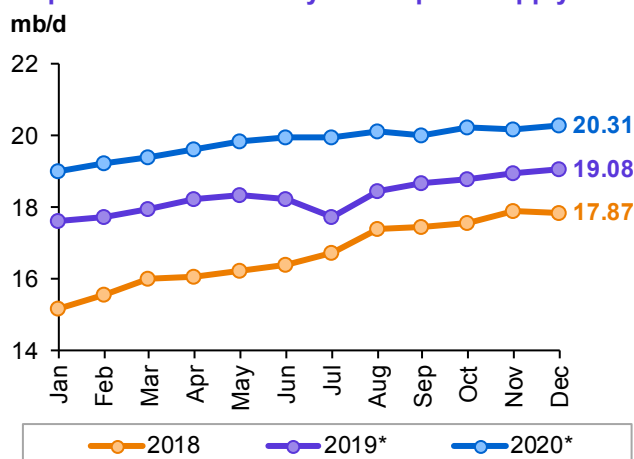
US liquids supply in 2019 is forecast to average 18.33 mb/d, representing y-o-y growth of 1.62 mb/d, revised down by 0.05 mb/d from the previous month’s assessment due to lower-than-expected crude output in 2Q19 and 3Q19. Moreover, 4Q19 is now forecast at lower output due to current production trends for crude oil and NGLs. Besides expected y-o-y growth of 1.20 mb/d for crude oil, NGL production, mainly from unconventional sources of shale gas, is expected to grow by 0.42 mb/d to average 4.79 mb/d, while other liquids output, mainly biofuels, is estimated to remain unchanged from last year at 1.35 mb/d.

Graph 5 - 10: US monthly crude oil supply



Note: * 2019 = Estimate and 2020 = Forecast.
Source: OPEC Secretariat.

Graph 5 - 11: US monthly total liquids supply



Note: * 2019 = Estimate and 2020 = Forecast.
Source: OPEC Secretariat.

US tight crude output in August 2019 increased by an estimated 165 tb/d m-o-m to average 7.87 mb/d (US tight crude for the first eight months of 2019 was adjusted downward as more actual data became available), an increase of 1.68 mb/d y-o-y according to preliminary estimates. The main m-o-m growth in US tight crude output from shale and tight formations through horizontal wells came from the Permian Midland as well as the Delaware basins in Texas adding a total of 120 tb/d to average 3.76 mb/d.

Table 5 - 5: US liquids production breakdown, mb/d

| | 2017 | 2018 | Change 2018/17 | 2019* | Change 2019/18 | 2020* | Change 2020/19 |
|---------------------------------|--------------|--------------|-------------------|--------------|-------------------|--------------|-------------------|
| Tight crude | 4.96 | 6.51 | 1.55 | 7.63 | 1.12 | 8.64 | 1.01 |
| Gulf of Mexico crude | 1.68 | 1.76 | 0.08 | 1.89 | 0.13 | 2.02 | 0.13 |
| Conventional crude oil | 2.71 | 2.72 | 0.01 | 2.67 | -0.06 | 2.54 | -0.13 |
| Unconventional NGLs | 3.02 | 3.60 | 0.57 | 3.98 | 0.40 | 4.43 | 0.45 |
| Conventional NGLs | 0.76 | 0.77 | 0.01 | 0.81 | 0.02 | 0.83 | 0.02 |
| Biofuels + Other liquids | 1.27 | 1.35 | 0.08 | 1.35 | 0.00 | 1.37 | 0.02 |
| US total supply | 14.40 | 16.71 | 2.31 | 18.33 | 1.62 | 19.84 | 1.50 |

Note: * 2019 = Estimate and 2020 = Forecast.

Sources: US EIA, Rystad Energy and OPEC Secretariat.

Tight crude output in the Eagle Ford was stagnant at 1.23 mb/d in August. Preliminary data of completed wells in 3Q19 shows that there was no remarkable change compared to 2Q19 at around 440 wells. Indeed, the number of completed wells in 2018 and 2019 (up to 3Q19) has been almost flat, according to Rystad Energy.

Table 5 - 6: US tight oil production growth, mb/d

| Shale play | 2018 | | 2019* | | 2020* | |
|--------------------------|-------------|--------------|-------------|--------------|-------------|--------------|
| | Production | Y-o-y change | Production | Y-o-y change | Production | Y-o-y change |
| Permian tight | 2.81 | 0.97 | 3.60 | 0.79 | 4.31 | 0.71 |
| Bakken shale | 1.25 | 0.20 | 1.42 | 0.17 | 1.56 | 0.14 |
| Eagle Ford shale | 1.18 | 0.09 | 1.22 | 0.04 | 1.26 | 0.04 |
| Niobrara shale | 0.46 | 0.12 | 0.52 | 0.06 | 0.57 | 0.05 |
| Other tight plays | 0.80 | 0.17 | 0.87 | 0.07 | 0.93 | 0.06 |
| Total | 6.51 | 1.55 | 7.63 | 1.12 | 8.64 | 1.01 |

Note: * 2019 = Estimate and 2020 = Forecast.

Source: OPEC Secretariat.

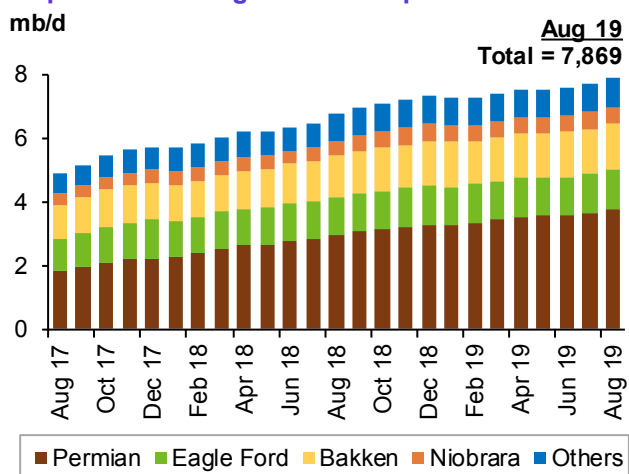
Production from the Bakken shale was up by 28 tb/d m-o-m to average 1.45 mb/d. Preliminary data on completed wells in 3Q19 in the Bakken indicates quarterly growth of 45 wells versus 2Q19 to average 430 wells.

Tight oil output increased m-o-m by 12 tb/d and 5 tb/d in the Niobrara and other shale plays to average 534 tb/d and 893 tb/d in August, respectively.

For **2020**, US tight crude and unconventional NGLs are forecast to continue to dominate non-OPEC supply growth. The anticipated spending discipline by independent companies as well as the continuation of the declining trend in drilling activity since April 2019 has led to the forecast for a slowdown in tight oil production in the key regions or even potential declines next year. Although oil production in the key regions will show y-o-y growth, it will be affected either by lower drilling and completion in these regions or offset by other regions' declines such as with Anadarko, where geological difficulties have undermined production potential, and in those regions with a marginal breakeven.

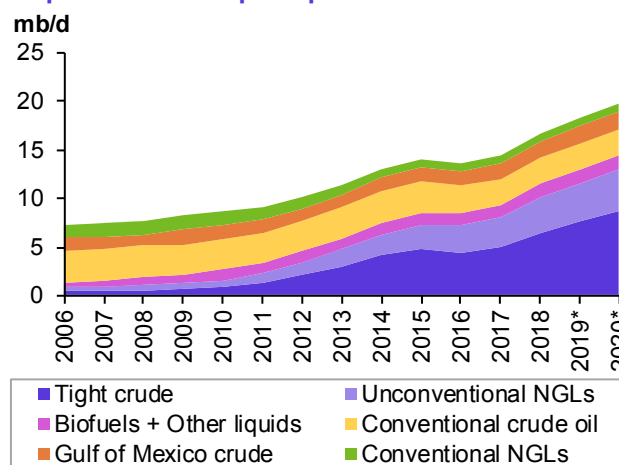
This could lead producers to try to maintain production growth by the completion of DUCs, which is associated with lower costs, as was also seen in some regions in recent months. However, considering the downward trend in the rig count, lower activity by service companies and less fracking, tight crude production is forecast to grow at a lower level than in the current year. Production in the Permian Basin will grow by 0.71 mb/d, which is less than the 0.79 mb/d estimated for the current year, despite infrastructure debottlenecking. However, drilling and completion slowdowns in other regions due to capital discipline will offset the sizeable growth in the Permian. The pipeline expansion, along with port enhancements to enable higher exports, particularly in Corpus Christi, are expected to cause an increase in export capacity from a current level of about 1 mb/d to around 2.9 mb/d by the end of 2020.

Graph 5 - 12: US tight crude output breakdown



Sources: US EIA, Rystad Energy and OPEC Secretariat.

Graph 5 - 13: US liquids production breakdown



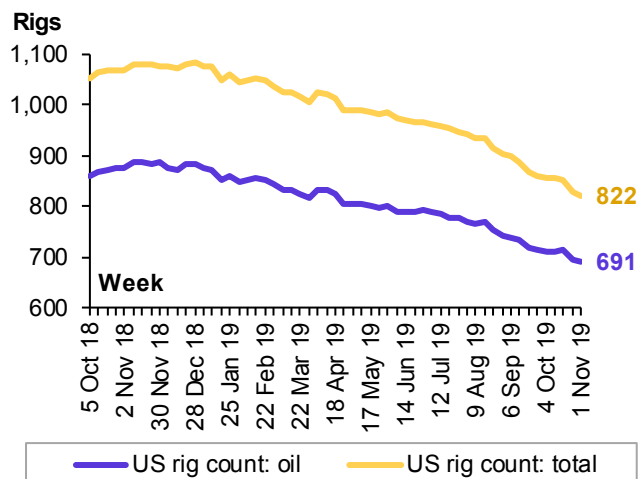
Note: * 2019 = Estimate and 2020 = Forecast. Sources: US EIA, Rystad Energy and OPEC Secretariat.

US rigs, wells and drilled-but-uncompleted wells (DUCs)

The overall **US rig count** declined by 245 units, or 23%, y-o-y to 822 rigs in the week ending 1 November. Out of the active 822 rigs, 799 rigs were onshore and 22 rigs were offshore. US oil rigs dropped by 183 units, or 21%, y-o-y, to average 691 oil rigs (**Graph 5 - 14**). US gas rigs dropped by 63 units, or 33%, y-o-y to 130 rigs. Total horizontal rigs (oil and gas) decreased by 212 units, or 23%, y-o-y to stand at 717 horizontal rigs.

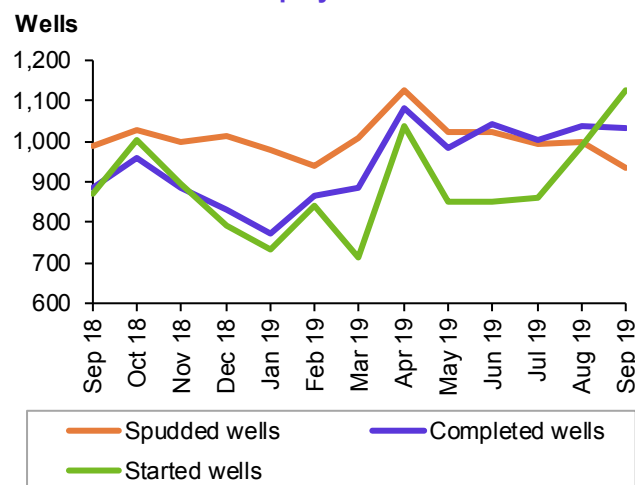
With regard to D&C in all US shale plays, 934 wells were spudded in September 2019, down by 67 wells m-o-m, while 1,035 wells were completed in the same month (**Graph 5 - 15**), which means that operators took 101 DUCs from inventories in September.

Graph 5 - 14: US weekly oil rig count



Sources: Baker Hughes and OPEC Secretariat.

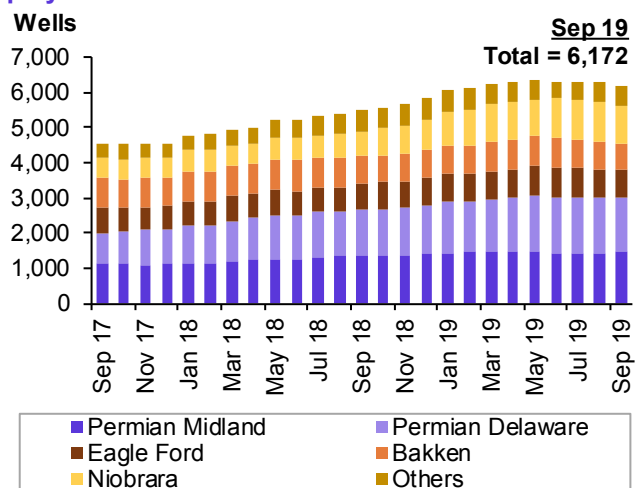
Graph 5 - 15: Spudded, completed and started wells in the US shale plays



Sources: Rystad Energy and OPEC Secretariat.

In **Graph 5 - 16**, the US tight oil horizontal DUC count development shows how the DUCs count has been decreasing in recent months. Oilfield services company Halliburton said in late October that it expects a further deceleration in drilling and well completion activity in the final months of the year.

Graph 5 - 16: US horizontal DUCs count by shale play



Sources: Rystad Energy and OPEC Secretariat.

With regard to **investment in the US**, particularly in the shale oil industry, capital spending in 2020 is expected to be flat compared to 2019, as companies continue to operate within cash flow. Occidental Petroleum was reported in the media, that it would slash spending on big projects by 40% next year as it missed earnings estimates in its first results after closing on its \$38 billion purchase of rival Anadarko Petroleum.

In the Permian Basin, spending is forecast to drop by half in 2020, Reuters reported. According to the Head of Pioneer Natural Resources, activity in the Permian Basin is poised to slow “significantly” over the next several years, with much of the decline due to free cash flow models adopted by public US independent producers. Platts also reported that the lower price environment, well interference from suboptimal spacing between wells and operators drilling less-prospective acreage have combined to set up the Permian for potentially fewer well drillings and completions over its West Texas/New Mexico footprint.

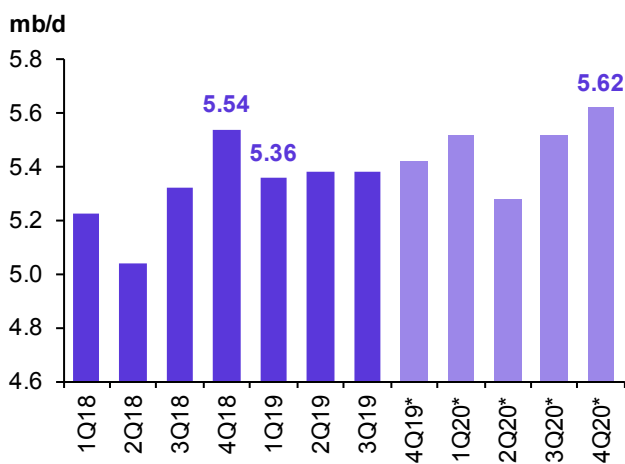
Canada

Canada’s liquids supply in July 2019 rose by 0.01 mb/d m-o-m to average 5.43 mb/d, according to official data, which is 0.15 mb/d higher than a year earlier. Non-conventional oil production increased by 40 tb/d to average 3.02 mb/d in July, lower by 0.10 mb/d y-o-y, while conventional oil output declined by 49 tb/d y-o-y to average 1.25 mb/d. Non-conventional oil output in 2Q19 following the Alberta government’s mandate for production cuts reached 2.92 mb/d, higher by 0.05 mb/d q-o-q, nonetheless 0.17 mb/d less than seen in 4Q18, the hereto production peak of oil sands in Canada. The quota system came into force in January and was originally scheduled to run to the end of 2019. The upwardly revised preliminary production estimation for 2Q19 at 5.06 mb/d now stands at 5.38 mb/d, and shows a 0.34 mb/d increase y-o-y.

Canada’s oil supply in **2019** was revised up by 10 tb/d to average 5.39 mb/d due to upward revisions in historical oil production dated back to 2Q17 as well as a reassessment in the supply forecast for 3Q19 and 4Q19, now representing growth of 0.10 mb/d y-o-y.

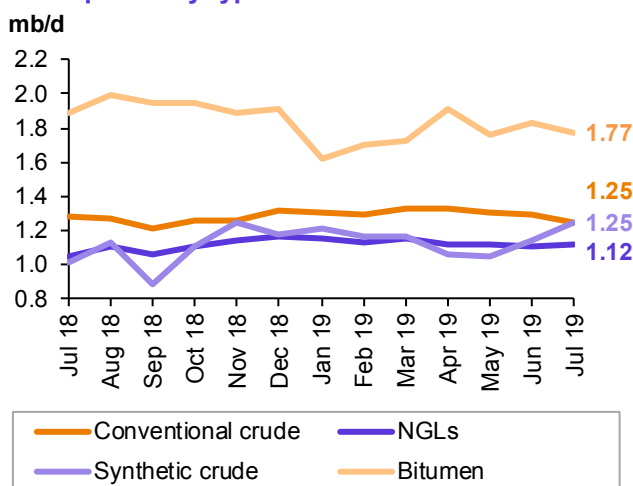
For 2020, Canada's Alberta province is extending its oil production curtailment order to the end of 2020, contingent on continued pipeline congestion, and is loosening output limits following calls by some producers to scrap caps altogether, according to Argus news. The main reason for the Alberta government's extension was related to the delays in Enbridge's 760 tb/d Line 3 replacement pipeline project.

Graph 5 - 17: Canada quarterly oil production



Note: 4Q19-4Q20 = Forecast.
Sources OPEC Secretariat.

Graph 5 - 18: Canada monthly production development by type



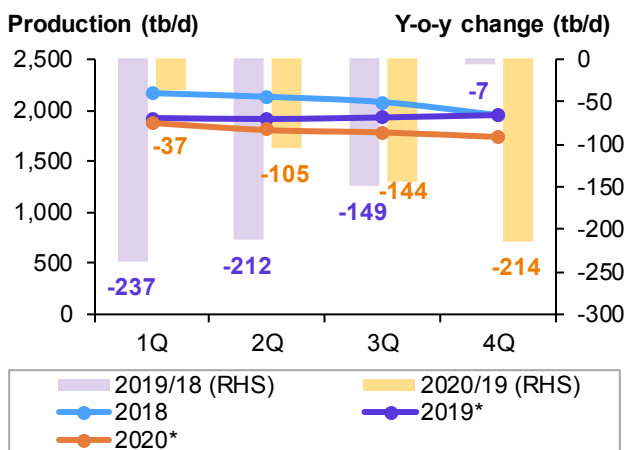
Sources: National Energy Board and OPEC Secretariat.

Nevertheless, Canadian oil production is forecast to grow by 0.1 mb/d to average 5.48 mb/d. About half of the 0.22 mb/d of projected production ramp ups from new projects will likely be offset by planned maintenance. Concerns regarding investment continue as investors face more pipeline obstacles. Enbridge's Line 3 project has already been pushed to the second half 2020, with Husky reportedly reducing spending in Western Canada until sufficient pipeline capacity becomes available. Moreover, according to Argus news, "the expected marketable production in 2020 would exceed takeaway capacity by 150 tb/d without curtailments," the government said.

Mexico

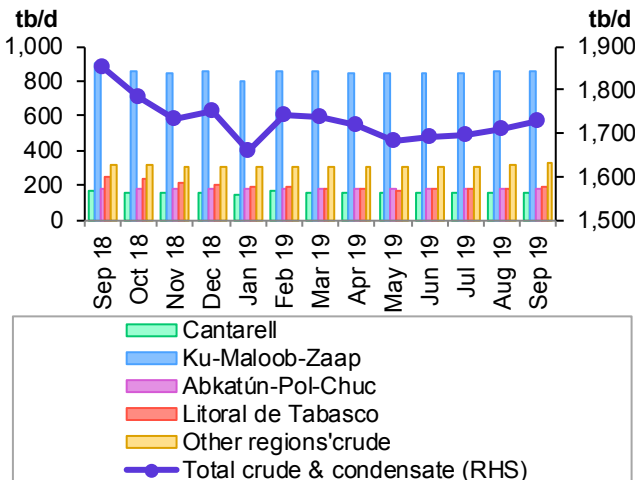
Mexico's average liquids output in September 2019 rose by 0.01 mb/d m-o-m and averaged 1.94 mb/d, down by 0.13 mb/d y-o-y. Crude oil production was stagnant m-o-m at an average of 1.68 mb/d, and was down by 125 tb/d y-o-y. NGL output was up by a minor 7 tb/d m-o-m to average 250 tb/d. Looking at **Graph 5 - 20**, oil output has increased since May 2019 so far, mainly in Ku-Maloob-Zaap. Moreover, with the start-up of the Mitzón 2 oil field in 2H19, Mexico's liquids supply decline is forecast to slow to 0.15 mb/d and average 1.93 mb/d in 2019. Oil production in the first three quarters declined by 0.2 mb/d y-o-y.

Graph 5 - 19: Mexico's quarterly liquids supply



Note: * 2019 = Estimate and 2020 = Forecast.
Source: OPEC Secretariat.

Graph 5 - 20: Mexico's crude and condensate monthly output by region



Sources: Pemex and OPEC Secretariat.

For **2020**, production from mature fields is expected to decline by 260 tb/d. Half of the declines next year are forecast from the Cantarell, Abkatún-Pol-Chuc and Tsimin-Xux projects. New production capacity of 25 tb/d is forecast to be added in 2020, with 80% coming from the Balam field. Maintenance is expected to occur in 2Q20 with production returning in the 3Q20. Overall, Mexico's oil supply in 2020 will decline further by 0.13 mb/d to average 1.80 mb/d.

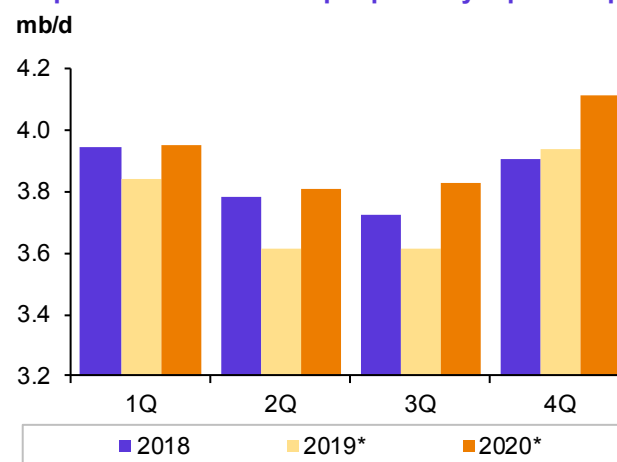
OECD Europe

OECD Europe's preliminary oil supply in September declined by 0.16 mb/d m-o-m to average 3.49 mb/d, up by 0.01 mb/d y-o-y. This is due to lower m-o-m oil output in Norway and the UK.

For **2019**, OECD Europe's oil supply is forecast to see a contraction of 0.09 mb/d to average 3.75 mb/d, following growth of 0.01 mb/d in 2018. The projected increase of 0.07 mb/d for the UK is expected to be offset by production declines in other countries, particularly Norway. North Sea oil production is forecast to see a gradual ramp-up from 4Q19 onward, owing to the start-up of the giant Norwegian Johan Sverdrup field.

