

OPEC

Monthly Oil Market Report

18 January 2017

Feature article:
Monetary policies and their impact on the oil market

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Oil market highlights

Crude Oil Price Movements

The OPEC Reference Basket jumped nearly 20% in December to \$51.67/b, ending above \$50/b for the first time in 18 months. In contrast, the Basket's yearly average value came in at its lowest in more than 12 years at \$40.76/b. The oil complex surged on news of the historic cooperation between OPEC and non-OPEC. ICE Brent ended \$7.84 higher at \$54.92/b, while NYMEX WTI soared \$6.40 to \$52.17/b. For the year, ICE Brent and NYMEX WTI averaged \$45.13/b and \$43.47/b, respectively, the lowest since 2004.

World Economy

World economic growth for 2016 and 2017 has been revised up by 0.1 percentage point to stand at 3.0% and 3.2%, respectively. The OECD growth in 2017 was revised higher to 1.8%, following growth of 1.7% in 2016. China's forecast remains at 6.7% in 2016 and 6.2% in 2017, while India's growth in 2016 was revised down slightly to 7.2%, followed by growth of 7.1% in 2017. After two years of recession, both Russia and Brazil are forecast to recover in 2017 with growth of 0.9% and 0.4% respectively.

World Oil Demand

Global oil demand growth in 2016 is expected at 1.25 mb/d after a marginal upward revision of around 10 tb/d, mainly reflecting the better-than-expected performance in OECD Asia Pacific and Europe. World oil demand is expected to average 94.44 mb/d in 2016. In 2017, world oil demand is anticipated to rise by a solid 1.16 mb/d y-o-y to average 95.60 mb/d. This represents an upward revision of 10 tb/d, mostly due to an expected uptick in oil requirements in OECD Europe in 1Q17.

World Oil Supply

Non-OPEC oil supply in 2016 is now expected to show a contraction of 0.71 mb/d, following an upward revision of 70 tb/d, mainly driven by higher-than-expected growth in Norway, Russia and the US. In 2017, non-OPEC oil supply is projected to grow by 0.12 mb/d, representing a downward adjustment of 0.18 mb/d. Downward revisions to Russia, Kazakhstan, China, Congo and Norway, were partially offset by a 0.23 mb/d upward adjustment to US supply. OPEC NGL production is forecast to grow by 0.15 mb/d in 2017, following growth of 0.15 mb/d last year. In December, OPEC production decreased by 221 tb/d, according to secondary sources, to average 33.08 mb/d.

Product Markets and Refining Operations

Product markets showed a mixed performance in the Atlantic Basin in December 2016. US refinery margins were supported by the recovery seen in the gasoline cracks on the back of healthy domestic demand amid stronger exports to Latin America. Refinery margins in Europe weakened due to slower gasoline export opportunities and a lack of support at the middle of the barrel, despite the colder weather. In Asia, product oversupply weighed on margins.

Tanker Market

Tanker spot freight rates in December 2016 rose in both dirty and clean segments of the market. Average VLCC, Suezmax and Aframax spot freight rates rose by 18%, 25% and 1%, respectively, from a month before. The higher rates were driven by delays in eastern ports, pre-holiday activities and thinning tonnage supply in some areas. Average clean spot freight rates for both East and West of Suez increased in December by 19% and 26% m-o-m, respectively. Compared to the same month last year, both clean and dirty spot freight also increased on average.

Stock Movements

Total OECD commercial stocks fell in November 2016 to stand at 2,993 mb, some 271 mb above the latest five-year average. Crude and product inventories showed surpluses of 190 mb and 82 mb, respectively. In terms of days of forward cover, OECD commercial stocks in November stood at 63.7 days, some 5.2 days higher than the seasonal average.

Balance of Supply and Demand

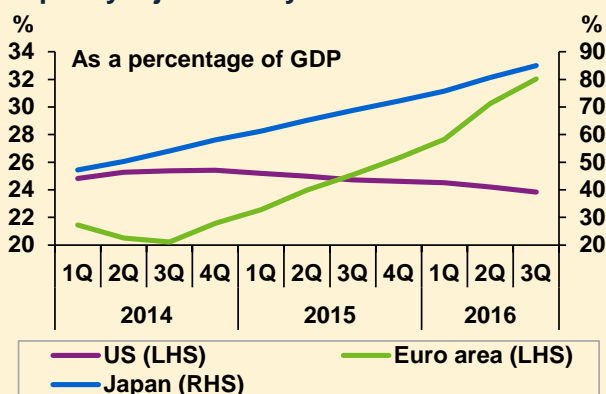
Demand for OPEC crude in 2016 is estimated to stand at 31.2 mb/d, some 1.8 mb/d higher than in 2015. In 2017, demand for OPEC crude is forecast at 32.1 mb/d, a further increase of 0.9 mb/d over 2016.

Monetary policies and their impact on the oil market

Monetary policies continue to have an important influence on the global economy and recent efforts by OPEC and some non-OPEC producers to rebalance the oil market may turn out to be supportive for a normalisation of monetary policies by major central banks. Rising cooperation leading to a faster rebalancing of the oil market in the energy sector is leading to healthier inflation levels in major economies and to improvements in global economic growth. Although uncertainties remain, recent oil market-related developments, in combination with further improvement in the OECD economies, an expected recovery in Russia and Brazil in 2017, and continued high growth levels in China and India, may put central banks in a better situation to gradually reduce the extraordinary monetary stimulus that has been a key factor for the global economic recovery since the Great Recession in 2008/2009. While the US Federal Reserve (Fed) has been tightening monetary supply since 2015, the European Central Bank (ECB) and other central banks are likely to continue their monetary stimulus in the short term (**Graph 1**).

Graph 1

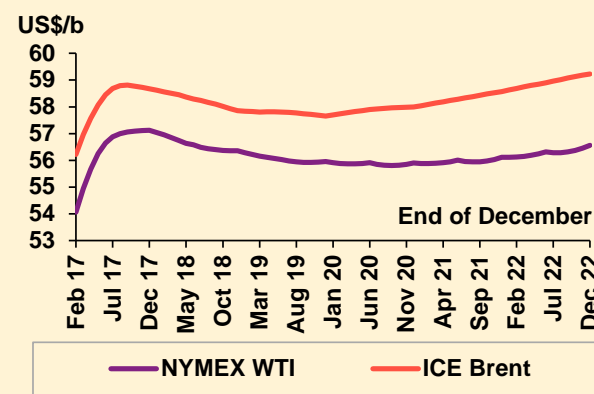
Liquidity injections by central banks



Sources: ECB, FRB/BEA, CAOBOJ and Haver Analytics.

Graph 2

NYMEX WTI & ICE Brent futures curve



Sources: CME Group and Intercontinental Exchange.

In the near term, the Fed is looking to raise interest rates further, following the improvement of the US economy, healthier labour market together with rising inflation of close to 2%. The Fed expects that the evolution of the economy will warrant only gradual increases. However, the fiscal stimulus plans of the new administration may trigger a more rapid rise in interest rates than currently anticipated. This would particularly be the case if the major part of this stimulus is financed by an increase in government debt. Therefore, there is some uncertainty about the pace of future interest rate increases. Given the importance of the US economy and the status of the US dollar in global trade, how the oil market is affected by such developments depend on whether the issues are considered from the short- or medium-term perspective.

There are numerous short-term impacts of US monetary policy on oil markets. Rising US interest rates could result in increased capital outflows from emerging and some other economies, and hence lower economic activity, especially in emerging countries, limiting oil demand growth. Such capital outflows are usually accompanied by increased speculative activity, potentially impacting oil price volatility significantly in the short-term. Additionally, the expectation of higher-yielding US dollar-denominated investments may support the strengthening of the dollar versus major currency counterparts, which usually weighs on oil prices. At the same time, an increase in US dollar interest rates negatively affects oil industry investments by making them costlier, especially expensive and highly-leveraged oil developments. This also raises the cost-of-carry for oil inventories, although the impact on stock levels will depend on the shape of the futures curve. At the end of December 2016, the futures curve for both NYMEX WTI and ICE Brent was already showing the first signs of backwardation (**Graph 2**).

While the ECB and the Bank of Japan have continued with their extraordinary monetary policies including ultra-low or negative interest rates, a shift towards normalisation is possible. With inflation in these economies rising significantly from last year's levels to now stand at 1.1% in the Euro-zone and 0.5% in Japan, some reduction in monetary stimulus is foreseen. However, their policies are likely to remain more accommodative than the Fed's.

A continued normalisation of monetary policies, indicating improving economic conditions, together with the recent historic cooperation between OPEC and non-OPEC producers, should help to bring needed stability to the oil market, hence further supporting the world economy.

Crude Oil Price Movements

The OPEC Reference Basket (ORB) jumped nearly 20% in December to end above \$50/b for the first time in a year-and-a-half at \$51.67/b as the oil complex surged after the historic joint OPEC and non-OPEC decision. In contrast, the 2016 yearly average value came in at its lowest in more than 12 years at \$40.76/b, around 18% less than in 2015.

Crude oil futures on both sides of the Atlantic rallied sharply in December, rising to well above \$50/b to reach their highest levels in 18 months. Both made big gains since the end of November. For the year, however, oil futures witnessed one of the worst slump cycles since the financial crisis in 2008, resulting in their lowest yearly average in 12 years. ICE Brent averaged \$7.84 higher in December at \$54.92/b, while NYMEX WTI soared \$6.40 to average \$52.17/b. In yearly terms, ICE Brent was 16% lower in 2016 at \$45.13/b for 2016, while NYMEX WTI declined 11%, to \$43.47/b. Both were at their lowest since 2004.

The ICE Brent/NYMEX WTI spread widened significantly in December as the US benchmark was pressured by a seasonally unusual oil stock build at the end of the year. Also, increasing US shale oil production and the strengthening US dollar had negative impacts on WTI. For the year, the spread narrowed considerably from \$4.87/b in 2015 to \$1.66/b.

Hedge funds and other institutional investors' bets on crude oil prices rising hit fresh all-time highs in December, providing additional fuel to ongoing steady gains in prices. Speculator bet on higher oil prices increased significantly over the month as indicated by the exchange traders' commitment data.

OPEC Reference Basket

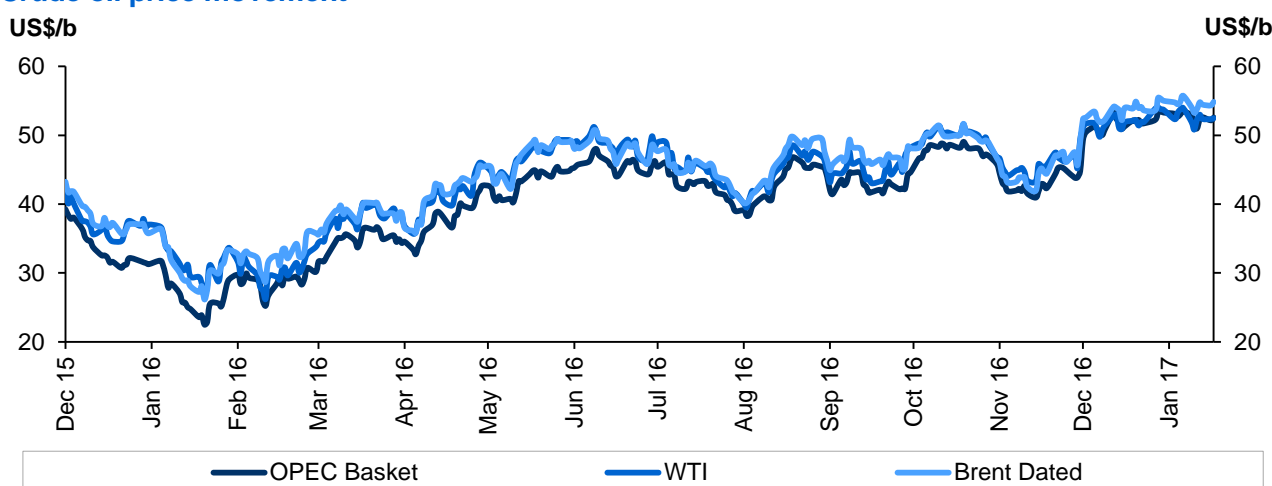
Month-on-month (m-o-m), the ORB ended 2016 nearly 20% higher, or up by \$8.45, in December to average above \$50/b for the first time in a year-and-a-half. The increase in December was the highest percentage gain since March 2016 and the largest monthly gain since March 2011 at the start of the Arab Spring. The oil complex surged after a historic joint OPEC and non-OPEC decision. The move was seen as a positive step towards helping draw down stocks over the course of 2017.

In contrast, the 2016 yearly average value came in at its lowest in more than 12 years amid the most significant deterioration in oil prices in more than a decade due to overwhelming crude oil oversupply.

On a monthly basis, the ORB value surged \$8.45 to average \$51.67/b, up 19.6%. On a yearly basis, the ORB value in 2016 was 17.6% or \$8.78 lower at \$40.76/b, the lowest value since 2004.

Graph 1.1

Crude oil price movement



Sources: Argus Media, OPEC Secretariat and Platts.

Crude Oil Price Movements

Table 1.1
OPEC Reference Basket and selected crudes, US\$/b

	Nov 16	Dec 16	Change		Year-to-date	
			Dec/Nov	%	2015	2016
Basket	43.22	51.67	8.45	19.6	49.49	40.76
Arab Light	43.32	51.92	8.60	19.9	49.85	40.96
Basrah Light	41.97	50.87	8.90	21.2	47.87	39.53
Bonny Light	45.20	53.91	8.71	19.3	52.95	44.02
Es Sider	43.63	52.12	8.49	19.5	51.38	42.69
Girassol	44.95	53.41	8.46	18.8	52.96	43.61
Iran Heavy	42.42	51.41	8.99	21.2	48.80	39.57
Kuwait Export	42.14	50.93	8.79	20.9	48.13	39.30
Qatar Marine	44.25	52.08	7.83	17.7	50.71	41.43
Meray	39.37	45.86	6.49	16.5	41.11	34.02
Minas	40.72	49.68	8.96	22.0	49.17	41.11
Murban	47.25	54.93	7.68	16.3	53.87	44.83
Oriente	41.69	48.67	6.98	16.7	44.94	38.44
Rabi Light	43.92	52.22	8.30	18.9	52.83	42.62
Sahara Blend	45.13	53.82	8.69	19.3	52.79	44.28
Other Crudes						
Brent	45.13	53.57	8.44	18.7	52.41	43.76
Dubai	43.98	52.08	8.10	18.4	50.94	41.39
Isthmus	45.64	53.81	8.17	17.9	51.14	42.37
LLS	46.79	53.53	6.74	14.4	52.36	44.96
Mars	42.30	49.39	7.09	16.8	48.19	40.12
Urals	43.83	52.28	8.45	19.3	51.90	42.16
WTI	45.67	52.02	6.35	13.9	48.73	43.27
Differentials						
Brent/WTI	-0.54	1.55	2.09	-	3.69	0.49
Brent/LLS	-1.66	0.04	1.70	-	0.05	-1.19
Brent/Dubai	1.15	1.49	0.34	-	1.48	2.37

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

All ORB component values improved over the month, retreating from the previous month's hefty losses, along with relevant marker grades. Spot prices for Dated Brent, WTI and Dubai increased in December by \$8.44, \$6.35 and \$8.10, respectively.

The multiple regions' destination grades, **Arab light**, **Basrah light**, **Iran Heavy** and **Kuwait Export**, which gained the most, increased \$8.82 on average, or a hefty 20.8%, for the month to reach \$51.28/b. The Middle Eastern spot components, **Murban** and **Qatar Marine**, saw their values lifted by \$7.76/b, or 17%, to \$53.51/b. These grades were also supported further by the healthy sour crude oil market in Asia and Europe. The Latin American ORB components, Venezuelan **Meray** and Ecuador's **Oriente**, which increased the least ensuing the WTI market, were both up by \$6.49, or 16.5%, and \$6.98, or 16.7%, at \$45.86/b and \$48.67/b, respectively. The light sweet crudes from West and North Africa's Basket components, **Saharan Blend**, **Es Sider**, **Girassol**, **Bonny Light** and Gabon's **Rabi**, gained \$8.53, or 19.1%, to \$53.10/b.

On 17 January, the ORB was up at \$52.60/b, 93¢ above the December average.

The oil futures market

Crude oil futures rallied sharply in December on both sides of the Atlantic to reach their highest levels in 18 months at well above \$50/b. Both ICE Brent and NYMEX WTI made big gains since the end of November, supported by the OPEC decision and the subsequent cooperation of some non-OPEC producers.

The US dollar softened after it rallied to its highest level since 2002. The dollar hit a 14-year high against a basket of currencies after data showed US manufacturing activity grew more than expected in November.

For the year, however, oil futures witnessed one of the worst slump cycles since the financial crisis in 2008, resulting in their worst yearly average in 12 years.

ICE Brent ended December \$7.84 or 16.5% higher at \$54.92/b on a monthly average basis, while NYMEX WTI soared \$6.40 or 14% to \$52.17/b. Compared to 2015, ICE Brent was \$8.60, or 16%, lower at \$45.13/b for 2016, while NYMEX WTI declined by \$5.48, or 11%, to \$43.47/b. These yearly averages for oil futures are the lowest since 2004.

Table 1.2
Crude oil futures, US\$/b

	Nov 16	Dec 16	Change Dec/Nov	%	Year-to-date 2015	2016
NYMEX WTI	45.76	52.17	6.40	13.99	48.73	43.47
ICE Brent	47.08	54.92	7.84	16.65	53.60	45.13
Transatlantic spread	1.31	2.75	1.44	2.66	4.87	1.66

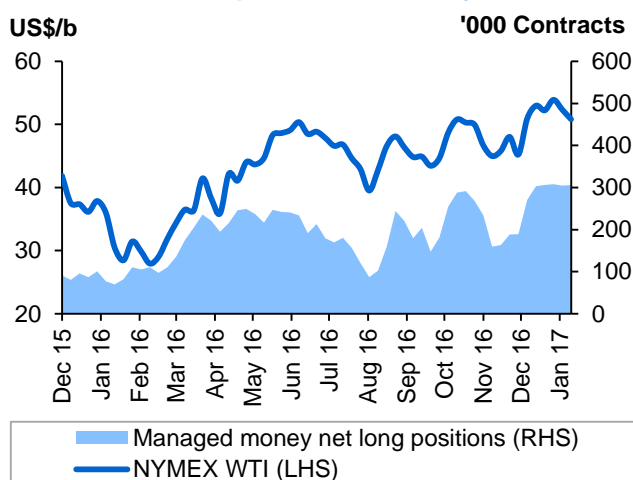
Note: Totals may not add up due to independent rounding.

Sources: CME Group, Intercontinental Exchange and OPEC Secretariat.

Crude oil futures prices improved further in the third week of January. On 17 January, ICE Brent stood at \$55.47/b and NYMEX WTI at \$52.48/b.

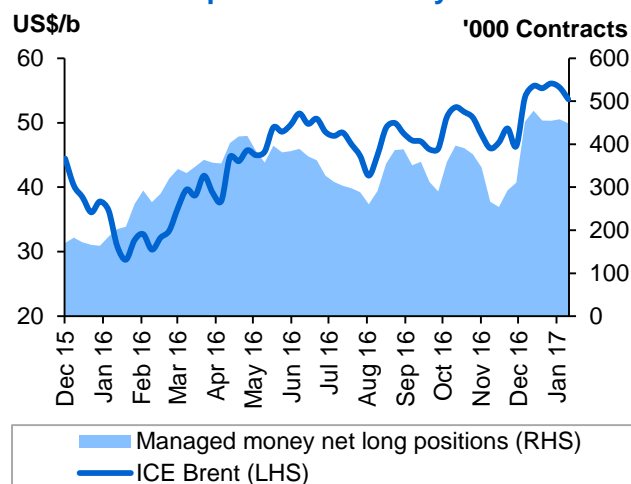
Hedge funds and other institutional investors' bets on crude oil prices rising hit fresh all-time highs, providing additional momentum to the ongoing steady gains in prices. **Speculators'** bets on higher oil prices increased significantly in December as indicated by the traders' commitments data from both the ICE and NYMEX exchanges. **Money managers' net length** in **NYMEX WTI** crude surged by 118,823 contracts, or a hefty 63%, to 307,909 lots in the period from the OPEC meeting on 30 November to the end of December. As for **ICE Brent** futures and options, speculators increased net long positions by 143,962 contracts, or 46%, to 454,585 lots. The total futures and options open interest volume in the two exchanges also increased, rising by 2.6%, or 137,619 contracts, to 5.46 million lots.

Graph 1.2
NYMEX WTI vs. Speculative activity



Sources: CFTC and CME Group.

Graph 1.3
ICE Brent vs. Speculative activity



Source: IntercontinentalExchange.

After reaching record highs during the previous month, in December, the **daily average traded volume** for NYMEX WTI contracts dropped by a hefty 161,601 lots, down 12.4%, to 1,141,952 contracts, while that of ICE Brent was 159,191 contracts lower, down a substantial 17.1% at 773,796 lots. The daily aggregate traded volume for both crude oil futures markets decreased by 320,791 lots to 1.92 million futures contracts, slightly less than 2 billion b/d of crude oil.

Crude Oil Price Movements

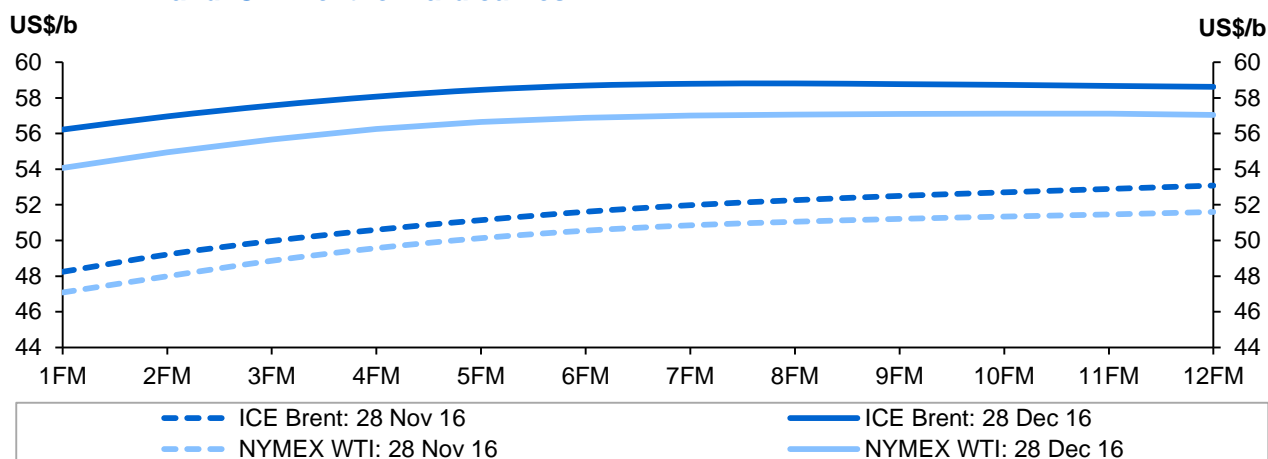
The **total traded volume** in both exchanges was significantly lower in December, at 23.98 and 16.25 million contracts in NYMEX WTI and ICE Brent, respectively, due mainly to the holiday season.

The futures market structure

Although in the near term, all oil markets remain in contango, even after the OPEC and non-OPEC decision, the first signs of backwardation were visible in the futures curve, as summer 2017 contracts are trading above 2018 strip average. Developments further down the curve were significant, with NYMEX **WTI** shifting into backwardation around the end of 2017, while the overall back-end curve shifted lower.

Graph 1.4

NYMEX WTI and ICE Brent forward curves



Note: FM = future month.

Sources: CME Group and Intercontinental Exchange.

The **Brent** crude futures structure has flipped into backwardation for the first time in two-and-a-half years, mimicking the shift in the US crude futures market last week. The December 2017 contract traded at a premium to the December 2018 contract, the first time in backwardation since June 2014, just at the point when the current global oversupply began.

Table 1.3

NYMEX WTI and ICE Brent forward curves, US\$/b

		1FM	2FM	3FM	6FM	12FM	12FM-1FM
NYMEX WTI	28 Nov 16	47.08	47.99	48.86	50.55	51.60	4.52
	28 Dec 16	54.06	54.95	55.67	56.88	57.04	2.98
	Change	6.98	6.96	6.81	6.33	5.44	-1.54
ICE Brent	28 Nov 16	48.24	49.21	49.97	51.61	53.08	4.84
	28 Dec 16	56.22	56.96	57.57	58.69	58.62	2.40
	Change	7.98	7.75	7.60	7.08	5.54	-2.44

Note: FM = future month.

Sources: CME Group and Intercontinental Exchange.

In December, the **Dubai** deep contango eased on a monthly average basis amid strong Asian demand. The Dubai M1 94¢/b discount to M3 decreased to 63¢/b. The **North Sea Brent** contango also narrowed amid firm demand and lower supplies. The M1/M3 discount moved in to around \$1.20/b on average in December, from \$2.05/b in November. In the US, the **WTI** contango worsened further over the month amid a build in US stocks. The WTI contango (M1-M3) widened 29¢ to \$1.87/b.

The **ICE Brent/NYMEX WTI spread** widened significantly in December as the US benchmark was pressured by a seasonally unusual oil stock build at the end of the year. Also, increasing US shale oil production and the strengthening US dollar had negative impacts on WTI. On the other hand, Brent was

affected positively by the ongoing plans to adjust OPEC and non-OPEC production. The first-month ICE Brent/NYMEX WTI spread of \$1.31/b in November widened to \$2.75/b in December, an increase of more than double. Theoretically, this is in favour of US crude and against the flow of Brent-related crudes, such as WAF crudes to the US. For the year, the ICE Brent/NYMEX WTI spread narrowed considerably from \$4.87/b in 2015 to \$1.66/b, on average.

In a related trend, trading surged to a record on options that bet on the spread between WTI and Brent. Some traders attribute this to a US Republican tax proposal that would levy corporate taxes on imports to the US, while exempting exports from US taxation. Such a tax regime would encourage oil producers to favour foreign markets and refiners to buy domestic crude, which might push up the price of US crude relative to global oil prices. As a result, the spread between WTI and Brent could narrow or even reverse.

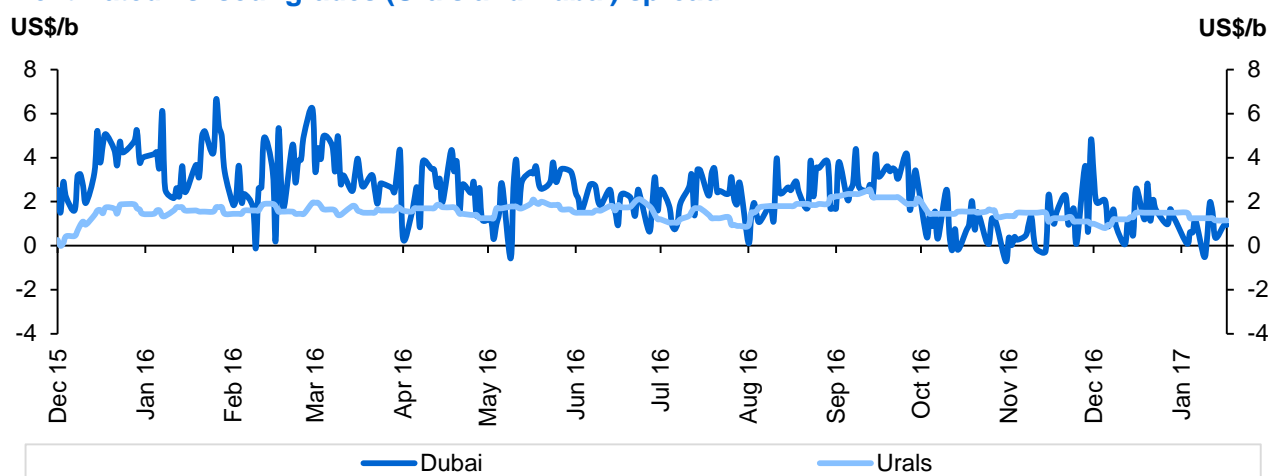
The light sweet/medium sour crude spread

The sweet/sour differentials were relatively stable in December, flattening in Europe, narrowing slightly in the US Gulf Coast (USGC), and widening somewhat in Asia.

In **Europe**, the Urals medium sour crude discount to light sweet North Sea Brent remained at \$1.30/b in December, as both markets fundamentally improved equally over the month on good demand.

Graph 1.5

Brent Dated vs. sour grades (Urals and Dubai) spread



Sources: Argus Media, OPEC Secretariat and Platts.

In **Asia**, the previous month's widening trend of the Tapis/Dubai spread continued as the Asia Pacific light crudes found support from healthy regional gasoline and naphtha margins. The easing arbitrage flow of Brent-related light sweet crudes, due to the wider Brent-Dubai spread, also supported the increase of the Tapis premium over Dubai. The Tapis/Dubai spread widened by 40¢ on a monthly average basis to \$3.70/b. The Dated Brent/Dubai spread also widened by 35¢ to \$1.50/b.

In the **USGC**, the Light Louisiana Sweet (LLS) premium over medium sour Mars was reduced further in December at \$4.15/b, down 55¢. Both grades were supported by the widening of WTI/Brent over the month as it makes local crude more attractive compared to imported volumes.

Looking ahead, going into 2017, premiums for light sweet grades are expected to soften as a result of the joint OPEC and non-OPEC output adjustment agreement, which is supposed to reduce primarily the availability of medium-sour crudes. Moreover, relatively healthy fuel oil cracks in Asia and the US – drawing support from falling Russian fuel oil output – will contrast with likely weak gasoline fundamentals weighing on its cracks. These combined factors are likely to limit the upside potential for sweet crude premiums to sour. This should be true for Asia, in particular, as it would not be a surprise to see Dubai receive a relative increase in support due to lesser avails.

Commodity Markets

Energy commodity prices advanced firmly in December, led by an increase in crude oil following the OPEC Conference in November and a jump in natural gas prices in the US on colder-than-average weather. In the group of non-energy commodities, agricultural prices were mixed, while metals advanced on average due to strong global manufacturing figures. Gold prices saw their worst monthly average performance of 2016 on the prospect of higher interest rates in the US.

Trends in selected commodity markets

Commodity market sentiment was generally lifted by higher oil prices during the month as a result of announced OPEC and non-OPEC production adjustments. Meanwhile, metal commodity prices were supported by further improving momentum in global manufacturing activity as shown by the JPM global manufacturing PMI, which stood at 52.7 versus 52.1 the previous month. Meanwhile, the Federal Reserve (Fed) proceeded with a largely expected interest rate hike but also pointed to a slightly higher-than-expected path of interest rate increases, provided that momentum in the US economy persists in 2017, which translated into higher value for the US dollar and lower gold prices.