Therefore, for **2020**, total growth of 0.17 mb/d y-o-y and an average oil supply of 3.93 mb/d is forecast. While Norway's output is forecast to grow by 0.21 mb/d, the UK and Denmark's production is projected to decline by 0.02 mb/d and 0.01 mb/d, respectively, while oil production in other OECD Europe will remain flat at 0.73 mb/d.

Graph 5 - 21: OECD Europe quarterly liquids supply

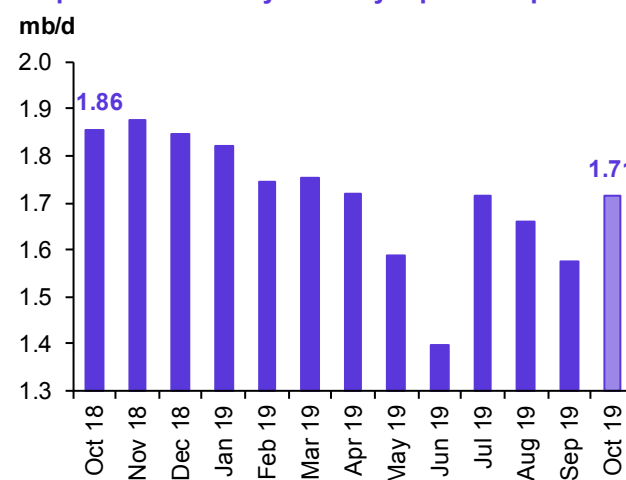


Note: * 2019 = Estimate and 2020 = Forecast.
Source: OPEC Secretariat.

Norway

Norwegian liquids supply in September fell by 0.09 mb/d m-o-m to average 1.57 mb/d. Average daily liquids production in September included 1.32 mb/d of crude oil, 244 tb/d of NGLs and 18 tb/d of condensate. According to Norwegian Petroleum Directorate (NPD), oil production in September was 7.7% lower than the NPD's forecast, and 4.1% below the forecast so far this year. The main reasons for the lower output in September as well as output remaining below the NPD's forecast were technical problems and maintenance work on some fields. The annual decline rate for liquids supply in 1H19 was 10.7% compared to the same period a year earlier. Liquids production for October 2019 is expected to rise as fields return from maintenance, mainly in Ekofisk and also in Gullfaks. Moreover, with the start-up of the Norwegian shelf's third-largest oil field – the North Sea giant, Johan Sverdrup – q-o-q growth in 4Q19 is anticipated.

Graph 5 - 22: Norway monthly liquids output



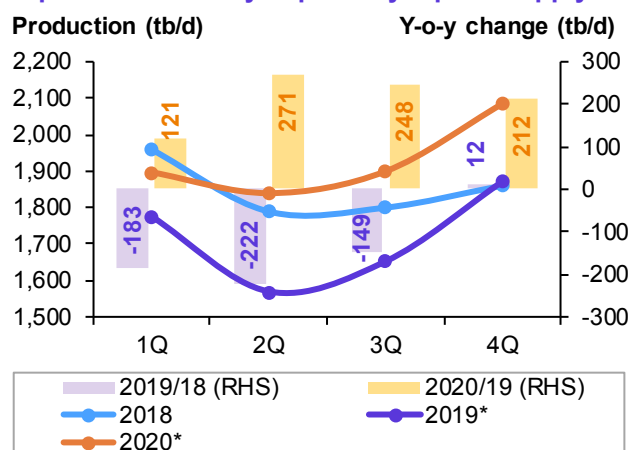
Sources: Norwegian Petroleum Directorate OPEC Secretariat.

Regarding Norwegian fields' development, two wells drilled this summer close to the Skarv field complex in the Norwegian Sea are estimated to collectively contain more than 120 mboe. At the same time, Phase 1 of the Ærflugl subsea tieback to Skarv is on track, with offshore modification work in progress and development drilling due to start soon, according to the operator Aker BP. By the end of this year, the partners plan to take a final investment decision on Ærflugl Phase 2, according to Offshore Magazine.

For **2020**, Norway's liquids supply is expected to grow by 0.21 mb/d to average 1.93 mb/d, which is still lower than the level of average liquids output in 2017 at 1.97 mb/d.

Johan Sverdrup is forecast to account for 50% of the new production. In addition, 20% of the new production will come from the ramp-up of the Valhall and Oseberg projects and the start-up of Njord, Yme and Martin Linge. Maintenance is scheduled for 2Q20 and again for 4Q20.

Graph 5 - 23: Norway's quarterly liquids supply



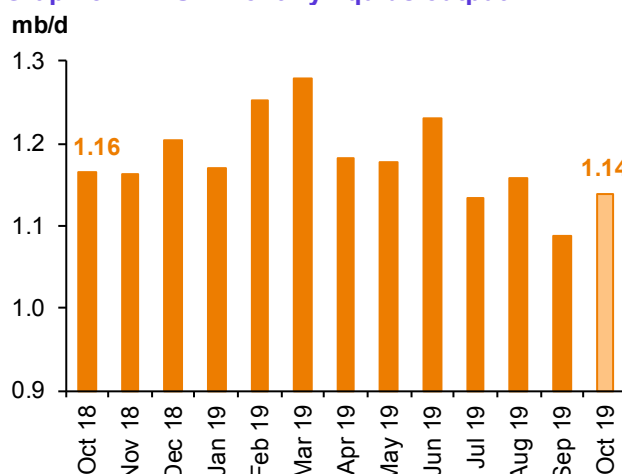
Note: * 2019 = Estimate and 2020 = Forecast.
Source: OPEC Secretariat.

UK

UK crude oil output in September 2019 declined m-o-m by 0.07 mb/d to an average of 0.96 mb/d following a 0.17 mb/d upward revision in August, but was higher by 0.08 mb/d y-o-y due to the base effect of heavy maintenance in 2018. NGL output was up by 4 tb/d to average 77 tb/d. Consequently, liquids output in September fell m-o-m by 0.07 mb/d to average 1.09 mb/d and was lower by 0.03 mb/d y-o-y.

Since 1Q19, UK oil output has decreased from 1.23 mb/d to 1.20 mb/d in 2Q19 and has now declined to 1.13 mb/d in 3Q19. However, UK oil supply growth for the current year was revised up by 28 tb/d this month following the official upward revision of the production data in 2Q19 and 3Q19.

Graph 5 - 24: UK monthly liquids output



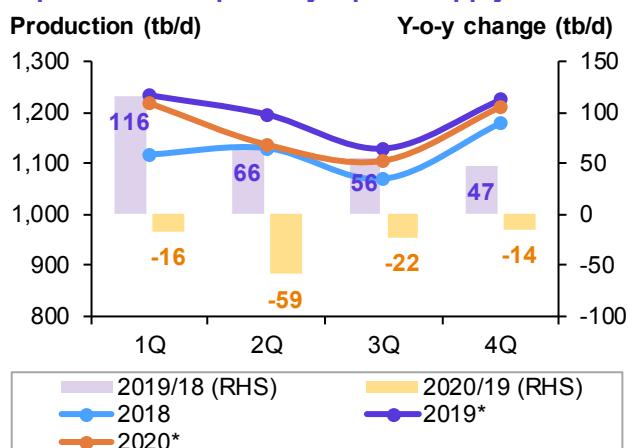
Sources: Oil and Gas Authority and OPEC Secretariat.

According to the latest data, oil production in October is set to rise m-o-m, mainly from new fields, despite the Buzzard field having been offline from 4–14 October due to a 10-day outage and a further shutdown from 17–25 October.

For **2019**, UK liquids supply growth is forecast at a slower pace compared to a year ago at 0.07 mb/d, revised up by 0.03 mb/d due to upward revisions in 2Q19 and 3Q19 by 39 tb/d and 74 tb/d, respectively, to average 1.19 mb/d.

For **2020**, taking into account the growth from new projects – Mariner, Clair, Lancaster and the start-up of Liberator – and expected declines, UK oil supply is forecast to see an overall contraction of 0.03 mb/d in 2020 to average 1.17 mb/d. The main projects in decline include Buzzard, Elgin/Franklin, Golden Eagle Area, Western Isles, Greater Catcher and ETAP. These will account for more than 40% of total UK declines in 2020. Maintenance is expected to occur in 2Q20 and 3Q20, then returning to production in 4Q20.

Graph 5 - 25: UK quarterly liquids supply



Note: * 2019 = Estimate and 2020 = Forecast.
Source: OPEC Secretariat.

Developing Countries (DCs)

Total developing countries' (DCs) oil supply for 2019 was revised down by 25 tb/d from last month's assessment and is now expected to grow by 0.11 mb/d y-o-y to average 13.57 mb/d. DCs oil supply was revised down by 16 tb/d in 2Q19, 72 tb/d in 3Q19 and 20 tb/d in the forecast of 4Q19. This was mainly due to downward revisions in Other Asia's supply forecast, which was revised down by 0.02 mb/d following a downward revision in historical production data mainly in Indonesia, and now is forecast to decline deeper by 0.12 mb/d y-o-y to average 3.43 mb/d. Latin America is now forecast to see y-o-y growth of 0.20 mb/d, owing to new production ramp-ups in Brazil. In Africa, the anticipated y-o-y growth of 0.04 mb/d will come mainly from Ghana and the Sudans. And finally, oil supply in the Middle East is expected to remain unchanged y-o-y at 3.21 mb/d.

Table 5 - 7: Developing countries' liquids supply, mb/d

| | 1Q | 2Q | 3Q | 4Q | Yearly | Change Y-o-y |
|--------------|-------|-------|-------|-------|--------|-----------------|
| 2018 | 13.44 | 13.51 | 13.39 | 13.51 | 13.46 | 0.07 |
| 2019* | 13.41 | 13.44 | 13.60 | 13.83 | 13.57 | 0.11 |
| 2020* | 13.78 | 13.80 | 13.82 | 13.98 | 13.85 | 0.27 |

Note: * 2019 = Estimate and 2020 = Forecast.

Source: OPEC Secretariat.

For **2020**, oil supply in DCs is expected to increase by 0.27 mb/d to average 13.85 mb/d, revised down by 8 tb/d from the last monthly assessment. The key driver remains Latin America with y-o-y forecast growth of 0.25 mb/d due to projects being ramped up in Brazil. Moreover, while production is forecast to increase in the Middle East and Africa by 0.04 mb/d and 0.03 mb/d to average 3.25 mb/d and 1.57 mb/d, respectively, production in Other Asia, despite projected growth in India and Malaysia, is forecast to decline by 0.04 mb/d, by less than a year earlier, to average 3.39 mb/d.

Latin America

Brazil

Brazil's crude oil output in September 2019 fell by 62 tb/d m-o-m to average 2.93 mb/d according to the Agência Nacional do Petróleo, mainly due to lower output from two FPSOs operating in the Lula Field, but up by 0.44 mb/d y-o-y.

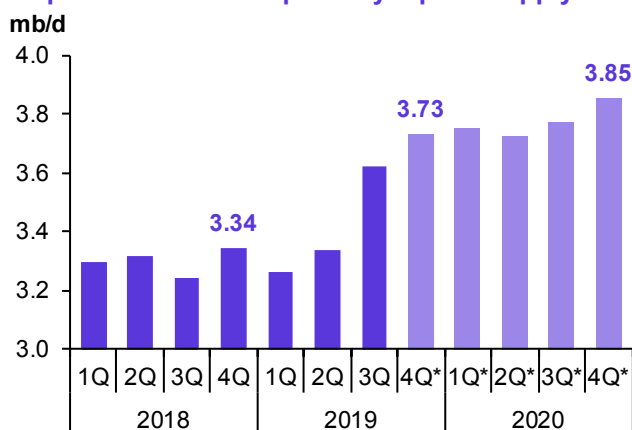
As of September, oil production from pre-salt horizon in Santos Basin rose y-o-y by 0.4 mb/d, of which output in the Búzios rose by 0.3 mb/d, and the rest came from the Lula field. While oil production from mature fields producing from post-salt horizons in the Campos Basin are declining, oil production from the Tartaruga Verde field showed y-o-y growth of 35 tb/d. NGL output was steady in September at 0.11 mb/d m-o-m, while biofuel output rose by 15 tb/d in the same month to average 0.63 mb/d, showing a new record.

Brazil's total liquids supply in September declined by 0.04 mb/d to average 3.67 mb/d, higher by 0.48 mb/d y-o-y. With new project ramp-ups, particularly in the Lula and Búzios fields, as well as the end of heavy maintenance in offshore platforms, total liquids output in 3Q19 grew by 0.28 mb/d q-o-q to average 3.62 mb/d. This level is forecast to rise to 3.73 mb/d in 4Q19.

As a result, Brazil's liquids supply in **2019** is forecast to average 3.49 mb/d (including biofuels), representing y-o-y growth of 0.19 mb/d.

Despite the instalment of seven FPSOs, each with a capacity of 150 tb/d since last year, four of which started production in the pre-salt Búzios field, supply from Búzios has only ramped up to 0.30 mb/d, around 25% of installed capacity. However, well productivity in the Búzios field is expected to increase in 4Q19 and beyond. Moreover, the P-68 FPSO is also projected to start production from the Berbgao/Sururu oil field by the end of this year.

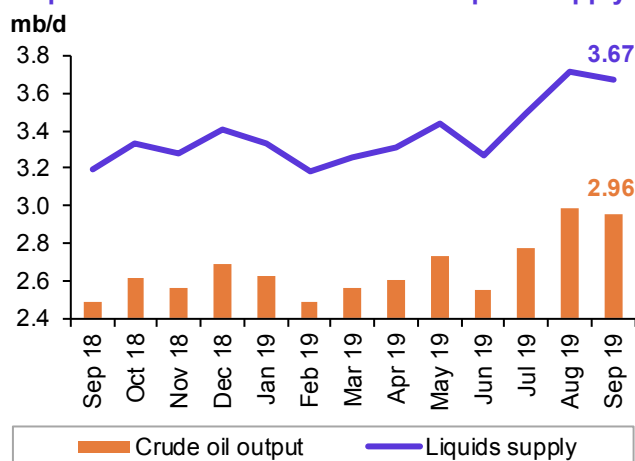
Graph 5 - 26: Brazil's quarterly liquids supply



Note: * 4Q19-4Q20 = Forecast.

Sources: National Agency of Petroleum, Natural Gas and Biofuels; and OPEC Secretariat.

Graph 5 - 27: Brazil's crude oil and liquids supply



Sources: National Agency of Petroleum, Natural Gas and Biofuels; and OPEC Secretariat.

The supply forecast for **2020** shows y-o-y growth of 0.29 mb/d for an average of 3.78 mb/d. More than 80% of the estimated addition from new projects is expected to come from the Búzios (x-Franco), Lara and Lula fields. Mature fields such as Parque das Baleia, Marlim Sul (South), Roncador, Mero (Libra NW), and Marlim Leste account for more than 50% of the estimated 0.12 mb/d total decline in Brazil's supply during 2020. Annual maintenance is expected to slow growth starting from 2Q20 and 3Q20.

FSU

FSU oil supply in 2019 is forecast to increase by 0.04 mb/d y-o-y in 2019 to average 14.34 mb/d, revised up by 33 tb/d from last month's assessment due to the upward revision of 33 tb/d in Kazakhstan's supply forecast. In Russia and Kazakhstan, oil supply is expected to increase by 0.07 mb/d and 0.01 mb/d y-o-y to average 11.41 mb/d and 1.82 mb/d, respectively, while oil output is likely to decline in Azerbaijan and FSU others by 0.02 mb/d and 0.01 mb/d, respectively.

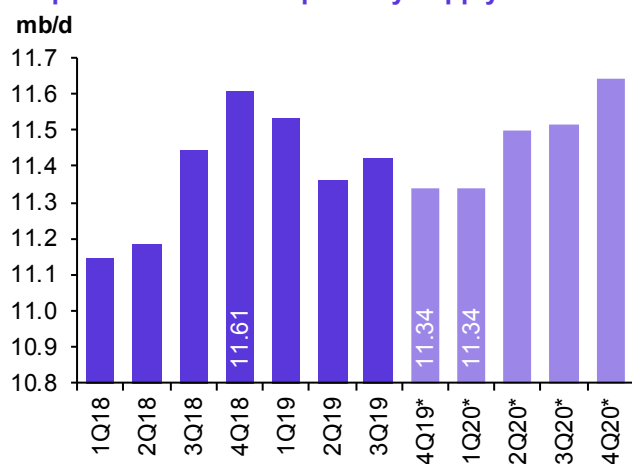
For **2020**, FSU oil supply is forecast to grow by 0.10 mb/d y-o-y and average 14.44 mb/d. Oil production in Russia is forecast to grow by 0.09 mb/d to average 11.50 mb/d, assuming that production remains adjusted to 11.34 mb/d in 1Q20 as part of the ongoing DoC. Oil supply in Kazakhstan and Azerbaijan is likely to grow by 0.03 mb/d and 0.01 mb/d, respectively, but is projected to decline by 0.02 mb/d in FSU others.

Russia

Preliminary data for **Russian liquids supply in October 2019** shows a decrease of 0.02 mb/d m-o-m to average 11.43 mb/d, down by 0.18 mb/d y-o-y. Part of the higher production in recent months is due to rising condensate output from gas fields, which usually see a production increase ahead of an anticipated cold winter.

Russia's oil supply is forecast to grow by only 0.07 mb/d in **2019** to average 11.41 mb/d. For **2020**, growth of 0.09 mb/d is anticipated for an average of 11.50 mb/d.

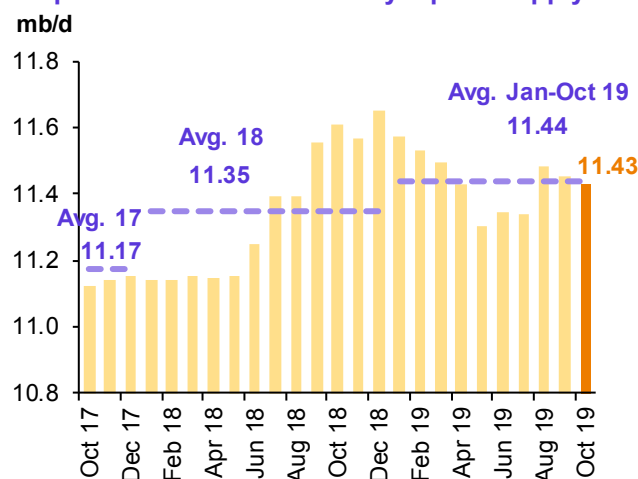
Graph 5 - 28: Russia's quarterly supply forecast



Note: * 4Q19-4Q20 = Forecast.

Sources: Nefte Compass and OPEC Secretariat.

Graph 5 - 29: Russia's monthly liquids supply



Sources: Nefte Compass and OPEC Secretariat.

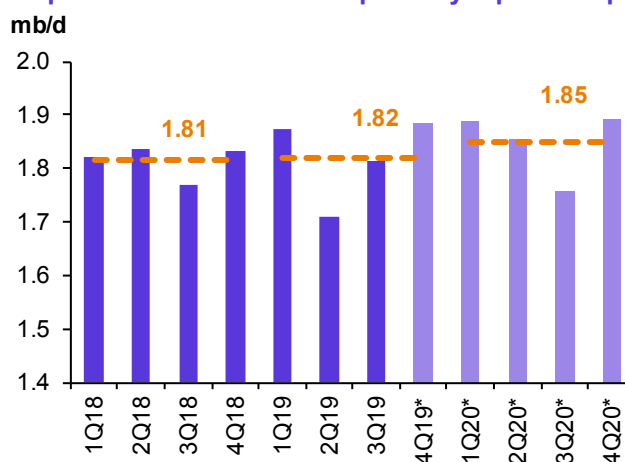
Caspian

Kazakhstan

Kazakhstan's liquids output in September was down by 0.01 mb/d m-o-m to average 1.77 mb/d, higher y-o-y by 0.06 mb/d. Crude oil production in September decreased by 7 tb/d to average 1,505 tb/d, while NGL output was steady at 267 tb/d. Oil production in September was higher than expected in the previous assessment, because lower production in the Karachaganak field that declined 0.13 mb/d m-o-m was offset by post-maintenance higher production at the Tengiz and Kashagan fields.

Oil supply in 3Q19 has been revised up by 65 tb/d, which will be carried over to 4Q19. Therefore, 3Q19 and 4Q19 have been revised up to 1.81 mb/d and 1.88 mb/d, respectively. Hence, Kazakhstan's oil supply in the current year will grow by 0.01 mb/d to average 1.82 mb/d.

Graph 5 - 30: Kazakhstan's quarterly liquids output



Note: * 4Q19-4Q20 = Forecast.

Sources: Nefte Compass and OPEC Secretariat.

Preliminary October data showed a recovery in production by 0.04 mb/d to average 1.81 mb/d amid a post-maintenance production recovery in the Karachaganak field, despite outages of 75 tb/d in Kashagan for 10 days.

For **2020**, oil supply is forecast to grow by 0.03 mb/d to average 1.85 mb/d.

Reuters, quoting Kazakh officials, reported that the international consortium overseeing the **giant Kashagan** project has abandoned plans to develop a satellite oil field, Kalamkas-Sea. Meanwhile, Royal Dutch Shell has pulled out of a project to develop the Khazar field at an adjacent block, reflecting a global trend of the majors cutting back on riskier, capital-intensive oil developments.

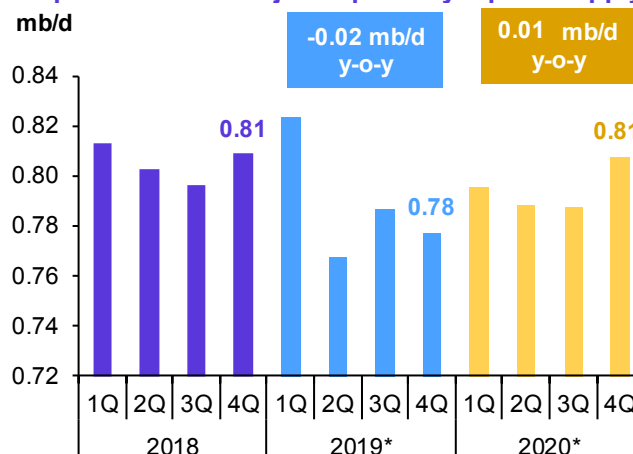
Azerbaijan

Azerbaijan's liquids output in September remained unchanged m-o-m to average 0.78 mb/d. Oil production in 3Q19 was higher by 0.02 mb/d q-o-q to average 0.79 mb/d, and showed a y-o-y decline of 0.01 mb/d.

For **2019**, oil supply in Azerbaijan is expected to decline by 0.02 mb/d to average 0.79 mb/d.

For **2020**, production is forecast to grow further compared to 2019 to average 0.79 mb/d, representing y-o-y growth of 0.01 mb/d.