Agricultural commodity prices were mixed during the month, with larger declines in the group of beverages after falls hit cocoa and coffee prices. Output of Arabica coffee from Colombia increased by 4% during the 12 months to November from the same period last year, according to the Federation of Growers of Colombia, while expected output in largest producer Brazil in the 2016/2017 season was upgraded during the month by the Agriculture Ministry of Brazil. This translated into a sharp decrease in prices. The US Department of Agriculture increased its expectations for global ending stocks for corn, wheat and soybeans, generally due to higher expected supplies, which was generally bearish for prices. Contrarily, the USDA decreased its forecast for rice stocks, which was supportive of its prices. Better prospects for the next Brazilian sugarcane crop due to water availability and a weaker Brazilian real impacted sugar prices.

Metal prices were supported by better manufacturing conditions globally but especially in China, the world's largest consumer, as shown by a manufacturing PMI reading of 51.9 in December versus 50.9 the previous month. However, further upside was limited by rising stocks in the London Metal Exchange system for the majority of base metals. The slowing pace of price increases in real estate in China also limited upside potential. The price of newly constructed residential buildings advanced in 55 of the 70 largest cities on a m-o-m basis in November, but the pace of advances was slower than over the previous month, when price advances occurred in 62 of the 70 largest cities, according to the National Bureau of Statistics. Iron ore prices increased by around 10% due to rising demand for steel production. Crude steel output increased by 5.0% y-o-y both globally and in main producer China in November, according to the World Steel Association.

Energy commodity prices generally increased, led by jumps in crude oil after the signing of OPEC and non-OPEC agreements. Meanwhile, natural gas prices in the US jumped by 43% after higher-than-average withdrawals from inventories due to colder-than-average weather. Colder weather in Europe was also supportive for prices. Natural gas inventories declined to 64.9% of capacity at the end of December versus around 80% the previous month, according to Gas Infrastructure Europe. Coal prices retreated on some recovery in Chinese output following some easing in mining restrictions previously imposed by the Government of China.

Commodity Markets

Table 2.1

Commodity price data

Commodity	Unit	Monthly averages			% Change	Year-to-date	
		Oct 16	Nov 16	Dec 16	Dec 16/Nov 16	2015	2016
Energy*		63.7	59.4	68.4	15.1	64.9	55.0
Coal, Australia	US\$/mt	93.2	100.0	86.6	-13.4	57.5	65.9
Crude oil, average	US\$/b	49.3	45.3	52.6	16.3	50.8	42.8
Natural gas, US	US\$/mbtu	2.9	2.5	3.6	43.2	2.6	2.5
Non-energy*		80.8	83.5	83.8	0.3	82.4	80.3
Agriculture*		89.5	90.0	89.4	-0.6	89.3	89.1
Food*		92.8	93.2	93.0	-0.2	90.9	92.3
Soybean meal	US\$/mt	367.0	369.0	365.3	-1.0	394.8	379.8
Soybean oil	US\$/mt	858.0	880.0	911.0	3.5	756.9	809.3
Soybeans	US\$/mt	403.0	412.0	421.0	2.2	390.4	405.8
Grains*		76.5	76.0	75.9	-0.2	88.8	82.0
Maize	US\$/mt	152.3	151.8	152.4	0.4	169.8	159.2
Wheat, US, HRW	US\$/mt	151.8	150.5	142.0	-5.7	204.5	166.6
Sugar, world	US\$/kg	0.5	0.4	0.4	-8.6	0.3	0.4
Base metal*		69.6	76.5	77.9	1.8	73.6	68.3
Aluminum	US\$/mt	1,665.9	1,737.1	1,727.7	-0.5	1,664.7	1,604.2
Copper	US\$/mt	4,731.3	5,450.9	5,660.4	3.8	5,510.5	4,867.9
Iron ore, cfr spot	US\$/dmtu	59.0	73.0	80.0	9.6	55.8	58.4
Lead	US\$/mt	2,024.5	2,180.6	2,209.8	1.3	1,787.8	1,866.7
Nickel	US\$/mt	10,259.7	11,128.9	10,972.3	-1.4	11,862.6	9,595.2
Tin	US\$/mt	20,099.8	21,126.1	21,204.4	0.4	16,066.6	17,933.8
Zinc	US\$/mt	2,311.5	2,566.2	2,664.8	3.8	1,931.7	2,090.0
Precious metals*		99.0	97.0	90.8	-6.3	91.3	98.1
Gold	US\$/toz	1,266.6	1,238.4	1,157.4	-6.5	1,160.7	1,249.0
Silver	US\$/toz	17.7	17.4	16.4	-5.6	15.7	17.1

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

Source: World Bank, Commodity price data.

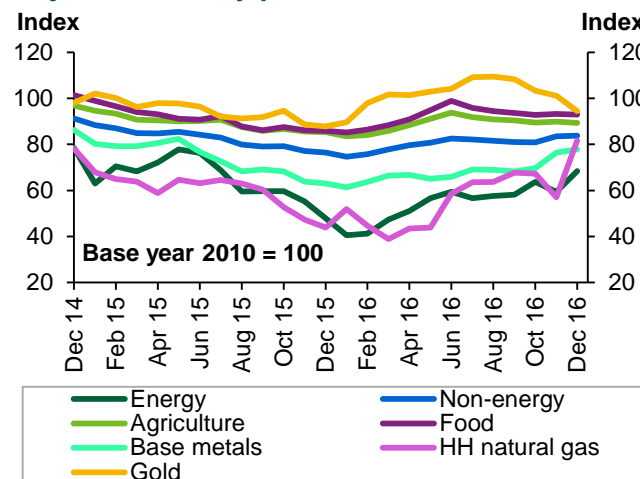
Average energy prices in December increased by 15.1% m-o-m, led by a 16.3% increase in average crude oil prices and a 43.2% jump in natural gas prices m-o-m in the US, while average natural gas prices in Europe advanced by 12.0%. Meanwhile, Australian benchmark thermal coal prices decreased by 13.4%.

Agricultural prices decreased by 0.6%, with a 0.2% decrease in average food prices and a 7.1% retreat in beverage prices due to falls of 12.1% in Arabica coffee and a 7.4% drop in cocoa prices. However, raw materials increased by 2.2%, mainly due to a 16% jump in natural rubber prices. Sugar prices declined by 8.6% over the month.

Average base metal prices increased by 1.8%, led by a 3.8% monthly increase in copper prices. Average iron ore prices rose by 9.6%.

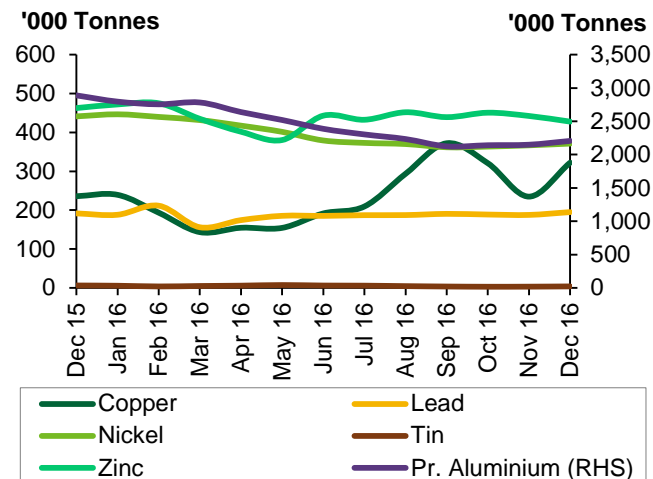
In the group of **precious metals**, gold prices declined by 6.5% on average, on a firming outlook for higher interest rates in the US. Meanwhile, silver prices declined by 5.6%.

Graph 2.1

Major commodity price indices

Source: World Bank, Commodity price data.

Graph 2.2

Inventories at the LME

Sources: London Metal Exchange and Thomson Reuters.

In December, the **Henry Hub natural gas index** jumped. The average price was up by \$1.08, or 43.2%, to \$3.58 per million British thermal units (mmbtu) after trading at an average of \$2.50/mmbtu the previous month.

The US Energy Information Administration (EIA) said utilities withdrew 49 billion cubic feet (bcf) of **gas from storage** during the week ending 30 December. This was below the lower range of analysts' expectations of a 72 to 83 bcf withdrawal. Total working gas in storage stood at 3,311 bcf, or 9.9%, lower than that at the same time the previous year and 0.6% lower than the previous five-year average.

Investment flows into commodities

Open interest volume (OIV) increased in December for selected US commodity markets such as crude oil, natural gas and copper, while decreasing for precious metals, agriculture and livestock. Meanwhile, in monthly terms, speculative net length positions increased for crude oil, natural gas, copper and livestock, while declining for agriculture and precious metals.

Table 2.2:

CFTC data on non-commercial positions, '000 contracts

	Open interest		Net length			
	Nov 16	Dec 16	Nov 16	% OIV	Dec 16	% OIV
Crude oil	1,974	2,068	156	8	272	13
Natural gas	1,166	1,218	40	3	149	12
Agriculture	5,090	4,905	418	8	292	6
Precious metals	656	559	189	29	104	19
Copper	228	233	62	27	80	34
Livestock	550	544	76	14	128	23
Total	9,665	9,527	941	89	1,024	108

Source: US Commodity Futures Trading Commission.

Agriculture's open interest decreased by 3.6% to 4,904,537 contracts in December. Meanwhile, money managers decreased net long positions by 30.3% to 291,585 lots, largely because of decreasing net length in sugar, coffee and corn.

Henry Hub's natural gas open interest increased by 4.4% m-o-m to 1,217,686 contracts in December. Money managers increased their net length positions by 2.7 times to 149,101 lots on larger-than-average withdrawals from storage during the month.

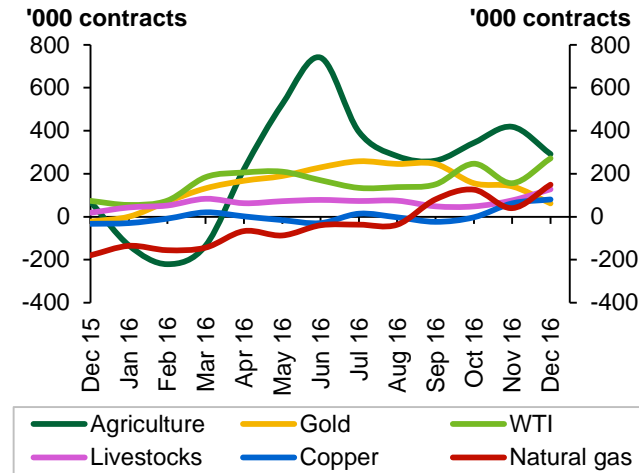
Commodity Markets

Copper's open interest increased by 2.2% m-o-m to 233,472 contracts in December. Money managers increased their net long position by 29.3% to 80,303 contracts on continuing improving global manufacturing figures.

Precious metals' open interest decreased by 14.8% m-o-m to 559,105 contracts in December. Money managers decreased their net long positions by 44.7% to 127,677 lots.

Graph 2.3

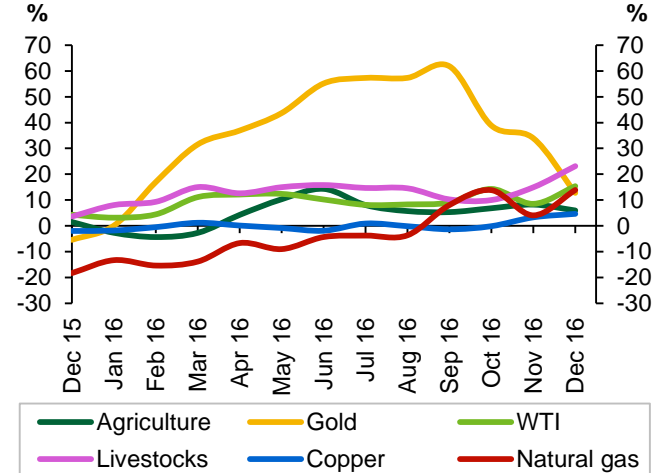
Speculative activity in key commodities, net length



Source: US Commodity Futures Trading Commission.

Graph 2.4

Speculative activity in key commodities, as percentage of open interest



Source: US Commodity Futures Trading Commission.

World Economy

The global economic growth dynamic has gained some traction lately. This momentum is forecast to continue in 2017. Hence, the global GDP growth forecast was revised up by 0.1 percentage point for both 2016 and 2017, lifting global growth to 3.0% and 3.2%, respectively. It is mainly the OECD economies that have seen some improvements to their growth dynamic, which has been reflected in slightly higher forecasts for the US, Japan and the Euro-zone in 2017. Overall OECD growth in 2017 was revised up from 1.7% to 1.8%. These revisions have been based on current underlying economic developments and do not reflect fiscal stimulus measures in the US or other policy decisions that could have positive impacts. Moreover, a continued rebalancing of the oil market after the historic OPEC/non-OPEC agreement of 10 December could lift growth further, as it may lead to improvements in the output of producer economies, along with once again rising investments.

In emerging economies, the improving oil sector and sound domestic economic developments have lifted Russian economic growth by 0.1 percentage point (pp) in both 2016 and 2017. Russia now registers a contraction of 0.5% and modest growth of 0.9%, respectively. After the removal of large denominated bills in India caused some dampening of domestic consumption, growth for 2016 has now been revised down to 7.2%, but remains unchanged at 7.1% for 2017. The forecasts for Brazil and China remain unchanged. While Brazil is forecast to recover to 0.4% in 2017, after a deep recession of 3.4% in 2016, China continues to enjoy solid growth of 6.2% in 2017, following 6.7% a year earlier.

Among the most important uncertainties for global economic growth, policy issues across the globe bear considerable weight, as do monetary policy decisions, which remain important in the near term. Given the inflationary support, also due to the ongoing rebalancing of the oil market, it is expected that the normalisation of US Federal Reserve (Fed) monetary policy will continue in 2017. This may also apply to other major central banks but, in comparison, a relatively more accommodative stance is expected, particularly from the European Central Bank (ECB) and the Bank of Japan (BoJ).

Table 3.1
Economic growth rate and revision, 2016-2017*, %

	World	OECD	US	Japan	Euro-zone	UK	China	India	Brazil	Russia
2016	3.0	1.7	1.6	1.0	1.6	2.0	6.7	7.2	-3.4	-0.5
Change from previous month	0.1	0.0	0.0	0.2	0.0	0.1	0.0	-0.3	0.0	0.1
2017	3.2	1.8	2.2	1.1	1.4	1.1	6.2	7.1	0.4	0.9
Change from previous month	0.1	0.1	0.1	0.2	0.1	0.3	0.0	0.0	0.0	0.1

Note: * 2016 = Estimate and 2017 = Forecast.

Source: OPEC Secretariat.

OECD

OECD Americas

US

The US economy continues to **grow at healthy levels** with continuous improvements in the labour market, rising inflation and lead indicators that point at continued rising output. This seems to be a solid base for higher 2017 growth, compared with 2016, which was mainly impacted by low growth in the first half. It remains unclear to some extent which policies will be implemented by the incoming US Administration, but fiscal policy decisions will certainly need close monitoring.

3Q16 GDP growth was reported to be stronger in the final of three estimates at 3.5% q-o-q on a seasonally adjusted annualized rate (SAAR), compared to an already solid first estimate of 2.9% and a

World Economy

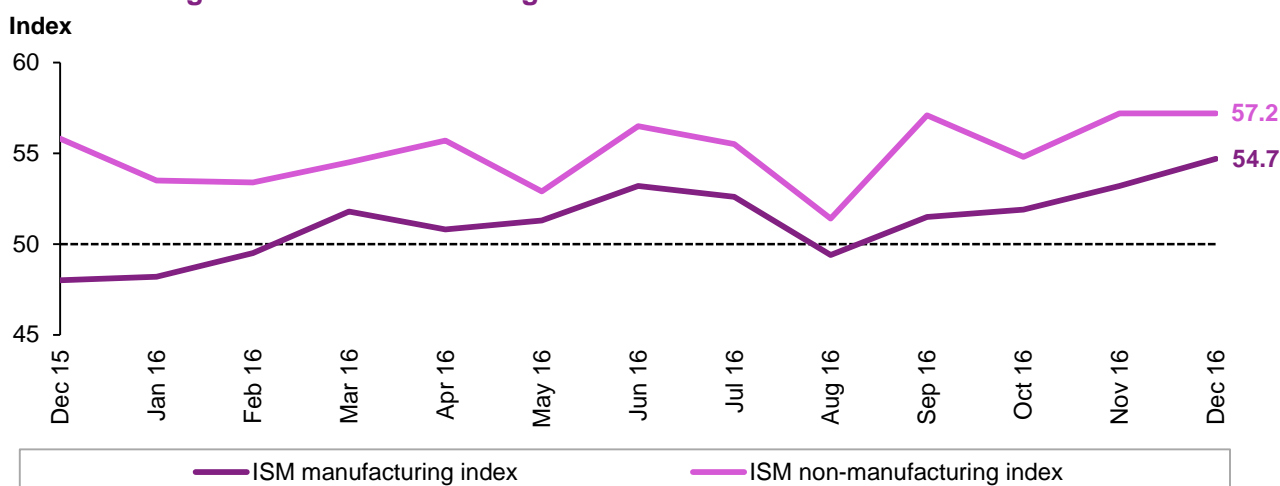
second estimate of 3.2%. The most important supportive factor was ongoing solid private household consumption, which rose by 3.0% q-o-q SAAR. Moreover, private investment also grew by 3.0% q-o-q SAAR. Exports also supported GDP significantly, as they grew by 10.0% q-o-q SAAR. While the low 1H16 growth has kept full year GDP growth clearly below the 2%-mark, the economy is forecast to continue with stronger 2H16 momentum into 2017. Depending on the implementation of further fiscal stimulus measures, there may be even some more upside. However, it is important to note that with the ongoing economic momentum, too much fiscal stimulus may even lead to growth that triggers a faster-than-currently-anticipated interest rate hiking cycle by the Fed which has the potential of generating negative spill-overs onto emerging economies. Monetary policies will most probably become an important area to monitor in the coming months. As fiscal stimulus measures may well become a key factor in the achievement of higher growth in the near-term, monetary policies will need to reflect such a development. Hence, monetary stimulus is expected to become a less important factor supporting economic growth and, thus, liquidity may fall. Consequently, market volatility may be set to rise, while the oil market could also be impacted.

The recent upward momentum of the **labour market** continued in the latest December readings. The unemployment rate increased slightly to 4.7% in December, while non-farm payroll additions rose by 156,000 in December, after an upward revision of 204,000 in November. Average hourly earnings improved significantly, growing by 2.9% y-o-y.

The development in **industrial production** remains soft, but the decline rates are lower than in past months, mainly due to an improved situation in the energy sector. Industrial production declined by 0.6% y-o-y in November, after contracting 0.8% y-o-y in October. Mining, which includes oil sector-related output, fell considerably by 4.6%. This decline rate is the lowest in more than a year.

The positive trend in private household consumption, given recent GDP numbers, was considerably supported by the latest retail sales numbers. **Retail sales** growth in December stood at 4.1% y-o-y, even higher than the already strong November level of 3.9% y-o-y. This positive trend was also visible in the Conference Board's Consumer Confidence Index, which increased strongly to a level of 113.7, the highest level since 2007 and a strong indication that economic conditions are improving.

Graph 3.1
Manufacturing and non-manufacturing ISM indices



Sources: Institute for Supply Management and Haver Analytics.

July's **Purchasing Manager's Index (PMI)** for the manufacturing sector, as provided by the Institute of Supply Management (ISM), also indicated improvements in the underlying economy as the manufacturing PMI moved higher to reach 54.7 in December, higher than the 53.2 seen in November. The important services sector index remained at an elevated level of 57.2 for the second consecutive month in December.

Given the better-than-expected 2H16 performance and the expectation that this growth dynamic will continue in the current year, the **GDP growth forecast** for 2017 was lifted from 2.1% to 2.2%. More data over the coming months and better insights into fiscal stimulus plans of the incoming

Administration will provide a sounder overview for a more detailed assessment of the situation of the US economy. The 2016 growth estimate remains unchanged at 1.6%.

Canada

The economy of Canada continues to improve slightly, along with a better situation in the US, its most important trading partner, as well as improvements in the oil sector. After 3Q16, GDP growth was announced at 3.5% q-o-q SAAR, while industrial production continued its growth trend. In October it rose by 1.9% y-o-y, after a rise of 3.3% in September. Output from the mining, oil and gas sector remained an important driver, with overall sector growth of 3.2% y-o-y. Also, the PMI for manufacturing improved and rose to 51.9 in December, compared to 51.5 in November. Consequently, the GDP growth forecast for 2016 was revised up to 1.3%, from 1.2% in the previous month. The 2017 GDP growth forecast remains unchanged at 1.7%.

OECD Asia Pacific

Japan

Japan has seen some **uplifting momentum** very recently for two reasons: First, the underlying growth momentum, domestically and externally, seems to have improved. Secondly, GDP accounting was revised, according to the United Nations' System of National Accounts 2008 (SNA 2008), leading to higher growth levels, since the changes imply that growth levels in the recent past seem to have been slightly higher than originally accounted for. In general, most parameters have improved. Domestic demand has risen significantly, the decline in exports has come to a halt, inflation levels have risen to healthier levels and the labour market's tightness is forecast to continue.

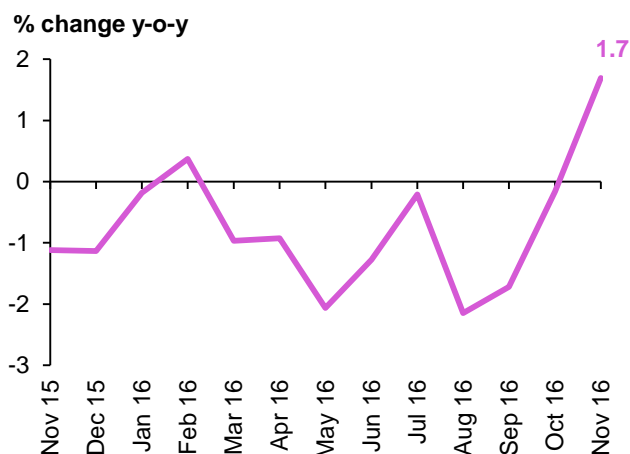
3Q16 GDP grew by 1.3% q-o-q SAAR, supported by domestic consumption and a better situation in exports. The further development of the Japanese yen will also need close monitoring in this respect, but its recent weakness should lead to Japanese products being more competitive. Positively, and in line with the most recent improvements in the economy, the deflationary trend has turned and the efforts of the Bank of Japan (BoJ) may have also been supported by the developments in the oil market.

Inflation rose again in November to reach 0.5% y-o-y, after it had turned positive in October, when it stood at 0.2% y-o-y. Given the strengthening of oil prices recently, and the global impact of again rising inflation, this trend may continue. When excluding the two volatile groups of energy and food, the country's core inflation figure stood at only 0.1% in November, compared to 0.2% in October. Positively, real income continued to rise with pay increases of 0.6% y-o-y in November and 0.3% a month earlier. The rising income pattern is also supported by the very low unemployment rate, which stood at only 3.1% in November.

Japanese exports were almost flat in November, compared to large declines in the past months, now probably also supported by an again weakening Japanese yen. On a non-seasonally adjusted level, November exports fell by only 0.4% y-o-y, compared to October's decline of 10.3% y-o-y. **Industrial production** recovered significantly and rose for the fourth month in a row, up by 2.9% y-o-y in November. Additionally, the negative trend in manufacturing orders turned positive. Manufacturing orders increased by 10.4% y-o-y in November, after seeing a decline of 6.0% y-o-y in October. The improving environment has also been reflected in **domestic demand**. Retail trade recovered sharply and rose by 1.7% y-o-y, after multiple months of decline.

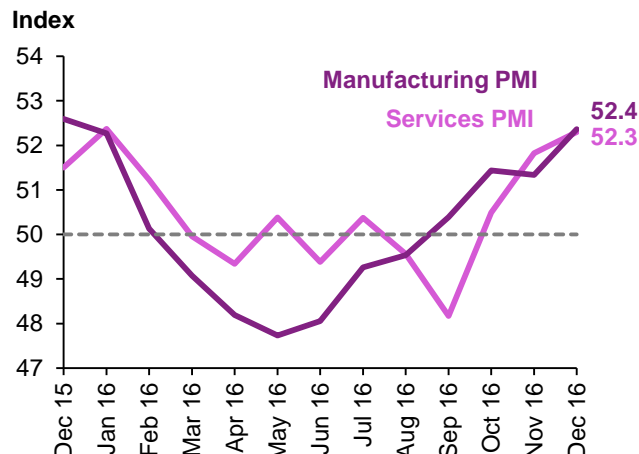
World Economy

Graph 3.2
Japanese retail trade



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

Graph 3.3
Japanese PMIs



Sources: IHS Markit, Nikkei and Haver Analytics.

The **latest PMI numbers** provided by IHS Markit also confirmed the ongoing improvements. The PMI for manufacturing rose to 52.4 in December, compared to 51.3 in November. The services sector PMI also improved to stand above the growth-indicating level of 50 for a third consecutive month, rising to 52.3 in December from 51.8 in November.

By considering the improving underlying momentum, growth forecast for both 2016 and 2017 were revised up by 0.2 pp. The 2016 economic growth forecast now stands at 1.0%, compared to 0.8% in the previous month. The 2017 GDP growth forecast was lifted to 1.1% from 0.9% a month earlier. Numerous challenges persist and it remains to be seen to what extent the current improvements in the global economy and the ongoing stimulus measures will be able to lift growth above current forecast levels.

South Korea

Although the situation in the South Korean economy remains challenged by the latest political turbulence, it still seems to weather this relatively well. Exports rose significantly in December, increasing by 7.6% y-o-y after an already healthy level of 3.2% y-o-y a month earlier. Industrial production also rose by 3.8% y-o-y in November, compared to 1.7% y-o-y in the previous month. However, the latest PMI number for the manufacturing sector in November still indicates a declining momentum in the manufacturing sector. The index improved slightly to 49.4 in December from 48.0 in November but continued to remain below the growth-indicating level of 50. While near-term developments warrant close monitoring, the GDP growth forecast for this month remains unchanged at 2.6% for 2016 and 2.5% for 2017.

OECD Europe

Euro-zone

The Euro-zone's economic performance has lately been surprisingly somewhat to the upside. Growth seems to still be supported by healthy domestic demand and exports are also benefitting from the relatively weak euro. The current growth dynamic seems to be quite broad-based, while Germany, and to some extent France, remain the geographic regions that are principally supporting the recovery trend, considering that they represent around half of the Euro-zone's economy. Moreover, Spain and some peripheral economies are also enjoying a rebound from past years' low levels, while Italy is still doing relatively less well. This most recent broad momentum, in combination with the weaker euro, has also led to higher inflation and hence it remains to be seen how the ECB will proceed with its monetary stimulus, which seems to carry less weight in the current economic environment.

So far, the ECB has announced that it will continue its asset purchases until the end of 2017. But towards year-end, the development of interest rates remains to be seen, as inflation is seeing solid support from the labour market, commodity prices and housing. The unemployment rate has remained

below 10% for two consecutive months. Moreover, banking sector-related weakness seems to have abated to some extent, while challenges in Italy remain. Also, the looming hard exit of the UK from the EU is adding some concern. With government elections in the Netherlands, Italy, France and Germany, the economic situation will continue to be influenced by political developments.

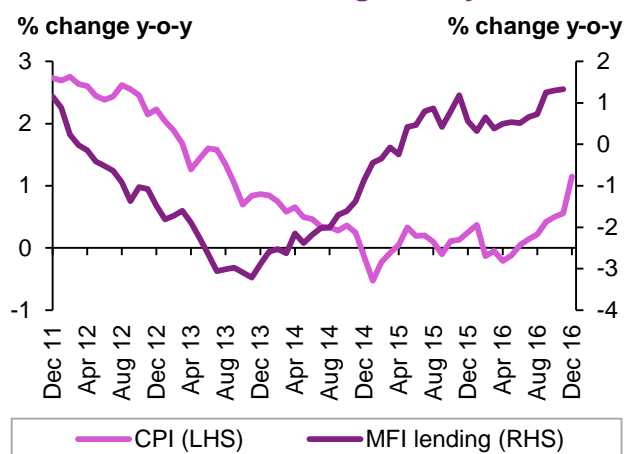
More positively, 3Q16 GDP growth was confirmed at 0.4% q-o-q seasonally adjusted growth rate, up from 2Q16 when growth stood at 0.3% and only slightly below the 0.5% reached in 1Q16. Current estimates for 4Q16 show similar growth as in 3Q16 and some slight appreciation of quarterly growth in 2017.

The latest industrial production figures were volatile to some extent, but have recently confirmed that the business environment remains in expansionary territory. After growth of only 0.8% y-o-y in October, November's appreciation stood at a considerable 3.0% y-o-y. Manufacturing growth stood at a firm 2.7%. Retail sales growth in value terms increased as well, by 2.2% y-o-y in November, after 2.8% in October, signalling ongoing improvements in the underlying economy. Some support may still come from slight improvements in the labour market. The unemployment rate in the Euro-zone continued at below the 10.0% mark as it stood at 9.8% in November, the same as a month earlier.

Following the latest rounds of ECB stimulus and supported by an adjustment in oil prices, inflation increased to a healthier level of 1.1% y-o-y in December, after reaching 0.6% y-o-y in the previous month. Core inflation – the CPI excluding energy, tobacco and food – stood at 0.9% y-o-y, rising from 0.8% a month earlier. This inflationary dynamic will remain an area that the ECB will closely consider in its upcoming monetary decisions. Among other reasons, this trend has also been a factor for the ECB to reduce its monetary stimulus programme. The effectiveness of the monetary stimulus – not only in terms of inflation, but also in terms of credit supply – has increased lately. In November, credit supply increased by 1.3% y-o-y for the third consecutive month, recovering from levels below 1% for all of 2016 prior to September.

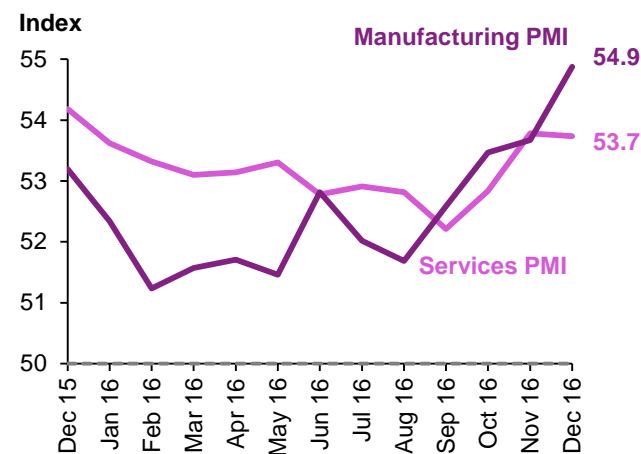
The latest PMI indicators point to a continuation in Euro-zone improvements as well. The manufacturing PMI rose to 54.9 in December, from 53.7 in the previous month. The important services PMI was almost unchanged at 53.7 in December vs 53.8 a month earlier.

Graph 3.4
Euro-zone CPI and lending activity



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

Graph 3.5
Euro-zone PMIs



Sources: IHS Markit and Haver Analytics.

Supported by ongoing improvements, the **2017 GDP growth forecast** for the Euro-zone was revised up slightly to 1.4% from 1.3% in the past month. However, this growth level is slightly below 2016 growth, which is estimated at 1.6%, unchanged from the previous month. The lower level of growth in the current year anticipates the challenges from political developments in 2017, given key elections in France and Germany, and the vagueness about Brexit procedures, which may all lead to rising uncertainty. This is to be seen in combination with some likelihood of rising inflation and hence a potential reduction in monetary stimulus.

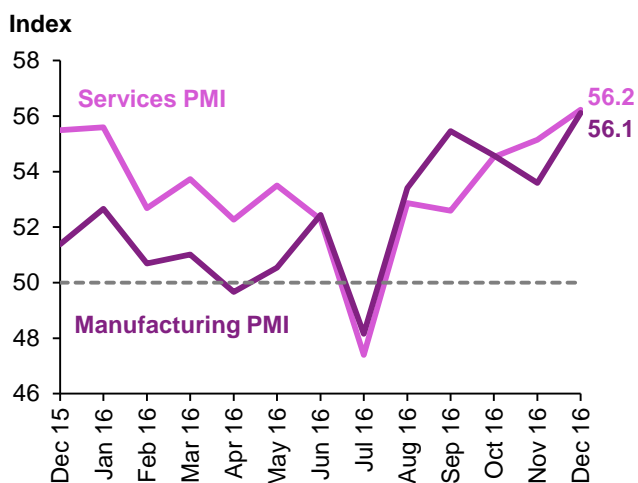
World Economy

UK

The UK's process of exiting the EU remains uncertain and is expected to impact the economy negatively this year and probably for longer, though so far the economic consequences have been limited. The country's 2016 economic performance was even better than expected as developments during the second half were robust. Not only did exports benefit from a weakening pound, but domestic consumption also held up well. However, uncertainty will remain for the coming months and is expected to negatively impact the economic developments of the UK in 2017. Still, the ruling of the Supreme Court, which has to decide upon the formal involvement of parliament in the negotiations, needs to be awaited, though it is expected that they will have a ruling by January. If the government appeal at the Court is rejected, a debate will take place to approve the exit negotiations in parliament. Hence, a bill will likely only be passed after some delays and amendments. While it seems that the March deadline to trigger Article 50 may be met, such an outcome could create further uncertainty. More importantly, parliament will likely demand more transparency about the negotiation strategy. Moreover, the further procedures for Scotland remain unclear. Given the latest developments, a so-called "hard exit" now seems relatively likely, contrary to an initially expected "soft exit", which would have allowed the UK to continue with most of its existing trade agreements with the EU.

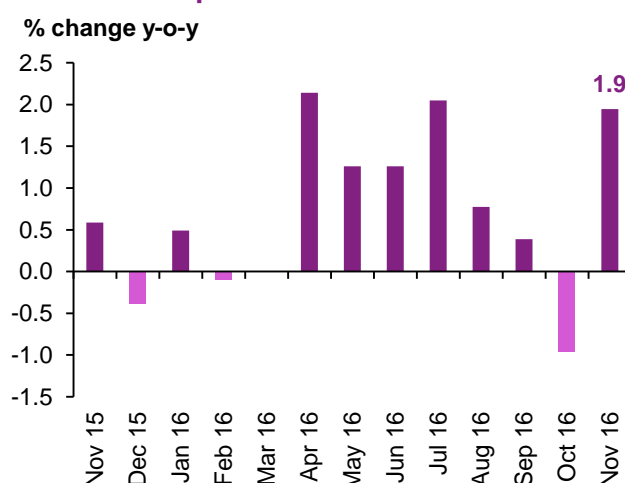
The UK's economy has only slightly started to slow down and has remained surprisingly robust. The **PMI for manufacturing** increased to a considerable level and stood at 56.1 in December, after 53.4 in November. Positively – and probably even more important for economic growth in the UK – the **services sector PMI** rose by one index point to 56.2 from 55.2 in November. Also, the momentum in **industrial production** recovered again to growth of 4.7% y-o-y. This comes after it had turned significantly negative in October, falling by 3.1% y-o-y, the largest decline since September 2013. Domestic **consumption** held up very well as retail values increased by 6.3% y-o-y in November, after an already considerable rise of 6.4% in October. This better-than-expected post-Brexit development has led to a slightly upward revision in growth estimates for 2016. The forecast for 2016 has been revised up to 2.0% from 1.9%. The 2017 growth forecast was also revised up by 0.3 pp to 1.1%. Nevertheless, the underlying assumption of a severe negative impact of the Brexit on the UK economy in the short term has not changed. But first it seems that the fallout will spread over a longer time horizon and may be counterbalanced by governmental support, at least to some extent.

Graph 3.6
UK PMIs



Sources: CIPS, IHS Markit and Haver Analytics.

Graph 3.7
UK industrial production



Sources: Office for National Statistics and Haver Analytics.

Non-OECD BRICs

Table 3.2
Summary of macroeconomic performance of BRIC countries, 2016-2017*

	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	
	2016	2017	2016	2017	2016	2017	2016	2017	2016	2017
Brazil	-3.4	-0.4	9.1	7.7	-18.1	-18.6	-6.3	-6.7	71.5	78.1
Russia	-0.5	0.9	7.1	5.4	30.0	55.7	-3.7	-2.9	13.2	15.2
India	7.2	7.1	5.0	5.1	-9.2	-13.2	-3.8	-3.5	51.6	51.3
China	6.7	6.2	2.1	2.2	256.0	200.7	-3.8	-4.2	20.0	24.8

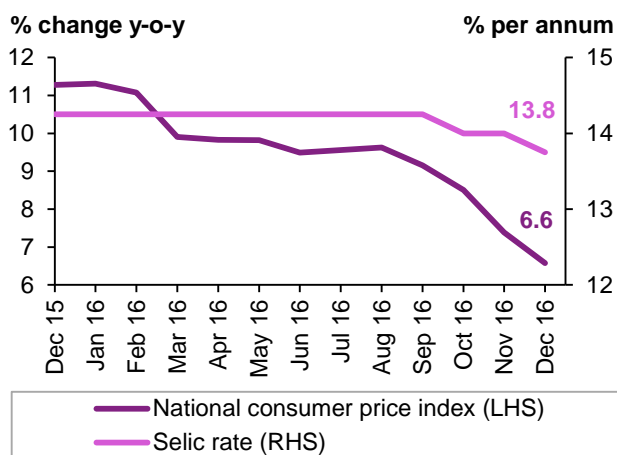
Note: 2016 = Estimate and 2017 = Forecast.

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

Brazil

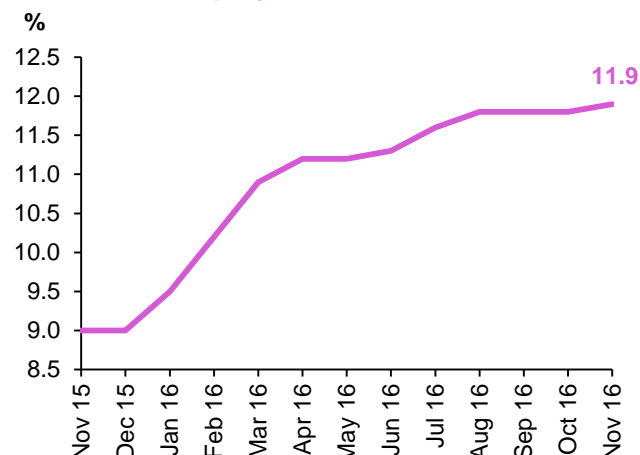
The economic activity indicator published by Brazil's central bank showed a decline in **GDP** of 3.9% y-o-y in October 2016. The decline eased during the first three quarters of 2016, contracting by 5.4%, 3.6% and 2.9% in 1Q16, 2Q16 and 3Q16, respectively. The **Brazilian real** was largely stable in December, somewhat depreciating by 0.3% m-o-m, following a 4.9% depreciation during the previous month. The central bank lowered its benchmark **interest rate** by 25 basis points (bp) to 13.75% in December as **inflation** continued to ease. Inflation decreased to 6.6% y-o-y in December, down from 7.4% a month earlier, which was the lowest rate since January 2015. The **unemployment rate** increased in November to another record-high level of 11.9%.

Graph 3.8
Brazilian inflation vs. Interest rate



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

Graph 3.9
Brazilian unemployment rate

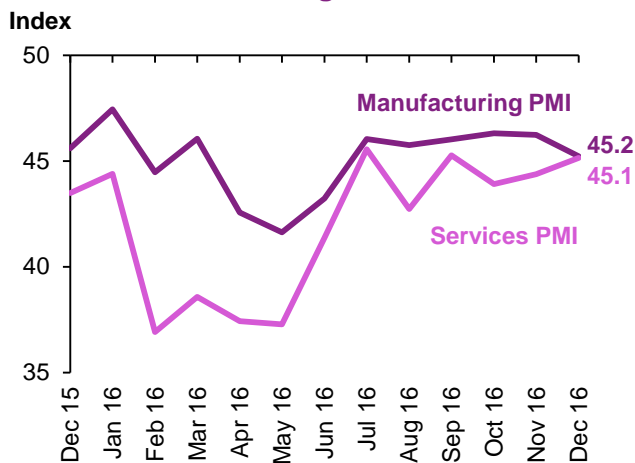


Sources: Instituto Brasileiro de Geografia e Estatística and Trading Economics.

The **services sector** in Brazil continued to remain in recession in December, for the 22nd consecutive month, as Markit's Brazil Services Business Activity Index remained well in contraction territory. The Index showed an ongoing fall in output, new orders and employment. Similarly, the **manufacturing sector** in December showed a sharper decline in production and new business, falling by the quickest rate seen in six months. Markit's Brazil Manufacturing PMI dipped to a six-month low of 45.2 in December. Meanwhile, the **consumer confidence** index in December posted 75.6, which was lower than the 80.9 seen a month earlier.

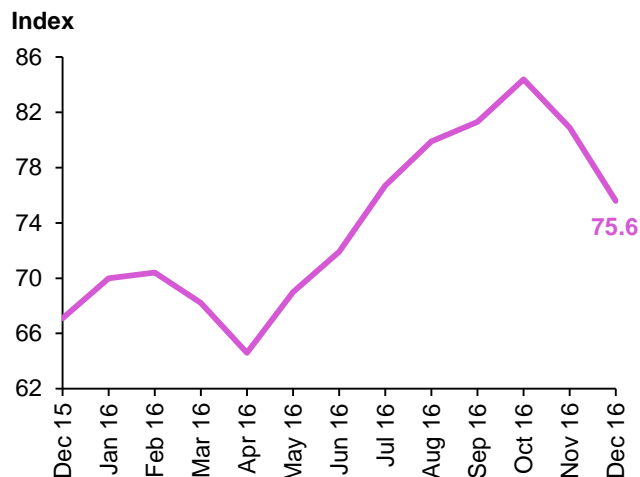
World Economy

Graph 3.10
Brazilian manufacturing and services PMIs



Sources: IHS Markit and Haver Analytics.

Graph 3.11
Brazilian consumer confidence index



Sources: Fundação Getúlio Vargas and Haver Analytics.

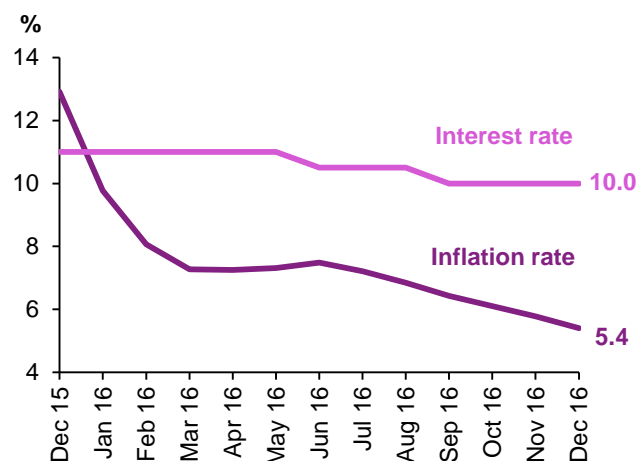
Other relevant signals during 4Q16 did not significantly deviate from the previous quarter, suggesting a further contraction in GDP. The ongoing contraction in the services and manufacturing sectors will extend a negative impact on economic output into 1Q17. GDP is forecast to decelerate by 3.4% y-o-y in 2016, before showing minor cyclical growth of 0.4% in 2017.

Russia

GDP in Russia contracted by 0.4% y-o-y in 3Q16, the slowest pace since the onset of economic deceleration in 1Q15. **Household consumption** showed a slower decline of 3.1% y-o-y in 3Q16 compared to 5.2% seen in the previous quarter. **Gross fixed capital formation (GFCF)** also decreased by a notably slower pace, 0.5% y-o-y vs 4.3%. **Exports** increased nearly 7% y-o-y in 3Q16, from a largely unchanged level of exports in the previous quarter. **Imports** continued slowing for the 12th consecutive quarter, though at a lesser rate of 3.0% y-o-y, from 6.7% seen in 2Q16.

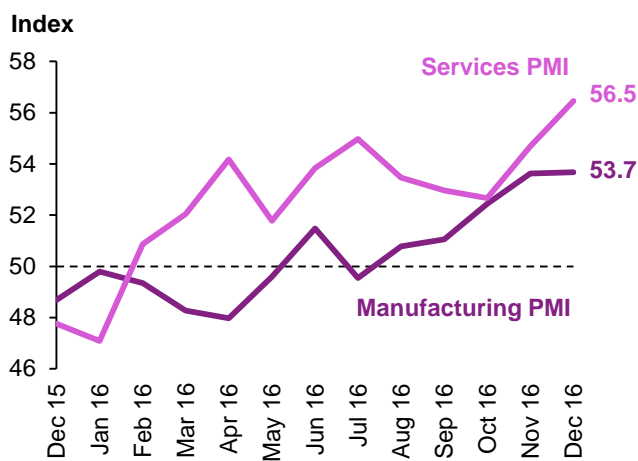
The downward **inflationary trend** continued in December posting 5.4%, its slowest rate of increase since June 2012. Following a depreciation of 2.7% in November, the **Russian ruble** appreciated 3.4% m-o-m in December. At the same time, the benchmark **interest rate** was kept unchanged at 10.0% by the country's central bank.

Graph 3.12
Russian inflation vs. Interest rate



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

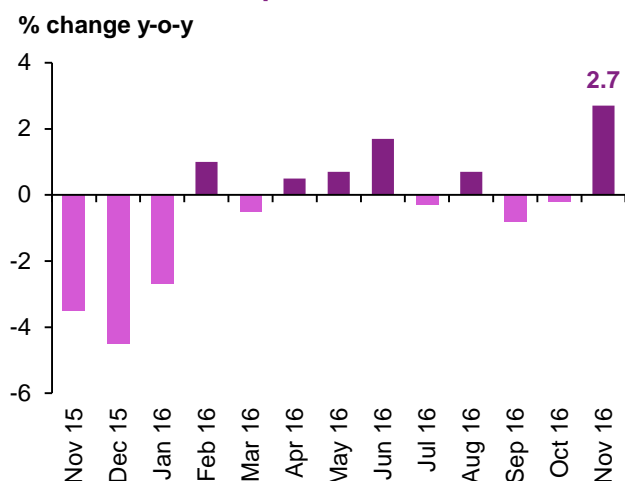
Graph 3.13
Russian PMIs



Sources: IHS Markit and Haver Analytics.

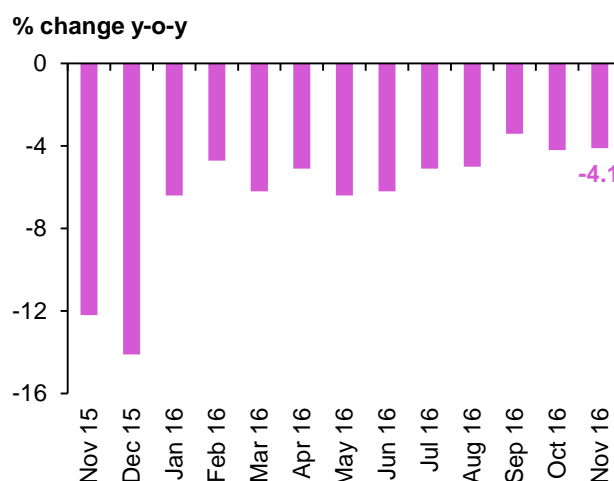
The second successive improvement in Russia's **services sector** was reported in December, with Markit's Russia Services Business Activity Index rising to a 49-month high of 56.5. The three-month average, for the period October–December, is the highest since 1Q13. Despite this sizable expansion, **retail sales** continued to contract in November, though at a slower pace.

Graph 3.14
Russian industrial production



Sources: Federal State Statistics Service and Haver Analytics.

Graph 3.15
Russian retail sales



Sources: Federal State Statistics Service and Haver Analytics.

The manufacturing PMI survey reported the fastest employment growth in the **manufacturing sector** since March 2011 on a higher number of new orders. The sector gained momentum in December. The index posted a 69-month high of 53.7 in December, up from November's 53.6. In line with marked improvements in the manufacturing sector, **industrial production** increased by 2.7% y-o-y in November, highlighting the fastest rate of increase in nearly two years.

The robust performance by services and manufacturing at the end of 2016 is expected to positively influence Russia's GDP growth in 4Q16 and extend into 2017. GDP is now forecast to decelerate by 0.5% y-o-y in 2016 and return to the growth territory of around 0.9% in 2017.

India

India's **GDP growth** is expected to show moderate improvement related to oil and commodity prices. It seems that there were strong negative shocks to GDP growth in late 2016 due to demonetisation in November. The Indian government is now pursuing a wide range of infrastructure projects, including development of major new industrial corridors and accelerating investment in railways and power infrastructure in order to support the economy in 2017.

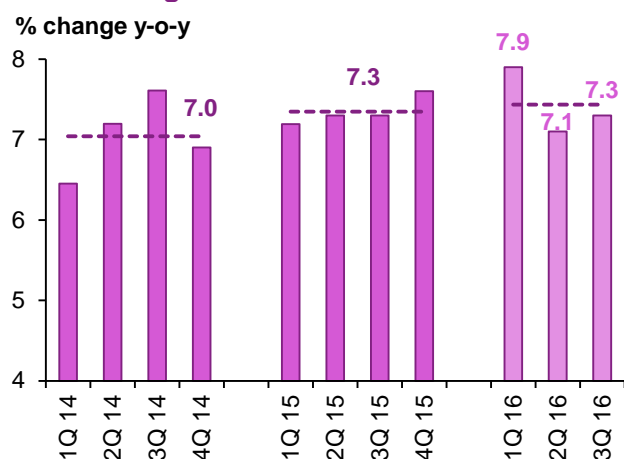
A key fiscal reform due to be implemented in India in 2017 is the new goods and services tax (GST), which is expected to boost Indian GDP growth by about 0.15%-0.25% in and after 2017 and deliver significant efficiency gains to Indian industry by lowering the costs of logistics substantially. The GST reform will therefore provide a significant boost to the growth of India's logistics industry, which is already growing at a double-digit pace, as well as lowering logistics costs for manufacturing companies, thereby improving their competitiveness within India and abroad. The GST will also result in the elimination of other indirect taxes, reducing double taxation. The authorities plan to roll out a range of taxation reforms as of fiscal year 2017/18 (April–March) to plug leakages, discourage tax treaty abuse and promote compliance through regulatory changes.

India's **CPI inflation** eased to 3.6% y-o-y in November while its Wholesale Price Index (**WPI**) also moderated to 3.2% y-o-y. The self-inflicted cash crunch mainly responsible for the November easing is seen as keeping prices weak for another few months. A sharp moderation in food inflation for both retail and wholesale prices were behind the November inflation easing. High base effects and a fundamental improvement in food supply following a good harvest added to the sharp slowdown in private

World Economy

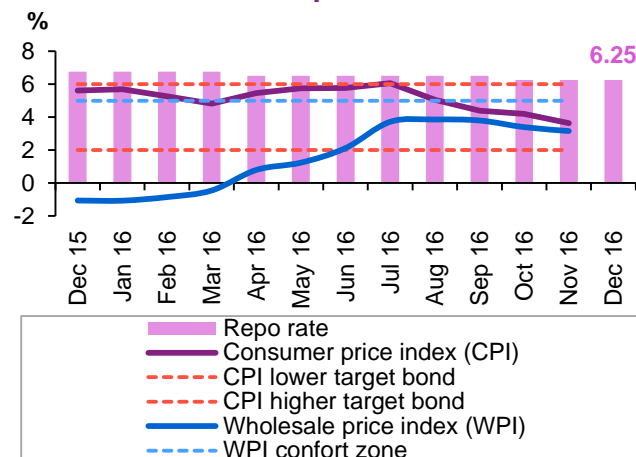
consumption caused by the government's surprise recall of 86% of cash in circulation in early November.

Graph 3.16
Indian GDP growth



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

Graph 3.17
Indian inflation vs. Repo rate

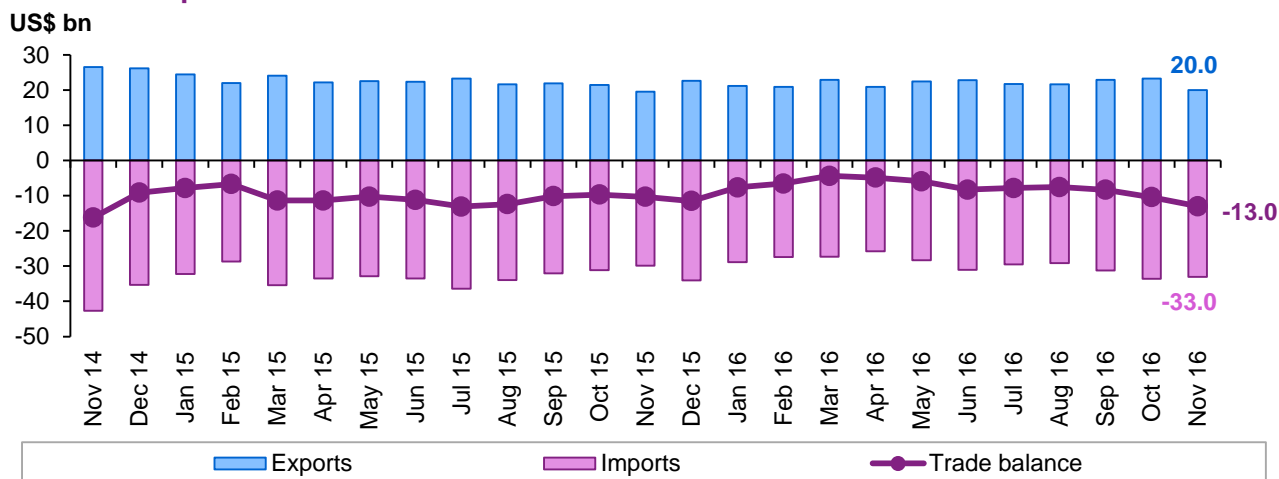


Sources: Ministry of Commerce and Industry, Reserve Bank of India and Haver Analytics.

In terms of **financial policies**, on 2–3 January, the Indian Ministry of Finance and the Reserve Bank of India (RBI) released the issuance calendar for marketable debt securities for the remainder of fiscal year 2016/17 (April–March). According to the revised calendar, the government plans to borrow Rs 660 bn (\$9.5 bn), which is Rs 180 bn less than in the previous calendar. It seems the adjustment to the government's borrowing plans indicates that tax revenues have exceeded the administration's expectations, leaving it with a higher than anticipated cash position.

Merchandise exports grew 2.3% y-o-y in November, extending the recovery in trade that began three months ago following a long spell of exports contraction. However, the pace of annual growth moderated, while exports dropped 13.8% in sequential terms. **Imports**, on the other hand, saw a faster rise in November to \$33 bn, up 10.4% y-o-y and only 2% down in sequential terms. The improvement in imports was mainly driven by a surge in gold purchases, which jumped 23.2% y-o-y in value terms. Imports are also expected to rise further, driven by a higher oil imports bill and gold imports.

Graph 3.18
Indian net exports



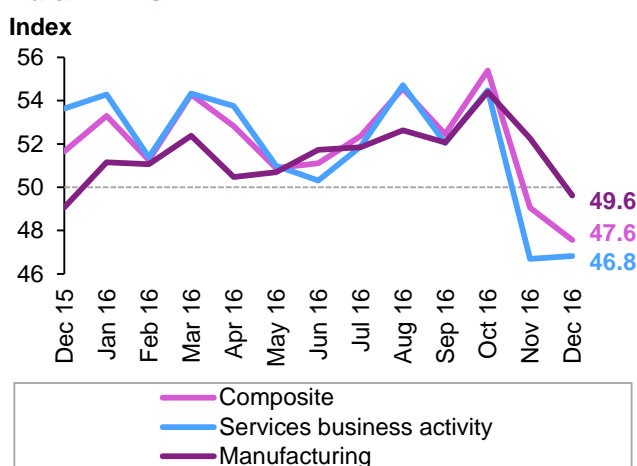
Sources: Ministry of Commerce and Industry and Haver Analytics.

Despite the major disruption to the economy of the government's demonetisation, the recovery in exports continued in November, albeit at a slower pace. The supply chains of export-oriented businesses are less cash-dependent and thus were less affected by the post-demonetisation cash crunch.

In terms of investments, it seems gross fixed investment (according to national accounts figures) fell for three consecutive quarters in January–September 2016, weighing not just on economic growth, but also on employment prospects for India's rapidly growing workforce. Monetary easing by the RBI, which has cut its benchmark rate (the repurchase rate) by 175 bp since January 2015, has proved insufficient to revive industrial credit growth. According to the RBI, bank lending to industry even fell on a y-o-y basis in late 2016, which is the first time that it has contracted in the period for which data is available (since March 2008). The issuance of more corporate debt on bond markets did not make up for the decline in bank lending.

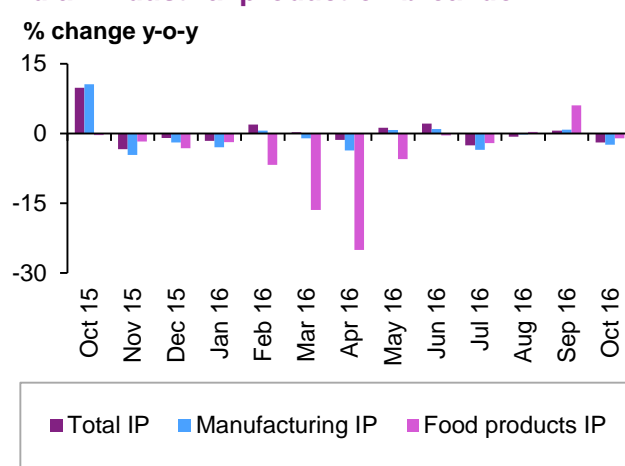
India's **PMI** data for December indicated that the rupee demonetisation took a toll on manufacturing performance. Quantities of purchases were scaled back and employment lowered. Meanwhile, input costs increased at a quicker rate, whereas output charge inflation eased. The PMI was recorded below the crucial 50.0 threshold for the first time in 2016 during December. Down from 52.3 in November to 49.6, the latest reading was indicative of a marginal deterioration in the health of the sector. Nevertheless, the average of 52.1 over the October–December quarter was broadly in line with the 52.2 seen in the July–September period. Four of the five sub-components of the PMI edged below 50.0, while average delivery times lengthened further. The services PMI registered 46.8 in December, little changed from November's reading of 46.7 and indicating a further solid contraction in output. Moreover, the downturn was broad-based by sub-sector, with the hotels and restaurants sub-component as the worst performer. With factory production also falling, activity across the private sector economy as a whole dipped to the greatest extent in over three years.

Graph 3.19
Indian PMIs



Sources: Nikkei, IHS Markit and Haver Analytics.

Graph 3.20
Indian industrial production breakdown



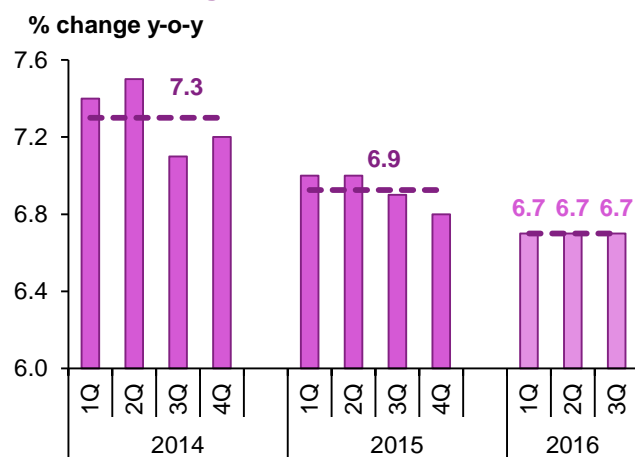
Sources: Central Statistical Organisation of India and Haver Analytics.

India's **GDP growth** expectation for 2016 was revised down to 7.2% from 7.5% given some downward pressures stemming from supply side effects like post-demonetisation, a slowdown in private consumption and a likely further contraction in gross fixed investment, but GDP growth expectations for 2017 have been kept unchanged at 7.1%.

China

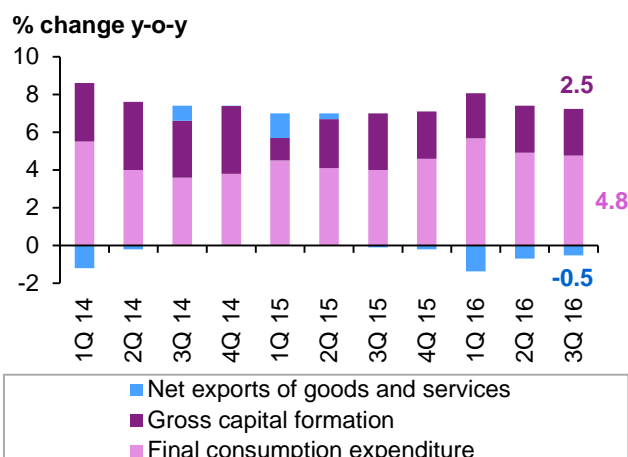
China's growth held steady in November, as exports and consumption picked up, offsetting the investment slowdown (in part reflecting weaker real estate activity). As expected, housing sales growth slowed substantially to 7.7% y-o-y, following the introduction of housing purchase restrictions by local governments in more than 20 cities in early October. Overall, the data trends confirm that China is well placed to meet the **GDP growth** target of at least 6.5% in 2016 (the expectation is 6.7%). In 2017, China should benefit from a possible pick-up in US growth from a more expansionary fiscal policy there. But the increase in uncertainty and the risk of China-specific trade restrictions will weigh on exports. Overall, it seems there will be a slight improvement in the export outlook next year, helped by some strengthening of global demand and an 8% trade-weighted depreciation in the Chinese renminbi in the year to November. It seems China's economy was stronger than expected in 4Q16. Rather than a modest overall deceleration, current indicators signal steady growth relative to 3Q16, albeit with a stronger lead by industry amidst slowing services and construction output. A housing correction is expected due to fairly consistent cyclical dynamics in China's housing market over the last decade. While the housing correction is already building momentum, it is anticipated to deepen significantly in 1Q17.

Graph 3.21
Chinese GDP growth rate



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

Graph 3.22
Chinese GDP breakdown



Sources: China National Bureau of Statistics and Haver Analytics.