Graph 5 - 31: Azerbaijan's quarterly liquids supply

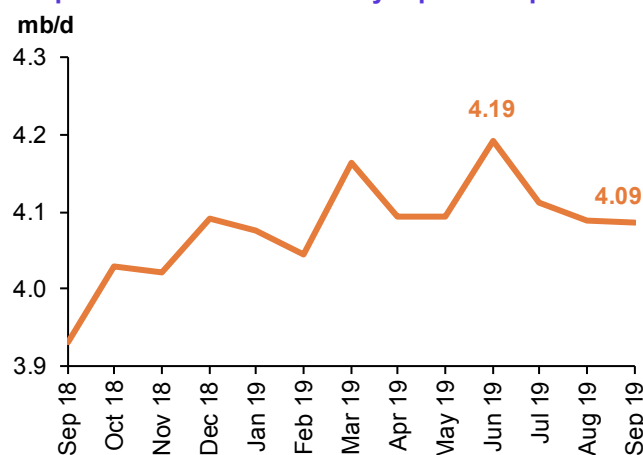


Note: * 2019 = Estimate and 2020 = Forecast.
Sources: JODI and OPEC Secretariat.

China

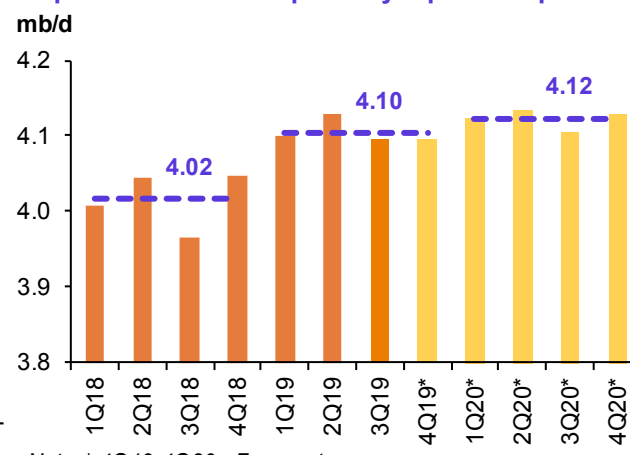
China's liquids production in September 2019 was steady at an average 4.09 mb/d according to official data, up by 0.16 mb/d y-o-y. Crude oil output in September decreased by a minor 5 tb/d at an average of 3.91 mb/d, which was 0.11 mb/d higher y-o-y. Domestic crude oil output by PetroChina, the biggest Chinese major oil company, for the first nine months of 2019 increased by 1.4% over the same period of the preceding year by a total of 557 mb, according to the company's announcement in its third quarterly report of 2019, according to Reuters. Production from Shaanxi and Xinjiang are showing m-o-m growth, while oil production at several mature fields is declining.

Graph 5 - 32: China's monthly liquids output



Sources: China National Petroleum Corporation and OPEC Secretariat.

Graph 5 - 33: China's quarterly liquids output



Note: * 4Q19-4Q20 = Forecast.
Sources: China National Petroleum Corporation and OPEC Secretariat.

China's liquids production in **2019** is expected to grow by 0.09 mb/d to average 4.10 mb/d.

For **2020**, oil production growth is forecast to slow to 0.02 mb/d, for an average of 4.12 mb/d. However, oil production in the next years will depend on foreign investor spending in the upstream sector amid the US-China trade dispute.

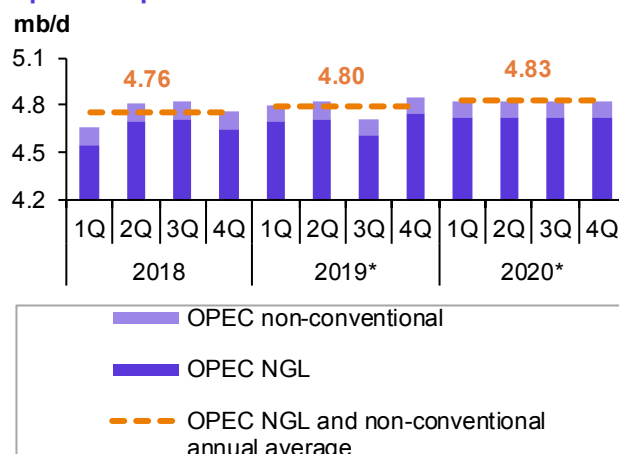
OPEC NGLs and non-conventional oils

OPEC NGLs and non-conventional liquids in 2019 are forecast to grow by 0.04 mb/d to average 4.80 mb/d, revised down by 11 tb/d due to downward revisions in production of some OPEC MCs compared to last month's assessment, and following growth of 0.12 mb/d in 2018.

NGL output in September declined by 0.22 mb/d m-o-m to average 4.56 mb/d. Preliminary production data for **October 2019** shows a recovery of 0.26 mb/d to average 4.81 mb/d compared with a month earlier, and an increase of 0.06 mb/d y-o-y.

For **2020**, the preliminary forecast indicates growth of 0.03 mb/d to average 4.83 mb/d.

Graph 5 - 34: OPEC NGL and non-conventional liquids output



Note: * 2019 = Estimate and 2020 = Forecast.
Sources: OPEC Secretariat.

Table 5 - 8: OPEC NGL + non-conventional oils, mb/d

| | 2018 | 2019 | Change 19/18 | 1Q20 | 2Q20 | 3Q20 | 4Q20 | 2020 | Change 20/19 |
|-------------------|-------------|-------------|-----------------|------|------|------|------|-------------|-----------------|
| Total OPEC | 4.76 | 4.80 | 0.04 | 4.83 | 4.83 | 4.83 | 4.83 | 4.83 | 0.03 |

Note: 2019 = Estimate and 2020 = Forecast.
Source: OPEC Secretariat.

OPEC crude oil production

According to secondary sources, total **OPEC-14 preliminary crude oil production** averaged 29.65 mb/d in October, higher by 943 tb/d m-o-m. Crude oil output increased mostly in Saudi Arabia, Venezuela and UAE, while production decreased in Ecuador, Angola, Iraq and Nigeria.

Table 5 - 9: OPEC crude oil production based on secondary sources, tb/d

| | 2017 | 2018 | 1Q19 | 2Q19 | 3Q19 | Aug 19 | Sep 19 | Oct 19 | Oct/Sep |
|---------------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|------------|
| Algeria | 1,047 | 1,042 | 1,026 | 1,019 | 1,021 | 1,016 | 1,020 | 1,019 | -1 |
| Angola | 1,634 | 1,505 | 1,443 | 1,420 | 1,388 | 1,385 | 1,399 | 1,356 | -43 |
| Congo | 252 | 317 | 326 | 332 | 326 | 320 | 335 | 325 | -11 |
| Ecuador | 530 | 519 | 526 | 530 | 543 | 543 | 548 | 448 | -100 |
| Equatorial | | | | | | | | | |
| Guinea | 133 | 125 | 115 | 114 | 119 | 117 | 122 | 125 | 4 |
| Gabon | 200 | 187 | 209 | 212 | 203 | 204 | 197 | 207 | 9 |
| Iran, I.R. | 3,813 | 3,553 | 2,725 | 2,407 | 2,192 | 2,193 | 2,164 | 2,146 | -18 |
| Iraq | 4,446 | 4,550 | 4,635 | 4,699 | 4,750 | 4,781 | 4,732 | 4,690 | -42 |
| Kuwait | 2,708 | 2,745 | 2,715 | 2,693 | 2,655 | 2,638 | 2,658 | 2,674 | 16 |
| Libya | 811 | 951 | 965 | 1,154 | 1,103 | 1,074 | 1,160 | 1,167 | 6 |
| Nigeria | 1,658 | 1,718 | 1,736 | 1,783 | 1,842 | 1,870 | 1,848 | 1,811 | -37 |
| Saudi Arabia | 9,954 | 10,311 | 10,019 | 9,769 | 9,452 | 9,851 | 8,796 | 9,890 | 1,094 |
| UAE | 2,916 | 2,986 | 3,066 | 3,063 | 3,080 | 3,082 | 3,083 | 3,106 | 23 |
| Venezuela | 1,911 | 1,354 | 975 | 776 | 714 | 735 | 644 | 687 | 42 |
| Total OPEC | 32,014 | 31,864 | 30,481 | 29,971 | 29,388 | 29,809 | 28,707 | 29,650 | 943 |

Notes: Totals may not add up due to independent rounding.

Source: OPEC Secretariat.

Table 5 - 10: OPEC crude oil production based on direct communication, tb/d

| | 2017 | 2018 | 1Q19 | 2Q19 | 3Q19 | Aug 19 | Sep 19 | Oct 19 | Oct/Sep |
|---------------------|-------|--------|--------|-------|-------|--------|--------|--------|---------|
| Algeria | 1,059 | 1,040 | 1,027 | 1,017 | 1,025 | 1,019 | 1,024 | 1,023 | -1 |
| Angola | 1,632 | 1,473 | 1,421 | 1,424 | 1,318 | 1,328 | 1,369 | 1,391 | 22 |
| Congo | 263 | 323 | 345 | 340 | 334 | 338 | 327 | 388 | 61 |
| Ecuador | 531 | 517 | 529 | 531 | 546 | 550 | 547 | 467 | -80 |
| Equatorial | | | | | | | | | |
| Guinea | 129 | 120 | 108 | 114 | 109 | 106 | 109 | 119 | 10 |
| Gabon | 210 | 193 | 214 | 225 | 220 | 220 | 216 | 212 | -5 |
| Iran, I.R. | 3,867 | .. | .. | .. | .. | .. | .. | .. | .. |
| Iraq | 4,469 | 4,410 | 4,540 | 4,565 | 4,630 | 4,650 | 4,620 | 4,576 | -44 |
| Kuwait | 2,704 | 2,737 | 2,712 | 2,681 | 2,636 | 2,605 | 2,650 | 2,633 | -17 |
| Libya | .. | .. | .. | .. | .. | .. | .. | .. | .. |
| Nigeria | 1,536 | 1,602 | 1,689 | 1,721 | 1,794 | 1,760 | 1,796 | 1,780 | -16 |
| Saudi Arabia | 9,959 | 10,317 | 10,053 | 9,752 | 9,503 | 9,789 | 9,129 | 10,303 | 1,174 |
| UAE | 2,967 | 3,008 | 3,055 | 3,050 | 3,068 | 3,065 | 3,070 | 3,070 | 0 |
| Venezuela | 2,035 | 1,510 | 1,289 | 1,045 | 864 | 933 | 749 | 761 | 12 |
| Total OPEC | .. | .. | .. | .. | .. | .. | .. | .. | .. |

Notes: .. Not available.

Totals may not add up due to independent rounding.

Source: OPEC Secretariat.

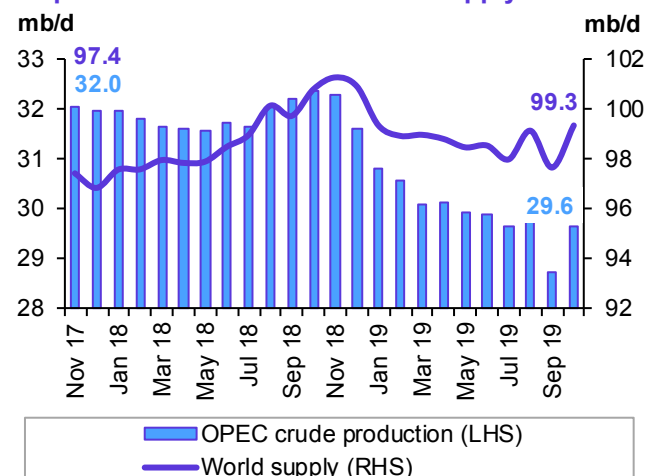
World oil supply

Preliminary data indicates that **global oil supply** in October increased by 1.67 mb/d to average 99.34 mb/d, compared to the previous month.

Non-OPEC supply (including OPEC NGLs) increased by 0.73 mb/d to average 69.69 mb/d in October compared to the previous month, higher by 1.28 mb/d y-o-y. Preliminary incremental production in October was mainly driven by the US, Canada, Norway, the UK, Australia, Kazakhstan, China and OPEC NGLs.

The **share of OPEC crude oil in total global production** increased by 0.5 pp to 29.8% in October 2019 compared to the previous month. Estimates are based on preliminary data from direct communication for non-OPEC supply, OPEC NGLs and non-conventional oil, while estimates for OPEC crude production are based on secondary sources.

Graph 5 - 35: OPEC and world oil supply



Source: OPEC Secretariat.

Product Markets and Refinery Operations

Product markets in October exhibited a mixed performance.

In the **Atlantic Basin**, markets strengthened as heavy refinery maintenance works led to restricted product output, which supported refining economics. Another positive factor was the recovery in naphtha markets in both the US and Europe, as naphtha crack spreads jumped for the second consecutive month, re-entering positive territory on the USGC.

In **Asia**, robust y-o-y product output growth amid new refining capacity additions in China has contributed to a rise in product inventory levels in Singapore, which has weighed on Asian product markets. The effect of sanctions on select Chinese cargo ships and the resulting hike in freight rates has led to a severe weakening in fuel oil markets in all regions, but the greatest impact has been seen in Asia.

Refinery margins

For the fourth consecutive month, **US** refinery margins continued to move upwards in October. They exhibited the strongest m-o-m gain since February 2019, affected by lower refinery runs. This positive performance was underpinned by solid improvements registered across the barrel, the exception being the bottom of the barrel. The largest contribution came from the naphtha segment, which showed robust strength during the month with cracks rising by \$5.12 m-o-m. This is the largest m-o-m gain registered since February 2015.

At the same time, high sulphur fuel oil (HSFO) cracks in the US were severely pressured by concerns over declining demand in the run-up to the new IMO 2020 regulations at the start of next year. The registered weakening in HSFO cracks has placed prices for the same product under pressure, despite solid inventory declines.

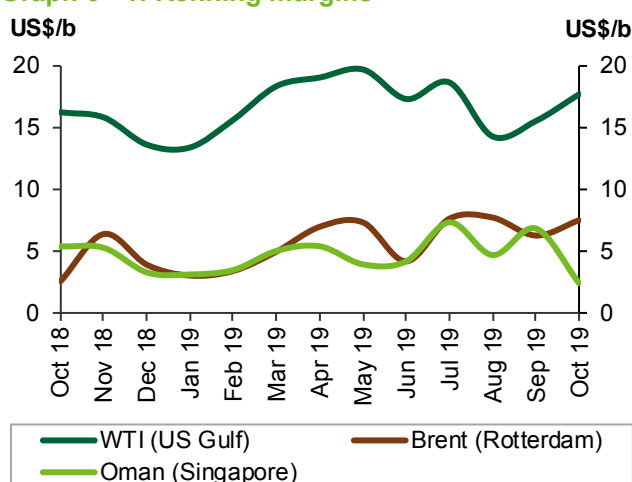
US refinery margins for WTI averaged \$17.61/b in October, up by \$2.17 m-o-m and by \$1.46 y-o-y.

Refinery margins in **Europe** partially recovered the losses witnessed in the previous month, as product balances became increasingly tighter in October due to planned refinery shutdowns. However, the return of refining capacity in the near term will most likely lead to higher refinery utilization rates, with higher product output likely to weigh on European product markets in the coming month.

Refinery margins for Brent in Europe averaged \$7.54/b in October, up by \$1.25 compared to a month earlier and by \$4.95 y-o-y.

Asian refinery margins fell, reaching a multi-year record low as soaring freight rates discouraged long distance trade flows and pressured HSFO demand. Furthermore, the start-up of the new Rongsheng petrochemical integrated refinery in China in October exacerbated concerns over product surplus. This added to the already negative market sentiment in the region due to excess refining capacity. Refinery margins for Oman in Asia lost \$4.36 m-o-m to average \$2.46/b in September. They were lower by \$2.93 y-o-y.

Graph 6 - 1: Refining margins



Sources: Argus Media and OPEC Secretariat.

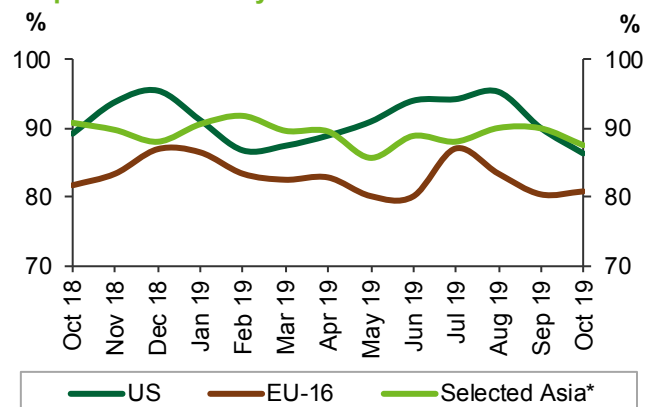
Refinery operations

In the **US**, refinery utilization rates increased to average 86.27% in October, which corresponds to a throughput of 16.22 mb/d. This represents a m-o-m drop of 3.7 pp and 710 tb/d. Y-o-y, refinery utilization rates were down by 2.87 pp, with throughputs down by 520 tb/d.

European refinery utilization rates averaged 80.90% in October, corresponding to a throughput of 10.03 mb/d. This is a m-o-m rise of 0.4 pp, or 50 tb/d. Y-o-y, utilization rates decreased by 0.89 pp and throughputs were down by 111 tb/d.

In **selected Asia** – comprising Japan, China, India, Singapore and South Korea – refinery utilization rates rose to average 87.52% in October, corresponding to a throughput of 24.79 mb/d. Compared to the previous month, throughputs were down by 2.4 pp and 330 tb/d. Y-o-y they were up by 1.13 pp and 1.12 mb/d.

Graph 6 - 2: Refinery utilization rates



Note: * Includes Japan, China, India, Singapore and South Korea.

Sources: Argus Media, EIA, Euroilstock, Petroleum Association of Japan, and OPEC Secretariat.

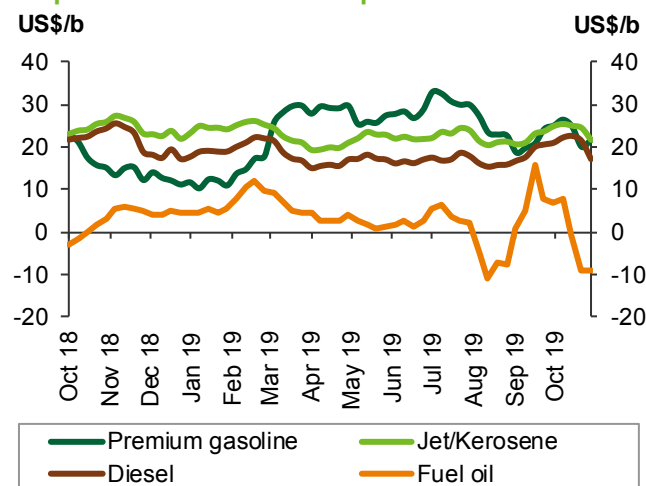
Product markets

US market

US gasoline cracks reversed trend and witnessed solid gains. This reflected the inventory level declines recorded over every week of October. Lower US refinery intakes, which were 710 tb/d lower m-o-m, contributed to a strengthening gasoline market. This was despite a mild decline in the gasoline price caused by seasonally lower demand, which is typical for this time of the year. During the month, a series of refinery problems in California caused unplanned gasoline outages due to damage at the Chevron EI Segundo refinery FCC unit. This added to the declining gasoline stocks and prevented gasoline prices from falling further.

In October the gasoline crack spread gained \$2.28 m-o-m to average \$23.51, which was up by \$4.64 y-o-y.

Graph 6 - 3: US Gulf crack spread vs. WTI



Sources: Argus Media and OPEC Secretariat.

The USGC **jet/kerosene crack spread** continued to trend upwards, supported by strong inventory drawdowns caused by lower refinery outputs, amid strong exports, despite the seasonal weakness. In addition, the high freight rates registered over the month kept volume flows from Asia to Europe under pressure. This exacerbated the jet/kerosene tightness in the Atlantic Basin, contributing to the positive jet/kerosene US market performance. The US jet/kerosene crack spread against WTI averaged \$24.36/b, up by \$2.02 m-o-m and by 10¢ y-o-y.

US gasoil crack spreads performed positively, underpinned by the US gasoil balance that fell by nearly 50% m-o-m to stand at 449 tb/d, compared with 880 tb/d the previous month, according to JBC Energy. Although gasoil exports to Europe were weak during the month, exports to Latin America remained healthy, which

Product Markets and Refinery Operations

coupled with the reduction in gasoil production resulted in a significant lift of US gasoil crack spreads. The US gasoil crack spread averaged \$20.91/b, up by \$2.04 m-o-m, but down by \$1.64 y-o-y.

US **fuel oil crack spreads** continue to show high volatility. After the significant recovery witnessed in September, fuel oil crack spreads reversed trend and plunged again into negative territory in October. This weak performance can be attributed to the spike in freight rates, which had a negative impact on global fuel oil demand. In October, the US fuel oil crack spread averaged minus 53¢, down by \$8.12 m-o-m and by 32¢ y-o-y.

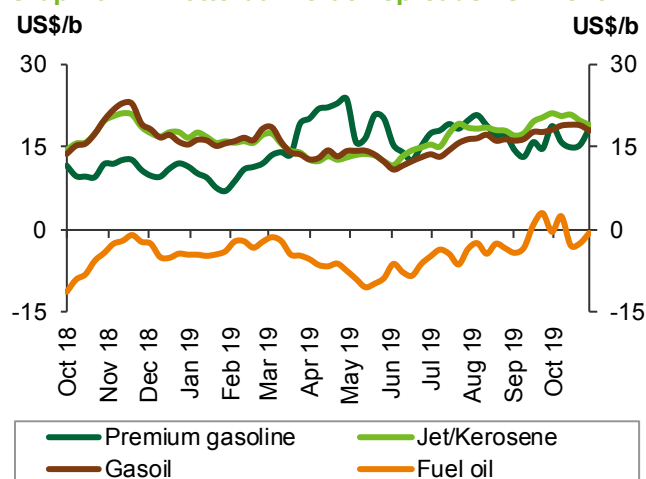
European market

Gasoline crack spreads witnessed gains as healthy import requirements from the Middle East and West Africa contributed to a stronger European gasoline market. From the domestic perspective, heavy refinery turnarounds added to the bullishness, despite the seasonal weakening due to relatively lower regional consumption at this time of the year.

However, the projected return of offline capacities, both regionally and globally, could increase product availability and weigh on gasoline markets, while gasoline exports, particularly to West Africa, are expected to remain strong, in the near term.

The gasoline crack spread averaged \$16.52/b in October, up by \$1.88 m-o-m and by \$6.44 y-o-y.

Graph 6 - 4: Rotterdam crack spreads vs. Brent



Sources: Argus Media and OPEC Secretariat.

Jet/kerosene crack spreads edged higher as market tightness settled in the region. This was on the back of reduced supplies due to refinery planned outages, as well as lower imports from the Middle East because of unfavourable shipping economics. The Rotterdam jet/kerosene crack spread averaged \$20.41/b, up by \$1.52 m-o-m and higher by \$4.08 y-o-y.

European **gasoil** crack spreads strengthened in October, supported by reduced domestic gasoil production attributed to heavy turnarounds. Furthermore, lower US gasoil stock levels, and consequently lower gasoil imports from the US to Europe, provided further support to the positive performance.

In addition, combined Amsterdam-Rotterdam-Antwerp gasoil and diesel stock levels dropped significantly over the month. This also supported Europe's gasoil markets by preventing a steeper fall in prices for the product, which was attributed to strong imports from Russia, as well as the mild weather conditions. The gasoil crack spread averaged \$18.74/b, which was higher by \$1.60 m-o-m and by \$2.68 y-o-y.

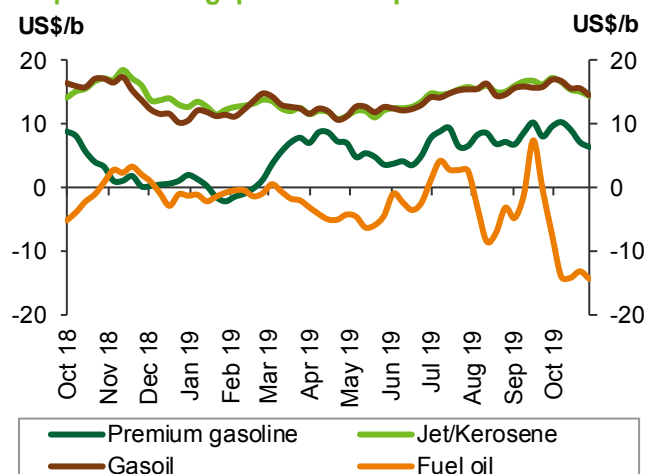
At the bottom of the barrel, the **fuel oil 3.5% crack spread** in Rotterdam fell, pressured by a decline in fuel oil demand that led to rising stock levels. HSFO prices dropped by \$13.49/b and drove HSFO cracks deep into negative territory. In Europe, the fuel oil crack averaged minus \$24.41/b in October, losing \$10.65 m-o-m and \$12.96 y-o-y.

Asian market

The **Asian gasoline 92** crack spread against Dubai strengthened slightly. An MTBE (a gasoline blending component used to boost the octane number) shortage drove gasoline prices higher. This positioned them at a premium vs ultra-low sulphur diesel prices on a dollar-per-tonne basis in the region, which lent support to Asian gasoline cracks. Moreover, planned and unplanned refinery outages exerted pressure on inventories, which provided further support. However, rising product supply at the new 200 tb/d Rongsheng refinery in China, which is currently ramping up, partially softened the maintenance-related tightness and helped cap gains in gasoline cracks.

The Singapore gasoline crack spread against Oman averaged \$8.58/b in October, slightly up by 14¢ m-o-m, and by \$2.32 y-o-y.

Graph 6 - 5: Singapore crack spreads vs. Dubai



Sources: Argus Media and OPEC Secretariat.

Singapore light distillate **naphtha crack spreads** rose, reflecting the positive performance in gasoline cracks and strong demand for naphtha-derived octane that boosted gasoline blending components. The return of naphtha crackers following planned maintenance, as well as firm demand from the petrochemical sector boosted naphtha crack spreads. The Singapore naphtha crack spread against Oman averaged minus \$2.32/b, having increased by \$4.58 m-o-m, and by \$2.18 y-o-y.

In the middle of the barrel, **jet/kerosene** crack spreads in Asia trended slightly downwards pressured by the closed arbitrage to Europe, as Europe's air travel industry continues to face financial challenges, which is exerting pressure on jet fuel demand. The Singapore jet/kerosene crack spread against Oman averaged \$15.92/b, down by 72¢ m-o-m, but slightly up by 16 ¢ y-o-y.

The Singapore **gasoil crack spread** moved slightly upwards on the back of stronger exports. Gasoil requirements to the Middle East were robust and those for Europe nearly tripled in October. The Singapore gasoil crack spread against Oman averaged \$16.84/b, up by 25¢ m-o-m, but down by 67¢ y-o-y.

The Singapore **fuel oil crack spread** changed direction compared with the previous month, pressured by lower demand, with significant losses witnessed. The effect of trade sanctions applied to a select group of the Chinese shipping industry had a direct impact on trade flow volumes and trajectories during the month, which affected HSFO demand globally. Consequently, HSFO prices in Singapore plunged in October, losing \$14.62/b to average \$46.63/b. This is the lowest level recorded since July 2017. Singapore fuel oil cracks against Oman averaged minus \$12.83, down by \$12.97 m-o-m and by \$10.25 y-o-y.

Product Markets and Refinery Operations

Table 6 - 1: Short-term prospects for product markets and refinery operations

| <u>Event</u> | <u>Time frame</u> | <u>Asia</u> | <u>Europe</u> | <u>US</u> | <u>Observations</u> |
|---|-------------------|--|--|--|---|
| End of autumn maintenance season | Nov 19 | ↓ Some negative impact on product markets | ↓ Some negative impact on product markets | ↓ Some negative impact on product markets | A rise in product output leads to builds in product inventory levels, exerting pressure on prices, as well as product cracks. |
| Preparations for IMO 2020 | May 19 – Dec 19 | ↑ Some positive impact on product markets (short term) | ↑ Some positive impact on product markets (short term) | ↑ Some positive impact on product markets (short term) | Refinery plant upgrades, rising VLSFO buying interest, increasingly tighter global HSFO supplies and a possible mild uptick in gasoil-derived marine fuels could support product markets going forward. |
| Lower heavy crude availability | Mid-term | ↑ Some positive impact on heavier product markets | ↑ Some positive impact on heavier product markets | ↑ Some positive impact on heavier product markets | May support prices and cracks of heavier products. |
| CDU additions | May 19 – Dec 19 | ↓ Negative impact on product markets | ↓ Negative impact on product markets | ↓ Negative impact on product markets | An overall increase in product output is to be expected and could further exacerbate the oversupply environment. |

Source: OPEC Secretariat.

Table 6 - 2: Refinery operations in selected OECD countries

| | <i>Refinery throughput, mb/d</i> | | | | <i>Refinery utilization, %</i> | | | |
|-----------------------|----------------------------------|---------------|---------------|-----------------------|--------------------------------|---------------|---------------|-----------------------|
| | <u>Aug 19</u> | <u>Sep 19</u> | <u>Oct 19</u> | <u>Change Oct/Sep</u> | <u>Aug 19</u> | <u>Sep 19</u> | <u>Oct 19</u> | <u>Change Oct/Sep</u> |
| US | 17.85 | 16.92 | 16.22 | -0.71 | 95.25 | 89.98 | 86.27 | -3.7 pp |
| Euro-16 | 10.35 | 9.97 | 10.03 | 0.05 | 83.52 | 80.47 | 80.90 | 0.4 pp |
| France | 1.13 | 0.96 | 0.99 | 0.03 | 90.58 | 76.76 | 79.38 | 2.6 pp |
| Germany | 1.75 | 1.73 | 1.77 | 0.05 | 79.75 | 78.98 | 81.09 | 2.1 pp |
| Italy | 1.51 | 1.39 | 1.34 | -0.05 | 73.70 | 67.79 | 65.56 | -2.2 pp |
| UK | 1.09 | 0.99 | 1.02 | 0.03 | 82.64 | 75.10 | 77.40 | 2.3 pp |
| Selected Asia* | 25.13 | 25.12 | 24.79 | -0.33 | 90.00 | 89.96 | 87.52 | -2.4 pp |

Note: * Includes Japan, China, India, Singapore and South Korea.

Sources: EIA, Euroilstock, Petroleum Association of Japan, FGE, and OPEC Secretariat.

Table 6 - 3: Refinery crude throughput, mb/d

| | 2016 | 2017 | 2018 | 4Q18 | 1Q19 | 2Q19 | 3Q19 | 4Q19 |
|--------------------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|
| Total OECD | 37.47 | 38.16 | 38.05 | 37.95 | 37.31 | 37.19 | 38.42 | 38.32 |
| OECD Americas | 18.78 | 19.10 | 19.31 | 19.15 | 18.36 | 19.07 | 19.53 | 19.36 |
| of which US | 16.51 | 16.88 | 17.32 | 17.33 | 16.46 | 17.14 | 17.49 | 17.09 |
| OECD Europe | 11.91 | 12.25 | 11.99 | 11.94 | 12.08 | 11.66 | 12.30 | 12.33 |
| of which: | | | | | | | | |
| France | 1.14 | 1.17 | 1.10 | 1.15 | 1.12 | 0.98 | 1.06 | 1.12 |
| Germany | 1.93 | 1.91 | 1.80 | 1.65 | 1.76 | 1.70 | 1.79 | 1.78 |
| Italy | 1.30 | 1.40 | 1.35 | 1.35 | 1.24 | 1.33 | 1.45 | 1.34 |
| UK | 1.09 | 1.10 | 1.06 | 1.14 | 1.08 | 1.03 | 1.05 | 1.12 |
| OECD Asia Pacific | 6.78 | 6.82 | 6.74 | 6.87 | 6.87 | 6.45 | 6.60 | 6.63 |
| of which Japan | 3.28 | 3.22 | 3.11 | 3.20 | 3.19 | 2.94 | 3.05 | 3.02 |
| Total Non-OECD | 41.46 | 42.28 | 43.50 | 43.89 | 43.90 | 43.43 | 43.92 | 44.71 |
| of which: | | | | | | | | |
| China | 10.77 | 11.35 | 12.03 | 12.25 | 12.63 | 12.66 | 12.75 | 13.16 |
| Middle East | 6.93 | 7.04 | 7.26 | 7.46 | 7.22 | 7.11 | 6.95 | 7.28 |
| Russia | 5.58 | 5.59 | 5.72 | 5.73 | 5.71 | 5.38 | 5.89 | 5.81 |
| Latin America | 4.66 | 4.51 | 4.22 | 4.07 | 4.03 | 4.08 | 4.04 | 3.97 |
| India | 4.74 | 4.79 | 4.89 | 4.89 | 5.11 | 4.97 | 4.96 | 5.02 |
| Africa | 2.20 | 2.21 | 2.22 | 2.18 | 2.16 | 2.22 | 2.21 | 2.22 |
| Total world | 78.93 | 80.45 | 81.55 | 81.84 | 81.21 | 80.62 | 82.34 | 83.03 |

Note: Totals may not add up due to independent rounding.

Sources: OPEC Secretariat, JODI, AFREC, APEC, EIA, IEA, Euroilstock, Petroleum Association of Japan, Ministry data, including Ministry of Energy of the Russian Federation, Ministry of Petroleum and Natural Gas of India.

Product Markets and Refinery Operations

Table 6 - 4: Refined product prices, US\$/b

| | Sep 19 | Oct 19 | Change Oct/Sep | Average 2018 | Year-to-date 2019 |
|-------------------------------------|--------|--------|-------------------|-----------------|----------------------|
| US Gulf (Cargoes FOB): | | | | | |
| Naphtha* | 52.86 | 55.10 | 2.24 | 68.51 | 56.62 |
| Premium gasoline (unleaded 93) | 78.09 | 77.49 | -0.60 | 85.78 | 80.54 |
| Regular gasoline (unleaded 87) | 70.54 | 68.83 | -1.71 | 80.17 | 73.46 |
| Jet/Kerosene | 79.20 | 78.34 | -0.86 | 85.35 | 79.50 |
| Gasoil (0.2% S) | 75.73 | 74.89 | -0.84 | 80.99 | 74.76 |
| Fuel oil (3.0% S) | 48.62 | 42.32 | -6.30 | 60.17 | 55.57 |
| Rotterdam (Barges FoB): | | | | | |
| Naphtha | 52.82 | 53.92 | 1.10 | 66.47 | 55.02 |
| Premium gasoline (unleaded 98) | 77.21 | 76.25 | -0.96 | 87.34 | 79.87 |
| Jet/Kerosene | 81.42 | 80.14 | -1.28 | 86.93 | 80.34 |
| Gasoil/Diesel (10 ppm) | 79.71 | 78.47 | -1.24 | 85.94 | 79.54 |
| Fuel oil (1.0% S) | 61.57 | 58.86 | -2.71 | 62.33 | 59.82 |
| Fuel oil (3.5% S) | 48.81 | 35.32 | -13.49 | 59.04 | 52.53 |
| Mediterranean (Cargoes FOB): | | | | | |
| Naphtha | 52.40 | 52.79 | 0.39 | 65.79 | 54.02 |
| Premium gasoline** | 70.96 | 69.39 | -1.57 | 79.08 | 71.42 |
| Jet/Kerosene | 79.45 | 77.45 | -2.00 | 85.10 | 78.13 |
| Diesel | 79.51 | 78.10 | -1.41 | 85.66 | 79.19 |
| Fuel oil (1.0% S) | 63.84 | 62.46 | -1.38 | 63.53 | 62.88 |
| Fuel oil (3.5% S) | 51.05 | 40.90 | -10.15 | 60.36 | 54.42 |
| Singapore (Cargoes FOB): | | | | | |
| Naphtha | 54.21 | 57.14 | 2.93 | 67.24 | 56.19 |
| Premium gasoline (unleaded 95) | 74.40 | 74.19 | -0.21 | 79.93 | 71.85 |
| Regular gasoline (unleaded 92) | 69.55 | 68.04 | -1.51 | 77.66 | 69.07 |
| Jet/Kerosene | 77.75 | 75.38 | -2.37 | 84.81 | 77.45 |
| Gasoil/Diesel (50 ppm) | 77.70 | 76.30 | -1.40 | 84.67 | 77.90 |
| Fuel oil (180 cst) | 61.25 | 46.63 | -14.62 | 65.24 | 60.69 |
| Fuel oil (380 cst 3.5% S) | 61.34 | 46.25 | -15.09 | 64.74 | 60.10 |

Note: * Barges.

** Cost, insurance and freight (CIF).

Sources: Argus Media and OPEC Secretariat.

Tanker Market

A host of factors in the **tanker market** in October pushed rates to the highest on record on all major routes. The market had been expecting a seasonal pickup in demand and some tightness on the tanker availability side as tankers were scheduled to be taken out of service to have scrubbers installed ahead of IMO 2020. However, geopolitical developments, such as the announcement of sanctions on two subsidiaries of one of the largest shippers in the world, China's Cosco, led to some panic fixing and rates surged. While rates quickly fell back, average **dirty spot freight rates** in October more than doubled m-o-m and were sharply higher y-o-y.

Clean rates were also pulled higher, as some clean ships were repurposed to carry dirty freight, resulting in a lower but still considerable increase on average in clean spot freight rates.

Spot fixtures

Global spot fixtures rose in October, increasing by 0.52 mb/d or 2.7% m-o-m, but remained below last year's levels, down 1.53 mb/d or 7% compared to the same month a year ago. However, fixtures were the highest since March 2019.

Table 7 - 1: Spot fixtures, mb/d

| | <u>Aug 19</u> | <u>Sep 19</u> | <u>Oct 19</u> | <u>Change</u> <u>Oct 19/Sep 19</u> |
|---------------------|---------------|---------------|---------------|---------------------------------------|
| All areas | 19.28 | 19.51 | 20.03 | 0.52 |
| OPEC | 13.59 | 13.13 | 13.55 | 0.42 |
| Middle East/East | 8.05 | 8.17 | 8.07 | -0.10 |
| Middle East/West | 1.28 | 1.13 | 1.37 | 0.24 |
| Outside Middle East | 4.26 | 3.82 | 4.10 | 0.28 |

Sources: Oil Movements and OPEC Secretariat.

OPEC spot fixtures averaged 13.55 mb/d in October, some 3% or 420 tb/d higher than in the previous month but some 5% or 780 tb/d lower y-o-y.

Fixtures from the **Middle East-to-West** were sharply higher, averaging 1.37 mb/d in October, representing an increase of 21% m-o-m but remained 15% lower than last year.

In contrast, fixtures on the **Middle East-to-East route** reversed some of the previous month's gains, declining 100 tb/d or 1% in October to 8.07 mb/d. Compared to the same month last year, rates on the route increased 300 tb/d or 4%.

Outside the Middle East fixtures averaged 4.10 mb/d in October, an increase of 0.28 mb/d or 7% from the previous month but a decline of 830 tb/d or 17% compared to the same month last year.

Sailings and arrivals

OPEC sailings rose 1% m-o-m in October, averaging 25.13 mb/d. Sailings from the **Middle East** edged up 1% or 220 tb/d in October to average 18.51.

Crude arrivals showed mixed movement in October. Arrivals in West Asia edged lower m-o-m in October but fell 2% or 110 tb/d y-o-y. Arrivals in the Far East saw a negligible increase m-o-m but dropped 810 tb/d or 9% y-o-y. Meanwhile, arrivals in Europe declined 110 tb/d m-o-m but were marginally higher y-o-y. North American arrivals were also largely unchanged, but declined 120 tb/d or 1% y-o-y.

Table 7 - 2: Tanker sailings and arrivals, mb/d

| | <u>Aug 19</u> | <u>Sep 19</u> | <u>Oct 19</u> | <u>Change Oct 19/Sep 19</u> |
|-----------------|---------------|---------------|---------------|---------------------------------|
| Sailings | | | | |
| OPEC | 24.71 | 24.87 | 25.13 | 0.26 |
| Middle East | 18.25 | 18.29 | 18.51 | 0.22 |
| Arrivals | | | | |
| North America | 9.78 | 9.75 | 9.75 | -0.01 |
| Europe | 12.19 | 12.18 | 12.07 | -0.11 |
| Far East | 8.17 | 8.23 | 8.23 | 0.01 |
| West Asia | 4.40 | 4.37 | 4.38 | 0.01 |

Sources: Oil Movements and OPEC Secretariat.

Dirty tanker freight rates

Very large crude carriers (VLCCs)

VLCC spot freight rates surged in October with gains across all routes. The **Middle East-to-East** route jumped 116% compared to the previous month, to stand at WS135 points in October.

Freight rates registered for tankers operating on the **Middle East-to-West** routes in October increased by 174% m-o-m to stand at WS83 points.

West Africa-to-East routes in October also showed gains, increasing 104% from a month ago, to average WS130 points.

Table 7 - 3: Dirty VLCC spot tanker freight rates, Worldscale (WS)

| | <u>Size 1,000 DWT</u> | <u>Aug 19</u> | <u>Sep 19</u> | <u>Oct 19</u> | <u>Change Oct 19/Sep 19</u> |
|------------------|---------------------------|---------------|---------------|---------------|---------------------------------|
| Middle East/East | 230-280 | 57 | 62 | 135 | 73 |
| Middle East/West | 270-285 | 27 | 30 | 83 | 53 |
| West Africa/East | 260 | 58 | 64 | 130 | 66 |

Sources: Argus Media and OPEC Secretariat.

Suezmax

Suezmax average spot freight rates also surged in October. Rates for tankers operating on the West Africa-to-US Gulf Coast (USGC) route averaged WS166 points, a gain of 142%. Rates on the Northwest Europe-to-USGC route saw the highest gains in percentage terms, increasing by a whopping 199% to average WS151 points.

Table 7 - 4: Dirty Suezmax spot tanker freight rates, WS

| | <u>Size 1,000 DWT</u> | <u>Aug 19</u> | <u>Sep 19</u> | <u>Oct 19</u> | <u>Change Oct 19/Sep 19</u> |
|--------------------------------|---------------------------|---------------|---------------|---------------|---------------------------------|
| West Africa/US Gulf Coast | 130-135 | 57 | 68 | 166 | 97 |
| Northwest Europe/US Gulf Coast | 130-135 | 47 | 51 | 151 | 101 |

Sources: Argus Media and OPEC Secretariat.

Aframax

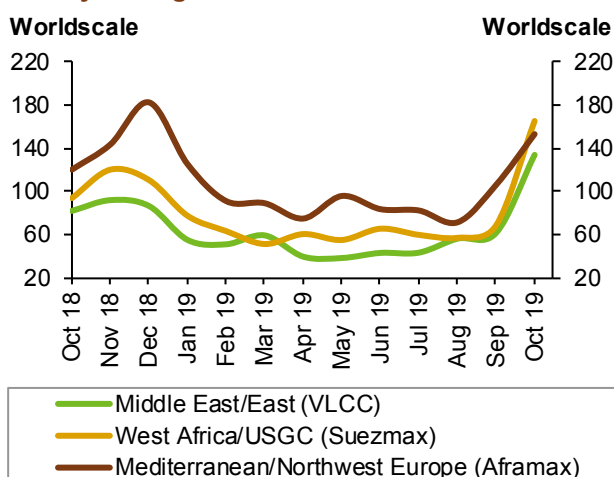
Rising tides in the tanker market even lifted the **Aframax** sector, although to a lesser extent. The Indonesia-to-East route led gains with an increase of 91% to average WS174 points. Caribbean to US East Coast rose 42% to average WS188 points. Meanwhile, the intra-Med route increased 59% to average WS176 points and the Med-to-North West Europe route averaged WS153 points, an increase of 45%.

Table 7 - 5: Dirty Aframax spot tanker freight rates, WS

| | Size 1,000 DWT | Aug 19 | Sep 19 | Oct 19 | Change Oct 19/Sep 19 |
|--------------------------------|-------------------|--------|--------|--------|-------------------------|
| Indonesia/East | 80-85 | 88 | 91 | 174 | 83 |
| Caribbean/US East Coast | 80-85 | 75 | 133 | 188 | 55 |
| Mediterranean/Mediterranean | 80-85 | 76 | 110 | 176 | 66 |
| Mediterranean/Northwest Europe | 80-85 | 71 | 106 | 153 | 47 |

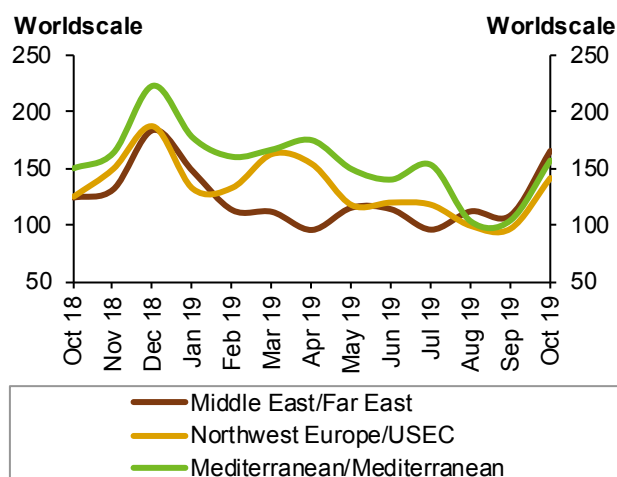
Sources: Argus Media and OPEC Secretariat.

Graph 7 - 1: Crude oil spot tanker freight rates, monthly average



Sources: Argus Media and Platts.

Graph 7 - 2: Products spot tanker freight rates, monthly average



Sources: Argus Media and OPEC Secretariat.

Clean tanker freight rates

The **clean spot tanker** market also saw across-the-board increases in October, with spot freight rates rising both East and West of Suez.

Table 7 - 6: Clean spot tanker freight rates, WS

| | Size 1,000 DWT | Aug 19 | Sep 19 | Oct 19 | Change Oct 19/Sep 19 |
|--------------------------------|-------------------|--------|--------|--------|-------------------------|
| East of Suez | | | | | |
| Middle East/East | 30-35 | 112 | 109 | 165 | 56 |
| Singapore/East | 30-35 | 131 | 139 | 163 | 25 |
| West of Suez | | | | | |
| Northwest Europe/US East Coast | 33-37 | 99 | 96 | 141 | 45 |
| Mediterranean/Mediterranean | 30-35 | 103 | 104 | 157 | 53 |
| Mediterranean/Northwest Europe | 30-35 | 111 | 112 | 167 | 55 |

Sources: Argus Media and OPEC Secretariat.

Tanker Market

Clean tanker spot freight rates **West of Suez** averaged WS155 points, representing an overall gain of 49% over the previous month. The Mediterranean-to-Mediterranean and Med-to-Northwest Europe routes both saw increases of around 50% to average WS157 points and WS167 points, respectively. Meanwhile, rates on the Northwest Europe-to-USEC route rose 47% to WS141 points.