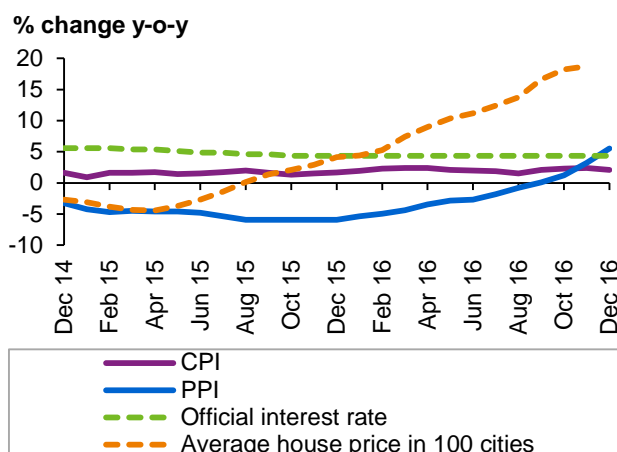
Chinese **exports** grew 0.1% in November, the first expansion in eight months. Geographically, the improvement was due primarily to mid-to-high single-digit growth in exports to the EU and the US. Exports to Hong Kong and ASEAN fell at a slightly faster pace. Imports expanded by 6.7%, a 26-month high. Imports from the EU, ASEAN and Japan swung into strong growth, although they worsened from Korea.

China's **foreign exchange reserves** declined by \$69.1 billion in November to \$3.05 trillion, according to data from the State Administration of Foreign Exchange (SAFE). The pace of decline accelerated for the fourth straight month, and compares with average monthly declines of \$36.5 billion in the last 12 months, or a record monthly decline of \$107.9 billion in December 2015. The sharp declines in November largely preceded new "window guidance" on stricter oversight of capital outflows. While outflows are likely to continue owing to expectations of rising interest rates in the US, quantitative limitations or administration barriers on certain capital outflows should help stabilise this trend in the coming months, although they will create a higher regulatory burden for legitimate businesses. Even if capital outflows are controlled, foreign reserves will continue to decline in value, given that only about half of Chinese reserves are denominated in US dollars.

On 29 December 2016, the China Foreign Exchange Trade System (CFETS), a unit of the People's Bank of China, announced a revision to a basket of currencies used to manage the Chinese yuan (CNY) exchange rate. Starting 1 January 2017, the CFETS basket was re-weighted to accommodate 11 new currencies, bringing the total to 24 currencies from a prior 13. While the People's Bank of China (PBoC) continues to manage the yuan mainly against the US dollar, it is considering additional room for

depreciation with a revised basket for the Chinese yuan. The CFETS basket revision de-emphasizes the USD/CNY exchange rate, and thus provides additional room for depreciation. The addition of more currencies and the downward revision in the weight of the dollar provides room for China to continue to gradually depreciate its currency against the US dollar.

Graph 3.23
Chinese CPI vs. PPI



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

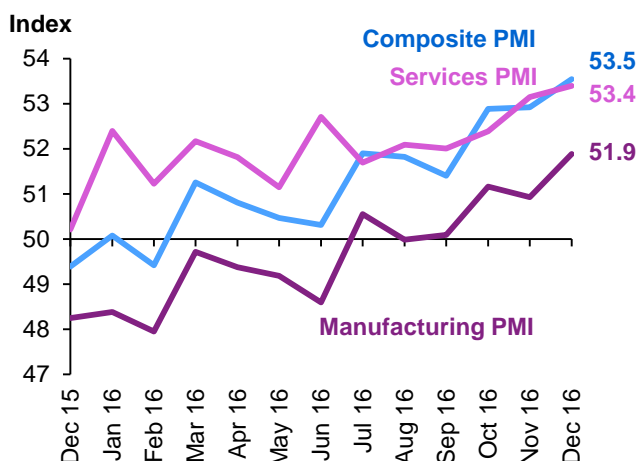
Graph 3.24
Chinese trade balance



Sources: China Customs and Haver Analytics.

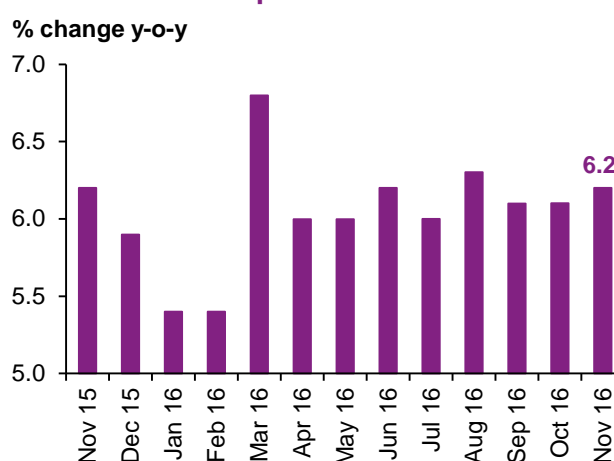
China's **official PMI** expanded at a slower pace of 51.4 in December. The slowdown was primarily due to the slower growth in output. The expansion of new orders was unchanged at a 29-month high. China's official **non-manufacturing index** slowed to 54.5. Total new orders expanded at a faster pace, but new export orders fell into contraction, indicating that the improvement was entirely domestic. The decline was entirely in the services sub-component, which slowed 0.5 points to 53.2, while the construction sub-component improved by 1.5 points to reach 61.9. The worsening PMI is unlikely to materially drag on real economic indicators for 4Q16. Despite modestly weaker sentiments in December, average manufacturing and non-manufacturing PMI readings were at their highest level of 2016 during 4Q. While deceleration is expected in indicators with recently unsustainable rapid growth – such as those related to housing and industry – decelerations will be more prominent in 2017 rather than in December. Going forward, the PMI is expected to worsen in January-February, following historic trends with sentiments worsening around the Chinese New Year celebrations.

Graph 3.25
Chinese PMIs



Sources: Caixin, IHS Markit and Haver Analytics.

Graph 3.26
Chinese industrial production



Sources: China National Bureau of Statistics and Haver Analytics.

China's **GDP growth** expectations have been kept unchanged at 6.7% in 2016 and 6.2% in 2017.

OPEC Member Countries

The economy of **Saudi Arabia** expanded in real terms by 0.9% y-o-y in 3Q16. Gross value added in the oil sector increased by 3.6% y-o-y in 3Q16, up from 1.6% in the previous quarter, while that of the non-oil sector declined 0.7% y-o-y in 3Q16. The country's non-oil private sector gained strength in December, according to Emirates NBD's Saudi Arabia PMI. The index increased to a level of 55.5 last month, up from 55 in November, on rising output and promising market demand for goods and services.

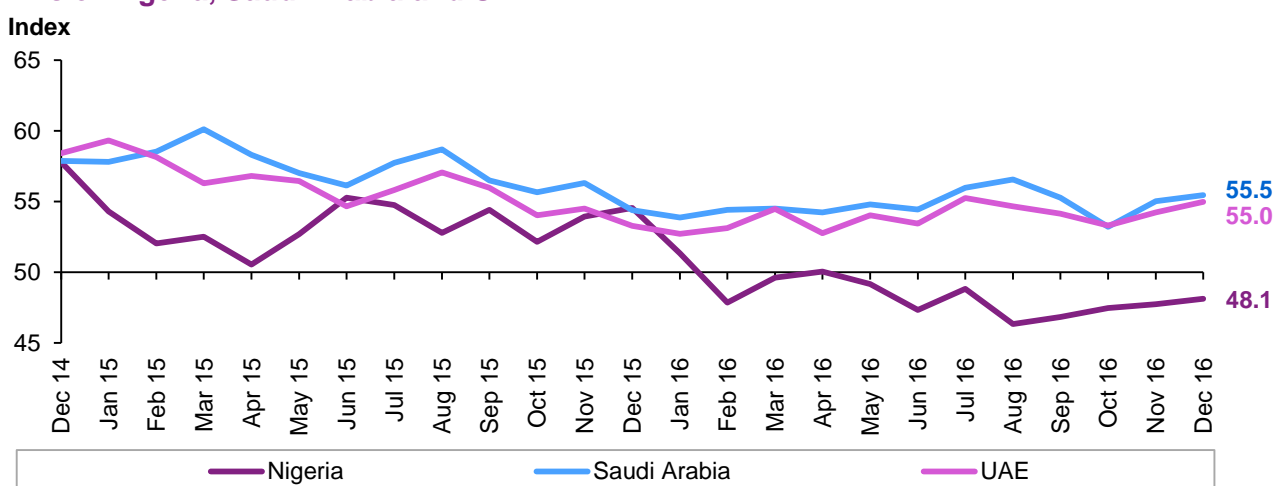
In **Nigeria**, the slowdown in private sector economic activity eased last month, as the PMI reached a five-month high of 48.1, up from November's 47.7. A slower decline in output and new export orders, together with a lesser increase in output prices, were behind this improvement. Nigeria's GDP decreased by 2.3% y-o-y in 3Q16, according to the country's National Bureau of Statistics.

The economy of **Qatar** grew by 3.7% y-o-y in 3Q16, up from 1.9% in the previous quarter. The contraction in gross value added in manufacturing eased from 4.4% in 2Q16 to 1.3% in 3Q16. The value added of construction activity continued growing at robust levels.

The **UAE's** non-oil private sector ended 2016 on a positive note with the PMI survey showing the quickest growth of output in 16 months. The index rose to 55 in December, from November's 54.2. It also showed that new orders for exports increased in December for the first time since July. Inflation recorded 1.9% y-o-y in October, its highest since February 2016.

Graph 3.27

PMIs of Nigeria, Saudi Arabia and UAE



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

Other Asia

The deceleration in exports by their sharpest pace since October 2015 from **Indonesia's** manufacturing sector during December, caused manufacturing output to decline according to the Nikkei Indonesia Manufacturing PMI. It dropped to 49.0 in December, from 49.7 a month earlier. GDP grew 5.0% y-o-y in 3Q16. Private consumption expenditure rose 5.0% y-o-y, while general government consumption expenditure dropped by nearly 3.0% y-o-y. The exports of goods and services fell by 6.0% and imports also declined by 3.9%.

In the **Philippines**, GDP growth accelerated to 7.1% y-o-y in 3Q16, the fastest pace in three years. Private consumption expenditure grew by 7.3% y-o-y, government consumption by 3.1%, capital formation by 20%, exports of goods and services by 8.8% and imports by 14.2%. The country's manufacturing sector continued to grow in December, though at slower pace from the previous month on a slower increase in new orders.

The manufacturing sector in **Thailand** had its first expansion in eight months in December according to the Nikkei Thailand Manufacturing PMI. The index registered 50.6 last month, up from 48.2 in

November, on improvements in production and total new orders, together with the first expansion in employment in 2016.

Africa

In **Egypt**, GDP grew 4.5% y-o-y in 2Q16, up from 3.7% in the previous quarter on the vast increase in GFCF, which grew by 26% y-o-y in 2Q16 compared to a 4.9% increase in 1Q16. Public sector consumption also posted a notable expansion of 4.8% y-o-y, up from 2.0%. The decline in exports continued, but eased markedly in 2Q16 at 2.4% y-o-y versus a drop of more than 18% in the previous quarter.

In **South Africa**, GDP sustained its low growth path in 3Q16, growing 0.7% y-o-y similar to the previous quarter. Private consumption increased by 1.1% y-o-y in 3Q16, up from 0.8% in 2Q16, while government consumption was growing slower at 1.1% y-o-y vs 1.5% in the previous quarter. GFCF contracted by 6.1% y-o-y, the most since 2Q10, and exports declined by 3.9% y-o-y, the first drop since the financial crisis of 2008/09.

Latin America

In **Argentina**, the big shift in economic policies seen under the new government as of December 2015 has coincided with unfavourable externalities leading to a sharp contraction in output. GDP contracted 3.8% y-o-y in 3Q16, following a 3.7% decline in the previous quarter. Decelerations in private consumption (by 3.1%), GFCF (by 7.5%) and the exports of goods and services (by 2.6%) were the triggers of this contraction in GDP. Imports, on the other hand, were 0.6% lower in 3Q16, after increasing in the previous five successive quarters. Inflation grew by more than 40% y-o-y during April-November 2016 on the back of the currency depreciation of more than 53% between December 2015 and December 2016.

Transition region

GDP in the **Czech Republic** expanded 1.6% y-o-y in 3Q16, signaling the lowest rate of growth since 4Q13 on slower growth in both household and public consumption, and exports, alongside shrinkage in GFCF. The country's manufacturing sector had better business conditions at the end of 2016 on faster growth in production, new orders and job creation. Thus, its respective PMI increased to 53.8 in December, up from 52.2 in November, its highest reading in nine months.

The economy of **Hungary** grew by 2.2% y-o-y in 3Q16, compared to a 2.9% in the previous quarter. While public consumption shrank by 0.9%, private expenditure grew by 4.6%. Following a big drop in GFCF by more than 12% in 2Q16, it returned to growth with a rise of 1.5% in 3Q16. Growth in exports decelerated from 9.5% y-o-y in 2Q16 to 4.6% in the next quarter. Imports also increased by a lower rate of 5.3% in 3Q16 from 8.0% in the previous quarter.

Oil prices, US dollar and inflation

The US dollar gained in December against all major currencies with the exception of the British pound sterling and the Canadian dollar. On average, the US dollar gained 7.7% against the Japanese yen, after having already increased against it around 14% in the last four months. The dollar gained 2.6% both against the Euro and the Swiss franc. In contrast, the dollar declined slightly by 0.5% against the pound sterling amid uncertainties remaining regarding the Brexit negotiations between the UK and the EU.

Compared with the Chinese yuan, the US dollar rose by 1.2% m-o-m on average in December– and it has advanced by around 4% in the last four months. It increased by 0.4% m-o-m against the Indian rupee. Compared with the Brazilian real, the dollar increased by 0.3% m-o-m on average, but declined by 3.4% against the Russian ruble, mainly due to the impact of higher oil prices.

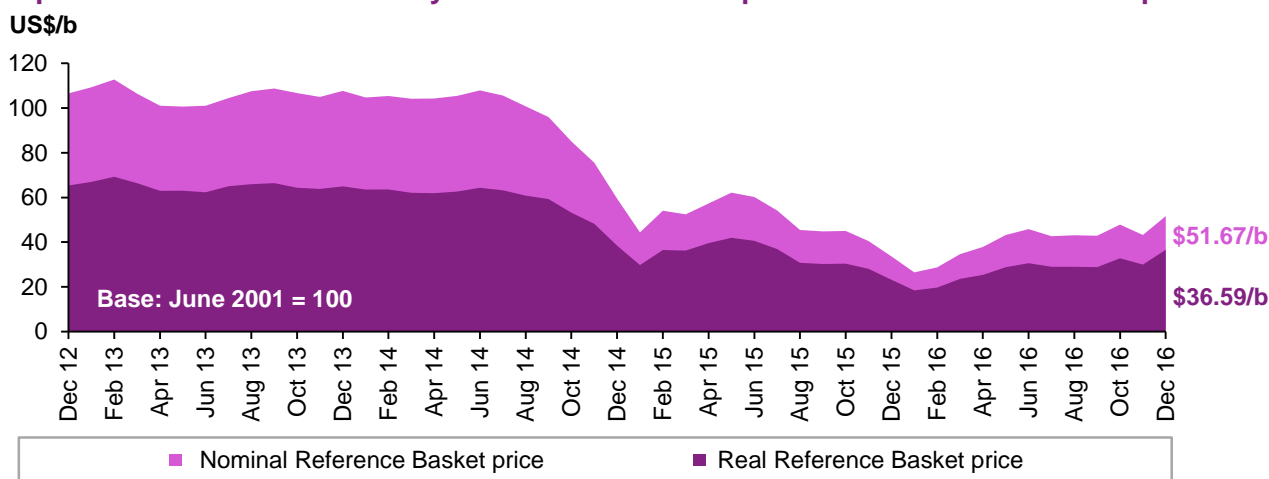
Against the currencies of NAFTA trading partners, the US dollar on average ended up by 2.9% against the Mexican peso after already having advanced against it by 5.3% the previous month, mainly due to an uncertain outlook for trade relations with the US. This trend of appreciation continued into the beginning of 2017 after some US companies scaled back their investment plans in Mexico to avoid potential tariffs. Meanwhile, the US dollar decreased by 0.7% against the Canadian dollar.

The US dollar increases mainly continue to reflect the expected tightening of monetary policy by the US Fed as the US economy approaches its policy goals, while at the same time, the central banks of the majority of its major currency counterparts are expected to remain relatively more accommodative. The Fed’s economic projections released at its December meeting showed a median projected path of a federal funds rate slightly above the path discussed at the September meeting.

In nominal terms, the price of the OPEC Reference Basket increased by \$8.45, or 19.6%, from \$43.22/b in November to \$51.67/b in December. In real terms, after accounting for inflation and currency fluctuations, the Basket increased to \$36.59/b from \$29.98/b (base June 2001=100). Over the same period, the US dollar advanced by 2.1% against the import-weighted modified Geneva I + US dollar basket*, while inflation stayed flat.

Graph 3.28

Impact of inflation and currency fluctuations on the spot OPEC Reference Basket price*



Source: OPEC Secretariat.

* The 'modified Geneva I+US\$ basket' includes the euro, the Japanese yen, the US dollar, the pound sterling and the Swiss franc, weighted according to the merchandise imports of OPEC Member Countries from the countries in the basket.

World Oil Demand

World oil demand was revised marginally up by 10 tb/d, to average 1.25 mb/d in 2016; as a result, total oil demand stood at 94.44 mb/d. This upward revision was broadly due to better-than-expected data in the OECD region. The additional gains in petrochemical feedstock demand along with heating fuel requirements due to colder-than-expected snaps have supported oil demand in both OECD Asia Pacific and Europe. Furthermore, the demonetization policy announced in India during the month of November had a direct impact on oil demand growth in the country, permitting a sharp upward revision in the Other Asia region in 4Q16. Oil demand growth for 2017 is expected to be around 1.16 mb/d, slightly up from the previous month's report, to reach 95.60 mb/d. Positive upward revisions were focused on OECD Europe, as a result of expect cold weather and improvement in transportation fuel requirements. Other Asia was revised downward in the first half of 2017, following the demonetization policy weighing on the economy and thus oil requirements.

World Oil Demand for 2016 and 2017

Table 4.1

World oil demand in 2016*, mb/d

	2015	1Q16	2Q16	3Q16	4Q16	2016	Change 2016/15	
							Growth	%
Americas	24.59	24.55	24.69	25.12	24.77	24.78	0.19	0.77
of which US	19.84	19.91	19.99	20.27	19.97	20.04	0.20	0.99
Europe	13.74	13.63	13.91	14.39	13.77	13.93	0.18	1.33
Asia Pacific	8.04	8.57	7.64	7.74	8.18	8.03	-0.01	-0.08
Total OECD	46.37	46.75	46.23	47.25	46.73	46.74	0.37	0.79
Other Asia	12.04	12.42	12.60	12.37	12.83	12.56	0.51	4.26
of which India	4.05	4.51	4.25	4.12	4.49	4.34	0.29	7.23
Latin America	6.56	6.19	6.49	6.76	6.40	6.46	-0.10	-1.49
Middle East	7.97	7.94	7.79	8.37	7.81	7.98	0.00	0.06
Africa	3.99	4.12	4.09	4.03	4.17	4.10	0.11	2.78
Total DCs	30.57	30.68	30.98	31.53	31.20	31.10	0.53	1.74
FSU	4.62	4.49	4.37	4.73	5.04	4.66	0.04	0.81
Other Europe	0.67	0.68	0.64	0.68	0.77	0.70	0.02	3.57
China	10.95	10.81	11.33	11.21	11.61	11.24	0.29	2.66
Total "Other regions"	16.25	15.99	16.35	16.62	17.42	16.60	0.35	2.17
Total world	93.19	93.42	93.55	95.41	95.35	94.44	1.25	1.34
Previous estimate	93.17	93.47	93.62	95.21	95.31	94.41	1.24	1.33
Revision	0.02	-0.05	-0.07	0.20	0.04	0.03	0.01	0.01

Note: * 2016 = Estimate.

Totals may not add up due to independent rounding.

Source: OPEC Secretariat.

OECD

Based on the latest available data, oil demand growth in OECD regions was adjusted up by 20 tb/d in 2016.

This upward revision mainly reflects the positive momentum witnessed in OECD Asia Pacific (+30 tb/d in 2Q16 and +70 tb/d for 3Q16), as better-than-expected performance in oil demand growth data persisted in South Korea well into 4Q16, driven by solid petrochemical feedstock demand and cold weather snaps.

Figures for OECD Europe were also adjusted higher (+30 tb/d in 3Q16), accounting for better-than-expected performance by the Netherlands, Poland, Turkey and the UK, with transportation fuels and

World Oil Demand

naphtha providing the greatest support. In 2017, oil demand growth was adjusted upward (+50 tb/d in 1Q17 and +30 tb/d in 2Q17) due to anticipated improvements in overall economic activities in the region, as well as expected colder weather conditions across the continent.

Nevertheless, oil demand growth was revised downward in OECD Americas (-20 tb/d in 1Q16 and -30 tb/d in 4Q16) as warmer-than-expected weather capped demand for heating fuel.

Table 4.2
World oil demand in 2017*, mb/d

	2016	1Q17	2Q17	3Q17	4Q17	2017	Change 2017/16	Growth	%
Americas	24.78	24.77	24.84	25.37	24.93	24.98	0.20	0.79	
of which US	20.04	20.05	20.09	20.49	20.12	20.19	0.15	0.75	
Europe	13.93	13.66	13.94	14.41	13.81	13.96	0.03	0.21	
Asia Pacific	8.03	8.51	7.56	7.71	8.12	7.97	-0.06	-0.71	
Total OECD	46.74	46.93	46.34	47.50	46.86	46.91	0.17	0.36	
Other Asia	12.56	12.73	12.97	12.73	13.20	12.91	0.35	2.80	
of which India	4.34	4.64	4.38	4.30	4.62	4.49	0.14	3.27	
Latin America	6.46	6.28	6.53	6.81	6.49	6.53	0.07	1.07	
Middle East	7.98	8.07	7.91	8.46	7.92	8.09	0.11	1.36	
Africa	4.10	4.23	4.19	4.14	4.29	4.21	0.11	2.63	
Total DCs	31.10	31.30	31.60	32.14	31.91	31.74	0.64	2.05	
FSU	4.66	4.56	4.42	4.79	5.10	4.72	0.06	1.30	
Other Europe	0.70	0.71	0.66	0.70	0.80	0.72	0.02	3.15	
China	11.24	11.09	11.59	11.50	11.85	11.51	0.27	2.38	
Total "Other regions"	16.60	16.36	16.68	16.99	17.75	16.95	0.35	2.11	
Total world	94.44	94.59	94.61	96.63	96.52	95.60	1.16	1.22	
Previous estimate	94.41	94.61	94.67	96.45	96.48	95.56	1.15	1.22	
Revision	0.03	-0.01	-0.06	0.18	0.04	0.04	0.00	0.00	

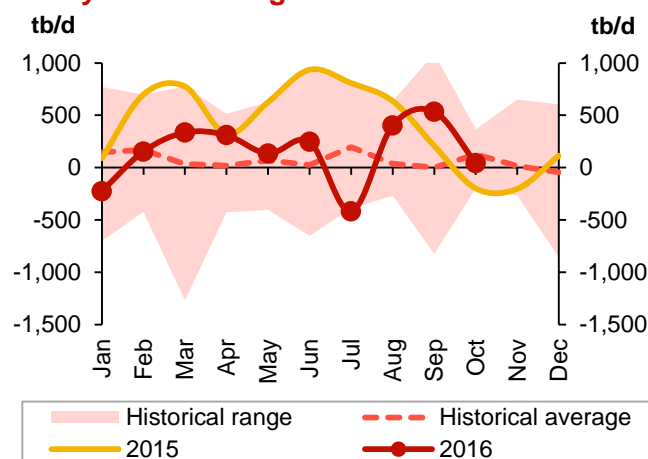
Note: * 2017 = Forecast.

Totals may not add up due to independent rounding.

Source: OPEC Secretariat.

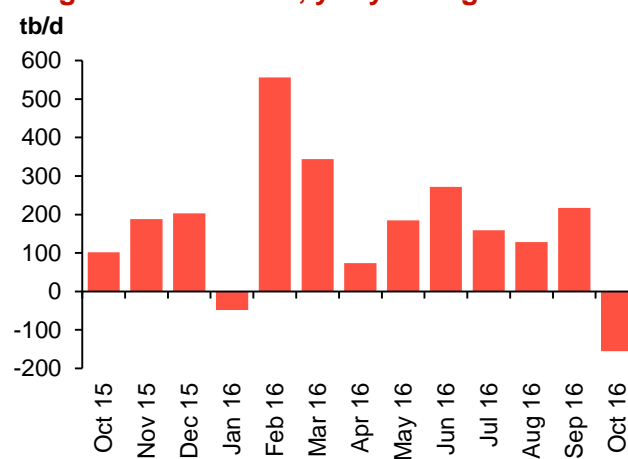
OECD Americas

Graph 4.1
Yearly oil demand growth in OECD Americas



Sources: National, Joint Organisations Data Initiative and OPEC Secretariat.

Graph 4.2
US gasoline demand, y-o-y change



Source: US Energy Information Administration.

The most recent available monthly **US** oil demand data in October showed an increase in oil requirements of around 0.15 mb/d, or 0.7% y-o-y. This monthly gain, which is quite in line with observed

monthly trends during 2016, was essentially determined by increasing residual fuel oil, jet kerosene and diesel demand. Increases were partly offset, however, by surprisingly shrinking gasoline requirements for the second month in 2016, marking the largest monthly drop in approximately three years, despite a robust, growing general economy and low fuel price levels. Gasoline demand shrank by as much as 0.15 mb/d or 1.6% y-o-y. With data for 10 months in 2016, US oil demand seems to be growing solidly, in line with general economic growth in the country and a low oil price environment that generally favours oil consumption in the road transportation sector. Preliminary weekly data for November and December 2016 appear to extend the existing positive overall picture, however with opposing trends as far as main petroleum product categories are concerned – gasoline appears to remain flat, while cold weather and a low 2015 baseline support gains in diesel and residual fuel oil usage. Furthermore, consistent with the healthily growing air transportation sector, jet kerosene saw substantial growth, and there are expectations for it to rise by around 70 tb/d, or more than 4.2%, y-o-y. The outlook for 2017 US oil demand depends on developments in the US economy and the oil price level, with risks being balanced, compared with the previous month's projections.

Table 4.3
US oil demand, tb/d

	October		Change 2016/15	
	2016	2015	tb/d	%
Propane/propylene	1,047	1,084	-37	-3.4
Gasoline	9,095	9,245	-150	-1.6
Diesel oil	4,024	4,014	10	0.2
Jet/kerosene	1,605	1,614	-9	-0.6
Fuel oil	345	236	109	46.2
Other products	3,506	3,307	199	6.0
US 50	19,622	19,500	122	0.6
US territories	397	374	23	6.1
Total	20,019	19,874	145	0.7

Sources: US Energy Information Administration and OPEC Secretariat.

In **Mexico**, November 2016 came up strongly decreasing as oil requirements shed more than 81 tb/d, or 4.7%, y-o-y. Gains in gasoline demand, jet kerosene and diesel have been more than offset by shrinking demand for residual fuel oil and LPG, mainly as a result of substitution by other energy commodities. With data for 11 months in 2016, Mexican oil demand remained sluggish compared with the same period in 2015, declining by as much as 55 tb/d, or 3.2%, y-o-y. Gasoline and jet kerosene usage saw gains, but have been more than offset by shrinking demand in all other petroleum product categories. Mexican oil demand is expected to grow only slightly in 2017, with risks skewed to the downside compared with the previous month's projections, primarily depending on the country's economy and the degree of fuel substitution with other energy commodities.

The latest **Canadian** data for October implies strongly declining oil demand, by more than 0.1 mb/d, or 4.4%, compared with the same month a year earlier. Demand for all main petroleum product categories fell y-o-y, with the strongest losses occurring for LPG, diesel and residual fuel oil. The 2017 projections for Canadian oil demand are unchanged from the previous month's report and foresee slight growth y-o-y. The risks, however, are balanced between the upside and downside.

In 2016, **OECD Americas' oil demand** grew by 0.19 mb/d, compared with a year earlier. OECD Americas' oil demand for 2017 is projected to gain an additional 0.20 mb/d, compared with 2016.

OECD Europe

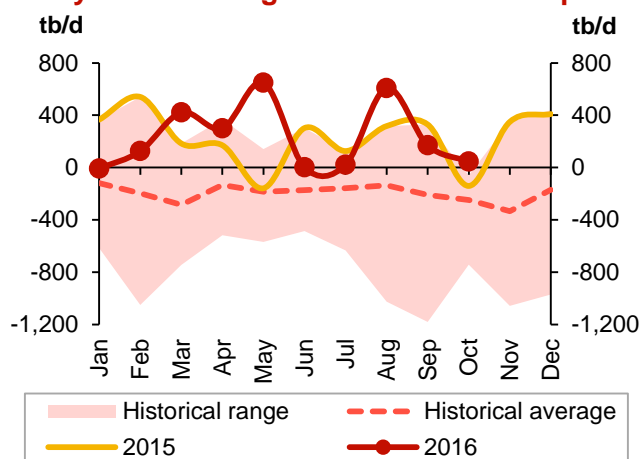
European oil demand continued to grow for another month in October, adding an estimated 45 tb/d y-o-y, in line with the improving economy in the region, the low oil price environment, colder weather compared with the same month in 2015 and the historical norm. Substantially colder weather conditions during November and December may further positively influence oil demand in the region. Oil demand grew in a number of countries such as the Netherlands (+78 tb/d y-o-y), France (+50 tb/d

World Oil Demand

y-o-y) Belgium (+47 tb/d y-o-y), Turkey (+41 tb/d y-o-y) and Sweden (+40 tb/d y-o-y). As the region's road transportation fleet is largely diesel-fueled and has been particularly supported by the low oil price environment, automotive diesel demand marked an overall historical high of 5.17 mb/d in September, while automotive diesel demand for October reached an historical high for that month of 4.92 mb/d. These developments are consistent with bullish auto sales in November, which imply a 5.8% y-o-y increase and remarkable growth in some major auto markets, such as Spain (+13.5%), France (+8.5%) and Italy (+8.2%). Early indications for the European Big 4 oil consumers (Germany, France, Italy and the UK) imply weakening in oil demand in November, some 90 tb/d lower altogether. Germany and the UK are seen on the decline, while demand in Italy and France increased.

Graph 4.3

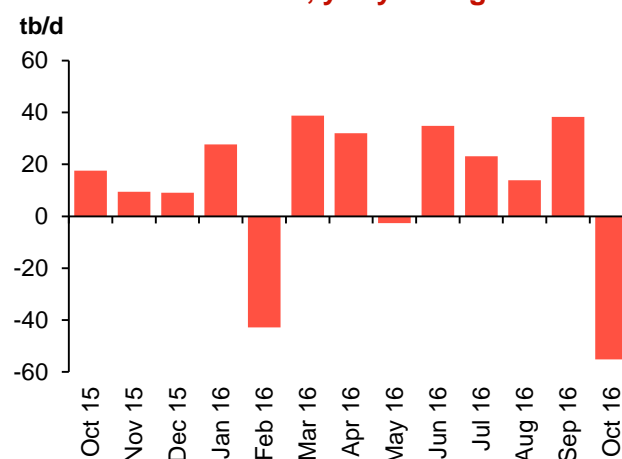
Yearly oil demand growth in OECD Europe



Sources: National, Joint Organisations Data Initiative and OPEC Secretariat.

Graph 4.4

UK diesel oil demand, y-o-y change



Sources: Joint Organizations Data Initiative, UK Department of Energy Climate and Change and OPEC Secretariat.

The outlook for the region's oil demand in 2017 continues to focus on downside risks that predominantly relate to the structure of oil demand in the region and uncertainties associated with it. Consequently, 2017 oil demand growth expectations are projected to be substantially lower than those observed a year earlier, as some positive effects during 2016 are most likely not expected to persist.

Table 4.4

Europe Big 4* oil demand, tb/d

	Nov 16	Nov 15	Change	Change, %
LPG	434	406	28	7.0
Naphtha	599	642	-43	-6.7
Gasoline	1,047	1,071	-23	-2.2
Jet/kerosene	694	698	-5	-0.7
Diesel oil	3,243	3,224	19	0.6
Fuel oil	250	256	-6	-2.3
Other products	564	621	-57	-9.2
Total	6,831	6,918	-87	-1.3

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

Sources: JODI, OPEC Secretariat, UK Department of Energy and Climate Change and Unione Petrolifera.

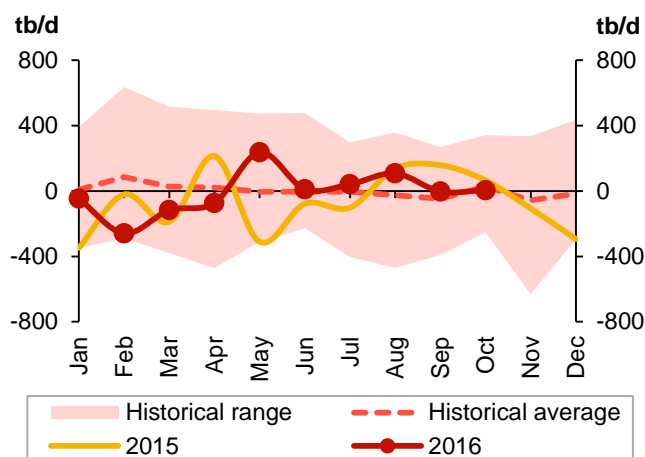
OECD Europe oil demand for 2016 grew surprisingly by 0.18 mb/d compared with 2015, while 2017 oil demand is projected to remain broadly flat at 2016 levels, growing by a mere 0.03 mb/d.

OECD Asia Pacific

According to preliminary data from the Japanese Ministry of Economy, Trade and Industry (METI), **Japanese** oil demand increased sharply by 0.17 mb/d, or 4.8%, y-o-y in November. This monthly increase was the first in approximately 15 months and the largest during the last three years. Demand

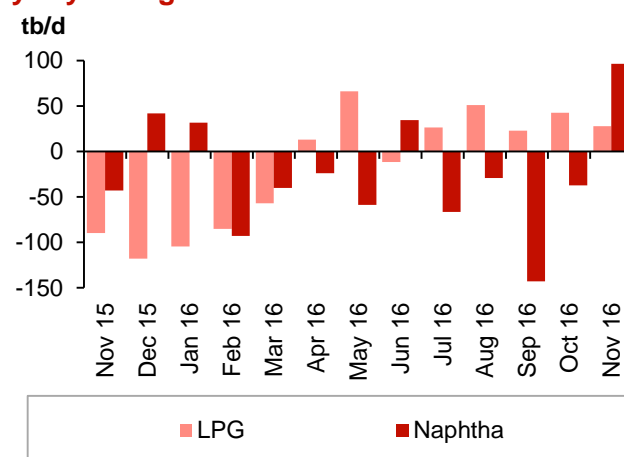
for all main petroleum product categories grew, particularly for naphtha, LPG, jet kerosene and diesel as well as for residual fuel oil used in electricity generation. The use of fossil fuels for electricity generation increased in November y-o-y, due to a substantially colder month over the same period in 2015 and making up for some losses caused by a routine outage of one nuclear reactor at Sendai. However, the reactor resumed operation in December, bringing the number of currently operating reactors to three out of a total of 42. The Japanese Institute of Energy Economics expects that seven reactors will be restarted during 1Q17. The risks for 2017 Japanese oil demand remain skewed to the downside as a result of fuel substitutions and bearish economic forecasts.

Graph 4.5
Yearly oil demand growth in OECD
Asia Pacific



Sources: National, Joint Organisations Data Initiative and OPEC Secretariat.

Graph 4.6
Japanese LPG and naphtha demand,
y-o-y change



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

Table 4.5
Japanese domestic sales, tb/d

	Nov 16	Nov 15	Change	Change, %
LPG	439	411	28	6.8
Naphtha	846	793	53	6.7
Gasoline	901	896	4	0.5
Jet/kerosene	463	378	84	11.8
Diesel oil	602	564	38	6.8
Fuel oil	454	406	48	11.8
Other products	62	64	-2	-3.1
Direct crude burning	40	120	-80	-66.4
Total	3,807	3,632.7	174	4.8

Source: Ministry of Economy Trade and Industry of Japan.

In **South Korea**, November came up strong, increasing by more than 0.11 mb/d, or 4.2%, y-o-y. Almost all main petroleum product category requirements rose, particularly those related to petrochemicals – LPG and naphtha, adding 21.9% and 3.5% y-o-y, respectively, as well as jet kerosene and residual fuel oil. Gasoline and diesel demand fell slightly y-o-y, slightly offsetting overall gains. The outlook for South Korean oil demand during 2017 remains bullish, mainly as a result of positive expectations for the country's economy.

In 2016, **OECD Asia Pacific oil demand** shrank by 0.01 mb/d. This downward trend will continue in 2017, but to a higher degree, by 0.06 mb/d.

World Oil Demand

Non-OECD

Based on the latest available data, oil demand growth in non-OECD regions was adjusted lower by around 10 tb/d in 2016 despite upward adjustments in Other Asia (+20 tb/d) and China (+10 tb/d).

Latin America was revised lower (-50 tb/d in 4Q16) due to slower economic momentum denting oil demand growth.

In the Middle East, oil demand growth was adjusted lower (-20 tb/d in 3Q16 and -80 tb/d in 4Q16), mainly reflecting the high level of substitution in Saudi Arabia and slower-than-expected economic development in the region.

For 2017, a minor downward revision took place in the non-OECD region, namely in Other Asia, particularly India (-20 tb/d each in 1Q17, 2Q17 and 3Q17), reflecting a lower level of economic growth compared with 2016 and a higher base line of comparison.

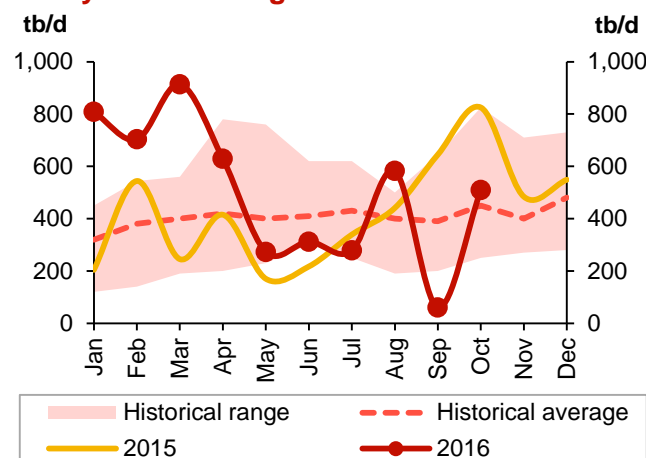
Other Asia

In **India**, oil demand growth increased substantially during the month of November to record a massive 0.50 mb/d increase, equivalent to 12.1% y-o-y; taking year-to-date data (with data from January to November) to a remarkable rise of around 0.30 mb/d and setting the stage for a historical demand growth year in the country. This growth was propelled by a government decision to withdraw 500 and 1,000 rupee notes, with an initial deadline of mid-November, which was then extended to December.

The decision created a buying spree across the country, boosting demand growth for all products with the exception of jet/kerosene, which declined by 9.1% y-o-y. As a result of panic purchases, gasoline rose by 10.0% y-o-y, adding almost 47 tb/d during the month of November, despite declining sales for two-wheeled vehicles, which dipped by 5.9% y-o-y. However, overall passenger vehicle sales rose by just 1.8% y-o-y, compared with growth of around 4.5% y-o-y in October.

Graph 4.7

Yearly oil demand growth in Other Asia



Sources: National, Joint Organisations Data Initiative and OPEC Secretariat.

Graph 4.8

Indian gasoline demand, y-o-y change



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

For LPG, demand grew solidly, rising by 0.13 mb/d, which equates to 18.8% y-o-y. Growth was encouraged by project expansions in the LPG distribution system coupled with a continuous government push for the use of LPG in the residential sector, primarily replacing kerosene usage, which, in turn, pressured kerosene requirements. As a result, kerosene demand shrunk by around 30 tb/d y-o-y in November. However, despite the slump in kerosene demand, jet fuel demand, on the other hand, increased by more than 8.0%, supported by strong growth in air passenger traffic. Diesel demand also picked up the pace, with the product growing by a firm 10.0% y-o-y, mostly driven by consumer panic buying and an increase in construction activities supporting government infrastructure spending plans.

Fuel oil and other product categories were the largest contributors to oil demand gains in India during the month of November; both products increased by a healthy 20.0% and 18.7% y-o-y, respectively. The increase in demand for power generation sectors, as well as a government commitment to expanding road networks, contributed to the uptick in demand for these two products.

Table 4.6
Indian oil demand by main products, *tb/d*

	<u>Nov 16</u>	<u>Nov 15</u>	<u>Change</u>	<u>Change, %</u>
LPG	808	680	128	18.8
Gasoline	518	471	47	10.0
Jet/kerosene	296	326	-30	-9.1
Diesel oil	1,841	1,675	167	10.0
Fuel oil	296	247	49	20.0
Other products	907	764	143	18.7
Total	4,665	4,162	504	12.1

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

In other countries in the region – such as Indonesia, Malaysia and Taiwan – oil demand growth during the month of October was stable, while it picked up sharply in Hong Kong, Thailand and the Philippines.

In **Hong Kong**, oil demand growth rose to nearly 13.0% y-o-y during October, with most of the gains attributed to positive developments in the construction and power generation sectors.

In **Thailand**, oil demand rose during October by around 27 *tb/d* y-o-y. All products were in positive territory, with the exception of LPG and fuel oil, which declined.

In the **Philippines**, oil demand rose solidly in October by around 36 *tb/d* y-o-y, with transportation fuels – gasoline, diesel oil and jet fuel – registering positively, while naphtha, fuel oil and other products were in negative territory.

Looking forward, the risks for 2017 in Other Asian oil demand are anticipated to be balanced with developments in the overall economy, with the impact on oil demand in India being the major focus of attention during 1H17. For other countries in the region, assumptions revolve around continuous healthy economic growth, coupled with steady retail prices. Indonesia, Thailand, Singapore and the Philippines are projected to contribute positively to oil demand growth in 2017. Light distillates – which include LPG, naphtha and gasoline – will be the products leading oil demand next year.

Other Asia's oil demand is anticipated to add a solid 0.51 *mb/d* in 2016. As for 2017, oil demand is forecast to be 0.35 *mb/d* higher than a year earlier.

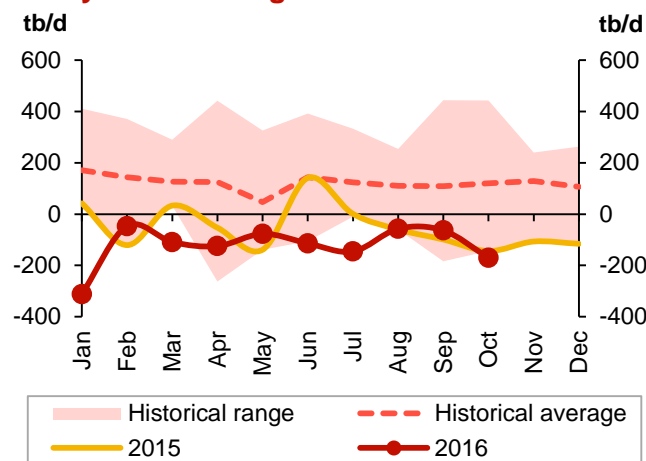
Latin America

Brazil's November oil demand contracted once more, declining from the previous year's levels by 54 *tb/d*, or more than 2.3% y-o-y, largely as a result of overall slower economic activity in the country. Gasoline consumption, however, increased during the month by a solid 96 *tb/d*, or around 14.0%, y-o-y, mainly because the product continued to be priced more competitively than ethanol, encouraging drivers with flex fuel engines to take advantage of the price difference between the two products. Ethanol, on the other hand, suffered considerable losses y-o-y, with the product declining by a sharp 85 *tb/d*, or 28.7% y-o-y, as a result of less competitive pricing. Ethanol prices increased for nine successive months and reached as high as 2.7 reals per litre in November, mainly as rainy weather limited sugar cane production. With record unemployment rates in the country, sluggish new car sales data came as no surprise. In November, sales for new cars slowed considerably, down by around 8.0% y-o-y to reach around 174,000 units, leading to a year-to-date total of around 1.78 million units.

World Oil Demand

Graph 4.9

Yearly oil demand growth in Latin America



Sources: National, Joint Organisations Data Initiative and OPEC Secretariat.

Graph 4.10

Brazilian gasoline demand, y-o-y change



Sources: Agência Nacional do Petróleo, Gas e Biocombustíveis of Brazil, Joint Organisations Data Initiative and OPEC Secretariat.

Diesel demand weakened, down by almost 33 tb/d, or 3.5%, y-o-y, as a result of slower economic conditions on one hand and a higher base of comparison on the other. Fuel oil demand saw the largest share of losses; the product dipped by around 33 tb/d, or around 40.0% y-o-y, because of easing in industrial production output and reduced power generation demand.

Table 4.7

Brazilian inland deliveries, tb/d

	Nov 16	Nov 15	Change	Change, %
LPG	230	217	14	6.4
Gasoline	778	682	96	14.0
Jet/kerosene	111	123	-12	-10.0
Diesel oil	923	956	-33	-3.5
Fuel oil	50	83	-33	-40.0
Alcohol	211	296	-85	-28.7
Total	2,303	2,357	-54	-2.3

Source: Agência Nacional do Petróleo, Gás Natural e Biocombustíveis of Brazil.

In **Argentina**, October saw negative oil demand growth data, with transportation fuels on a declining trend, apart from jet/kerosene. However, LPG and the other product categories positively impacted oil demand growth. LPG rose by 15.5% y-o-y and other product categories increased by 6.0% y-o-y.

In **Ecuador**, oil demand was flat during the month of November despite mixed performance amongst products. Transportation fuels, primarily gasoline and jet/kerosene, gained as much as 29.2% and 14.3% y-o-y, respectively, while diesel oil and fuel oil almost entirely counterbalanced the gains recorded by transportation fuels.

Looking forward, oil demand growth is foreseen to be improving from the contraction levels experienced in 2016, driven by a better economic outlook in addition to a lower base line of comparison. Brazil is projected to be the main contributor to growth, with diesel oil and gasoline being the products of higher growth potential, fueling the industrial and transportation sectors.

Latin American oil demand is expected to be firmly in the negative in 2016, by around 0.10 mb/d. During 2017, oil demand growth is forecast to turn positive, with potential growth of 0.07 mb/d.

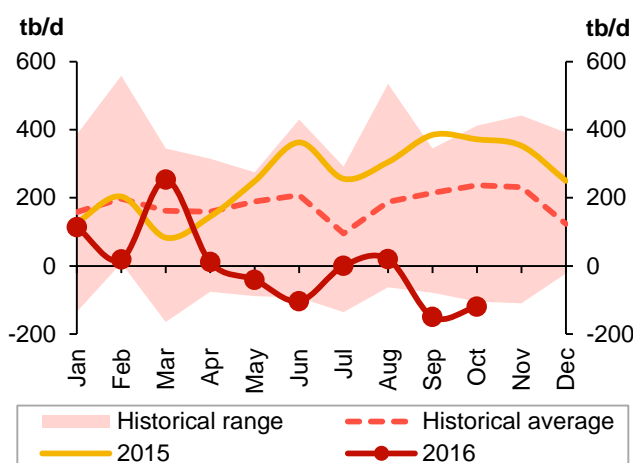
Middle East

Oil demand in **Saudi Arabia** dropped sharply in November by a massive 0.29 mb/d, or 12.0% y-o-y. As a result, total product consumption dropped as low as 2.16 mb/d, the lowest monthly total recorded for November since 2013. In cumulative terms, oil demand is set to decline in Saudi Arabia in 2016, likely by around 0.1 mb/d.

A drop in demand for direct crude burning for power generation purposes appears to be the major driver behind these declines. As indicated in previous reports, high levels of substitution with natural gas from the new Wasit gas plant, which started operations in March 2016 has had an immense impact on consumption for direct crude burning, which shed some 0.15 mb/d, or 29.3% y-o-y in November, as a result. Other product categories also fell sharply, by some 34.5% y-o-y, pushing overall oil demand growth well into negative territory.

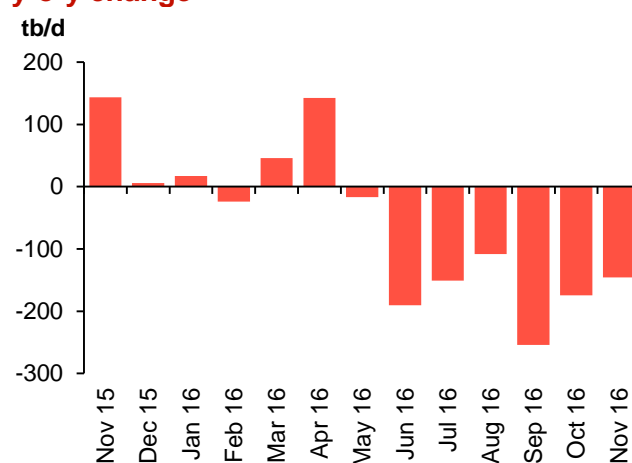
On the positive side, demand for LPG, jet/kerosene and fuel oil recorded solid growth, with LPG demand rising by a strong 29.5% y-o-y driven by additional petrochemical usage. Jet kerosene increased by 7.3% y-o-y, encouraged by improvements in air passenger traffic data and fuel oil added about 37 tb/d, or 9.1%, the result of a slight uptick in power generation and bunkering requirements.

Graph 4.11
Yearly oil demand growth in Middle East



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

Graph 4.12
Saudi Arabian direct crude burning, y-o-y change



Sources: Joint Organisations Data Initiative, Direct Communication and OPEC Secretariat.

In **Iraq**, November oil demand growth accelerated at a healthy pace, with some 80 tb/d, or 14.2%, y-o-y being added, the highest level of growth in 2016 and a level not reached since September 2015. All product categories registered positive growth with fuel oil, used to satisfy power generation requirements, rising the most – it was up by 36 tb/d, or around 25.3%, y-o-y. Jet/kerosene grew by 16.7 tb/d in November, in line with improvements in passenger travel data. Total product demand reached 0.65 mb/d in November. Other countries in the region also experienced growth, with the **UAE**, **Qatar** and **Kuwait** adding around 20 tb/d, 19 tb/d and 10 tb/d, respectively.

Looking ahead, oil demand growth in the region is foreseen gaining momentum in 2017, mainly as a result of a predicted improvement in the economy in some countries. On the other hand, geopolitical concerns, substitution by other fuels and subsidy reduction policies are assumed to limit demand growth potential in 2017. Transportation fuels – gasoline and diesel oil – are anticipated to be the products leading oil demand growth.

Middle East oil demand was flat in 2016, while oil demand in 2017 is projected to increase by 0.11 mb/d.

World Oil Demand

China

Chinese November oil demand rose by around 0.55 mb/d, driven by solid gains across the barrel, with the exception of diesel oil, which declined during the month. Oil demand was predominantly characterized by better-than-anticipated performance of LPG, jet/kerosene and gasoline, largely as a result of expansions in the petrochemical sector, healthy car sales and air travel data. LPG and gasoline demand continued to surge, with LPG generally responsible for new growth in the petrochemical sector, along with gasoline, which fulfills growing road transportation requirements. Products grew by 18.5% and 6.3% y-o-y, respectively.

According to statistics and analysis by the China Association of Automobile Manufacturers (CAAM), in year-to-date terms (with data from January to October), sales of passenger cars reached 19.1 million units, 15.4% higher y-o-y. Sport Utility Vehicles (SUV) continued with their high pace of growth, rising by 45.6% y-o-y. Multi-Purpose Vehicles (MPV) experienced a similar trend, with an increase of 22.6% y-o-y. As for other types of cars, sales witnessed growth by 3.6% y-o-y.

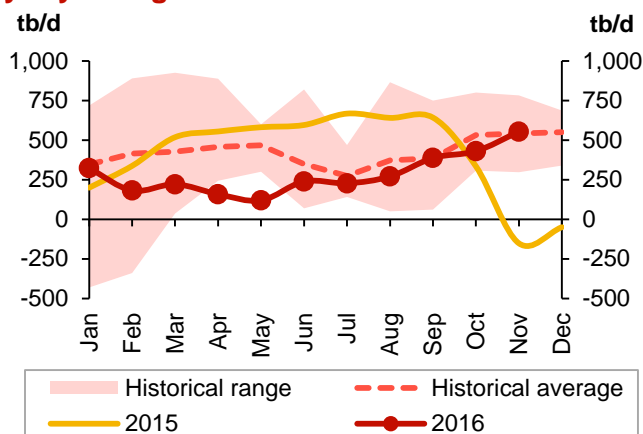
Jet fuel also saw strong growth performance in November, rising by a firm 20.3% y-o-y, much in line with global jet/kerosene figures. This is supported by improvements in the aviation sector, encouraged by lower y-o-y airfares positively impacting air passenger data.

On the other hand, diesel oil consumption decreased by 1.4% y-o-y, or 50 tb/d, highlighting the slightly slower momentum in the manufacturing and construction sectors.

Fuel oil gained some ground, adding about 10 tb/d or 2.8% y-o-y as bunker fuel requirements provided slight support to the product.

Graph 4.13

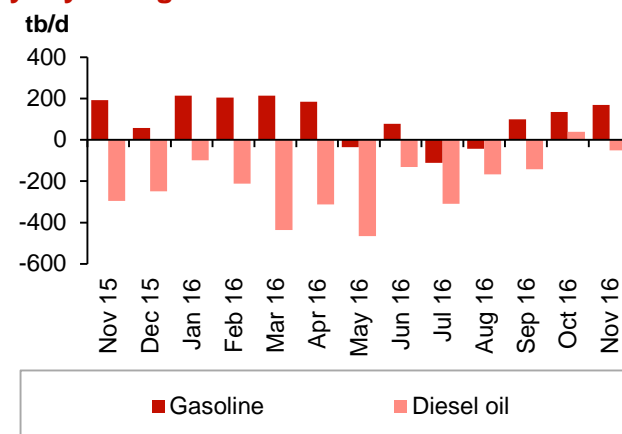
Chinese apparent oil demand, y-o-y change



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

Graph 4.14

Chinese diesel oil and gasoline demand, y-o-y change



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

Going forward, oil demand growth is seen at slightly lower levels in 2017 as the pace of economic growth in China is assumed to marginally ease. On the other hand, a continuation of fuel quality programmes targeting fewer emissions, as well as ongoing fuel substitution with natural gas and coal are also assumed to occur in 2017 projections. Additionally, gasoline and LPG are predicted to lead product growth, supported by ever-growing vehicle sales statistics and an improving petrochemical sector.

Chinese oil demand grew by 0.29 mb/d in 2016, while oil demand in 2017 is projected to increase again by 0.27 mb/d.

World Oil Supply

Preliminary data indicates that the world's oil supply decreased in December by 0.30 mb/d m-o-m to average 96.92 mb/d, but higher by 0.71 mb/d, y-o-y.

Non-OPEC oil supply¹ is estimated to have averaged 57.14 mb/d in 2016, a contraction of 0.71 mb/d y-o-y, and representing an upward revision of 70 tb/d, driven mainly by more growth in Norway, Russia and the US in 4Q16.

In 2017, non-OPEC oil supply is projected to grow by 0.12 mb/d, following a downward revision of 0.18 mb/d, driven by Russia, Kazakhstan, China, Congo and Norway, to average 57.26 mb/d, partially due to the planned production adjustments in 1H17 in line with OPEC – non-OPEC cooperation. However, the US forecast for 2017 was revised up by 0.23 mb/d, following higher rig counts and stronger cash flows.

OPEC NGL production is forecast to grow by 0.15 mb/d in 2017 to average 6.24 mb/d, following growth of 0.15 mb/d in 2016. In December, OPEC production decreased by 221 tb/d, according to secondary sources, to average 33.08 mb/d.

Non-OPEC supply

Non-OPEC oil supply in 2016 is estimated to have averaged 57.14 mb/d in 2016, a decline of 0.71 mb/d over 2015, and an upward revision of 0.07 mb/d from the previous assessment. Within quarters, non-OPEC oil supply encountered upward revisions, mainly in the second half of the year. Updated production data for 4Q16 led to this adjustment, concluding an upward revision of 248 tb/d in the OECD and 48 tb/d in the FSU region. According to preliminary and estimated data, total non-OPEC supply in 4Q16 decreased by 0.57 mb/d over the same period a year earlier. During 2H16, non-OPEC supply decreased by 0.83 mb/d compared with the same period the previous year.

Non-OPEC supply in 2016 saw a strong decline in OECD Americas, China and Latin America, while growth was seen in the FSU, driven by robust output from Russia. Despite low oil prices, Russian oil companies could produce more oil in 2016 and had more revenue thanks to the depreciation of the ruble.

OECD Americas' oil supply decline estimate of 0.53 mb/d in 2016 compares with growth of 0.93 mb/d in 2015. This drop relates mostly to declines in US onshore crude oil output rather than annual declines in Mexico and Canadian oil sands outages. Chinese crude oil production was weaker than expected according to various sources, due to low onshore performance, mature fields and low investment on behalf of the main domestic companies. In Latin America, total oil supply was disappointing following a remarkable drop in Brazilian yearly growth compared with that of a year earlier, as well as a higher annual decline in Colombia.

¹ Non-OPEC supply figures have been revised to include Indonesia following the suspension of its Membership in OPEC; the OPEC figures have also been revised accordingly.

Table 5.1
Non-OPEC oil supply in 2016*, mb/d

	2015	1Q16	2Q16	3Q16	4Q16	2016	Change 2016/15 Growth	%
Americas	21.07	21.00	20.08	20.49	20.59	20.54	-0.53	-2.50
of which US	14.04	13.81	13.68	13.42	13.60	13.63	-0.41	-2.95
Europe	3.76	3.90	3.73	3.63	3.91	3.79	0.03	0.85
Asia Pacific	0.46	0.44	0.42	0.44	0.45	0.43	-0.03	-5.74
Total OECD	25.29	25.34	24.22	24.55	24.94	24.76	-0.52	-2.06
Other Asia**	3.60	3.68	3.60	3.58	3.60	3.61	0.02	0.51
Latin America	5.19	4.98	5.06	5.19	5.23	5.12	-0.07	-1.37
Middle East	1.27	1.27	1.28	1.29	1.30	1.28	0.01	0.92
Africa	2.13	2.10	2.05	2.13	2.17	2.11	-0.02	-0.71
Total DCs	12.19	12.03	11.99	12.19	12.30	12.13	-0.06	-0.46
FSU	13.69	13.95	13.73	13.67	14.10	13.86	0.17	1.23
of which Russia	10.85	11.07	10.98	11.03	11.22	11.08	0.23	2.11
Other Europe	0.14	0.13	0.13	0.13	0.13	0.13	0.00	-3.51
China	4.38	4.22	4.11	4.00	3.95	4.07	-0.31	-7.16
Total "Other regions"	18.21	18.31	17.97	17.79	18.18	18.06	-0.15	-0.82
Total non-OPEC production	55.68	55.67	54.19	54.54	55.42	54.96	-0.73	-1.31
Processing gains	2.17	2.19	2.19	2.19	2.19	2.19	0.01	0.60
Total non-OPEC supply	57.85	57.86	56.37	56.72	57.61	57.14	-0.71	-1.23

Note: * 2016 = Estimate.

** Data includes Indonesia.

Source: OPEC Secretariat.

For 2017, non-OPEC oil supply is now projected to grow by 0.12 mb/d, down by 0.18 mb/d from the December *MOMR* due to lower expectations for Russia, Kazakhstan, China, Congo and Norway, to average 57.26 mb/d. The revision was driven partially by the non-OPEC decision on production adjustments in the first half of the year. In contrast, the US forecast for 2017 was revised up by 0.23 mb/d, following higher rig counts and increased cash flows.

At a meeting between 11 non-OPEC producers and OPEC Member Countries on 10 December 2016 in Vienna, it was agreed that participants in this historical cooperation should adjust their countries' oil production compared with October output, from the beginning of 2017 for at least six months, with the possibility of an extension for 2H17. These 11 non-OPEC oil producers – namely, Azerbaijan, Bahrain, Brunei Darussalam, Equatorial Guinea, Kazakhstan, Malaysia, Mexico, Oman, the Russian Federation, Sudan, and South Sudan – represent a 34.3% share of non-OPEC production (excluding processing gains) of 18.89 mb/d, based on October production data. According to the Joint Declaration of Cooperation, they pledged to adjust production by 558 tb/d, in accordance with an accelerated schedule. The adjustments will start from 1 January 2017 for six months, with the possibility to extend for another six months, depending on market conditions.

Non-OPEC supply adjustment commitments are somewhat challenging for those countries, however, initial reports show positive signs of compliance with pledged production adjustments. The revised 2017 forecast expects average oil production by these 11 countries in 1H17 to correlate with adjustment production levels.

The forecast for 2017 non-OPEC supply also depends on how much US tight oil production improves in the coming months. Most sources anticipate a rebound in shale oil output next year, supported by the recovery in oil prices and the remarkable spending.