On the **East of Suez** route, clean tanker spot freight rates rose 33% in October from the previous month to WS164 points, with the Singapore-to-East route increasing 18% to WS163 points, while the Middle East-to-East route averaged WS165 points for a gain of 52%.

Oil Trade

Preliminary data indicates that **US** crude oil imports fell by 8% m-o-m in October to average 6.2 mb/d, the lowest monthly average since November 1992. US crude exports remained above 3.2 mb/d for the second straight month, almost 1 mb/d higher than October 2018. As a result, US net crude imports averaged 3.0 mb/d in October. The October figure represents a decline of almost 1 mb/d since August, as net crude imports have fallen by 0.6 mb/d and 0.5 mb/d over the last two months respectively. US net product imports averaged 2.7 mb/d in October, almost 13%, or 0.4 mb/d, lower than in October 2018. Combined, net crude and product imports averaged just 0.3 mb/d in October, bring the US close to becoming a net liquids exporter.

According to the most recent available data, **China's** crude oil imports in September averaged to 10 mb/d for the second month in a row, representing a gain of almost 11% over the same month last year. China's product imports averaged 1.3 mb/d in September, following a gain of 83 tb/d, or 7%, while product exports recovered from a weak showing the previous month to average 1.5 mb/d. As a result, China was a net product exporter in September, with net exports of 0.2 mb/d, compared to net imports of 0.3 mb/d in September 2018.

India's crude imports averaged 4.1 mb/d in September, following a m-o-m decline of 12% or 0.6 mb/d. Y-t-d to September, India's crude oil imports have averaged 4.5 mb/d, broadly in line with the same period in 2018. India's product imports were the highest on record, averaging 1.2 mb/d in September, mostly driven by gains in LPG. This represents an increase of 27% m-o-m and 70% y-o-y. India's product exports continued to move higher in September, up 31%, or 0.4 mb/d, compared to August to average 1.7 mb/d. Diesel exports were the main driver behind the increase.

Japan's crude oil imports averaged 2.8 mb/d in September, representing a drop of 0.3 mb/d, or 11%, compared with the previous month. Product imports to Japan, including LPG, averaged 756 tb/d in September, representing a decline of 215 tb/d, or 22%, compared to August. Meanwhile, product exports, including LPG, averaged 692 tb/d in September, representing an increase of 111 tb/d, or 19%, over the previous month.

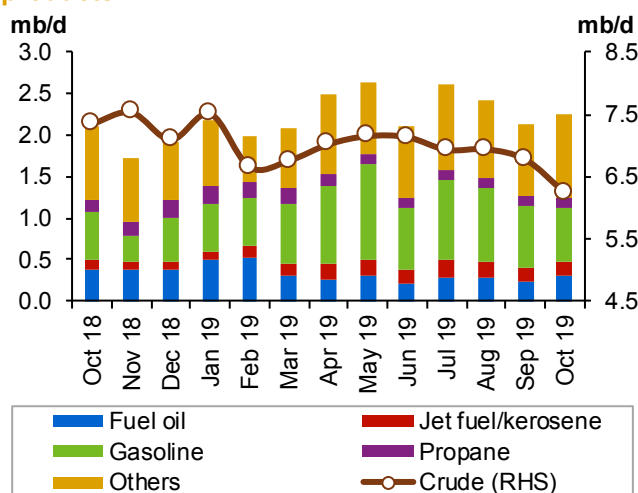
The latest available data shows **OECD Europe** crude imports averaged 11.8 mb/d in July, reflecting an increase of 967 tb/d m-o-m and a gain of 890 tb/d y-o-y. In the first seven months of this year, OECD Europe crude imports have averaged 11.2 mb/d, broadly in line with the same period last year. OECD Europe net product imports averaged 577 tb/d y-t-d to July, broadly in line with the previous year.

US

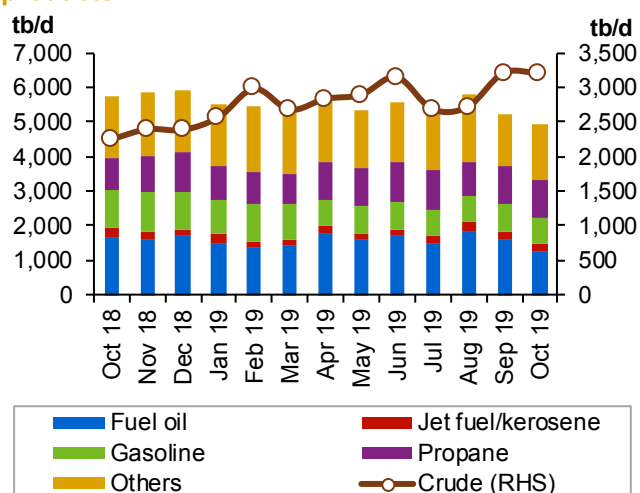
Preliminary data indicates that **US crude oil imports** fell by 8% m-o-m in October to average 6.2 mb/d, the lowest monthly average since November 1992. In annual terms, imports were 15% lower than the same period last year. Y-t-d, US crude imports have averaged 6.9 mb/d, a decline of 0.9 mb/d, or 12%, compared with the same period last year.

US crude exports remained at 3.2 mb/d for the second straight month, almost 1 mb/d higher than October 2018. On an annual basis, crude exports were just under 1 mb/d or 43% higher.

As a result, **US net crude imports** averaged 3.0 mb/d in October. The October figure represents a decline of almost 1 mb/d since August, as net crude imports have fallen by 0.6 mb/d and 0.5 mb/d over the last two months respectively. Y-o-y, US net exports were down by more than 2 mb/d compared with the same month last year.

Graph 8 - 1: US imports of crude and petroleum products

Sources: US EIA and OPEC Secretariat.

Graph 8 - 2: US exports of crude and petroleum products

Sources: US EIA and OPEC Secretariat.

On the product side, US **product imports** increased by 0.1 mb/d, or 5%, in October to average 2.2 mb/d. In annual terms, US product imports increased by 0.1 mb/d, or 6%, over the same month last year. In the first ten months of the year, US product imports have averaged 2.3 mb/d, representing a gain of 2% compared with the same period last year.

US **product exports** stood at 5.0 mb/d in October, representing a m-o-m decline of 6%, or 0.3 mb/d, and a larger drop of 14%, or 0.8 mb/d, y-o-y. In the year to October, product exports from the US have averaged 5.4 mb/d, just 1% lower than in the same period of 2018.

As a result, US **net product imports** averaged 2.7 mb/d in October, almost 13%, or 0.4 mb/d, lower than in the same month of 2018. Combined, **net crude and product imports** averaged 0.3 mb/d in October, compared with 1.5 mb/d in October 2018 and 2.7 mb/d in the same month of 2017.

Table 8 - 1: US crude and product net imports, tb/d

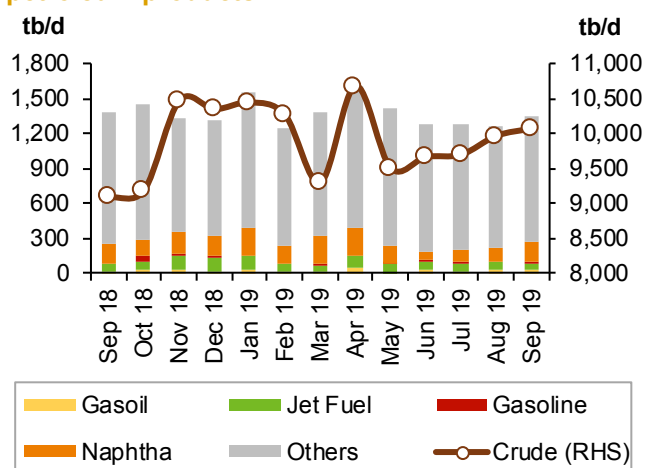
| | Aug 19 | Sep 19 | Oct 19 | Change Oct 19/Sep 19 |
|---------------------------------|------------|------------|------------|-------------------------|
| Crude oil | 4,217 | 3,558 | 3,021 | -536 |
| Total products | -3,368 | -3,120 | -2,719 | 400 |
| Total crude and products | 849 | 438 | 302 | -136 |

Sources: US EIA and OPEC Secretariat.

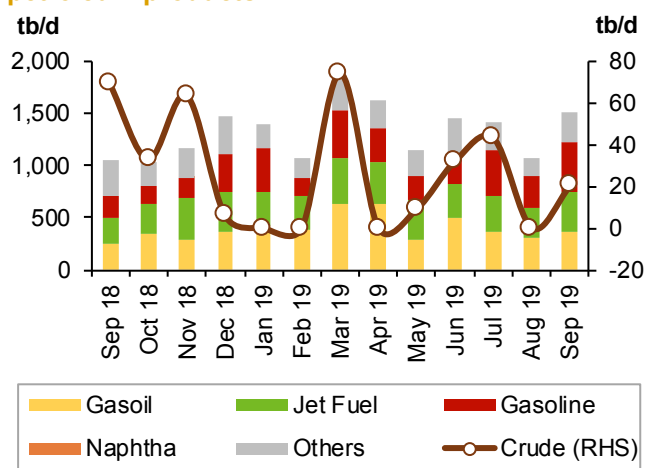
China

China's crude oil imports averaged 10 mb/d for the second month in a row in September, and were almost 11% higher than the same month last year. So far this year, crude imports have averaged 9.9 mb/d, some 0.9 mb/d higher than the same period last year.

Saudi Arabia remained the top **crude supplier** to China in September with a share of 17.4%, or 1.7 mb/d of imports, an increase of 5% over the previous month. Russia was second with 15% followed by Iraq with 12%, Angola with 8% and Brazil with 7%.

Graph 8 - 3: China's imports of crude and petroleum products

Sources: Argus China Petroleum and China, Oil and Gas Petrochemicals and OPEC Secretariat.

Graph 8 - 4: China's exports of crude and petroleum products

Sources: Argus China Petroleum and China, Oil and Gas Petrochemicals and OPEC Secretariat.

China's **product imports** averaged 1.3 mb/d in September, following a gain of 83 tb/d, or 7%. Naphtha imports saw another month of strong gains, increasing by 39% m-o-m, while gasoline imports returned to average 9 tb/d and LPG increased 10%. In contrast, pet coke, fuel oil and jet fuel declined by 24%, 9% and 7% respectively. Y-t-d, China's product imports declined by 2% compared to the same period last year.

Product exports from China recovered from a weak showing in the previous month. In September, product outflows jumped 41%, or 0.4 mb/d, to average 1.5 mb/d. Gains were seen in fuel oil, gasoline and jet fuel, while pet coke fell 25%. Y-t-d, China's product exports increased 8% compared to the same period last year.

As a result, China was a **net product exporter** in September, with net exports of 172 tb/d, compared to net imports of 190 tb/d in August and imports of 326 tb/d in the September 2018.

Table 8 - 2: China's crude and product net imports, tb/d

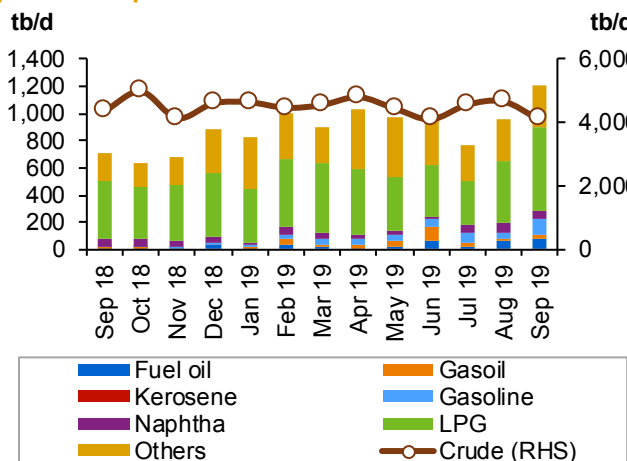
| | Jul 19 | Aug 19 | Sep 19 | Change Sep 19/Aug 19 |
|---------------------------------|--------------|---------------|--------------|-------------------------|
| Crude oil | 9,646 | 9,959 | 10,042 | 84 |
| Total products | -141 | 190 | -172 | -362 |
| Total crude and products | 9,505 | 10,148 | 9,870 | -278 |

Sources: Argus China Petroleum and China, Oil and Gas Petrochemicals and OPEC Secretariat.

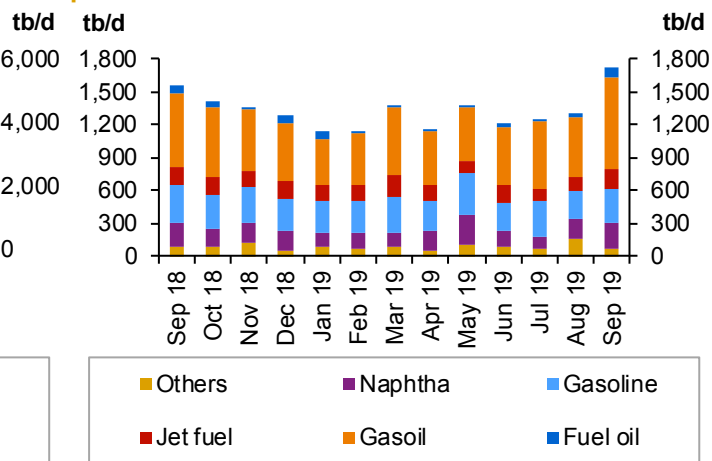
India

India's crude imports averaged 4.1 mb/d in September, following a m-o-m decline of 12%, or 0.6 mb/d. Compared with the same month last year, India's crude imports were 6%, or 0.3 mb/d, lower. Y-t-d to September, India's crude oil imports averaged 4.5 mb/d, broadly in line with the same period in 2018.

Meanwhile, India's **product imports** were the highest on record, averaging 1.2 mb/d in September. This represents a m-o-m gain of 27% and 70% y-o-y. LPG represented the bulk of imports, although diesel and gasoline inflows also increased. Y-t-d to September, total product imports have averaged 960 tb/d, some 21% higher than the same period last year.

Graph 8 - 5: India's imports of crude and petroleum products

Sources: Petroleum Planning & Analysis Cell of India and OPEC Secretariat.

Graph 8 - 6: India's exports of petroleum products

Sources: Petroleum Planning & Analysis Cell of India and OPEC Secretariat.

India's **product exports** continued to move higher in September, up 31%, or 0.4 mb/d, compared to the previous month to average 1.7 mb/d. Gains were seen broadly across the board, with diesel oil and gasoline more than doubling and LPG and fuel oil up 35% and 22%, respectively. Only naphtha experienced a decline with a drop of 24%. So far this year, India's product exports up to September have averaged 1.3 mb/d, broadly in line with the first nine months of 2018, representing an increase of 3%.

As a result, India's **net product exports** have averaged 337 tb/d so far this year, some 39% lower than in the same period last year.

Table 8 - 3: India's crude and product net imports, tb/d

| | Jul 19 | Aug 19 | Sep 19 | Change Sep 19/Aug 19 |
|---------------------------------|--------------|--------------|--------------|-------------------------|
| Crude oil | 4,568 | 4,672 | 4,104 | -568 |
| Total products | -484 | -360 | -510 | -150 |
| Total crude and products | 4,084 | 4,312 | 3,595 | -718 |

Note: India data table does not include information for crude import and product export by Reliance Industries.

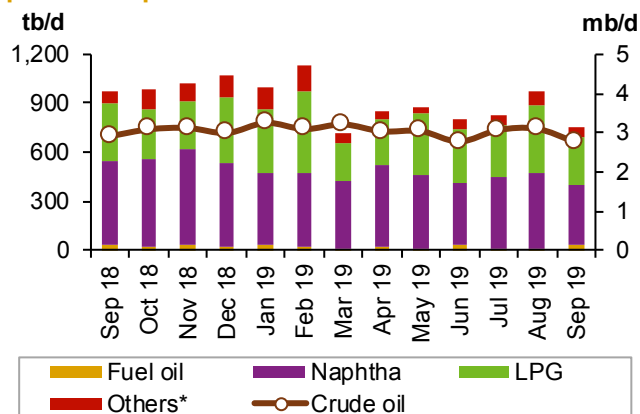
Sources: Petroleum Planning & Analysis Cell of India and OPEC Secretariat.

Japan

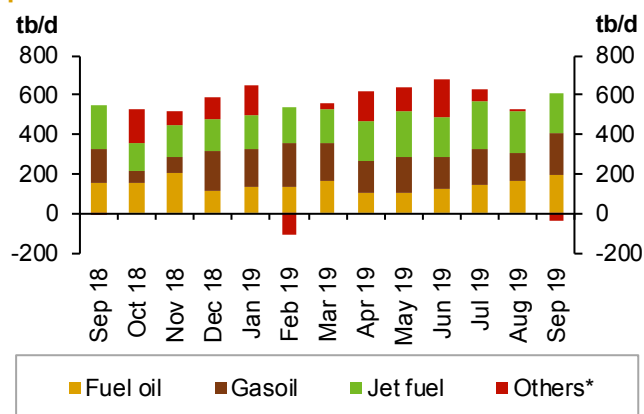
Japan's crude oil imports averaged 2.8 mb/d in September, representing a drop of 0.3 mb/d, or 11%, compared with the previous month. Crude oil imports were 5%, or 0.2 mb/d, lower y-o-y. So far in 2019, Japan's crude imports have averaged 3.0 mb/d, broadly in line with the first nine months of 2018.

Saudi Arabia was the **top supplier of crude to Japan** in September, averaging 987 tb/d, representing a share of almost 36%. UAE held the second spot with just under 30% followed by Kuwait with around 11%.

Product imports to Japan, including LPG, averaged 756 tb/d in September, which represented a decline of 215 tb/d, or 22%, compared with the previous month. Naphtha, gasoline, gasoil and jet fuel all experienced declines over the period, while kerosene and fuel oil showed gains. So far this year, total product imports have averaged 879 tb/d. This represents a decline of 81 tb/d, or 8%, compared with the same period last year.

Graph 8 - 7: Japan's imports of crude and petroleum products

Note: * Others: Contains gasoline, jet fuel, kerosene, gasoil, asphalt and paraffin wax.
Sources: Ministry of Economy, Trade and Industry of Japan and OPEC Secretariat.

Graph 8 - 8: Japan's exports of petroleum products

Note: * Others: Contains LPG, gasoline, naphtha, kerosene, lubricating oil, asphalt and paraffin wax.
Sources: Ministry of Economy, Trade and Industry of Japan and OPEC Secretariat.

Meanwhile, **product exports**, including LPG, averaged 692 tb/d in September. This represented an increase of 111 tb/d, or 19%, over the previous month. Gasoil, fuel oil, and kerosene contributed to the increase, up 62 tb/d, 34 tb/d and 13 tb/d, respectively, while declines were seen in gasoline and jet fuel. So far this year, Japan's product exports have averaged 607 mb/d, an increase of almost 10% compared to the same period in 2018.

As a consequence, Japan's **net product imports** averaged 272 tb/d over the first nine months of 2019, representing a decline of 134 tb/d, or 33%, compared to the same period last year.

Table 8 - 4: Japan's crude and product net imports, tb/d

| | Jul 19 | Aug 19 | Sep 19 | Change Sep 19/Aug 19 |
|---------------------------------|--------------|--------------|--------------|-------------------------|
| Crude oil | 3,068 | 3,102 | 2,764 | -338 |
| Total products | 197 | 453 | 184 | -269 |
| Total crude and products | 3,265 | 3,554 | 2,948 | -607 |

Sources: Ministry of Economy, Trade and Industry of Japan and OPEC Secretariat.

OECD Europe

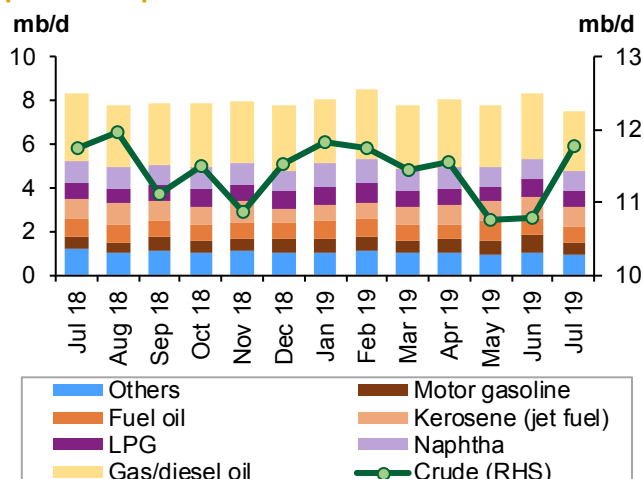
The latest available data shows **OECD Europe crude imports** averaged 11.8 mb/d in July, reflecting an increase of 967 tb/d m-o-m and a gain of 890 tb/d y-o-y. In the first seven months of this year, OECD Europe crude imports have averaged 11.2 mb/d, broadly in line with the same period last year.

Crude exports averaged 1.9 mb/d in July, representing a marginal m-o-m increase of 23 tb/d, or 1%, and a decline of 248 tb/d, or 12%, y-o-y. OECD Europe crude exports have averaged 2.0 mb/d in the first seven months of the year, down 102 tb/d from the same period in 2018.

As a result, y-t-d **OECD Europe net crude imports** averaged 9.2 mb/d through to July. This represents an increase of 107 tb/d, or 1%, over the same period in 2018.

Product imports declined by 845 tb/d, or 10%, to average 7.5 mb/d in July. Declines were seen in most major products, with motor fuels contributing the bulk of the losses. So far this year, product imports into OECD Europe have averaged 7.9 mb/d, representing a decline of 287 tb/d, or 4%, compared to the same period in 2018.

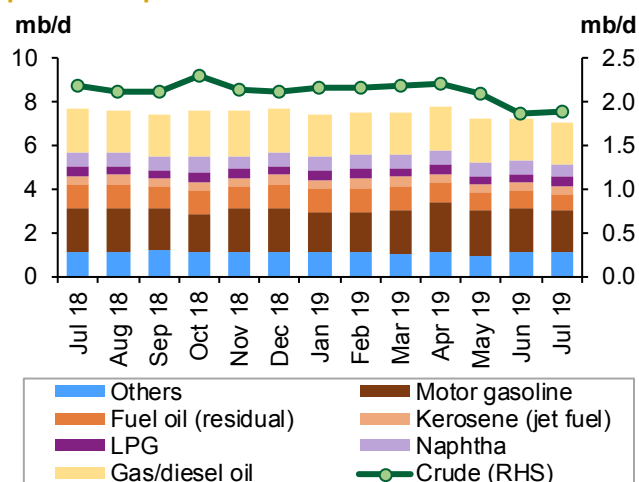
Graph 8 - 9: OECD Europe imports of crude and petroleum products



Sources: IEA and OPEC Secretariat.

OECD Europe **product exports** averaged 7.1 mb/d in July, representing a decline of 121 tb/d, or 2%. Motor gasoline and fuel oil were the main contributors, outweighing gains in LPG, naphtha, and gasoil. In the first seven months of 2019, OECD Europe product exports averaged 7.3 mb/d. This represents a decline of 283 tb/d, or around 4%, compared to the first seven months of 2018.

Graph 8 - 10: OECD Europe exports of crude and petroleum products



Sources: IEA and OPEC Secretariat.

Table 8 - 5: OECD Europe's crude and product net imports, tb/d

| | May 19 | Jun 19 | Jul 19 | Change Jul 19/Jun 19 |
|---------------------------------|--------------|---------------|---------------|-------------------------|
| Crude oil | 8,678 | 8,937 | 9,881 | 944 |
| Total products | 571 | 1,132 | 408 | -724 |
| Total crude and products | 9,248 | 10,069 | 10,288 | 219 |

Sources: IEA and OPEC Secretariat.

FSU

Total crude oil exports from the Former Soviet Union (FSU) were largely unchanged in September. They averaged 7.1 mb/d, representing a minor drop of 61 t/bd, or less than 1%. Crude exports through Russian pipelines rose marginally compared to the previous month, but remained around 4.4 mb/d.

In the **Transneft** system, total m-o-m shipments from the Black Sea edged down 9 tb/d, or 1%, to average 686 tb/d in September. Total Baltic Sea exports m-o-m increased 161 tb/d, or 12%, with shipments from Ust-Luga more than doubling to 359 tb/d, while Primorsk exports slipped by 36 tb/d, or just over 3%. Meanwhile, shipments via the Druzhba pipeline edged higher to average 1.1 mb/d. Kozmino shipments declined m-o-m by 131 tb/d, or 18%, to average 600 tb/d. Exports to China via the ESPO pipeline averaged 584 tb/d, a drop of 80%, or 53 tb/d, m-o-m.

In the **Lukoil system**, exports via the Barents Sea fell by 45 tb/d in September, while those from the Baltic Sea remained flat at 6 tb/d.

Russia's Far East total exports rose 41 tb/d from the previous month to average 389 tb/d.

Central Asia's total exports averaged 195 tb/d, a 25 tb/d, or 11%, drop from the previous month.

Black Sea total exports m-o-m declined by 49 tb/d to average 1.4 mb/d, with the Novorossiysk port terminal declining 51 tb/d. The Supsa port terminal increased by a marginal 3 tb/d.

In the **Mediterranean**, BTC supplies decreased compared to the previous month, down by 10 tb/d m-o-m, or 2%, to average 570 tb/d.

FSU total product exports declined marginally in September, averaging 2.9 mb/d for the month. Movements were mixed with gasoline, jet and gasoil seeing losses, while naphtha, fuel oil and VGO experiencing gains.

Table 8 - 6: Recent FSU exports of crude and petroleum products by sources, tb/d

| | | 2018 | 2Q19 | 3Q19 | Aug 19 | Sep 19 |
|-----------------------------------|--|--------------|--------------|---------------|---------------|---------------|
| Transneft system | | | | | | |
| Europe | Black Sea total | 544 | 646 | 707 | 677 | 686 |
| | Novorossiysk port terminal - total | 544 | 646 | 707 | 677 | 686 |
| | of which: Russian oil | 383 | 459 | 508 | 494 | 474 |
| | Others | 160 | 187 | 199 | 182 | 211 |
| | Baltic Sea total | 1,306 | 1,721 | 1,383 | 1,299 | 1,460 |
| | Primorsk port terminal - total | 758 | 1,010 | 1,124 | 1,137 | 1,101 |
| | of which: Russian oil | 758 | 1,010 | 1,124 | 1,137 | 1,101 |
| | Others | 0 | 0 | 0 | 0 | 0 |
| | Ust-Luga port terminal - total | 549 | 711 | 259 | 162 | 359 |
| | of which: Russian oil | 375 | 537 | 111 | 23 | 216 |
| | Others | 173 | 174 | 148 | 139 | 144 |
| | Druzhba pipeline total | 997 | 468 | 1,012 | 1,025 | 1,064 |
| | of which: Russian oil | 965 | 448 | 965 | 976 | 1,009 |
| | Others | 32 | 21 | 47 | 49 | 55 |
| Asia | Pacific ocean total | 619 | 698 | 670 | 731 | 600 |
| | Kozmino port terminal - total | 619 | 698 | 670 | 731 | 600 |
| | China (via ESPO pipeline) total | 577 | 603 | 600 | 637 | 584 |
| | China Amur | 577 | 603 | 600 | 637 | 584 |
| | Total Russia's crude exports | 4,043 | 4,136 | 4,373 | 4,369 | 4,395 |
| Lukoil system | | | | | | |
| Europe & North America | Barents Sea total | 135 | 130 | 161 | 185 | 140 |
| | Varandey offshore platform | 135 | 130 | 161 | 185 | 140 |
| Europe | Baltic Sea total | 7 | 6 | 6 | 6 | 6 |
| | Kalinigrad port terminal | 7 | 6 | 6 | 6 | 6 |
| Other routes | | | | | | |
| Asia | Russian Far East total | 371 | 388 | 353 | 347 | 389 |
| | Aniva Bay port terminal | 119 | 114 | 96 | 70 | 126 |
| | De Kastri port terminal | 252 | 274 | 257 | 277 | 263 |
| | Central Asia total | 233 | 233 | 213 | 220 | 195 |
| | Kenkiyak-Alashankou | 233 | 233 | 213 | 220 | 195 |
| Europe | Black Sea total | 1,386 | 1,306 | 1,438 | 1,434 | 1,386 |
| | Novorossiysk port terminal (CPC) | 1,323 | 1,247 | 1,373 | 1,357 | 1,306 |
| | Supsa port terminal | 61 | 59 | 65 | 77 | 80 |
| | Batumi port terminal | 2 | 0 | 0 | 0 | 0 |
| | Kulevi port terminal | 0 | 0 | 0 | 0 | 0 |
| | Mediterranean Sea total | 693 | 649 | 621 | 579 | 570 |
| | Baku–Tbilisi–Ceyhan (BTC) | 693 | 649 | 621 | 579 | 570 |
| Russian rail | | | | | | |
| | Russian rail | 32 | 32 | 29 | 28 | 29 |
| | of which: Russian oil | 32 | 32 | 29 | 28 | 29 |
| | Others | 0 | 0 | 0 | 0 | 0 |
| | Total FSU crude exports | 6,901 | 6,880 | 7,194 | 7,170 | 7,108 |
| Products | | | | | | |
| | Gasoline | 212 | 241 | 306 | 331 | 276 |
| | Naphtha | 517 | 505 | 517 | 490 | 499 |
| | Jet | 37 | 44 | 40 | 48 | 34 |
| | Gasoil | 1,006 | 908 | 932 | 932 | 904 |
| | Fuel oil | 930 | 913 | 986 | 1,002 | 1,012 |
| | VGO | 277 | 236 | 178 | 172 | 188 |
| | Total FSU product exports | 2,980 | 2,846 | 2,958 | 2,975 | 2,913 |
| | Total FSU oil exports | 9,881 | 9,727 | 10,151 | 10,145 | 10,021 |

Sources: Argus Nefte Transport and Argus Global Markets.

Stock Movements

Preliminary data for September showed that total **OECD commercial oil stocks** fell by 23.5 mb m-o-m, to stand at 2,945 mb, which was 88 mb higher than the same time one year ago, and 28 mb above the latest five-year average. Within the components, crude and product stocks fell by 13.8 mb and 9.7 mb, m-o-m, respectively, to stand at 12 mb and 16 mb above the latest five-year average. In terms of days of forward cover, OECD commercial stocks fell by 0.7 days m-o-m in September to stand at 60.8 days, which was 1.6 days above the same period in 2018, but 0.8 days below the latest five-year average.

Preliminary data for October showed that **US total commercial oil stocks** fell by 17.3 mb m-o-m to stand at 1,279.4 mb, which was 15.6 mb above the same period a year ago, and 22.4 mb higher than the latest five-year average. Within the components, crude stocks rose by 24.1 mb, while products stocks fell by 41.4 mb, m-o-m.

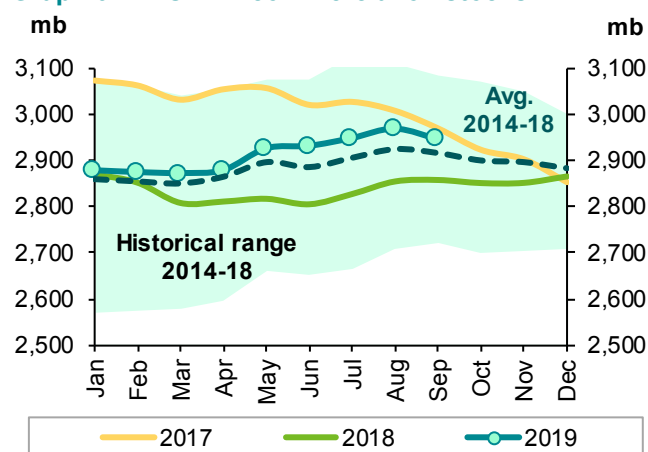
OECD

Preliminary data for September showed that total **OECD commercial oil stocks** fell by 23.5 mb m-o-m, reversing the build of last five months, to stand at 2,945 mb, which was 87.7 mb higher than the same time one year ago, and 28.2 mb above the latest five-year average.

Within the components, crude and product stocks fell by 13.8 mb and 9.7 mb, m-o-m, respectively. It should be noted that the overhang of total OECD commercial oil stocks has been reduced by around 272 mb since the 'Declaration of Cooperation' began at the beginning of 2017.

Within the regions, all OECD regions witnessed an overall total stock draw from the previous month.

Graph 9 - 1: OECD commercial oil stocks



Sources: Argus Media, Euroilstock, IEA, METI, OPEC Secretariat and US EIA.

OECD **commercial crude stocks** fell by 13.8 mb m-o-m in September, ending the month at 1,444 mb, which was 54.4 mb higher than the same time a year ago, and 12.5 mb higher than the latest five-year average. Compared to the previous month, OECD Americas and OECD Asia Pacific fell by 8.2 mb and 5.9 mb, respectively, while crude stocks in OECD Europe rose slightly by 0.3 mb.

OECD **total product inventories** also fell by 9.7 mb m-o-m in September to stand at 1,501 mb, which was 33 mb above the same time a year ago, and around 16 mb above the latest five-year average. Within the OECD regions, product stocks in OECD Americas rose by 0.7 mb, while OECD Asia Pacific and Europe stocks fell by 3.6 mb and 6.8 mb, m-o-m, respectively.

In terms of **days of forward cover**, OECD commercial stocks fell by 0.7 days m-o-m in September to stand at 60.8 days, which was 1.6 days above the same period in 2018, but 0.8 days below the latest five-year average. Within the regions, OECD Americas was 1.5 days below the latest five-year average to stand at 59.7 days in September. OECD Europe's stocks were 0.7 days higher than the latest five-year average to finish the month at 68.6 days. OECD Asia Pacific stocks were 1.2 days below the latest five-year average to stand at 50.7 days.

Table 9 - 1: OECD's commercial stocks, mb

| | <u>Jul 19</u> | <u>Aug 19</u> | <u>Sep 19</u> | <u>Change Sep 19/Aug 19</u> | <u>Sep 18</u> |
|------------------------------|---------------|---------------|---------------|---------------------------------|---------------|
| Crude oil | 1,469 | 1,457 | 1,444 | -13.8 | 1,389 |
| Products | 1,479 | 1,511 | 1,501 | -9.7 | 1,468 |
| Total | 2,948 | 2,968 | 2,945 | -23.5 | 2,857 |
| Days of forward cover | 60.9 | 61.5 | 60.8 | -0.7 | 59.2 |

Note: Totals may not add up due to independent rounding.

Sources: Argus Media, Euroilstock, IEA, METI, OPEC Secretariat and US EIA.

OECD Americas

OECD Americas total commercial stocks fell by 7.5 mb m-o-m in September to settle at 1,552 mb, which was 9 mb above a year ago, and 19.5 mb above the latest five-year average. Within the components, crude stocks fell by 8.2 mb, while products stocks rose by 0.7 mb, m-o-m.

Commercial crude oil stocks in OECD Americas fell by 8.2 mb m-o-m in September to stand at 780 mb, which was 3.3 mb higher than the same time a year ago, but 7.8 mb higher than the latest five-year average. This drop could be attributed to lower US crude oil imports. However, lower refinery runs limited a further drop in crude oil stocks.

In contrast, **total product stocks** in OECD Americas rose by 0.7 mb m-o-m in September to stand at 771 mb, which was 5.7 mb higher than the same time one year ago, and 11.7 mb above the latest five-year average. Lower consumption in the region was behind the product stock build.

OECD Europe

OECD Europe's total commercial stocks fell by 6.5 mb m-o-m in September, ending the month at 982 mb, which was 56.9 mb higher than the same time a year ago and 27.5 mb higher than the latest five-year average. Crude stocks rose by 0.3 mb, while products fell by 6.8 mb, m-o-m.

OECD Europe's **commercial crude stocks** rose by 0.3 mb m-o-m in September, ending the month at 439 mb, which was 32.1 mb above a year earlier, and 30.6 mb higher than the latest five-year average. The build was driven by lower refinery throughput in Europe region, which fell by around 380 tb/d to stand at 10.0 mb/d.

In contrast, OECD Europe's **commercial product stocks** fell by 6.8 mb m-o-m to end September at 543 mb, which was 24.8 mb higher than the same time a year ago, yet 3.1 mb less than the latest five-year average. The drop came on the back of lower refinery output in the region.

OECD Asia Pacific

OECD Asia Pacific's total commercial oil stocks fell by 9.5 mb m-o-m in September to stand at 411 mb, which was 21.8 mb higher than a year ago, yet 18.8 mb below the latest five-year average. Within the components, crude and products stocks fell by 5.9 mb and 3.6 mb, m-o-m, respectively.

OECD Asia Pacific's **crude inventories** fell by 5.9 mb m-o-m to end September at 224 mb, which was 19.1 mb higher than one year ago, but 25.9 mb below the latest five-year average.

OECD Asia Pacific's total **product inventories** also fell by 3.6 mb m-o-m to end September at 187 mb, which was 2.7 mb higher than the same time a year ago, and 7.2 mb above the latest five-year average.

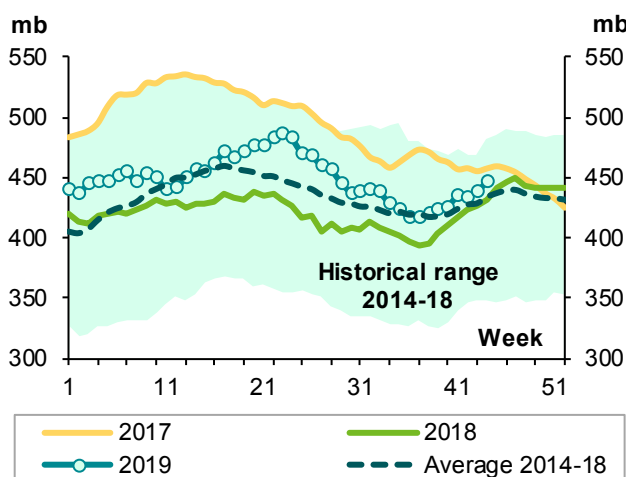
US

Preliminary data for October showed that **US total commercial oil stocks** fell by 17.3 mb m-o-m to stand at 1,279.4 mb, which was 15.6 mb, or 1.2%, above the same period a year ago, and 22.4 mb, or 1.8%, higher than the latest five-year average. Within the components, crude stocks rose by 24.1 mb, while product stocks fell by 41.4 mb, m-o-m.

US commercial crude stocks rose in October to stand at 446.8 mb, which was 13 mb, or 3.0%, above the same time last year, and 8.4 mb, or 1.9%, above the latest five-year average. The build resulted mainly from lower crude refinery throughput, which fell by around 710 tb/d to average 16.2 mb/d. Inventories in Cushing, Oklahoma, rose by more than 7 mb to end October at 47.7 mb.

In contrast, **total product stocks** in October fell by 41.4 mb m-o-m to stand at 832.6 mb, which was 2.6 mb, or 0.3%, above the level seen at the same time in 2018, and 14.0 mb, or 1.7%, above the latest five-year average. Within the components, all the products saw a stock draw.

Graph 9 - 2: US weekly commercial crude oil inventories



Sources: US EIA and OPEC Secretariat.

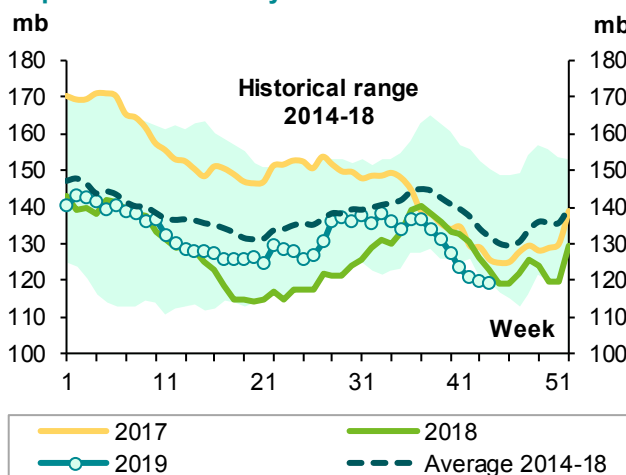
Gasoline stocks fell in October by 12.7 mb m-o-m, to settle at 217.2 mb, which was 15.4 mb, or 6.6%, lower than levels seen at the same time last year, and 1.8 mb, or 0.8%, lower than the latest five-year average. This monthly decrease came mainly on the back of higher demand, which rose by around 220 tb/d to average 9.5 mb/d.

Distillate stocks fell by 12.1 mb m-o-m in October to end the month at 119.1 mb, which was 5.6 mb, or 4.5%, lower than the same period a year ago, and 15.6 mb, or 11.6%, below the latest five-year average. The stock draw could be mainly attributed to higher demand, which increased by 320 tb/d to average 4.25 mb/d. Lower distillate output also supported the stock draw in distillate stocks.

Jet fuel stocks fell by 5.0 mb m-o-m to stand at 39.4 mb in October, which was 2.9 mb, or 6.9%, less than the same time a year ago, and 1.2 mb, or 2.9%, lower than the latest five-year average.

Residual fuel stocks also decreased by 1.0 mb m-o-m to end October at 28.8 mb, which was 0.4 mb, or 1.5%, less than the same time a year ago, and 6.9 mb, or 19.3%, lower than the latest five-year average.

Graph 9 - 3: US weekly distillate inventories



Sources: US EIA and OPEC Secretariat.

Table 9 - 2: US commercial petroleum stocks, mb

| | Aug 19 | Sep 19 | Oct 19 | Change Oct 19/Sep 19 | Oct 18 |
|--------------------------|----------------|----------------|----------------|-------------------------|----------------|
| Crude oil | 430.8 | 422.6 | 446.8 | 24.1 | 433.8 |
| Gasoline | 230.4 | 230.0 | 217.2 | -12.7 | 232.7 |
| Distillate fuel | 135.6 | 131.3 | 119.1 | -12.1 | 124.8 |
| Residual fuel oil | 28.6 | 29.8 | 28.8 | -1.0 | 29.2 |
| Jet fuel | 43.2 | 44.4 | 39.4 | -5.0 | 42.3 |
| Total products | 876.3 | 874.0 | 832.6 | -41.4 | 830.0 |
| Total | 1,307.1 | 1,296.7 | 1,279.4 | -17.3 | 1,263.8 |
| SPR | 644.8 | 644.8 | 641.0 | -3.9 | 654.8 |

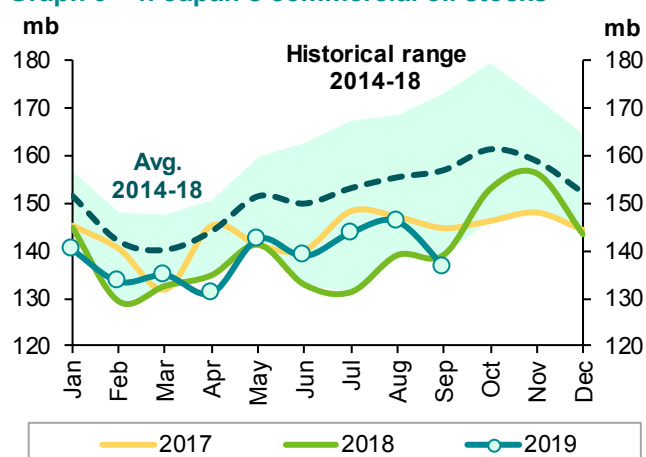
Sources: US EIA and OPEC Secretariat.

Japan

In Japan, **total commercial oil stocks** fell by 9.5 mb m-o-m in September to settle at 136.7 mb. The level was 2.4 mb, or 1.7%, lower than one year ago, and 20.1 mb, or 12.8%, below the latest five-year average. Within the components, crude and product stocks fell m-o-m by 5.9 mb and 3.6 mb, respectively.

Japanese **commercial crude oil stocks** fell by 5.9 mb m-o-m in September to stand at 75.1 mb, which was 1.0 mb, or 1.3%, above the same period a year ago, but 13.3 mb, or 15.0%, below the latest five-year average. The drop was driven mainly by lower crude imports, which fell by nearly 340 tb/d or 10.9% to average 2.76 mb/d. However, lower refinery throughput limited a further drop in crude oil stocks.

Graph 9 - 4: Japan's commercial oil stocks



Sources: Ministry of Economic, Trade and Industry of Japan and OPEC Secretariat.

Japan's **total product inventories** also fell by 3.6 mb m-o-m to end September at 61.5 mb, which was 3.4 mb, or 5.2%, lower than the same month last year, and 6.9 mb, or 10.1%, below the latest five-year average. Within the products, gasoline, distillates and naphtha stocks experienced a stock draw, while residual fuel oil saw a stock build.

Gasoline stocks fell by 0.5 mb m-o-m to stand at 9.6 mb in September, which was 0.8 mb, or 7.4%, lower than a year ago, and 0.8 mb, or 7.4%, lower than the latest five-year average. The drop was mainly driven by lower gasoline output, which declined by 11.4% from the previous month. Lower domestic sales, which decreased by 9.3%, limited a further drop in gasoline stocks.

Distillate stocks also fell by 1.3 mb m-o-m reversing the build of last four months to stand at 30.1 mb in September. This was 1.4 mb, or 4.3% lower than the same time a year ago, and 3.1 mb, or 9.3%, lower than the latest five-year average.

Within the distillate components, **jet fuel and gasoil stocks** fell by 7.8% and 15.1% m-o-m, respectively. The drop in both products was driven by lower output combined with higher domestic sales. In contrast, **kerosene** oil stocks rose m-o-m in September by 5.2%.

Total residual fuel oil stocks rose by 0.5 mb m-o-m in September to stand at 12.8 mb, which was 0.1 mb, or 1.0%, below the same period a year ago, and 1.6 mb, or 11.1%, lower than the latest five-year average. Within the components, fuel oil A and fuel B.C stocks rose by 0.6% and 6.0% m-o-m on the back of lower domestic sales.