World Oil Supply

Table 5.2
Non-OPEC oil supply in 2017*, mb/d

	2016	1Q17	2Q17	3Q17	4Q17	2017	Change 2017/16 Growth	%
Americas	20.54	20.65	20.45	20.58	20.73	20.60	0.06	0.31
of which US	13.63	13.70	13.60	13.70	13.81	13.70	0.08	0.57
Europe	3.79	3.87	3.73	3.54	3.82	3.74	-0.05	-1.38
Asia Pacific	0.43	0.45	0.46	0.45	0.42	0.44	0.01	1.85
Total OECD	24.76	24.97	24.63	24.56	24.97	24.78	0.02	0.07
Other Asia	3.61	3.56	3.53	3.53	3.50	3.53	-0.08	-2.30
Latin America	5.12	5.27	5.29	5.33	5.42	5.33	0.21	4.12
Middle East	1.28	1.24	1.23	1.24	1.24	1.24	-0.05	-3.78
Africa	2.11	2.13	2.15	2.22	2.24	2.18	0.07	3.35
Total DCs	12.13	12.19	12.20	12.32	12.40	12.28	0.15	1.23
FSU	13.86	13.87	13.83	13.97	14.05	13.93	0.07	0.49
of which Russia	11.08	10.98	10.97	11.10	11.14	11.05	-0.03	-0.24
Other Europe	0.13	0.15	0.15	0.15	0.16	0.15	0.02	16.11
China	4.07	3.97	3.91	3.89	3.90	3.92	-0.15	-3.74
Total "Other regions"	18.06	17.99	17.89	18.01	18.11	18.00	-0.06	-0.35
Total non-OPEC production	54.96	55.15	54.72	54.89	55.47	55.06	0.10	0.19
Processing gains	2.19	2.20	2.20	2.20	2.20	2.20	0.01	0.50
Total non-OPEC supply	57.14	57.34	56.92	57.09	57.67	57.26	0.12	0.20

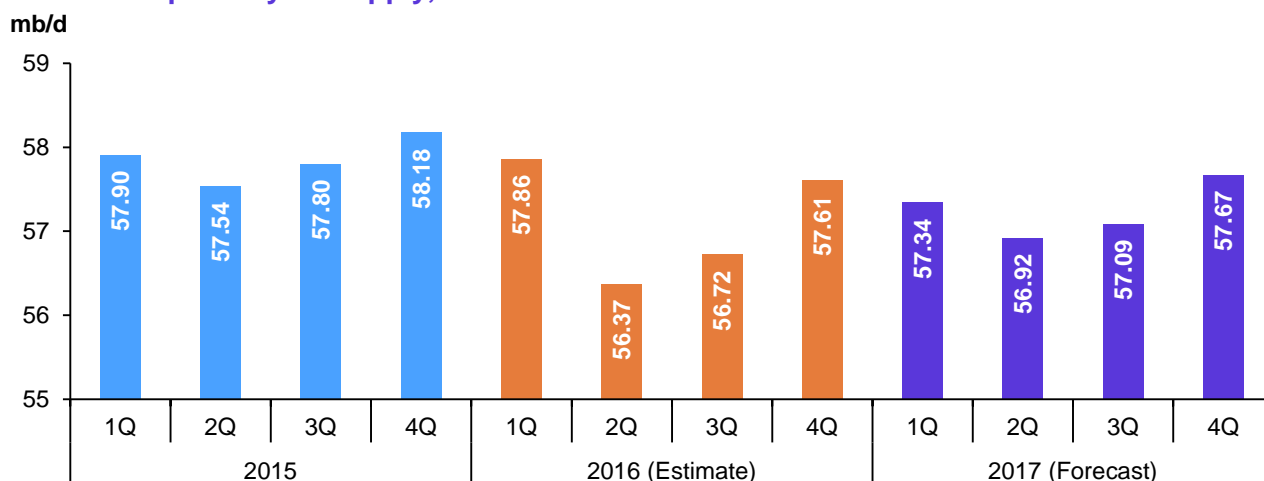
Note: * 2017 = Forecast, subject to review, following the most recent OPEC – non-OPEC Meetings.

** Data includes Indonesia.

Source: OPEC Secretariat.

On a country-by-country basis, the main contributors to growth in 2017 are expected to be Brazil with 0.25 mb/d, Canada with 0.17 mb/d, Kazakhstan with 0.14 mb/d, US with 0.08 mb/d, Africa others with 0.04 mb/d and Congo with 0.03 mb/d. Mexico, China, Indonesia, Norway, Oman, Azerbaijan and Russia are expected to show the strongest declines.

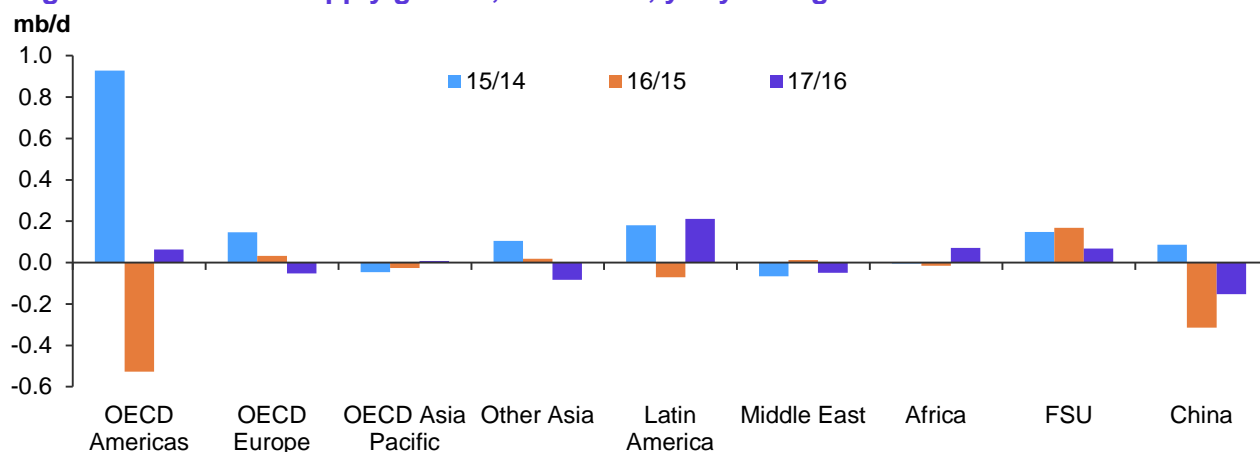
Graph 5.1
Non-OPEC quarterly oil supply, 2015-2017



Source: OPEC Secretariat.

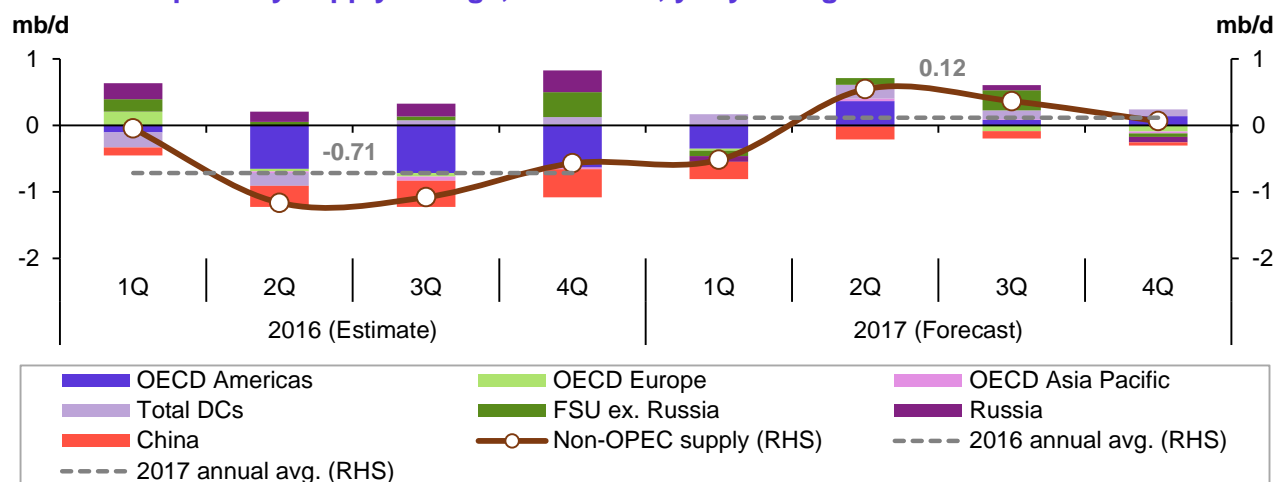
Regarding regional non-OPEC supply changes, the following graph shows that the main rebound in annual growth will be in OECD Americas and to some extent in DCs, particularly Latin America.

Graph 5.2
Regional non-OPEC supply growth, 2015-2017, y-o-y change



Note: 2016 = Estimate and 2017 = Forecast.
Source: OPEC Secretariat.

Graph 5.3
Non-OPEC quarterly supply change, 2016-2017, y-o-y change



Source: OPEC Secretariat.

According to new studies by Barclays, global oil and gas companies are expected to raise exploration and production (E&P) spending in 2017 by 7%, marking the first increase in three years. Thus, not only price can stimulate production in North America, but also spending on new projects and field developments, in general. In particular, projects with good economic performance and productivity could bring more oil online in 2017.

World Oil Supply

Table 5.3

Non-OPEC supply forecast comparison in 2016 and 2017, mb/d

Region	2016	Change 2016/15	2017	Change 2017/16
OECD Americas	20.54	-0.53	20.60	0.06
OECD Europe	3.79	0.03	3.74	-0.05
OECD Asia Pacific	0.43	-0.03	0.44	0.01
Total OECD	24.76	-0.52	24.78	0.02
Other Asia **	3.61	0.02	3.53	-0.08
Latin America	5.12	-0.07	5.33	0.21
Middle East	1.28	0.01	1.24	-0.05
Africa	2.11	-0.02	2.18	0.07
Total DCs	12.13	-0.06	12.28	0.15
FSU	13.86	0.17	13.93	0.07
Other Europe	0.13	0.00	0.15	0.02
China	4.07	-0.31	3.92	-0.15
Non-OPEC production	54.96	-0.73	55.06	0.10
Processing gains	2.19	0.01	2.20	0.01
Non-OPEC supply	57.14	-0.71	57.26	0.12

Note: * 2016 = Estimate and 2017 = Forecast.

** Data includes Indonesia.

Source: OPEC Secretariat.

OECD

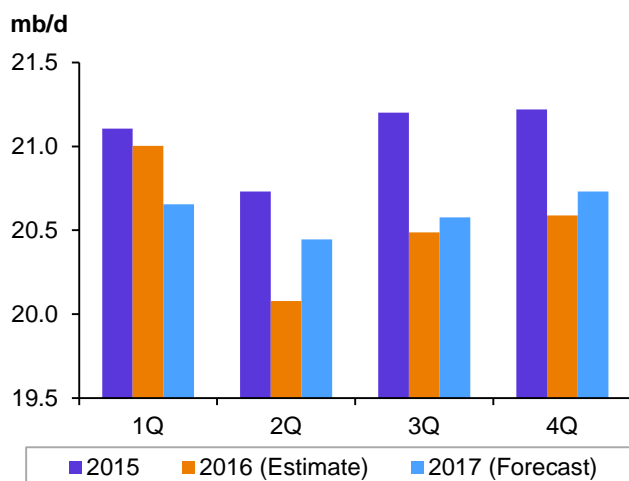
Total OECD liquids production in 2016 is estimated to contract by 0.52 mb/d to average 24.76 mb/d, revised up by 40 tb/d from December's *MOMR*. In 2017, OECD supply is forecast to average 24.78 mb/d, representing growth of 20 tb/d.

OECD Americas

OECD Americas' oil supply in 2016 is estimated to average 20.54 mb/d, showing a decline of 0.53 mb/d y-o-y and an upward revision by 10 tb/d, m-o-m. Supply in the US and Mexico is expected to decline in 2016, while it will grow in Canada. In 2017, supply in the region is expected to grow by 0.06 mb/d to average 20.60 mb/d, showing an upward revision of 0.22 mb/d, mostly due to higher expected US onshore crude output. Canada is also expected to see robust growth of 0.17 mb/d, while declines are anticipated in Mexico.

Graph 5.4

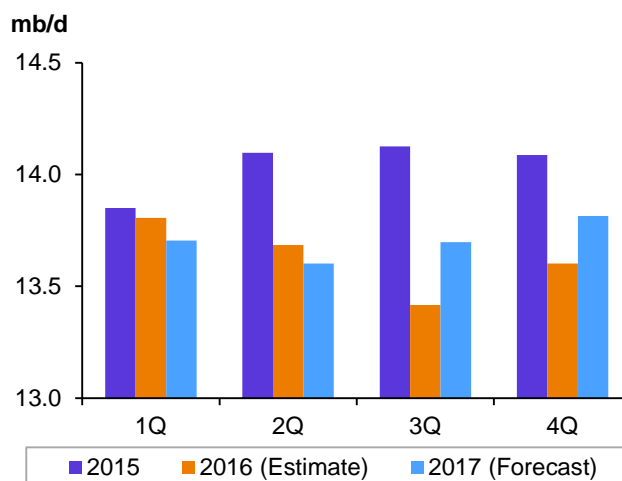
OECD Americas quarterly oil supply, 2015-2017



Source: OPEC Secretariat.

Graph 5.5

US quarterly oil supply, 2015-2017



Source: OPEC Secretariat.

US

According to the latest information from the US Energy Information Administration (EIA), crude oil production averaged 8.81 mb/d in October, some 0.23 mb/d higher than in September, of which 80 tb/d is attributed to growth in the US Gulf of Mexico's (GoM's) oil output, which recovered following peak maintenance a month earlier. Crude oil production in Texas and North Dakota increased by 80 tb/d and 20 tb/d m-o-m, to average 1.04 mb/d and 3.18 mb/d, respectively. Oil production in Alaska also increased by 50 tb/d to 0.5 mb/d in October. A move towards higher prices may lead to a resurgence in US tight oil production from the most prolific shale regions.

According to the EIA's official data of crude oil production, US crude oil output (excluding offshore regions and Alaska) declined from a peak of 7,634 tb/d in March 2015 to 6,602 tb/d in September 2016, but production increased by 106 tb/d in October to average 6,708 tb/d. This shows that after five consecutive months of increasing active oil rig numbers – they were up by 116 to 436 for onshore fields by the end of October – crude production increased by 106 tb/d.

Moreover, the EIA's official estimates from 15 December show that US tight oil production in selected plays declined by 0.59 mb/d from a peak of 4.65 mb/d in March 2015 to average 4.06 mb/d in November 2016. However, with drilling activity picking up as well as increasing cash flow in the tight oil industry, US tight crude output is expected to quickly rise.

NGLs production increased by 121 tb/d to average 3.54 mb/d in October, despite higher natural gas prices and export constraints significantly curtailing NGL economics. US total liquids supply declined since November 2015 from 14.16 mb/d to average 13.62 mb/d in October 2016, totalling a decline of 0.54 mb/d. US liquids supply – excluding processing gains in 2016 – is estimated to have declined by 0.41 mb/d, but was adjusted up by 10 tb/d over the last *MOMR* to average 13.63 mb/d.

In the **US GoM**, new drilling permits in November 2016 decreased by 56% over September to only seven new permits after three months of increases. This was a y-o-y drop of 67%. Shallow-water permits have shown the sharpest decline y-o-y, down by 73% from this time one year ago and displaying a drop of 88% from 2014. Offshore drilling is expected to continue to show limited activity as long as shallow water permits remain at historically low levels. Nonetheless, Royal Dutch Shell delivered first oil from the Stones project in mid-December. The project is located in GoM ultra-deepwater, about 320 km southwest of New Orleans, and is on record as the world's deepest (2,896 m underwater) offshore oil and gas project. The reservoir depth is about 8,077 m below sea level with recoverable reserves of 250 mboe. By the end of 2017, the first phase of production is expected to produce 50 tboe/d.

Total US liquids production in 2017 is forecast to grow by 80 tb/d and average 13.70 mb/d. This forecast has been revised up by 0.23 mb/d due to recent drilling activities, which showed a reverse trend from June, compared with a year earlier in most regions until now, particularly regions having prolific tight oil potential. Crude oil supply is forecast to grow in 2017, depending on rig counts, after a decline in 2016 of approximately 0.43 mb/d. Declines in onshore conventional crude in 2017 will be somewhat offset by growth of 0.15 mb/d in GoM. NGLs output is also expected to increase in 2017 despite an increase in natural gas prices. The main component of US oil output – tight oil – is forecast to grow. The number of drilling rigs and reactivation of companies' spending are the two most important factors leading to an output surge in the coming months.

US oil rig count

According to Baker Hughes' latest weekly report for 6 January 2017, total drilling rigs in the US increased by one rig, y-o-y, to 665 rigs. Oil rigs increased by 4 to 529 while gas rigs increased by 3 to 135, week-on-week. In terms of well trajectory, the number of horizontal wells increased by 2 to 534 rigs, w-o-w. Moreover, rigs for directional and vertical wells increased by 1 and 4 rigs to 57 and 74 rigs, respectively. In the basins, the number of oil rigs increased by 11 from the beginning of the previous June to 33 rigs so far. In Eagle Ford the number of rigs increased by 14 to 40, while in the Niobrara Basin they increased by 12 to 25 and in the Permian Basin they rose by 125 to 267. In total, the number of oil rigs from June 2016 until now increased continuously by 204 to reach 529 rigs. The number of gas rigs was also up by 53 to 135 rigs in the same period.

World Oil Supply

Table 5.4

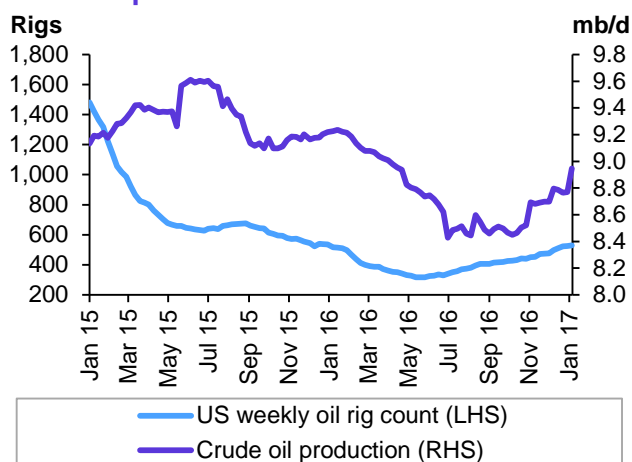
US rotary rig count on 6 January 2017

		06 Jan 17	Month ago	Year ago	Change		
					M-o-m	Y-o-y	Y-o-y, %
Oil and gas split	Oil	529	477	516	52	13	3%
	Gas	135	119	148	16	-13	-9%
Location	Onshore	641	575	637	66	4	1%
	Offshore	24	22	27	2	-3	-11%
Basin	Williston	33	31	49	2	-16	-33%
	Eagle Ford	47	40	71	7	-24	-34%
	Permian	267	235	209	32	58	28%
Drilling trajectory	Directional	57	46	64	11	-7	-11%
	Horizontal	534	485	519	49	15	3%
	Vertical	74	66	81	8	-7	-9%
US total rig count		665	597	664	68	1	0%

Sources: Baker Hughes and OPEC Secretariat.

Graph 5.6

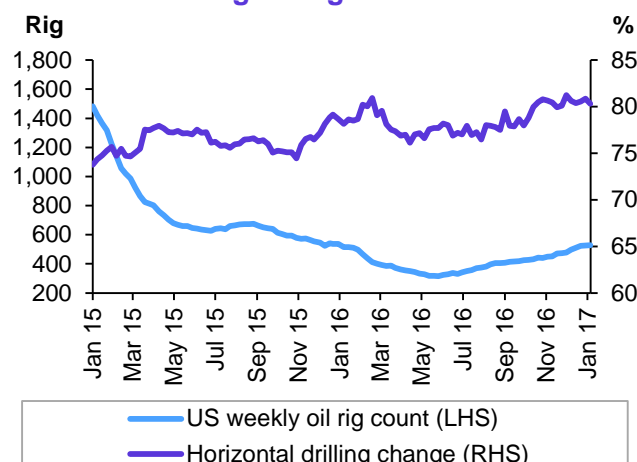
US weekly oil rig count vs. Crude oil production



Sources: Baker Hughes and US Energy Information Administration.

Graph 5.7

US weekly oil rig count vs. Horizontal drilling change

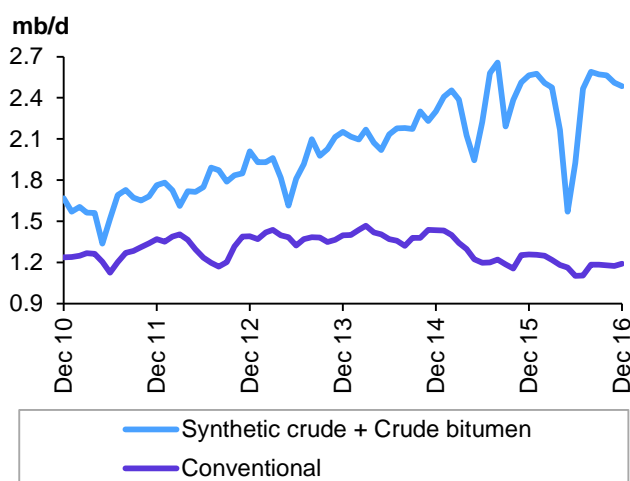


Source: Baker Hughes.

Canada and Mexico

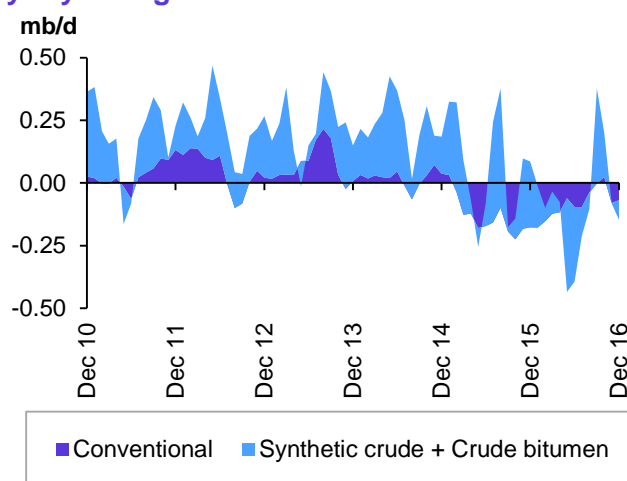
Canada's oil supply is expected to increase by 20 tb/d in 2016 to average 4.44 mb/d, revised up by 10 tb/d compared with the December *MOMR*. Preliminary estimates place September Canadian oil output at 4.65 mb/d, stagnant compared with August. Oil sands output – bitumen and synthetic crude – decreased by 19 tb/d to settle at 2.61 mb/d, while conventional oil was steady at 1.18 mb/d. Production of NGLs grew by 20 tb/d to average 0.86 mb/d. New projects such as MacKay River, Fort Hills and Black Gold, although small in size, are expected to produce about 175 tb/d of bitumen in 2017, including old project ramp-ups. They are also expected to add about 100 tb/d of synthetic crude. Forecast oil sands and synthetic crude growth will be partially offset by declines in various types of conventional crude, condensates and NGLs, leading to net growth of 0.17 mb/d in 2017 to average 4.61 mb/d.

Graph 5.8
Canada production by crude type



Source: OPEC Secretariat.

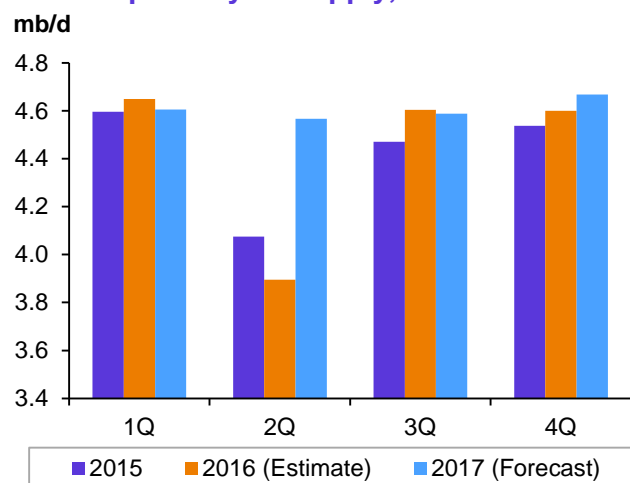
Graph 5.9
Canada production by crude type, y-o-y change



Source: OPEC Secretariat.

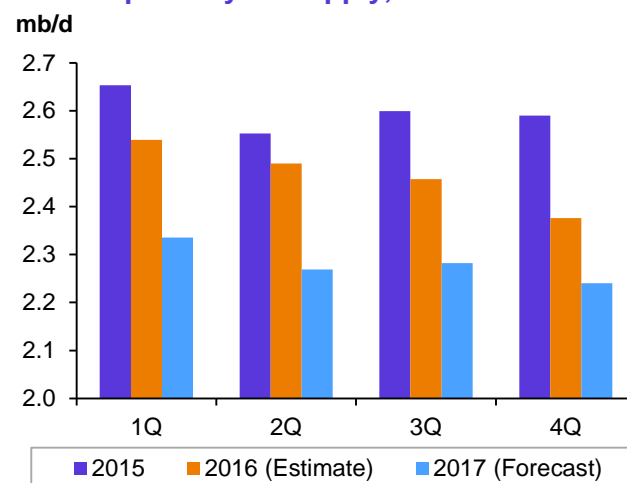
Canada's overall rig count for the week ending 6 January 2017 saw 48 more units w-o-w to reach a total of 205 units. Only one of these is offshore. Year-on-year, the rig count in Canada showed an increase of 39 rigs. After decreasing to a minimum of 26 rigs during the wildfires in Fort McMurray the previous May, the number of active rigs in Alberta – the main state for oil sands production – reached an average of 150 rigs, up by 28 rigs w-o-w. The other main producing provinces are Saskatchewan and British Columbia, registering 27 and 24 rigs on 6 January, respectively.

Graph 5.10
Canada quarterly oil supply, 2015-2017



Source: OPEC Secretariat.

Graph 5.11
Mexico quarterly oil supply, 2015-2017



Source: OPEC Secretariat.

Mexican liquids production in 2016 is expected to decline by 0.13 mb/d to average 2.47 mb/d, unchanged from the previous *MOMR*. Oil output in November declined by 20 tb/d to average 2.38 mb/d m-o-m, and the preliminary oil supply for 4Q16 shows another 80 tb/d of decline, q-o-q. According to this annual decline rate trend, oil production will fall by 0.18 mb/d to average 2.28 mb/d in 2017.

Mexico hopes to reverse 12 consecutive years of declining oil production by opening doors to international investors in the first round of the country's energy reform, held in early December. The most important field for development is Trion with a reserve of about half a billion barrels of oil located in deepwater GoM.

World Oil Supply

OECD Europe

Total **OECD Europe's oil supply** is estimated to grow by 30 tb/d to average 3.79 mb/d in 2016, indicating an upward adjustment of 40 tb/d over the December *MOMR*, with the increase coming mainly from Norway's supply revision. Contrarily, the 2017 forecast was revised down by 40 tb/d, with a contraction of 50 tb/d, to average 3.74 mb/d.

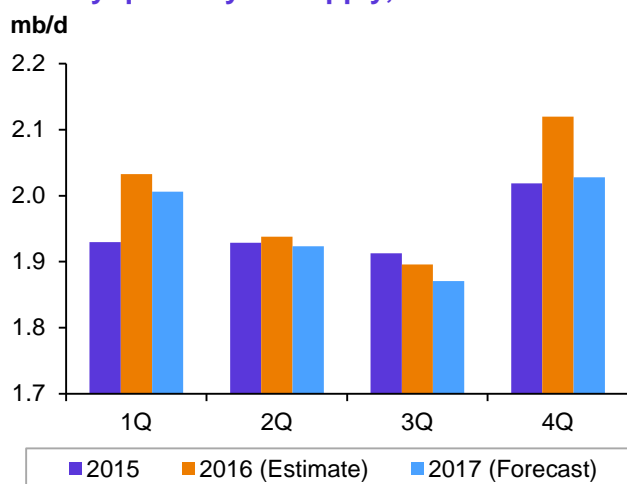
Norway

Norway's oil supply is estimated to have increased by 0.05 mb/d over the previous year to average 2.0 mb/d in 2016, revised up by 30 tb/d from the previous *MOMR*. Preliminary production figures for 4Q16 indicate average production of about 2.12 mb/d, while those for November show an average daily production of about 2.15 mb/d of oil, NGLs and condensate. This is 37 tb/d (about 2.0%) more than in October. According to the monthly Norwegian Petroleum Directorate (NPD) report, average daily liquid production in November consisted of 1.74 mb/d of oil, 0.38 mb/d of NGLs and 0.03 mb/d of condensate. Oil production in November is about 9% above that of November of last year.

The **Goliat** oil field was the first to start up in March 2016, though first oil for the year flowed more strongly from the **Edvard Grieg** field, which initially started production in November 2015. The Norwegian oil field which started up in December 2016 was the **Ivar Aasen**, located in the Norwegian North Sea, with a reserve of 186 mboe and production capacity of 68 tboe/d. It is expected to produce 35 tb/d in 2017.

Graph 5.12

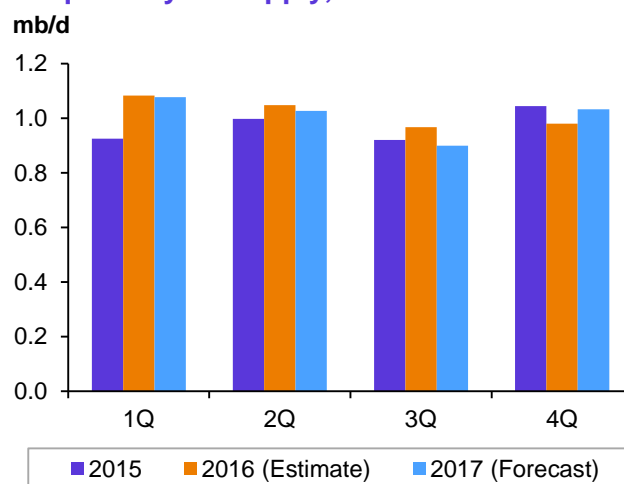
Norway quarterly oil supply, 2015-2017



Source: OPEC Secretariat.

Graph 5.13

UK quarterly oil supply, 2015-2017



Source: OPEC Secretariat.

The impact of low oil prices on Norway's oil industry led to a drop in investment in oil and natural gas extraction by 21% in the first half of 2016 compared with the first half of 2015, a decline of about 20.9 billion Norwegian kroner (US \$3.5 billion). However, investment cuts have affected some segments of the industry more than others, with exploration drilling experiencing greater declines. Investments in the first half of 2016 were more than 50% lower than in the first half of 2015.

In 2017, Statoil ASA plans to drill about 30 exploration wells as operator and partner, an increase of about 30%, compared with 23 in 2016. More than half of the wells will be drilled on the Norwegian Continental Shelf. The NPD states **Gina Krog**, an oil and gas field located northwest of Sleipner in the North Sea, has a startup planned for 2017. **Martin Linge** is located near the UK sector border, west of the Oseberg field in the North Sea; its startup is scheduled for late 2017. **Flyndre**, in the Ekofisk area of the North Sea on the border of the UK and Norwegian shelf, will be developed by connecting a horizontal subsea well on the UK shelf to the Clyde facility. The majority of resources are located in the UK sector. Production startup is scheduled for 2017. Nevertheless, rising output in recent years led to an increase in reservoir depletion rates and has resulted in low performance at mature fields. With the lack of any new giant oil field starting this year, annual production is expected to decline by 40 tb/d, to average 1.96 mb/d in 2017.