Table 9 - 3: Japan's commercial oil stocks*, mb

| | Jul 19 | Aug 19 | Sep 19 | Change Sep 19/Aug 19 | Sep 18 |
|-----------------------|--------------|--------------|--------------|-------------------------|--------------|
| Crude oil | 83.7 | 81.0 | 75.1 | -5.9 | 74.2 |
| Gasoline | 9.7 | 10.1 | 9.6 | -0.5 | 10.3 |
| Naphtha | 11.3 | 11.4 | 9.0 | -2.3 | 10.2 |
| Middle distillates | 26.7 | 31.4 | 30.1 | -1.3 | 31.5 |
| Residual fuel oil | 12.4 | 12.3 | 12.8 | 0.5 | 12.9 |
| Total products | 60.1 | 65.1 | 61.5 | -3.6 | 64.9 |
| Total** | 143.7 | 146.1 | 136.7 | -9.5 | 139.1 |

Note: * At the end of the month.

** Includes crude oil and main products only.

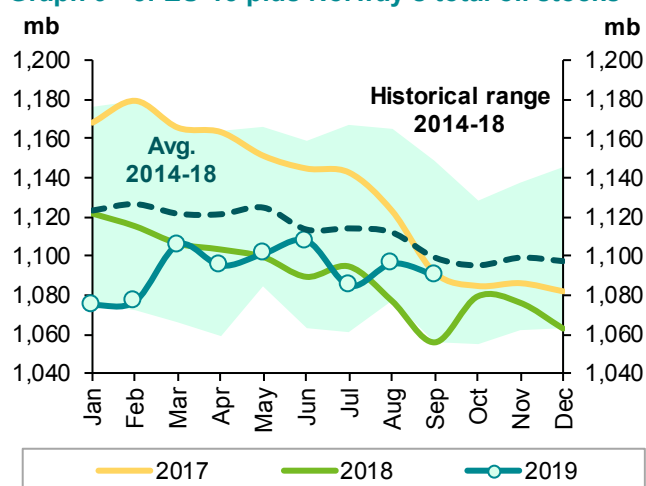
Sources: Ministry of Economy, Trade and Industry of Japan and OPEC Secretariat.

EU plus Norway

Preliminary data for September showed that **total European commercial oil stocks** fell by 6.5 mb m-o-m to stand at 1,089.7 mb, which was 33.9 mb, or 3.2%, above the same time a year ago, yet 9.5 mb, or 0.9%, lower than the latest five-year average. Within the components, crude stocks rose slightly by 0.3 mb, while product stocks fell by 6.8 mb, m-o-m.

European **crude inventories** rose slightly in September to stand at 479.5 mb, which was 17.0 mb, or 3.7%, higher than the same period a year ago, and 5.1 mb, or 1.1%, higher than the latest five-year average. The build was driven by lower refinery throughput in the EU-16 countries, which fell by 380 tb/d to stand at 9.97 mb/d.

Graph 9 - 5: EU-15 plus Norway's total oil stocks



Sources: Argus, Euroilstock and OPEC Secretariat.

In contrast, European **total product stocks** fell by 6.8 mb m-o-m, ending September at 610.2 mb, which was 16.9 mb, or 2.8%, higher than the same time a year ago, but 14.6 mb, or 2.3%, lower than the latest five-year average. The fall in product stocks could be attributed to lower refinery output in the region. Within products, gasoline experienced a stock build, while distillates and residual fuel oil witnessed a stock draw. Naphtha stocks remained unchanged in September versus the previous month.

Gasoline stocks rose by 0.6 mb m-o-m in September for the second consecutive month to stand at 110.4 mb, which was 5.2 mb, or 5.0%, higher than the same time a year ago, and 1.8 mb, or 1.6%, above the latest five-year average.

In contrast, **distillate stocks** fell by 5.9 mb m-o-m in September, reversing the build of the last three consecutive months, to stand at 411.2 mb. At this level, distillate stocks were 10.2 mb, or 2.6%, higher than the same time last year, albeit 11.4 mb, or 2.7%, below the latest five-year average.

Residual fuel stocks also fell in September by 1.5 mb m-o-m, to stand at 59.5 mb. At this level, residual fuel stood at 0.4 mb, or 0.7%, higher than the same time one year ago, but 8.7 mb, or 12.8%, below the latest five-year average.

Naphtha stocks remained unchanged in September ending the month at 29.0 mb, which was 1.0 mb, or 3.5%, above than last year's September level; and 3.8 mb, or 14.9%, higher than the latest five-year average.

Table 9 - 4: EU-15 plus Norway's total oil stocks, mb

| | <u>Jul 19</u> | <u>Aug 19</u> | <u>Sep 19</u> | <u>Change Sep 19/Aug 19</u> | <u>Sep 18</u> |
|-----------------------|----------------|----------------|----------------|---------------------------------|----------------|
| Crude oil | 481.2 | 479.2 | 479.5 | 0.3 | 462.5 |
| Gasoline | 108.1 | 109.8 | 110.4 | 0.6 | 105.2 |
| Naphtha | 26.6 | 29.0 | 29.0 | 0.0 | 28.1 |
| Middle distillates | 408.7 | 417.2 | 411.2 | -5.9 | 401.0 |
| Fuel oils | 60.1 | 61.0 | 59.5 | -1.5 | 59.1 |
| Total products | 603.5 | 617.1 | 610.2 | -6.8 | 593.4 |
| Total | 1,084.7 | 1,096.2 | 1,089.7 | -6.5 | 1,055.8 |

Sources: Argus, Euroilstock and OPEC Secretariat.

Singapore, Amsterdam-Rotterdam-Antwerp (ARA) and Fujairah

Singapore

At the end of September, **total product stocks in Singapore** fell by 1.1 mb m-o-m, reversing the build of last month to stand at 42.4 mb. The September level stood at 2.8 mb, or 7.1%, above the same period a year ago. Within products, middle distillates experienced a stock build, while light distillates and fuel oil registered a stock draw, when compared to the previous month.

Middle distillate stocks rose by 1.7 mb m-o-m to end September at 12.8 mb, which was 2.3 mb, or 21.9%, below the same period a year ago. This build may have been driven by higher imports to the hub.

Light distillate and fuel oil stocks fell in September by 1.2 mb and 1.6 mb, m-o-m, respectively. At 10.1 mb, light distillates stood at 1.4 mb, or 12.2%, lower than the same time one year ago. Fuel oil stocks ended September at 19.5 mb, which was 1.9 mb, or 10.8%, higher than last year's September level.

ARA

Total product stocks in ARA fell by 1.7 mb m-o-m in September to settle at 43.5 mb, which was 3.8 mb, or 8.0%, lower than the same time a year ago. Within products, all experienced stock draws, with the exception of fuel oil stocks, which remained unchanged.

Gasoline and gasoil stocks fell by 0.6 mb and 0.1 mb m-o-m in September to stand at 8.1 mb and 20.7 mb, respectively. Gasoline stocks were 0.7 mb, or 8.0%, below last year's level. Gasoil stocks were also 1.1 mb, or 5.0%, lower than last year's level.

Naphtha stocks also fell by 0.3 mb m-o-m in September ending the month at 1.7 mb, which was 1.2 mb, or 41.4%, less than the same month last year.

Fuel oil stocks remained unchanged in September m-o-m to stand at 7.9 mb. At this level, they remained at 0.6 mb, or 7.1%, lower when compared to the same time a year ago.

Fujairah

During the week ending 4 November 2019, **total oil product stocks in Fujairah** rose by 0.74 mb w-o-w to stand at 23.34 mb, according to data from FEDCom and S&P Global Platts. At this level, total oil stocks were 1.78 mb higher than the same time a year ago. Within products, light and heavy distillates witnessed a stock draw, while middle distillates registered stock builds, when compare with the previous week data.

Light distillate stocks fell by 0.11 mb w-o-w to stand at 5.92 mb, which was 4.92 mb lower than a year ago at the same time.

Heavy distillate stocks also fell by 0.22 mb to stand at 14.33 mb, which was 7.66 mb higher than the same level one a year ago.

In contrast, **middle distillates** rose by 1.07 mb w-o-w to stand at 3.09 mb. At this level, they were 0.97 mb lower than the same week in 2018.

Balance of Supply and Demand

Demand for OPEC crude in 2019 remained unchanged from the previous report to stand at 30.7 mb/d, 0.9 mb/d lower than the 2018 level. According to secondary sources, OPEC crude production averaged 30.5 mb/d in 1Q19, about 0.3 mb/d higher than the demand for OPEC crude in the same period, while in 2Q19, OPEC crude production averaged 30.0 mb/d, around 0.2 mb/d lower than the demand for OPEC crude. In 3Q19, OPEC crude production averaged 29.4 mb/d, around 2.4 mb/d lower than the demand for OPEC crude.

Demand for OPEC crude in 2020 remained unchanged from the previous report, to stand at 29.6 mb/d, which is around 1.1 mb/d lower than the 2019 level.

Balance of supply and demand in 2019

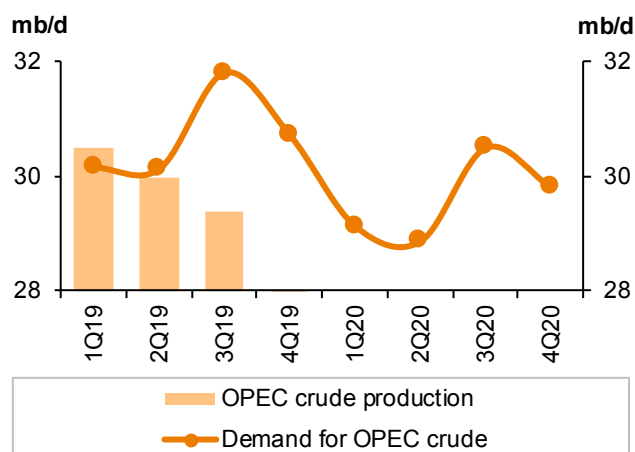
Demand for OPEC crude in 2019 remained unchanged from the previous report to stand at 30.7 mb/d, 0.9 mb/d lower than the 2018 level.

Compared with the last monthly report, both 1Q19 and 4Q19 were revised up by 0.1 mb/d, while 2Q19 was revised down by 0.2 mb/d. The 3Q19 remained unchanged.

When compared to the same quarters in 2018, demand for OPEC crude in 1Q19 and 2Q19 were 1.9 mb/d and 1.5 mb/d lower, respectively, while 4Q19 is expected to show a drop of 0.1 mb/d. The 3Q19 remained unchanged.

According to secondary sources, OPEC crude production averaged 30.5 mb/d in 1Q19, about 0.3 mb/d higher than the demand for OPEC crude in the same period, while in 2Q19 OPEC crude production averaged 30.0 mb/d, around 0.2 mb/d lower than the demand for OPEC crude. In 3Q19, OPEC crude production averaged 29.4 mb/d, around 2.4 mb/d lower than the demand for OPEC crude. This relatively higher figure reflects preliminary data for world oil demand and non-OPEC supply for 3Q19. Going forward, this number will be adjusted further as more data becomes available.

Graph 10 - 1: Balance of supply and demand, 2019–2020*



Note: * 2019 = Estimate and 2020 = Forecast.
Source: OPEC Secretariat.

Table 10 - 1: Supply/demand balance for 2019*, mb/d

| | 2018 | 1Q19 | 2Q19 | 3Q19 | 4Q19 | 2019 | Change 2019/18 |
|--|--------------|--------------|--------------|---------------|---------------|--------------|-------------------|
| (a) World oil demand | 98.82 | 98.76 | 98.76 | 100.69 | 100.95 | 99.80 | 0.98 |
| Non-OPEC supply | 62.47 | 63.80 | 63.81 | 64.18 | 65.39 | 64.30 | 1.82 |
| OPEC NGLs and non-conventionals | 4.76 | 4.80 | 4.82 | 4.71 | 4.86 | 4.80 | 0.04 |
| (b) Total non-OPEC supply and OPEC NGLs | 67.24 | 68.60 | 68.63 | 68.89 | 70.24 | 69.09 | 1.86 |
| Difference (a-b) | 31.59 | 30.16 | 30.14 | 31.80 | 30.71 | 30.71 | -0.88 |
| OPEC crude oil production | 31.86 | 30.48 | 29.97 | 29.39 | | | |
| Balance | 0.27 | 0.32 | -0.16 | -2.41 | | | |

Notes: * 2019 = Estimate

Totals may not add up due to independent rounding.

Source: OPEC Secretariat.

Balance of supply and demand in 2020

Demand for OPEC crude in 2020 remained unchanged from the previous report, to stand at 29.6 mb/d, around 1.1 mb/d lower than the 2019 level.

Compared with the last monthly report, 3Q20 remained unchanged. Both 1Q20 and 4Q20 were revised up by 0.1 mb/d each, while 2Q20 was revised down by 0.2 mb/d.

When compared to the same quarter in 2019, demand for OPEC crude in both 2Q20 and 3Q20 are forecast to be 1.3 mb/d lower each, while 1Q20 and 4Q20 are projected to fall by 1.0 mb/d and 0.9 mb/d, respectively.

Table 10 - 2: Supply/demand balance for 2020*, mb/d

| | 2019 | 1Q20 | 2Q20 | 3Q20 | 4Q20 | 2020 | Change 2020/19 |
|--|--------------|--------------|--------------|---------------|---------------|---------------|-------------------|
| (a) World oil demand | 99.80 | 99.78 | 99.79 | 101.78 | 102.12 | 100.88 | 1.08 |
| Non-OPEC supply | 64.30 | 65.82 | 66.09 | 66.46 | 67.49 | 66.46 | 2.17 |
| OPEC NGLs and non-conventionals | 4.80 | 4.83 | 4.83 | 4.83 | 4.83 | 4.83 | 0.03 |
| (b) Total non-OPEC supply and OPEC NGLs | 69.09 | 70.65 | 70.91 | 71.28 | 72.31 | 71.29 | 2.20 |
| Difference (a-b) | 30.71 | 29.13 | 28.88 | 30.50 | 29.81 | 29.58 | -1.12 |

Notes: * 2019 = Estimate and 2020 = Forecast.

Totals may not add up due to independent rounding.

Source: OPEC Secretariat.

Appendix

Table 11 - 1: World oil demand and supply balance, mb/d

| | 2016 | 2017 | 2018 | 1Q19 | 2Q19 | 3Q19 | 4Q19 | 2019 | 1Q20 | 2Q20 | 3Q20 | 4Q20 | 2020 |
|--|--------------|--------------|--------------|--------------|--------------|---------------|---------------|--------------|--------------|--------------|---------------|---------------|---------------|
| World demand | | | | | | | | | | | | | |
| OECD | 47.00 | 47.54 | 47.93 | 47.65 | 47.26 | 48.44 | 48.44 | 47.95 | 47.73 | 47.31 | 48.51 | 48.51 | 48.02 |
| Americas | 24.89 | 25.07 | 25.55 | 25.22 | 25.38 | 26.03 | 26.02 | 25.66 | 25.43 | 25.56 | 26.19 | 26.18 | 25.84 |
| Europe | 13.98 | 14.32 | 14.31 | 13.99 | 14.23 | 14.68 | 14.30 | 14.30 | 13.94 | 14.20 | 14.66 | 14.28 | 14.27 |
| Asia Pacific | 8.14 | 8.15 | 8.08 | 8.45 | 7.64 | 7.73 | 8.12 | 7.99 | 8.37 | 7.56 | 7.66 | 8.05 | 7.91 |
| DCs | 31.56 | 32.13 | 32.62 | 32.97 | 32.87 | 33.49 | 33.14 | 33.12 | 33.54 | 33.44 | 34.12 | 33.79 | 33.73 |
| FSU | 4.63 | 4.70 | 4.82 | 4.75 | 4.74 | 5.02 | 5.11 | 4.91 | 4.83 | 4.81 | 5.11 | 5.19 | 4.99 |
| Other Europe | 0.70 | 0.72 | 0.74 | 0.75 | 0.71 | 0.75 | 0.84 | 0.76 | 0.76 | 0.72 | 0.76 | 0.85 | 0.77 |
| China | 11.80 | 12.32 | 12.71 | 12.63 | 13.19 | 12.98 | 13.43 | 13.06 | 12.91 | 13.50 | 13.28 | 13.77 | 13.37 |
| (a) Total world demand | 95.69 | 97.41 | 98.82 | 98.76 | 98.76 | 100.69 | 100.95 | 99.80 | 99.78 | 99.79 | 101.78 | 102.12 | 100.88 |
| Non-OPEC supply | | | | | | | | | | | | | |
| OECD | 24.86 | 25.71 | 28.33 | 29.34 | 29.68 | 29.74 | 30.77 | 29.88 | 31.13 | 31.26 | 31.73 | 32.30 | 31.61 |
| Americas | 20.59 | 21.49 | 24.08 | 25.07 | 25.59 | 25.62 | 26.32 | 25.65 | 26.64 | 26.92 | 27.34 | 27.62 | 27.13 |
| Europe | 3.85 | 3.82 | 3.84 | 3.84 | 3.61 | 3.61 | 3.94 | 3.75 | 3.95 | 3.81 | 3.83 | 4.11 | 3.93 |
| Asia Pacific | 0.43 | 0.39 | 0.41 | 0.43 | 0.48 | 0.51 | 0.51 | 0.48 | 0.54 | 0.53 | 0.57 | 0.57 | 0.55 |
| DCs | 13.54 | 13.40 | 13.46 | 13.41 | 13.44 | 13.60 | 13.83 | 13.57 | 13.78 | 13.80 | 13.82 | 13.98 | 13.85 |
| FSU | 13.85 | 14.05 | 14.29 | 14.55 | 14.16 | 14.34 | 14.30 | 14.34 | 14.32 | 14.44 | 14.36 | 14.64 | 14.44 |
| Other Europe | 0.13 | 0.13 | 0.12 | 0.12 | 0.12 | 0.12 | 0.12 | 0.12 | 0.12 | 0.12 | 0.12 | 0.11 | 0.12 |
| China | 4.09 | 3.97 | 4.02 | 4.10 | 4.13 | 4.10 | 4.09 | 4.10 | 4.12 | 4.13 | 4.10 | 4.13 | 4.12 |
| Processing gains | 2.19 | 2.22 | 2.25 | 2.28 | 2.28 | 2.28 | 2.28 | 2.28 | 2.33 | 2.33 | 2.33 | 2.33 | 2.33 |
| Total non-OPEC supply | 58.68 | 59.48 | 62.47 | 63.80 | 63.81 | 64.18 | 65.39 | 64.30 | 65.82 | 66.09 | 66.46 | 67.49 | 66.46 |
| OPEC NGLs + non-conventional oils | 4.58 | 4.64 | 4.76 | 4.80 | 4.82 | 4.71 | 4.86 | 4.80 | 4.83 | 4.83 | 4.83 | 4.83 | 4.83 |
| (b) Total non-OPEC supply and OPEC NGLs | 63.26 | 64.12 | 67.24 | 68.60 | 68.63 | 68.89 | 70.24 | 69.09 | 70.65 | 70.91 | 71.28 | 72.31 | 71.29 |
| OPEC crude oil production (secondary sources) | 32.21 | 32.01 | 31.86 | 30.48 | 29.97 | 29.39 | | | | | | | |
| Total supply | 95.47 | 96.13 | 99.10 | 99.08 | 98.60 | 98.28 | | | | | | | |
| Balance (stock change and miscellaneous) | -0.23 | -1.28 | 0.27 | 0.32 | -0.16 | -2.41 | | | | | | | |
| OECD closing stock levels, mb | | | | | | | | | | | | | |
| Commercial | 3,002 | 2,855 | 2,865 | 2,871 | 2,931 | 2,945 | | | | | | | |
| SPR | 1,600 | 1,568 | 1,550 | 1,556 | 1,547 | 1,545 | | | | | | | |
| Total | 4,601 | 4,422 | 4,416 | 4,427 | 4,478 | 4,490 | | | | | | | |
| Oil-on-water | 1,102 | 1,025 | 1,058 | 1,013 | 995 | 1,012 | | | | | | | |
| Days of forward consumption in OECD, days | | | | | | | | | | | | | |
| Commercial onland stocks | 63 | 60 | 60 | 61 | 60 | 61 | | | | | | | |
| SPR | 34 | 33 | 32 | 33 | 32 | 32 | | | | | | | |
| Total | 97 | 92 | 92 | 94 | 92 | 93 | | | | | | | |
| Memo items | | | | | | | | | | | | | |
| (a) - (b) | 32.43 | 33.30 | 31.59 | 30.16 | 30.14 | 31.80 | 30.71 | 30.71 | 29.13 | 28.88 | 30.50 | 29.81 | 29.58 |

Note: Totals may not add up due to independent rounding.

Source: OPEC Secretariat.

Table 11 - 2: World oil demand and supply balance: changes from last month's table*, mb/d

| | 2016 | 2017 | 2018 | 1Q19 | 2Q19 | 3Q19 | 4Q19 | 2019 | 1Q20 | 2Q20 | 3Q20 | 4Q20 | 2020 |
|--|------|--------------|--------------|-------------|--------------|--------------|-------------|--------------|--------------|--------------|--------------|--------------|--------------|
| World demand | | | | | | | | | | | | | |
| OECD | - | - | - | 0.10 | -0.16 | -0.05 | -0.01 | -0.03 | 0.10 | -0.16 | -0.05 | -0.01 | -0.03 |
| Americas | - | - | - | 0.10 | -0.16 | -0.05 | -0.01 | -0.03 | 0.10 | -0.16 | -0.05 | -0.01 | -0.03 |
| Europe | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Asia Pacific | - | - | - | - | - | - | - | - | - | - | - | - | - |
| DCs | - | - | - | - | - | 0.05 | 0.07 | 0.03 | - | - | 0.05 | 0.07 | 0.03 |
| FSU | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Other Europe | - | - | - | - | - | - | - | - | - | - | - | - | - |
| China | - | - | - | - | - | - | - | - | - | - | - | - | - |
| (a) Total world demand | - | - | - | 0.10 | -0.16 | - | 0.06 | - | 0.10 | -0.16 | - | 0.06 | - |
| Non-OPEC supply | | | | | | | | | | | | | |
| OECD | - | 0.01 | 0.04 | 0.04 | 0.06 | 0.08 | -0.04 | 0.04 | - | - | - | - | - |
| Americas | - | 0.01 | 0.04 | 0.05 | 0.02 | -0.01 | -0.03 | 0.01 | -0.03 | -0.03 | -0.03 | -0.03 | -0.03 |
| Europe | - | - | - | -0.01 | 0.04 | 0.07 | -0.01 | 0.02 | 0.03 | 0.03 | 0.03 | 0.03 | 0.03 |
| Asia Pacific | - | - | - | - | - | 0.02 | - | 0.01 | 0.01 | 0.01 | - | - | 0.01 |
| DCs | - | - | - | - | -0.02 | -0.07 | -0.02 | -0.03 | -0.04 | -0.03 | -0.03 | -0.03 | -0.04 |
| FSU | - | - | - | - | - | 0.07 | 0.07 | 0.04 | 0.04 | 0.04 | 0.04 | 0.04 | 0.04 |
| Other Europe | - | - | - | - | - | - | - | - | - | - | - | - | - |
| China | - | - | - | - | - | -0.02 | - | -0.01 | - | - | - | - | - |
| Processing gains | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Total non-OPEC supply | - | 0.01 | 0.04 | 0.04 | 0.04 | 0.06 | - | 0.04 | - | - | - | - | - |
| OPEC NGLs + non-conventionals | - | - | - | - | - | -0.04 | - | -0.01 | -0.01 | -0.01 | -0.01 | -0.01 | -0.01 |
| (b) Total non-OPEC supply and OPEC NGLs | - | 0.01 | 0.04 | 0.04 | 0.04 | 0.02 | - | 0.03 | -0.01 | -0.01 | -0.01 | -0.01 | -0.01 |
| OPEC crude oil production (secondary sources) | - | - | - | - | -0.01 | 0.07 | - | - | - | - | - | - | - |
| Total supply | - | 0.01 | 0.04 | 0.04 | 0.04 | 0.09 | - | - | - | - | - | - | - |
| Balance (stock change and miscellaneous) | - | 0.01 | 0.03 | -0.06 | 0.20 | 0.09 | - | - | - | - | - | - | - |
| OECD closing stock levels (mb) | | | | | | | | | | | | | |
| Commercial | -1 | 1 | 2 | 3 | 5 | - | - | - | - | - | - | - | - |
| SPR | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Total | -1 | 1 | 2 | 3 | 6 | - | - | - | - | - | - | - | - |
| Oil-on-water | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Days of forward consumption in OECD | | | | | | | | | | | | | |
| Commercial onland stocks | - | - | - | - | - | - | - | - | - | - | - | - | - |
| SPR | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Total | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Memo items | | | | | | | | | | | | | |
| (a) - (b) | - | -0.01 | -0.03 | 0.06 | -0.21 | -0.02 | 0.06 | -0.02 | 0.12 | -0.15 | 0.01 | 0.07 | 0.01 |

Note: * This compares Table 11 - 1 in this issue of the MOMR with Table 11 - 1 in the October 2019 issue.

This table shows only where changes have occurred.

Source: OPEC Secretariat.

Table 11 - 3: OECD oil stocks and oil on water at the end of period

| | <u>2016</u> | <u>2017</u> | <u>2018</u> | <u>3Q17</u> | <u>4Q17</u> | <u>1Q18</u> | <u>2Q18</u> | <u>3Q18</u> | <u>4Q18</u> | <u>1Q19</u> | <u>2Q19</u> | <u>3Q19</u> |
|--|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|
| Closing stock levels, mb | | | | | | | | | | | | |
| OECD onland commercial | 3,002 | 2,854 | 2,863 | 2,969 | 2,854 | 2,805 | 2,803 | 2,856 | 2,863 | 2,868 | 2,931 | 2,945 |
| Americas | 1,598 | 1,498 | 1,542 | 1,571 | 1,498 | 1,468 | 1,471 | 1,541 | 1,542 | 1,508 | 1,565 | 1,552 |
| Europe | 989 | 943 | 922 | 965 | 943 | 959 | 944 | 925 | 922 | 980 | 977 | 982 |
| Asia Pacific | 415 | 412 | 399 | 433 | 412 | 378 | 388 | 390 | 399 | 380 | 389 | 411 |
| OECD SPR | 1,600 | 1,568 | 1,550 | 1,578 | 1,568 | 1,576 | 1,573 | 1,569 | 1,550 | 1,556 | 1,547 | 1,545 |
| Americas | 697 | 665 | 651 | 676 | 665 | 667 | 662 | 662 | 651 | 651 | 647 | 647 |
| Europe | 481 | 480 | 479 | 479 | 480 | 486 | 489 | 485 | 479 | 487 | 483 | 481 |
| Asia Pacific | 421 | 423 | 420 | 423 | 423 | 422 | 422 | 422 | 420 | 417 | 417 | 417 |
| OECD total | 4,602 | 4,421 | 4,413 | 4,547 | 4,421 | 4,381 | 4,376 | 4,424 | 4,413 | 4,424 | 4,478 | 4,490 |
| Oil-on-water | 1,102 | 1,025 | 1,058 | 998 | 1,025 | 1,036 | 1,014 | 1,041 | 1,058 | 1,013 | 995 | 1,012 |
| Days of forward consumption in OECD, days | | | | | | | | | | | | |
| OECD onland commercial | 63 | 60 | 60 | 62 | 60 | 59 | 58 | 59 | 60 | 60 | 60 | 61 |
| Americas | 64 | 59 | 60 | 62 | 59 | 58 | 57 | 60 | 61 | 59 | 60 | 60 |
| Europe | 69 | 66 | 65 | 67 | 67 | 67 | 64 | 65 | 66 | 69 | 67 | 69 |
| Asia Pacific | 51 | 51 | 50 | 52 | 48 | 49 | 50 | 48 | 47 | 50 | 50 | 51 |
| OECD SPR | 34 | 33 | 33 | 33 | 33 | 33 | 33 | 33 | 33 | 33 | 32 | 32 |
| Americas | 28 | 26 | 26 | 27 | 26 | 26 | 26 | 26 | 26 | 25 | 25 | 25 |
| Europe | 34 | 34 | 34 | 33 | 34 | 34 | 33 | 34 | 34 | 34 | 33 | 34 |
| Asia Pacific | 52 | 52 | 53 | 50 | 49 | 54 | 54 | 52 | 50 | 54 | 54 | 51 |
| OECD total | 97 | 92 | 93 | 94 | 92 | 92 | 91 | 92 | 93 | 93 | 92 | 93 |

Sources: Argus Media, Euroilstock, IEA, JODI, METI, OPEC Secretariat and US EIA.

Table 11 - 4: Non-OPEC supply and OPEC natural gas liquids, mb/d

| | | | | Change | | | | | Change | | | | |
|--------------------------------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|------------|
| | 2016 | 2017 | 2018 | 3Q19 | 4Q19 | 2019 | 19/18 | 1Q20 | 2Q20 | 3Q20 | 4Q20 | 2020 | 20/19 |
| US | 13.6 | 14.4 | 16.7 | 18.3 | 18.9 | 18.3 | 1.6 | 19.2 | 19.8 | 20.0 | 20.3 | 19.8 | 1.5 |
| Canada | 4.5 | 4.9 | 5.3 | 5.4 | 5.4 | 5.4 | 0.1 | 5.5 | 5.3 | 5.5 | 5.6 | 5.5 | 0.1 |
| Mexico | 2.5 | 2.2 | 2.1 | 1.9 | 1.9 | 1.9 | -0.2 | 1.9 | 1.8 | 1.8 | 1.7 | 1.8 | -0.1 |
| OECD Americas | 20.6 | 21.5 | 24.1 | 25.6 | 26.3 | 25.7 | 1.6 | 26.6 | 26.9 | 27.3 | 27.6 | 27.1 | 1.5 |
| Norway | 2.0 | 2.0 | 1.9 | 1.7 | 1.9 | 1.7 | -0.1 | 1.9 | 1.8 | 1.9 | 2.1 | 1.9 | 0.2 |
| UK | 1.0 | 1.0 | 1.1 | 1.1 | 1.2 | 1.2 | 0.1 | 1.2 | 1.1 | 1.1 | 1.2 | 1.2 | 0.0 |
| Denmark | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.0 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.0 |
| Other OECD Europe | 0.7 | 0.7 | 0.7 | 0.7 | 0.7 | 0.7 | 0.0 | 0.7 | 0.7 | 0.7 | 0.7 | 0.7 | 0.0 |
| OECD Europe | 3.9 | 3.8 | 3.8 | 3.6 | 3.9 | 3.8 | -0.1 | 4.0 | 3.8 | 3.8 | 4.1 | 3.9 | 0.2 |
| Australia | 0.3 | 0.3 | 0.3 | 0.4 | 0.4 | 0.4 | 0.1 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.1 |
| Other Asia Pacific | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.0 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.0 |
| OECD Asia Pacific | 0.4 | 0.4 | 0.4 | 0.5 | 0.5 | 0.5 | 0.1 | 0.5 | 0.5 | 0.6 | 0.6 | 0.6 | 0.1 |
| Total OECD | 24.9 | 25.7 | 28.3 | 29.7 | 30.8 | 29.9 | 1.6 | 31.1 | 31.3 | 31.7 | 32.3 | 31.6 | 1.7 |
| Brunei | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.0 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.0 |
| India | 0.9 | 0.9 | 0.9 | 0.8 | 0.8 | 0.8 | 0.0 | 0.8 | 0.8 | 0.9 | 0.9 | 0.8 | 0.0 |
| Indonesia | 0.9 | 0.9 | 0.9 | 0.8 | 0.8 | 0.8 | 0.0 | 0.8 | 0.8 | 0.8 | 0.8 | 0.8 | 0.0 |
| Malaysia | 0.7 | 0.7 | 0.7 | 0.6 | 0.7 | 0.7 | 0.0 | 0.7 | 0.7 | 0.7 | 0.7 | 0.7 | 0.0 |
| Thailand | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.0 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.0 |
| Vietnam | 0.3 | 0.3 | 0.2 | 0.2 | 0.2 | 0.2 | 0.0 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.0 |
| Asia others | 0.3 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.0 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.0 |
| Other Asia | 3.7 | 3.6 | 3.6 | 3.3 | 3.4 | 3.4 | -0.1 | 3.4 | 3.4 | 3.4 | 3.4 | 3.4 | 0.0 |
| Argentina | 0.7 | 0.6 | 0.6 | 0.7 | 0.6 | 0.6 | 0.0 | 0.6 | 0.6 | 0.6 | 0.6 | 0.6 | 0.0 |
| Brazil | 3.1 | 3.3 | 3.3 | 3.6 | 3.7 | 3.5 | 0.2 | 3.8 | 3.7 | 3.8 | 3.9 | 3.8 | 0.3 |
| Colombia | 0.9 | 0.9 | 0.9 | 0.9 | 0.9 | 0.9 | 0.0 | 0.9 | 0.9 | 0.8 | 0.9 | 0.9 | 0.0 |
| Trinidad & Tobago | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.0 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.0 |
| Latin America others | 0.3 | 0.3 | 0.3 | 0.3 | 0.3 | 0.3 | 0.0 | 0.2 | 0.2 | 0.3 | 0.3 | 0.2 | 0.0 |
| Latin America | 5.1 | 5.2 | 5.2 | 5.5 | 5.6 | 5.4 | 0.2 | 5.6 | 5.6 | 5.6 | 5.7 | 5.6 | 0.2 |
| Bahrain | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.0 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.0 |
| Oman | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 0.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 0.0 |
| Qatar | 2.0 | 1.9 | 2.0 | 2.0 | 2.0 | 2.0 | 0.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 0.0 |
| Syria | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Yemen | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.1 | 0.1 | 0.0 |
| Middle East | 3.3 | 3.1 | 3.2 | 3.2 | 3.2 | 3.2 | 0.0 | 3.2 | 3.2 | 3.3 | 3.3 | 3.3 | 0.0 |
| Cameroon | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.0 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.0 |
| Chad | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.0 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.0 |
| Egypt | 0.7 | 0.7 | 0.7 | 0.6 | 0.7 | 0.7 | 0.0 | 0.7 | 0.6 | 0.6 | 0.6 | 0.6 | 0.0 |
| Ghana | 0.1 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.0 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.0 |
| South Africa | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.0 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.0 |
| Sudans | 0.3 | 0.2 | 0.2 | 0.3 | 0.3 | 0.2 | 0.0 | 0.3 | 0.3 | 0.3 | 0.3 | 0.3 | 0.0 |
| Africa other | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.0 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.0 |
| Africa | 1.5 | 1.5 | 1.5 | 1.5 | 1.6 | 1.5 | 0.0 | 1.6 | 1.6 | 1.6 | 1.6 | 1.6 | 0.0 |
| Total DCs | 13.5 | 13.4 | 13.5 | 13.6 | 13.8 | 13.6 | 0.1 | 13.8 | 13.8 | 13.8 | 14.0 | 13.8 | 0.3 |
| FSU | 13.9 | 14.1 | 14.3 | 14.3 | 14.3 | 14.3 | 0.0 | 14.3 | 14.4 | 14.4 | 14.6 | 14.4 | 0.1 |
| Russia | 11.1 | 11.2 | 11.3 | 11.4 | 11.3 | 11.4 | 0.1 | 11.3 | 11.5 | 11.5 | 11.6 | 11.5 | 0.1 |
| Kazakhstan | 1.6 | 1.7 | 1.8 | 1.8 | 1.9 | 1.8 | 0.0 | 1.9 | 1.9 | 1.8 | 1.9 | 1.8 | 0.0 |
| Azerbaijan | 0.8 | 0.8 | 0.8 | 0.8 | 0.8 | 0.8 | 0.0 | 0.8 | 0.8 | 0.8 | 0.8 | 0.8 | 0.0 |
| FSU others | 0.4 | 0.3 | 0.3 | 0.3 | 0.3 | 0.3 | 0.0 | 0.3 | 0.3 | 0.3 | 0.3 | 0.3 | 0.0 |
| Other Europe | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.0 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.0 |
| China | 4.1 | 4.0 | 4.0 | 4.1 | 4.1 | 4.1 | 0.1 | 4.1 | 4.1 | 4.1 | 4.1 | 4.1 | 0.0 |
| Non-OPEC production | 56.5 | 57.3 | 60.2 | 61.9 | 63.1 | 62.0 | 1.8 | 63.5 | 63.8 | 64.1 | 65.2 | 64.1 | 2.1 |
| Processing gains | 2.2 | 2.2 | 2.3 | 2.3 | 2.3 | 2.3 | 0.0 | 2.3 | 2.3 | 2.3 | 2.3 | 2.3 | 0.1 |
| Non-OPEC supply | 58.7 | 59.5 | 62.5 | 64.2 | 65.4 | 64.3 | 1.8 | 65.8 | 66.1 | 66.5 | 67.5 | 66.5 | 2.2 |
| OPEC NGL | 4.5 | 4.5 | 4.7 | 4.6 | 4.8 | 4.7 | 0.0 | 4.7 | 4.7 | 4.7 | 4.7 | 4.7 | 0.0 |
| OPEC Non-conventional | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.0 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.0 |
| OPEC (NGL+NCF) | 4.6 | 4.6 | 4.8 | 4.7 | 4.9 | 4.8 | 0.0 | 4.8 | 4.8 | 4.8 | 4.8 | 4.8 | 0.0 |
| Non-OPEC & OPEC (NGL+NCF) | 63.3 | 64.1 | 67.2 | 68.9 | 70.2 | 69.1 | 1.9 | 70.6 | 70.9 | 71.3 | 72.3 | 71.3 | 2.2 |

Note: OECD Americas includes Chile.

Totals may not add up due to independent rounding.

Source: OPEC Secretariat.

Table 11 - 5: World rig count, units

| | | | | Change | | | | | | | Change |
|---------------------------|--------------|--------------|--------------|------------|--------------|--------------|--------------|--------------|--------------|--------------|------------|
| | 2016 | 2017 | 2018 | 2018/17 | 4Q18 | 1Q19 | 2Q19 | 3Q19 | Sep 19 | Oct 19 | Oct/Sep |
| US | 509 | 875 | 1,031 | 157 | 1,073 | 1,045 | 990 | 920 | 879 | 842 | -37 |
| Canada | 131 | 207 | 191 | -15 | 177 | 185 | 83 | 131 | 132 | 144 | 12 |
| Mexico | 26 | 17 | 27 | 9 | 32 | 26 | 34 | 38 | 44 | 45 | 1 |
| OECD Americas | 665 | 1,099 | 1,249 | 150 | 1,282 | 1,257 | 1,106 | 1,089 | 1,055 | 1,031 | -24 |
| Norway | 17 | 15 | 15 | 0 | 17 | 15 | 17 | 18 | 17 | 18 | 1 |
| UK | 9 | 9 | 7 | -2 | 8 | 13 | 16 | 16 | 15 | 15 | 0 |
| OECD Europe | 96 | 92 | 85 | -7 | 90 | 92 | 159 | 190 | 176 | 175 | -1 |
| OECD Asia Pacific | 7 | 15 | 21 | 5 | 23 | 24 | 29 | 31 | 31 | 32 | 1 |
| Total OECD | 768 | 1,206 | 1,355 | 149 | 1,396 | 1,372 | 1,295 | 1,310 | 1,262 | 1,238 | -24 |
| Other Asia* | 204 | 208 | 222 | 14 | 224 | 232 | 225 | 217 | 217 | 214 | -3 |
| Latin America | 111 | 112 | 123 | 11 | 123 | 128 | 122 | 123 | 111 | 112 | 1 |
| Middle East | 75 | 68 | 65 | -4 | 62 | 66 | 69 | 67 | 68 | 69 | 1 |
| Africa | 43 | 38 | 45 | 7 | 50 | 54 | 52 | 50 | 56 | 62 | 6 |
| Total DCs | 432 | 426 | 454 | 28 | 460 | 481 | 468 | 457 | 452 | 457 | 5 |
| Non-OPEC rig count | 1,200 | 1,632 | 1,809 | 177 | 1,855 | 1,853 | 1,763 | 1,767 | 1,714 | 1,695 | -19 |
| Algeria | 54 | 54 | 50 | -4 | 47 | 47 | 49 | 42 | 42 | 43 | 1 |
| Angola | 6 | 3 | 4 | 1 | 5 | 5 | 5 | 4 | 4 | 2 | -2 |
| Congo | 2 | 2 | 3 | 1 | 4 | 4 | 4 | 3 | 2 | 2 | 0 |
| Ecuador | 4 | 6 | 8 | 2 | 11 | 9 | 8 | 9 | 9 | 7 | -2 |
| Equatorial Guinea** | 1 | 1 | 1 | 0 | 1 | 1 | 1 | 1 | 1 | 1 | 0 |
| Gabon | 1 | 1 | 3 | 3 | 4 | 7 | 6 | 7 | 8 | 8 | 0 |
| Iran** | 143 | 156 | 157 | 2 | 157 | 157 | 157 | 157 | 157 | 157 | 0 |
| Iraq | 43 | 49 | 59 | 10 | 61 | 65 | 75 | 77 | 77 | 77 | 0 |
| Kuwait | 44 | 54 | 51 | -3 | 45 | 44 | 44 | 46 | 46 | 46 | 0 |
| Libya | 1 | 1 | 5 | 4 | 9 | 11 | 15 | 16 | 16 | 16 | 0 |
| Nigeria | 6 | 9 | 13 | 5 | 12 | 14 | 14 | 16 | 17 | 18 | 1 |
| Saudi Arabia | 125 | 118 | 117 | -1 | 123 | 118 | 115 | 118 | 114 | 106 | -8 |
| UAE | 51 | 52 | 55 | 4 | 57 | 58 | 59 | 64 | 67 | 70 | 3 |
| Venezuela | 58 | 49 | 32 | -17 | 26 | 25 | 23 | 25 | 25 | 25 | 0 |
| OPEC rig count | 537 | 553 | 558 | 5 | 563 | 565 | 576 | 585 | 585 | 578 | -7 |
| World rig count*** | 1,737 | 2,185 | 2,368 | 183 | 2,418 | 2,418 | 2,338 | 2,352 | 2,299 | 2,273 | -26 |
| <i>of which:</i> | | | | | | | | | | | |
| Oil | 1,313 | 1,678 | 1,886 | 209 | 1,934 | 1,936 | 1,827 | 1,833 | 1,804 | 1,787 | -17 |
| Gas | 370 | 466 | 448 | -17 | 453 | 455 | 482 | 486 | 460 | 451 | -9 |
| Others | 54 | 42 | 33 | -9 | 31 | 26 | 29 | 32 | 35 | 35 | 0 |

Note: * Other Asia includes Indonesia.

** Estimated data when Baker Hughes Incorporated did not report the data.

*** Data excludes China and FSU.

Totals may not add up due to independent rounding.

Sources: Baker Hughes Incorporated and OPEC Secretariat's estimates.

Glossary of Terms

Abbreviations

| | |
|-------|-------------------------------|
| b | barrels |
| b/d | barrels per day |
| bp | basis points |
| bb | billion barrels |
| bcf | billion cubic feet |
| cu m | cubic metres |
| mb | million barrels |
| mb/d | million barrels per day |
| mmbtu | million British thermal units |
| mn | million |
| m-o-m | month-on-month |
| mt | metric tonnes |
| q-o-q | quarter-on-quarter |
| pp | percentage points |
| tb/d | thousand barrels per day |
| tcf | trillion cubic feet |
| y-o-y | year-on-year |
| y-t-d | year-to-date |

Acronyms

| | |
|--------------|--|
| ARA | Amsterdam-Rotterdam-Antwerp |
| BoE | Bank of England |
| BoJ | Bank of Japan |
| BOP | Balance of payments |
| BRIC | Brazil, Russia, India and China |
| CAPEX | capital expenditures |
| CCI | Consumer Confidence Index |
| CFTC | Commodity Futures Trading Commission |
| CIF | cost, insurance and freight |
| CPI | consumer price index |
| DCs | developing countries |
| DUC | drilled, but uncompleted (oil well) |
| ECB | European Central Bank |
| EIA | US Energy Information Administration |
| Emirates NBD | Emirates National Bank of Dubai |
| EMs | emerging markets |
| EV | electric vehicle |
| FAI | fixed asset investment |
| FCC | fluid catalytic cracking |
| FDI | foreign direct investment |
| Fed | US Federal Reserve |
| FID | final investment decision |
| FOB | free on board |
| FPSO | floating production storage and offloading |
| FSU | Former Soviet Union |
| FX | Foreign Exchange |
| FY | fiscal year |
| GDP | gross domestic product |
| GFCF | gross fixed capital formation |
| GoM | Gulf of Mexico |
| GTLs | gas-to-liquids |
| HH | Henry Hub |
| HSFO | high-sulphur fuel oil |
| ICE | Intercontinental Exchange |
| IEA | International Energy Agency |
| IMF | International Monetary Fund |
| IOCs | international oil companies |
| IP | industrial production |
| ISM | Institute of Supply Management |
| LIBOR | London inter-bank offered rate |
| LLS | Light Louisiana Sweet |
| LNG | liquefied natural gas |
| LPG | liquefied petroleum gas |
| LR | long-range (vessel) |
| LSFO | low-sulphur fuel oil |

Glossary of Terms

| | |
|-------|--|
| MCs | (OPEC) Member Countries |
| MED | Mediterranean |
| MENA | Middle East/North Africa |
| MOMR | (OPEC) Monthly Oil Market Report |
| MPV | multi-purpose vehicle |
| MR | medium-range or mid-range (vessel) |
| NBS | National Bureau of Statistics |
| NGLs | natural gas liquids |
| NPC | National People's Congress (China) |
| NWE | Northwest Europe |
| NYMEX | New York Mercantile Exchange |
| OECD | Organisation for Economic Co-operation and Development |
| OPEX | operational expenditures |
| OIV | total open interest volume |
| ORB | OPEC Reference Basket |
| OSP | Official Selling Price |
| PADD | Petroleum Administration for Defense Districts |
| PBoC | People's Bank of China |
| PMI | purchasing managers' index |
| PPI | producer price index |
| RBI | Reserve Bank of India |
| REER | real effective exchange rate |
| ROI | return on investment |
| SAAR | seasonally-adjusted annualized rate |
| SIAM | Society of Indian Automobile Manufacturers |
| SRFO | straight-run fuel oil |
| SUV | sports utility vehicle |
| ULCC | ultra-large crude carrier |
| ULSD | ultra-low sulphur diesel |
| USEC | US East Coast |
| USGC | US Gulf Coast |
| USWC | US West Coast |
| VGO | vacuum gasoil |
| VLCC | very large crude carriers |
| WPI | wholesale price index |
| WS | Worldscale |
| WTI | West Texas Intermediate |
| WTS | West Texas Sour |