UK

The **UK's** oil production is expected to decline by 10 tb/d to average 1.01 mb/d in 2017, despite achieving growth in 2016. According to new project planning, around 76 tb/d of new production is expected to come online, primarily consisting of extra-heavy oil project Kraken and Quad 204 WoS in the North Sea. About 60 tb/d is also expected from project ramp-ups – the largest being the redevelopment of Monarb, which will lead to an increase of 22 tb/d of NGLs. There is also the Scolty/Crathes, the Greater Stella Area (GSA) and the Greater Catcher fields, which produce sour crude, along with some other small projects.

Despite higher maintenance in 2016, the UK's oil supply is estimated to grow by 50 tb/d y-o-y to average 1.02 mb/d, with the ramp-up of new fields since 4Q15 offsetting steep underlying declines. UK liquids production in November was higher by 218 tb/d m-o-m, averaging 1.05 mb/d – all increased by crude oil – to reach 0.95 mb/d.

Developing Countries

Total oil production from the group of **developing countries (DCs)** is estimated to decline by 80 tb/d y-o-y to average 12.10 mb/d in 2016, revised down by 10 tb/d compared with the previous assessment.

In **2017**, DC supply is forecast to grow by 0.14 mb/d to average 12.25 mb/d (adjusted to include Indonesia). The key region for growth is expected to be Latin America with 0.21 mb/d – mainly from Brazil – to average 5.33 mb/d and, to a lesser degree, Africa, increasing by 70 tb/d – mainly from the Congo and Ghana – to stand at 2.15 mb/d. Other Asia's oil supply will see a decline of 80 tb/d to average 3.53 mb/d due to the return of Indonesia to the non-OPEC group of producers. A decline of 50 tb/d is also expected for the Middle East, to stand at 1.24 mb/d next year.

Other Asia

Other Asia's oil production is estimated to increase by 20 tb/d in 2016 to average 3.61 mb/d (including Indonesia), unchanged in growth from the previous assessment. In **Malaysia**, the second offshore Shell project after Gumusat-Kakap in 2014 started up in December of 2016. Oil production began from the Malika tension-leg platform (TLP) located in deepwater Sabah, Malaysia, with a peak capacity of 60 tb/d. Oil production from this region is expected to decline by 80 tb/d in 2017, due to low performance in mature Indonesian oil fields, to average 3.53 mb/d.

Latin America

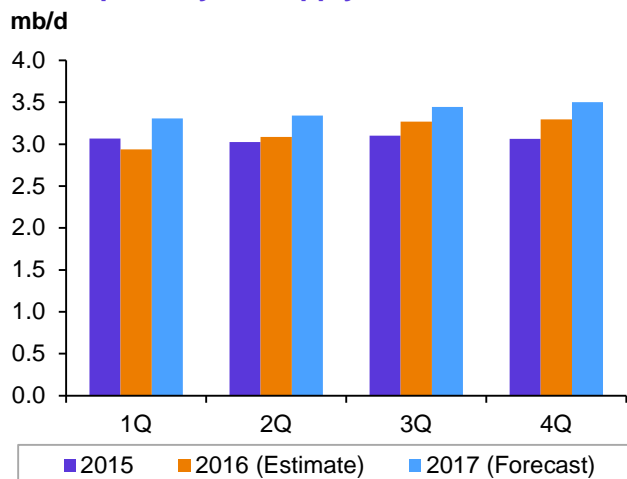
Oil supply from Latin America is predicted to increase by 0.21 mb/d, to average 5.33 mb/d in 2017, despite declining in 2016.

Brazil's liquids supply is estimated to average 3.15 mb/d in 2016, an increase of 0.08 mb/d over the previous year. Preliminary crude oil production shows a decrease of 15 tb/d m-o-m in November to average 2.61 mb/d, based on national source data. Despite this, total liquids supply was steady at 3.27 mb/d in November and preliminary estimates show growth of 20 tb/d in 4Q16, q-o-q. Brazil's Petrobras will begin seeking offers for the construction of seven new offshore oil platforms envisioned in its current 2017 investment plans. Oil production is expected to increase by 0.25 mb/d to average 3.40 mb/d when these projects materialize next year. Petrobras and other partners started production from the Lapa oil field through the FPSO Cidade de Caraguatatuba – with a capacity to produce 100 tb/d of oil in November.

World Oil Supply

Graph 5.14

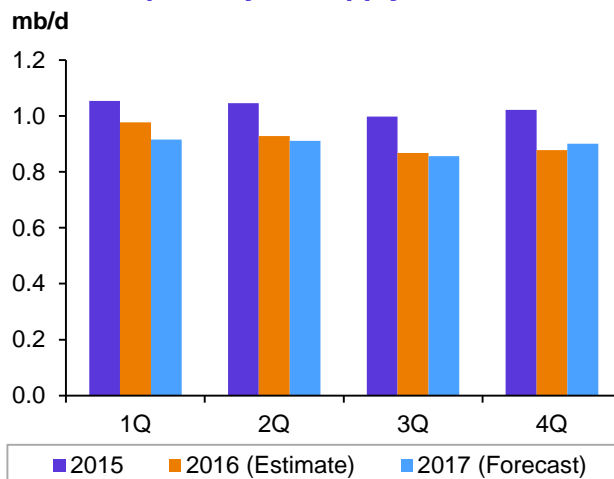
Brazil quarterly oil supply, 2015-2017



Source: OPEC Secretariat.

Graph 5.15

Colombia quarterly oil supply, 2015-2017



Source: OPEC Secretariat.

In **Colombia**, average crude oil production in 2H16 was more or less steady at 0.87 mb/d, 0.14 mb/d less than the same period in 2015 and 80 tb/d less than 1H16. It is estimated that annual production declined by 0.12 mb/d to average 0.91 mb/d in 2016. The main reason for this high decline rate was less investment due to low oil prices in 2016, but Ecopetrol – the state-owned oil company, and main operator in the country – plans to increase investment in 2017. Hence, the production decline is expected to ease in the current year to 20 tb/d, with average yearly output reaching 0.90 mb/d. There are no new fields startups planned for 2017, therefore expenditures will focus on increasing recovery in the mature fields. Half a million barrels of oil production in Colombia is high-cost and low recovery-performance extra-heavy oil.

Middle East

The main non-OPEC oil producers in the Middle East – Oman, Bahrain, Syria and Yemen – produced 1.28 mb/d in 2016. Preliminary data analysis indicates 10 tb/d of growth, mainly due to Oman's oil production. Oman produced 1.01 mb/d of oil in 2016, indicating 30 tb/d of growth y-o-y. Oil output in Bahrain and Syria was steady, while production in Yemen declined by 20 tb/d.

In 2017, Oman is expected to cut its production by 40 tb/d to average 0.96 mb/d, with half of this coming from annual decline. Middle East oil production will decline in 2017 by 50 tb/d to average 1.24 mb/d.

Africa

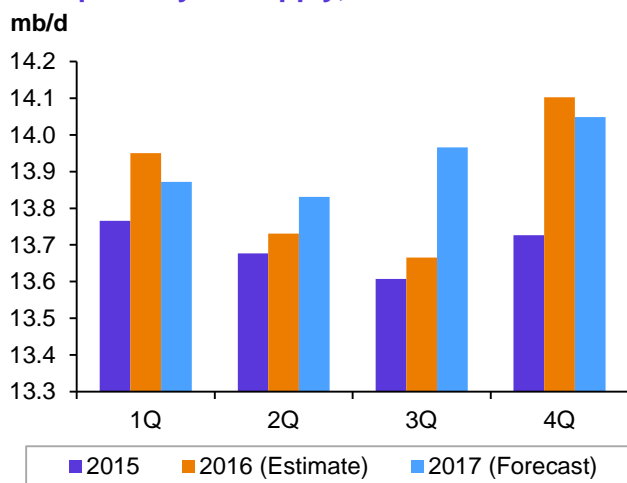
Oil output in Africa is estimated to decline by 20 tb/d in 2016, to average 2.11 mb/d. Most African countries saw an oil production decline in 2016, which partially offset growth from a new project in the Congo called Moho Marine Nord. Moreover, first oil was officially delivered on stream from the deepwater TEN project in Ghana, located 20 km west of the Jubilee field and operated by Tullow oil. It is expected that Tullow will recover 300 mboe with a final capex of less than \$4 billion. Production started this August and the operator planned to produce 23 tb/d by the end of 2016. This has now been reduced to 15 tb/d due to a technical bottleneck stemming from water injection. It is expected that output will reach to 65 tb/d on average in 2017 and peak production of 80 tb/d is forecast by end of the year.

In 2017, oil production will grow in Congo, South Africa and Ghana. However, the third phase of Nene Marine (Congo) has been delayed for one year as the project is still in the early concept study phase, therefore the expected growth in the Congo was revised down by 40 tb/d. Declines are seen coming from Sudan, South Sudan and Equatorial Guinea. For the region, growth is expected at 70 tb/d, to average 2.18 mb/d.

FSU, other regions

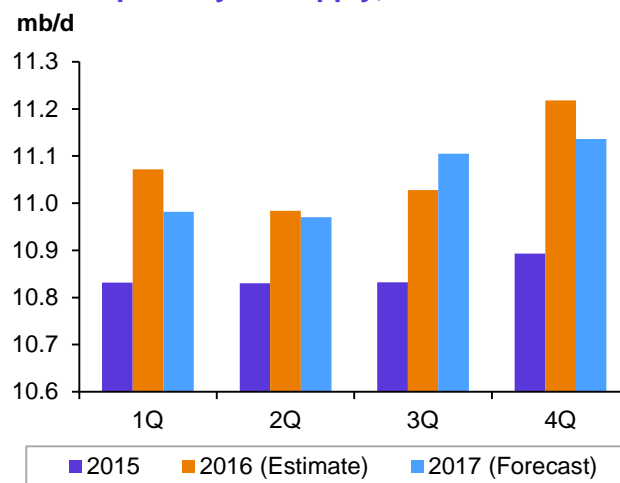
FSU's oil supply is expected to grow by 0.17 mb/d in 2016 to average 13.86 mb/d, revised up by 10 tb/d from the December report. In 2016, oil production in Russia increased, while declining in Kazakhstan and FSU Others and remaining stagnant in Azerbaijan. The oil production forecast for 2017 was revised down this month by 190 tb/d to now show growth of 0.07 mb/d for a total of 13.93 mb/d. Downward revisions were seen in Russia's production in line with its announced production adjustment and Kazakhstan's output due to lower expectations for the Kashagan field.

Graph 5.16
FSU quarterly oil supply, 2015-2017



Source: OPEC Secretariat.

Graph 5.17
Russia quarterly oil supply, 2015-2017



Source: OPEC Secretariat.

Russia

Russia's oil production was more or less stagnant at 11.22 mb/d in November and December. Output in 4Q16 was 0.33 mb/d higher y-o-y. Russian oil output is estimated to increase by 0.23 mb/d to average 11.08 mb/d in 2016, revised up by 30 tb/d over the last *MOMR*. Crude oil and condensate production in the last two months of the year increased by 10 tb/d to 10.427 mb/d, according to the energy ministry. Russia's total liquids output, including 0.795 mb/d of NGLs, reached 11.22 mb/d in December, repeating November's record.

Russia's oil supply for 2017 has been revised down by 0.11 mb/d and output is expected to contract by 30 tb/d to average 11.05 mb/d. The first and the second quarter have been revised down to 10.98 mb/d and 10.97 mb/d from 11.14 mb/d and 11.12 mb/d, respectively. It is assumed that output will increase again in 2H17.

Caspian

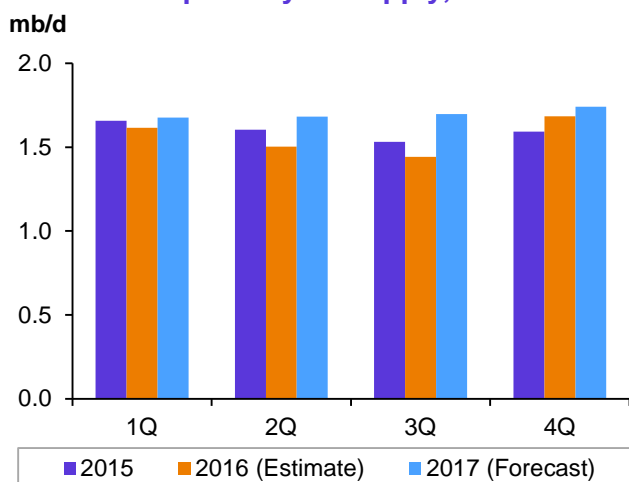
Kazakhstan's crude oil output increased by 49 tb/d m-o-m to stand at 1.43 mb/d as it recovered from maintenance, although the main share of Kashagan's production came on stream by month-end. Thus, November liquids output was higher m-o-m by 50 tb/d to average 1.70 mb/d – the same growth as seen a year ago. Kashagan's original ramp-up plan for 2016 was to reach 0.18 mb/d by the end of year. However, Kazakh average oil output in 4Q16, along with average output in the preceding quarters, shows that additional production from the new field of Kashagan has not so far exceeded a maximum of 0.11 mb/d and therefore a jump in December oil output is not expected. For 2017, and in line with the OPEC-non-OPEC cooperation agreement, adjusted Kazakh oil supply is now seen growing by 0.13 mb/d to average 1.69 mb/d. However, production ramp-up of the Kashagan field could lead to a maximum level of 0.27 mb/d by year end.

Azerbaijan's oil supply was revised down by 10 tb/d to average 0.86 mb/d, indicating stagnant output in 2016. However, production in 2H16 was lower by 30 tb/d than the 0.84 mb/d produced in 1H16. Azeri crude oil output in October and November increased by 50 tb/d each month after the return of the Guneshli platform from maintenance to average 0.76 mb/d. Hence, total oil production (crude plus NGLs)

World Oil Supply

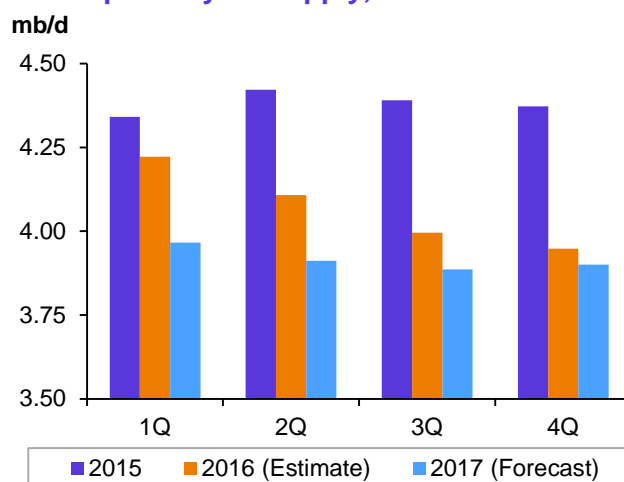
was pegged at 0.84 mb/d for these two months. A letter of intent was recently signed between Azerbaijan State Oil Co. (SOCAR) and BP-operated Azerbaijan international operating Co.(AIOC) for the future development of the Azeri-Chirag-Gunashli (ACG) field, which currently produces 620 tboe/d. ACG is a supergiant field located 100 km east of Baku, and to date it has produced more than 3 billion barrels of oil with around \$33 billion of investment.

Graph 5.18
Kazakhstan quarterly oil supply, 2015-2017



Source: OPEC Secretariat.

Graph 5.19
China quarterly oil supply, 2015-2017



Source: OPEC Secretariat.

China

China's supply in 2016 was revised down by 20 tb/d and is expected to contract by 0.31 mb/d over the previous year to average 4.07 mb/d. Chinese crude oil output increased in November – following a decline of 100 tb/d in October – by 135 tb/d to 3.92 mb/d m-o-m. Thus, total Chinese liquids supply – including unconventional liquids – reached 4.01 mb/d in November. Chinese oil production in 2017 is anticipated to contract for a second year by 0.15 mb/d, revised down by 50 tb/d, to average 3.92 mb/d.

OPEC NGLs and non-conventional oils

OPEC NGLs and non-conventional liquids are estimated to average 6.10 mb/d in 2016, representing growth of 0.15 mb/d over the previous year. In 2017, OPEC NGLs and non-conventional liquids production is projected to average 6.24 mb/d, representing an increase of 0.15 mb/d over the previous year.

Table 5.5
OPEC NGLs + non-conventional oils, 2014-2017*, mb/d

	2014	2015	Change 15/14	1Q16	2Q16	3Q16	4Q16	2016	Change 16/15	2017	Change 17/16
Total OPEC	5.83	5.94	0.11	6.05	6.08	6.11	6.15	6.10	0.15	6.24	0.15

Note: * 2016 = Estimate and 2017 = Forecast.

Source: OPEC Secretariat.

OPEC crude oil production

According to secondary sources, OPEC crude oil production in December decreased by 221 tb/d from the previous month to average 33.08 mb/d. Crude oil output increased the most in Iraq, Angola and Libya, while production in Saudi Arabia, Nigeria and Venezuela showed the largest decline.

Table 5.6

OPEC crude oil production based on secondary sources, tb/d

	2015	2016	2Q16	3Q16	4Q16	Oct 16	Nov 16	Dec 16	Dec/Nov
Algeria	1,106	1,088	1,084	1,090	1,086	1,091	1,089	1,080	-8.7
Angola	1,753	1,733	1,772	1,762	1,636	1,498	1,688	1,724	35.6
Ecuador	544	546	549	547	545	543	547	545	-2.5
Gabon	220	218	219	220	212	203	221	213	-8.7
Iran, I.R.	2,838	3,499	3,539	3,646	3,713	3,709	3,710	3,720	9.5
Iraq	3,934	4,382	4,290	4,396	4,598	4,571	4,590	4,632	42.6
Kuwait	2,728	2,782	2,730	2,811	2,824	2,848	2,810	2,812	2.0
Libya	405	391	312	311	571	528	577	608	31.3
Nigeria	1,880	1,596	1,552	1,436	1,604	1,615	1,656	1,542	-113.5
Qatar	666	657	662	652	646	645	651	643	-7.6
Saudi Arabia	10,139	10,409	10,299	10,596	10,554	10,566	10,623	10,474	-149.3
UAE	2,891	2,961	2,918	2,999	3,072	3,068	3,078	3,071	-6.3
Venezuela	2,365	2,157	2,181	2,111	2,053	2,072	2,066	2,021	-45.2
Total OPEC	31,470	32,418	32,106	32,574	33,113	32,955	33,305	33,085	-220.9

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

Source: OPEC Secretariat.

Table 5.7

OPEC crude oil production based on direct communication, tb/d

	2015	2016	2Q16	3Q16	4Q16	Oct 16	Nov 16	Dec 16	Dec/Nov
Algeria	1,157	1,146	1,126	1,162	1,168	1,171	1,184	1,149	-35.0
Angola	1,767	1,708	1,730	1,720	1,611	1,507	1,688	1,639	-49.0
Ecuador	543	549	554	551	543	542	544	544	0.2
Gabon	..	..	..	..	..	..	..	..	..
Iran, I.R.	3,152	..	3,570	3,653	..	3,980	3,990	..	..
Iraq	3,504	4,648	4,523	4,666	4,802	4,776	4,800	4,830	30.0
Kuwait	2,859	2,954	2,934	2,969	2,915	3,000	2,900	2,844	-56.0
Libya	..	..	..	..	..	..	..	..	..
Nigeria	1,748	1,496	1,485	1,209	1,623	1,390	1,536	1,940	403.9
Qatar	656	..	655	644	..	639	646	..	..
Saudi Arabia	10,193	10,460	10,360	10,651	10,602	10,625	10,720	10,465	-254.7
UAE	2,989	3,089	3,035	3,174	3,201	3,188	3,195	3,220	25.0
Venezuela	2,654	2,379	2,392	2,331	2,287	2,316	2,274	2,270	-4.2
OPEC excl. Iraq	..	..	..	..	..	..	..	..	..

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

.. Not available.

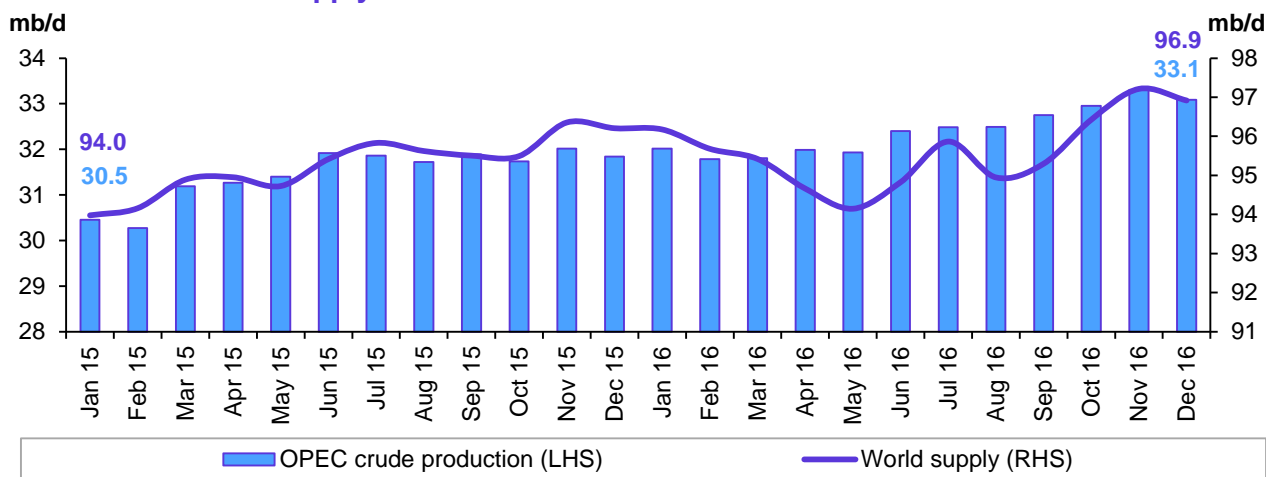
Source: OPEC Secretariat.

World oil supply

Preliminary data indicates that global oil supply decreased by 0.30 mb/d in December to average 96.92 mb/d, higher by 0.71 mb/d y-o-y. A decrease in both non-OPEC supply, including OPEC NGLs, of 0.08 mb/d and in OPEC crude production of 0.22 mb/d reduced overall global oil output in December. The share of OPEC crude oil in total global production stood at 34.1% in December, a decrease of 0.1% from the month before. Estimates are based on preliminary data for non-OPEC supply, direct communication for OPEC NGLs and non-conventional liquids, and secondary sources for OPEC crude oil production.

Graph 5.20

OPEC and world oil supply

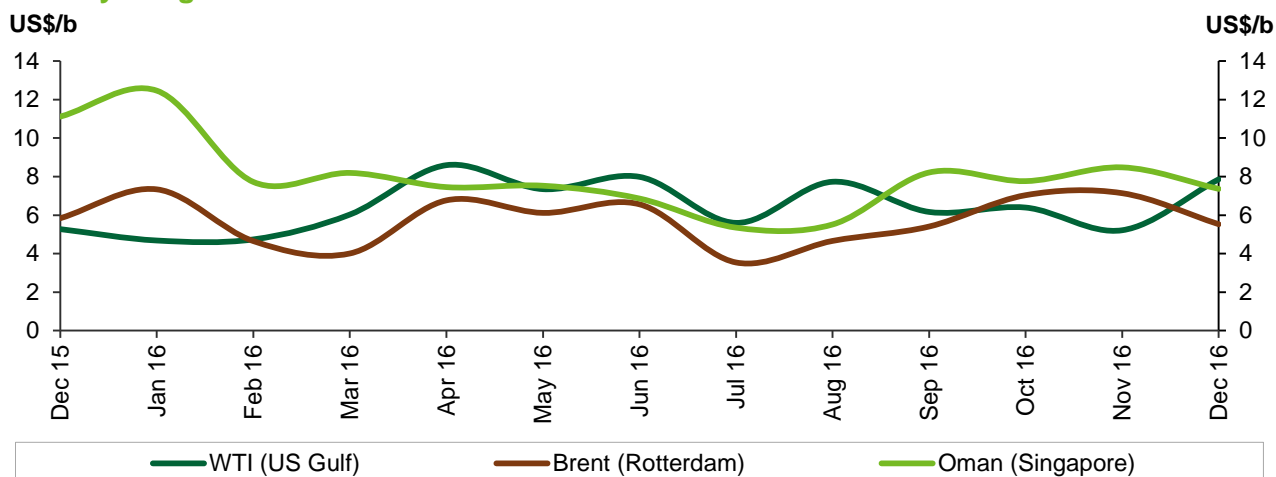


Source: OPEC Secretariat.

Product Markets and Refinery Operations

Product markets showed a mixed performance in the Atlantic Basin during December. US refinery margins were supported by the recovery seen in US gasoline crack spreads on the back of healthy domestic demand amid stronger exports to Latin America. Meanwhile, in Europe refinery margins weakened due to slower gasoline export opportunities and a lack of support at the middle of the barrel, despite the colder weather. In Asia, despite firm regional demand, margins weakened due to an environment of oversupply.

Table 6.1
Refinery margins



Sources: Argus Media and OPEC Secretariat.

The **US** domestic gasoline market continued receiving support from higher export opportunities, mainly to Latin America. This, along with domestic demand remaining relatively healthy, helped gasoline crack spreads to show a sharp recovery during December. This positive performance, along with stronger middle distillates demand, allowed the US Gulf Coast (USGC) refinery margins for WTI crude to gain more than \$2 versus the previous month, to average around \$7.80/b during December.

The **European** product market weakened during December due to losses across the barrel, with the top of the barrel crack spread falling due to a lack of export opportunities.

Meanwhile, at the middle of the barrel, gasoil margins weakened despite the colder weather, while also being pressured by higher inflows into the region. The refinery margin for Brent crude in Northwest Europe showed a fall of more than \$1 versus the previous month to average \$5.50/b during December.

Asian product markets continued enjoying strong regional seasonal demand during December. However, the pressure coming from the supply side with the end of the maintenance season, along with the outright hike seen in crude prices, caused the refinery margins to fall.

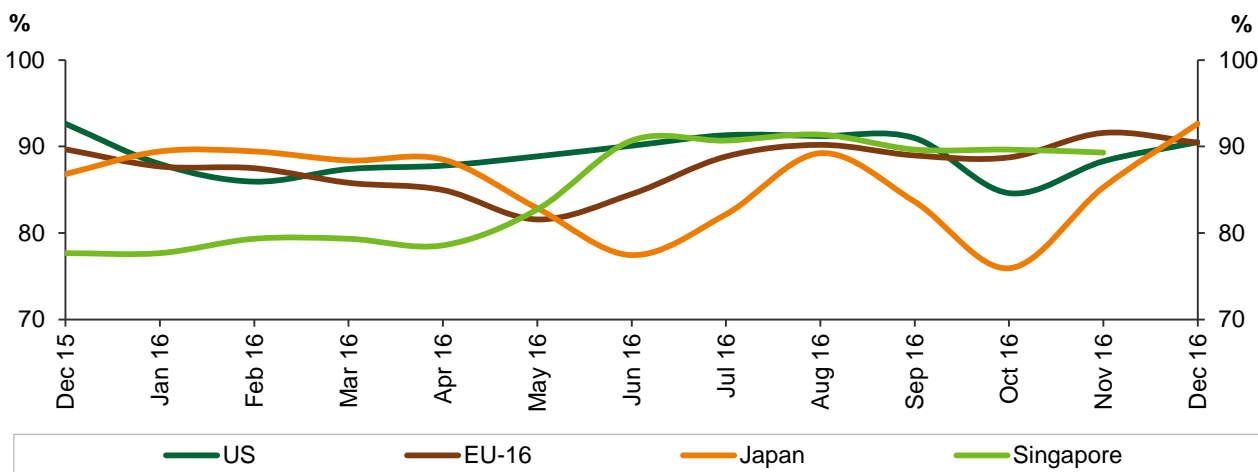
Refinery margins in Singapore averaged around \$7.40/b in December, down around \$1 versus the previous month's level.

Refinery operations

Following the peak of the global refinery maintenance season, more than 4 mb/d of capacity came online during last two months and refinery throughputs have been on the rise worldwide. Refinery utilization in the **US** averaged around 90.5% during December, corresponding to 16.6 mb/d, up by around 400 tb/d versus the previous month, and similar to the levels seen during the same month a year ago. In addition, US refineries have recovered from the impact of the Colonial Pipeline outage in the previous months.

Graph 6.2

Refinery utilisation rates



Sources: Argus Media and OPEC Secretariat.

European refinery runs averaged around 90.5% of capacity in December, corresponding to a throughput of 10.7 mb/d, which was around 130 tb/d lower than in the previous month and up by 90 tb/d from the same month a year ago. Refinery throughputs continued at a high level following the end of the maintenance season in Europe, while the strike action at a refinery in the Netherlands did not cause a big impact on refinery runs in the region.

In **Asia**, refinery utilization rates have been on the rise, following the end of the maintenance season and ahead of the expected seasonal increase in regional demand. Refinery runs in India averaged almost 5 mb/d during November. Meanwhile, Chinese refinery throughputs averaged over 11.3 mb/d during December, increasing by around 480 tb/d vs the same month a year ago and hitting a new record-high level. Refinery runs in Singapore for November averaged around 89%, similar to the previous month, while Japanese throughput averaged 93% of capacity in December. This was 7 pp higher than the previous month, following the end of refinery maintenance.

US market

US gasoline demand stood at around 9.0 mb/d in December, approximately 110 tb/d lower than in the previous month and 170 tb/d lower than in the same month a year earlier.

Despite healthy domestic gasoline demand following the typical seasonal downward corrections, gasoline margins strengthened during December by getting support from stronger export opportunities, which reached more than 1 mb/d, the highest level seen since 2010. Requirements from Latin American countries have continued to rise, mainly from Brazil and Mexico.

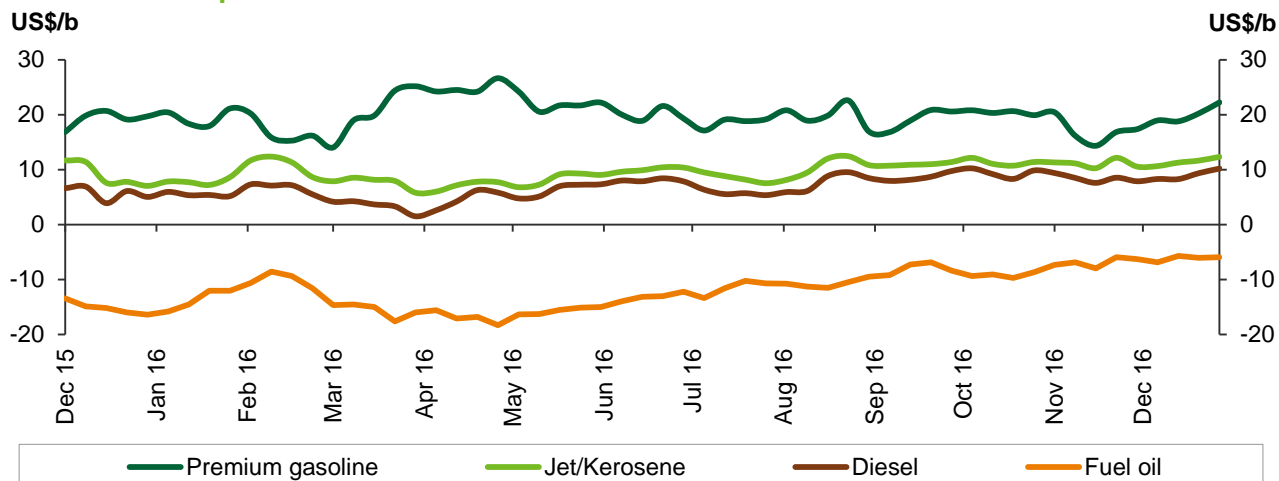
Additional gains were capped by the bearish sentiment coming from the supply side with refinery runs on the rise and inventories continuing to increase with a build of around 6 mb during December.

The gasoline crack spread showed a sharp gain of more than \$3, compared with the previous month's level, to average around \$20/b in December.

Product Markets and Refinery Operations

Graph 6.3

US Gulf crack spread vs. WTI



Sources: Argus Media and OPEC Secretariat.

Middle distillate demand stood at around 3.8 mb/d in December, which is 90 tb/d lower than in the previous month and around 30 tb/d higher than in the same month a year earlier.

The middle distillate market continued to receive some support from healthy domestic demand amid higher export opportunities to Europe and Latin America. Additional support came from news about a hydrocracker unit outage in Texas.

The USGC gasoil crack spread averaged around \$8.9/b in December, gaining almost \$1 from the previous month's level. Further gains were limited by increasing supplies following the end of the refinery maintenance season amid middle distillate inventories continuing on the rise during December.

At the **bottom of the barrel**, fuel oil margins strengthened as the market continued to be supported by tight sentiment boosted by falling inventories in PADD-3 amid healthy demand reported in the USGC and New York area.

The USGC HSFO crack spread gained almost \$1 to average minus \$6/b in December.

European market

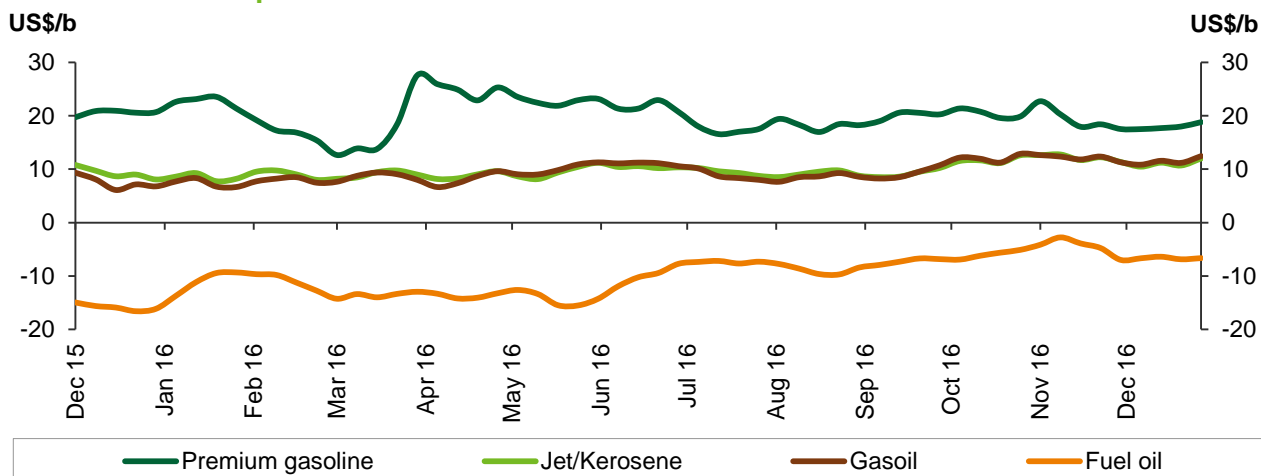
Product markets in Europe weakened during December due to losses across the barrel, with the gasoline crack spread falling due to a lack of export opportunities and the middle of the barrel losing some ground despite the colder weather due to higher inflows into the region. Meanwhile, outright crude oil prices also had a negative impact on the margins.

The **gasoline** market continued to weaken in Europe pressured by downward winter seasonal demand amid the narrowing seen in transatlantic arbitrage. Other bearish factors included slower export opportunities to the WAF market, where recent increases in gasoline prices have impacted the demand side and ARA gasoline inventories continued to increase during December.

The gasoline crack spread against Brent lost almost \$2 from the previous month's level to average around \$17.8/b during December. Further losses were somehow limited by strong export volumes to the Middle East seen at the start of the month, amid some increasing requirements from Egypt and Tanzania.

The light distillate **naphtha** crack slumped, falling more than \$3/b in December as the market became oversupplied with slower demand not only from the petrochemical sector, but also from the reformer units and gasoline blenders, while arbitrage opportunities to Asia remained limited.

Graph 6.4

Rotterdam crack spread vs. Brent

Sources: Argus Media and OPEC Secretariat.

The European **gasoil** market reversed the recovery seen in the last months as the market was pressured by the supply side with increasing regional supplies amid higher inflows into the region, mainly from the US. Another bearish factor was the expected increase in Russian ULSD exports in the coming weeks.

The gasoil crack spread against Brent crude at Rotterdam lost almost \$1 versus the previous month's level to average around \$11/b in December. Further losses were limited by some support coming from the uptick in heating oil demand along with decreases in ARA gasoil inventories.

At the **bottom of the barrel**, in December the fuel oil market reversed its recovery trend seen during the last months due to higher availability of bunker fuel as slower demand for SRFO in Europe contributed to increasing volumes of quality bunker fuel while arbitrage opportunities of bunker to Singapore were limited and ARA fuel oil inventories were on the rise, thus pressuring the regional market.

The NWE fuel oil crack lost almost \$3 compared with the previous month to average around minus \$7/b in December. Outright crude oil prices also played a role in hitting the margins.

Asian market

The Asian market continued to be relatively healthy during December on the back of firm regional demand. However, pressure coming from the supply side with the end of the maintenance season caused refinery margins to fall.

The Asian **gasoline** market continued to receive support from the demand side, with strong regional demand, mainly from India and Indonesia, and higher requirements seen from East Africa.

On the other hand, some tightening sentiment was fueled by stricter quality standards in the gasoline market starting in 2017 with the introduction of lower sulphur specifications in Vietnam and the "China V" quality standards starting in January.

However, despite healthy demand, gasoline margins lost some of the ground gained in the previous month due to expectations of higher inflows from the West and increasing refinery runs following the end of maintenance in the region.

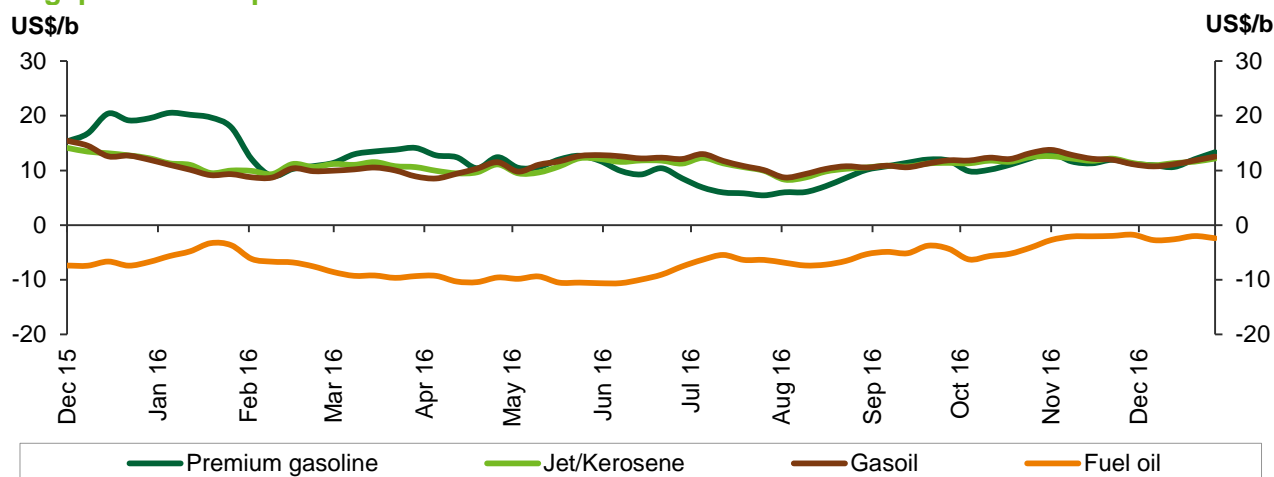
The gasoline crack spread against Oman crude in Singapore averaged around \$11.5/b in December, losing around 50 cents compared with the previous month's level.

Product Markets and Refinery Operations

The Singapore **naphtha** crack weakened during December, losing more than \$3/b as the supply side outweighed strong demand in the petrochemical sector. Additional volumes are expected from the West amid increasingly available volumes coming from the Middle East, mainly from the UAE.

Graph 6.5

Singapore crack spread vs. Oman



Sources: Argus Media and OPEC Secretariat.

At the **middle of the barrel**, the gasoil crack spread reversed the recovery trend seen in the previous month due to pressure coming from seasonally increasing supplies following the end of refinery maintenance. The ample supplies outweighed the higher demand reported from several countries such as Bangladesh, Pakistan, Indonesia and Malaysia.

Another bearish factor was the expected impact of the anti-pollution response on Chinese diesel and gasoil demand. Several factories were forced to reduce operations and some restrictions were placed on vehicle movements, mainly in the more affected cities of Beijing and around the Shandong province.

The gasoil crack spread in Singapore against Oman averaged around \$11.4/b in December, losing around \$1 compared with the previous month's level.

The Asian **fuel oil** market continued to gain support from firmer demand for bunker fuel and power generation. Additional demand was also reported from Malaysia, while slower demand growth is expected from South Korea after the restart of its nuclear capacity.

The fuel oil crack spread in Singapore against Oman averaged about minus \$2.5/b in December, losing around 50 cents from the previous month. Developments in crude oil prices also impacted fuel oil margins.

Table 6.1

Refinery crude throughput, mb/d

	<u>2013</u>	<u>2014</u>	<u>2015</u>	<u>1Q16</u>	<u>2Q16</u>	<u>3Q16</u>	<u>4Q16**</u>
Total OECD	36.05	36.33	37.41	37.78	37.19	38.77	38.26
OECD America*	18.24	18.69	18.94	19.05	19.24	19.65	19.26
of which US	15.03	15.55	15.90	15.94	16.27	16.68	16.07
OECD Europe	11.25	11.23	11.87	11.54	11.18	12.19	12.01
of which:							
France	1.12	1.09	1.15	1.13	0.94	1.19	1.25
Germany	1.86	1.84	1.88	1.87	1.81	1.94	1.90
Italy	1.25	1.18	1.32	1.22	1.28	1.36	1.33
UK	1.20	1.12	1.12	1.01	1.07	1.12	1.09
OECD Asia Pacific	6.55	6.41	6.59	7.19	6.78	6.93	6.99
of which Japan	3.20	3.07	3.08	3.49	3.17	3.24	3.23
Non-OECD	40.33	41.01	41.93	43.02	42.71	42.95	42.52
of which:							
China	9.78	10.16	11.00	11.32	11.66	11.53	11.35
Middle East	6.45	6.60	6.98	7.42	7.19	7.43	7.36
Russia	5.59	5.92	5.79	5.61	5.49	5.83	5.71
Latin America	5.37	4.96	4.81	4.72	4.43	4.40	4.49
India	4.31	4.50	4.58	4.94	4.88	4.90	5.00
Africa	2.07	2.29	2.15	2.19	2.17	2.15	2.20
Total world	76.38	77.34	79.33	80.80	79.90	81.72	80.79

Note: * Data includes Mexico and Chile.

** OPEC Secretariat's estimate.

Totals may not add up due to independent rounding.

Source: OPEC Secretariat.

Product Markets and Refinery Operations

Table 6.2

Refined product prices, US\$/b

	Nov 16	Dec 16	Change Dec/Nov	Year-to-date 2015	2016
US Gulf (Cargoes FOB):					
Naphtha*	47.00	53.74	6.74	59.46	45.05
Premium gasoline (unleaded 93)	62.37	71.77	9.40	77.67	63.10
Regular gasoline (unleaded 87)	55.33	66.19	10.86	67.58	57.15
Jet/Kerosene	56.64	63.33	6.69	64.76	52.81
Gasoil (0.2% S)	53.85	60.95	7.10	63.80	50.10
Fuel oil (3.0% S)	38.30	45.46	7.16	40.78	32.13
Rotterdam (Barges FoB):					
Naphtha	45.82	50.90	5.08	50.88	42.42
Premium gasoline (unleaded 98)	64.62	71.37	6.75	75.53	63.58
Jet/Kerosene	57.36	64.50	7.14	66.47	53.50
Gasoil/Diesel (10 ppm)	57.29	64.89	7.60	66.03	53.28
Fuel oil (1.0% S)	40.98	46.70	5.72	40.16	34.14
Fuel oil (3.5% S)	35.71	42.28	6.57	40.75	29.64
Mediterranean (Cargoes FOB):					
Naphtha	45.09	49.70	4.61	48.10	41.53
Premium gasoline**	57.83	64.86	7.02	69.36	56.27
Jet/Kerosene	55.87	62.61	6.74	64.62	51.90
Diesel	57.93	65.41	7.48	67.50	54.36
Fuel oil (1.0% S)	40.71	48.84	8.13	42.06	34.61
Fuel oil (3.5% S)	37.30	44.01	6.71	40.55	32.12
Singapore (Cargoes FOB):					
Naphtha	46.82	51.51	4.69	52.65	42.71
Premium gasoline (unleaded 95)	58.99	66.68	7.69	69.19	56.06
Regular gasoline (unleaded 92)	56.51	64.25	7.74	66.09	53.25
Jet/Kerosene	56.63	64.10	7.47	64.80	52.83
Gasoil/Diesel (50 ppm)	57.03	64.09	7.06	66.18	52.88
Fuel oil (180 cst 2.0% S)	43.90	51.68	7.78	45.95	37.11
Fuel oil (380 cst 3.5% S)	41.68	49.47	7.79	44.27	34.92

Note: * Barges.

** Cost, insurance and freight (CIF).

Sources: Argus Media and OPEC Secretariat.

Tanker Market

In December, the tanker market showed a positive momentum as its spot freight rates rose across both clean and dirty sectors. Dirty tanker rates continued to increase in December, as they had in the past few months. The average freight rates for VLCC, Suezmax and Aframax went up by 18%, 25% and 1%, respectively, from a month before. These higher rates were driven by several factors, but the most important were delays in eastern ports and uncertain discharge programmes. Additionally, increased pre-holidays activities and thinning tonnage supply in some areas also contributed towards the increase in spot freight rates. Similarly, the clean market showed higher monthly freight rates on all reported routes, also reflecting gains from those registered a year ago on both directions of Suez.

Spot fixtures

In December, OPEC spot fixtures increased by 5.7% from the previous month to average 11.73 mb/d, according to preliminary data. Higher spot fixtures were registered from the Middle East-to-Western destinations, which increased by 0.55 mb/d in December to average 2.9 mb/d. Seasonal winter demand supported the fixture increase in December. Spot fixtures from outside the Middle East registered a gain of 0.49 mb/d, or 18%, in December, compared with one month earlier.

Table 7.1

Tanker chartering, sailings and arrivals, mb/d

	Oct 16	Nov 16	Dec 16	Change Dec 16/Nov 16
Spot Chartering				
All areas	15.42	15.96	16.38	0.42
OPEC	11.21	11.10	11.73	0.63
Middle East/East	5.30	6.04	5.64	-0.40
Middle East/West	2.53	2.35	2.90	0.55
Outside Middle East	3.39	2.71	3.20	0.49
Sailings				
OPEC	23.75	24.01	24.07	0.06
Middle East	17.12	17.36	17.52	0.16
Arrivals				
North America	9.53	9.72	10.12	0.40
Europe	12.13	12.34	12.36	0.03
Far East	8.30	8.92	8.66	-0.26
West Asia	4.87	4.41	4.72	0.31

Sources: Oil Movements and OPEC Secretariat.

Sailings and arrivals

OPEC sailings increased by 0.06 mb/d, or 0.3%, in December to stand at 24.07 mb/d, accompanied by a rise in Middle East sailings. In December, Middle East sailings gained 0.16 mb/d, or 9%, from the previous month to stand at 17.52 mb/d. Crude oil arrivals increased in December in all areas with the exception of arrivals at Far East, which showed lower arrivals by 0.26 mb/d, or 2.9%, from a month earlier. Arrivals in North America, Europe and West Asia went up by 4.2%, 0.2% and 7.1%, respectively, compared with the previous month.

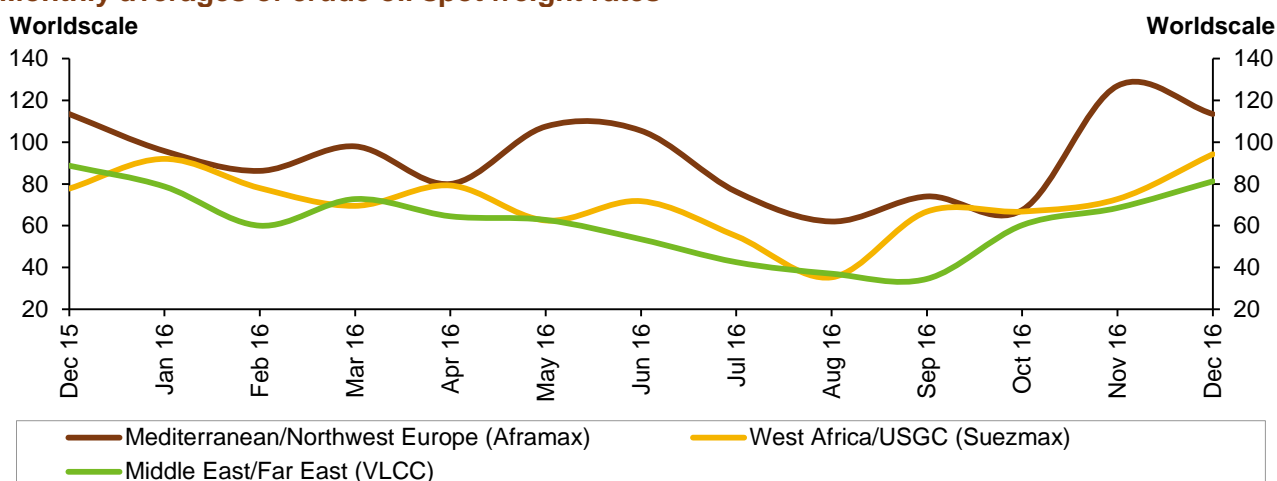
Spot freight rates VLCC

VLCC market activity was mostly steady in the month of December, as chartering activities in both Middle East and West Africa led to a further reduction in the amount of available vessels. Vessel supply was already tightening as a result of increasing delays in Indian and eastern ports due to weather delays and ullage limitations, which together added to the increasing discharge delays. This thus supported the increase in freight rates and resulted in sharp gains in daily earnings. The uncertain situation helped ship owners of secured itinerary vessels, allowing them to have the upper hand in the market, while pushing for higher rates, mainly for Middle East loadings. The third week of December, however, showed a decline in activities, which combined with a downward movement of rates as charterers seemed to be holding their requirements in order to counter the increasing sentiment in rates. In December, VLCC spot freight rates for tankers operating on the Middle East-to-West showed the highest gains among other routes increasing by 26% from the previous month to stand at WS49 points. This was followed by freight rates registered for tankers in the Middle East-to-East routes, which increased by 19% m-o-m.

VLCC spot freight rates for tankers trading on the West Africa-to-East routes increased by WS9 points, or 14%, in December. All rates registered on the reported routes remain 3% to 9% below those of the same month in 2016.

Graph 7.1

Monthly averages of crude oil spot freight rates



Sources: Argus and Platts.

Suezmax

In December, Suezmax spot freight rates registered remarkable gains on a monthly and annual basis. On average, Suezmax spot freight rates climbed by 25% compared with the previous month and by 22% from the same month a year earlier.

The West African Suezmax market had a very quiet start at the beginning of the month with a wide supply of vessels. These vessels were initially considered a threat to potential gains in the VLCC sector market, as they could be suitable replacements for VLCCs once the difference in rates justifies a split cargo. Similarly, Suezmax requirements in the Middle East were thin at that point and its freight rates remained low. The low freight rates also persisted in other regions at the beginning of the month as transactional delays in the Turkish Straits by up to eight days were not enough to support freight rates in the Black Sea.

Suezmax rates improved dramatically in the second week of the month, with gains driven by significant improvements in loading requirements across different regions. This resulted in a notable thinning in vessel supply. Nevertheless, the amount of enhancements varied as they remained moderate in the Mediterranean and the Black Sea, despite continuous transactional delays. In West Africa, freight rates

started to rise, as the tonnage list tightened and the replacement requirements occurred with some delays reported. In the Caribbean, the Suezmax market also witnessed higher rates as a result of higher trends created by the Aframax vessels in the region. Accordingly, average spot freight rates for tankers operating on the West Africa-to-US route increased by WS21 points in December to average WS94 points. On the Northwest Europe-to-US route, Suezmax spot freight rates increased by 20% compared with a month earlier, to average WS76 points.

Table 7.2

Spot tanker crude freight rates, *Worldscale*

	Size 1,000 DWT	Oct 16	Nov 16	Dec 16	Change Dec 16/Nov 16
Crude					
Middle East/East	230-280	60	69	81	13
Middle East/West	270-285	36	39	49	10
West Africa/East	260	62	68	77	10
West Africa/US Gulf Coast	130-135	67	73	94	22
Northwest Europe/US Gulf Coast	130-135	67	64	76	13
Indonesia/East	80-85	82	88	114	27
Caribbean/US East Coast	80-85	97	126	137	11
Mediterranean/Mediterranean	80-85	71	134	115	-18
Mediterranean/Northwest Europe	80-85	68	127	114	-14

Sources: *Argus Media and OPEC Secretariat.*

Aframax

Aframax spot freight rates were no exception in December, showing gains from the previous month though these remain less than those registered by the larger tanker sectors of the market.

The Caribbean Aframax market was active and the pre-holiday rush saw the level of transatlantic inquiries grow in combination with increased weather delays, leading to firmer sentiment, allowing ship owners to push for higher rates (mainly for prompt replacements). As a result, spot freight rates for tankers operating on the Caribbean-to-US East Coast (USEC) went up by 9% in December to average WS173 points, WS115 points higher than those in the same month of the previous year. Aframax freight rates in the East reported an increase as well, with spot freight rates for tankers operating on the Indonesia-to-East route showing an increase of 30% from the previous month to average WS114 points.

Following the massive gains in the Mediterranean markets achieved by the Aframax sector in November, freight rates the following month cooled off, showing a decline as more vessels were added to the position list and the situation balanced. The Aframax market in the Mediterranean remained balanced with all pre-holiday requirements covered easily. Therefore, tankers operating on the Mediterranean-to-Mediterranean and Mediterranean-to-Northwest Europe routes saw drops in spot freight rates of 14% and 11% during December to stand at WS115 points and WS114 points, respectively. However, those drops remain relative to the increase in rates achieved one month before.

Clean spot freight rates

Clean tanker spot freight rates shared the tanker market's upward momentum, reflecting higher freight rates on all reported routes in December with no exception.

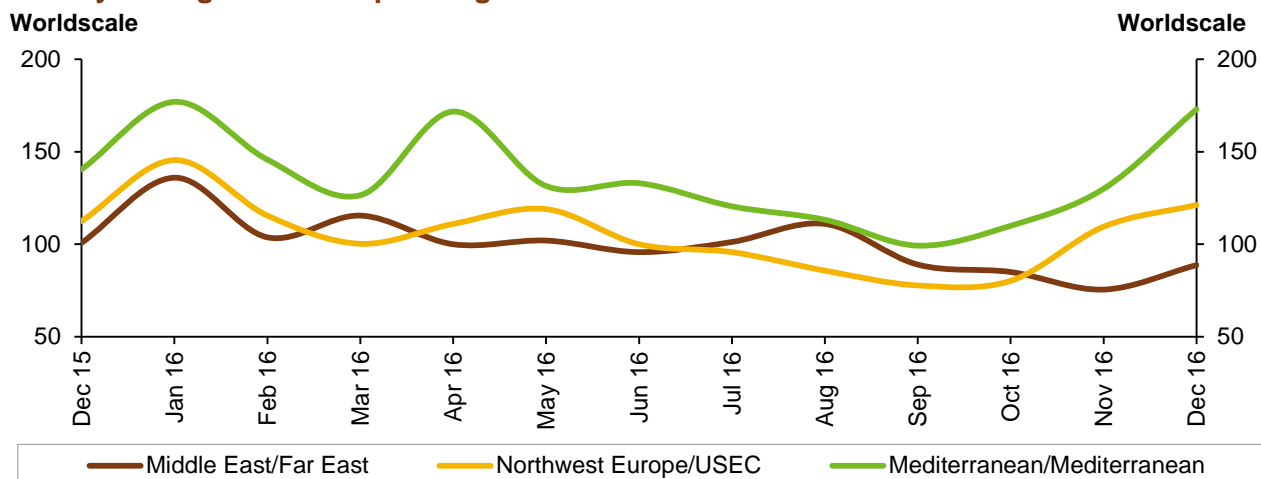
In the East, clean tanker spot freight rates from the Middle East-to-East experienced a hike of 19% compared with the previous month. The increase in market activity was only witnessed during the second half of December, giving medium-range vessel owners the chance to push for higher rates as vessel supply tightened. Clean spot freight rates for tankers trading on the Middle East-to-East and the Singapore-to-East routes increased by 18% and 20%, respectively.

Tanker Market

West of Suez, clean tanker spot freight rates increased as rates edged up for tankers of different sizes. The transatlantic clean tanker market firmed as a result of higher loading requirements. Spot freight rates for tanker operations on the Northwest Europe-to-USEC and US Gulf Coast increased by 11%, to average WS121 points in December.

Graph 7.2

Monthly average of clean spot freight rates



Sources: Argus Media and OPEC Secretariat.

In the Mediterranean, clean spot freight rates increased in December compared with the previous month, partially on the back of voyage delays. Clean spot freight rates for tankers trading in the Mediterranean-to-Mediterranean route rose by 33% in December compared with a month earlier, to average WS173 points, and clean spot freight rates for tankers operating on the Mediterranean-to-Northwest Europe route gained 30%, to stand at WS183 points. On average, spot freight rates registered in both East and West of Suez showed an annual increase of 2% and 18%, respectively

Table 7.3

Spot tanker product freight rates, *Worldscale*

Products	Size 1,000 DWT	Oct 16	Nov 16	Dec 16	Change Dec 16/Nov 16
		Middle East/East	30-35	85	76	89	13
Singapore/East	30-35	112	104	125	21
Northwest Europe/US East Coast	33-37	80	110	121	12
Mediterranean/Mediterranean	30-35	110	130	173	43
Mediterranean/Northwest Europe	30-35	117	140	183	43

Sources: Argus Media and OPEC Secretariat.

Oil Trade

In December, preliminary data shows that US crude oil imports declined to average 7.8 mb/d, down by 42 tb/d from the previous month and down by 73 tb/d, or 1%, from a year earlier. On a year-to-date basis, US crude imports in December were 500 tb/d higher. US monthly product imports declined by 385 tb/d from the previous month, while on an annual comparison they dropped by 102 tb/d, or 6%.

Japan's crude oil imports increased in November by 85 tb/d or 3%, to average 3.1 mb/d, following a drop seen a month earlier. Y-o-y, crude imports showed a drop of 121 tb/d, or 4%. Japan's product imports rose in November by 120 tb/d, to average 560 tb/d. This was up by 27% m-o-m, but was still 3% less than last year.

China's crude oil imports increased by 1.1 mb/d, or 16%, in November to average 7.9 mb/d. On an annual comparison, China's crude imports were 1.2 mb/d, or 18%, higher than last year. China's product imports were also up in November increasing by 215 tb/d to reach 1.2 mb/d.

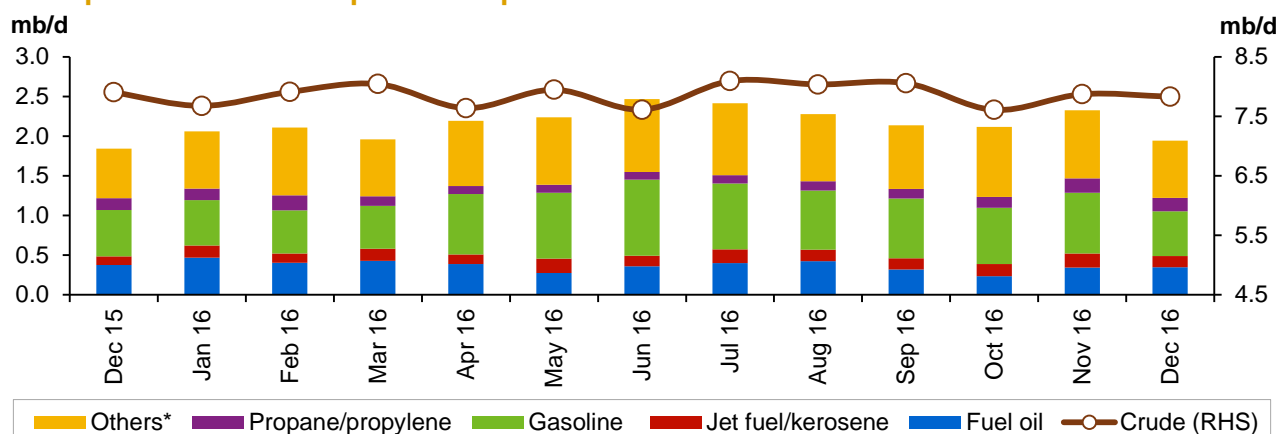
In November, India's crude imports increased by 290 tb/d, or 7%, from the previous month to average 4.6 mb/d. At the same time, crude imports reflected an annual gain of 517 tb/d, or 13%. Refinery runs in India were reported higher in November. India's product imports in November increased both on a monthly and an annual basis, rising by 12 tb/d and 223 tb/d, respectively, to average 833 tb/d for the month.

US

In December, preliminary data shows that US **crude oil imports** declined to average 7.8 mb/d, down by 42 tb/d from the previous month and down by 73 tb/d, or 1%, from a year earlier. On a year-to-date basis, US crude imports were 500 tb/d higher than over the same period a year earlier.

Graph 8.1

US imports of crude and petroleum products



Note: *Others: Contains natural gas liquids, liquefied refinery gases (LRG's), other liquids and all finished petroleum products except gasoline, jet fuel/kerosene, fuel oil and propane/propylene.

Sources: US Energy Information Administration and OPEC Secretariat.

US **product imports** declined by 385 tb/d from the previous month, while on an annual comparison they decreased by 102 tb/d, or 6%.

As to US **product exports**, in December they were 632 tb/d higher than a month earlier to average 5.2 mb/d. On an annual comparison, product exports were up by 340 tb/d, or 7%, over a year ago.

As a result, **US total net imports dropped in December by 1.2 mb/d, or 44%, to average 4 mb/d.**

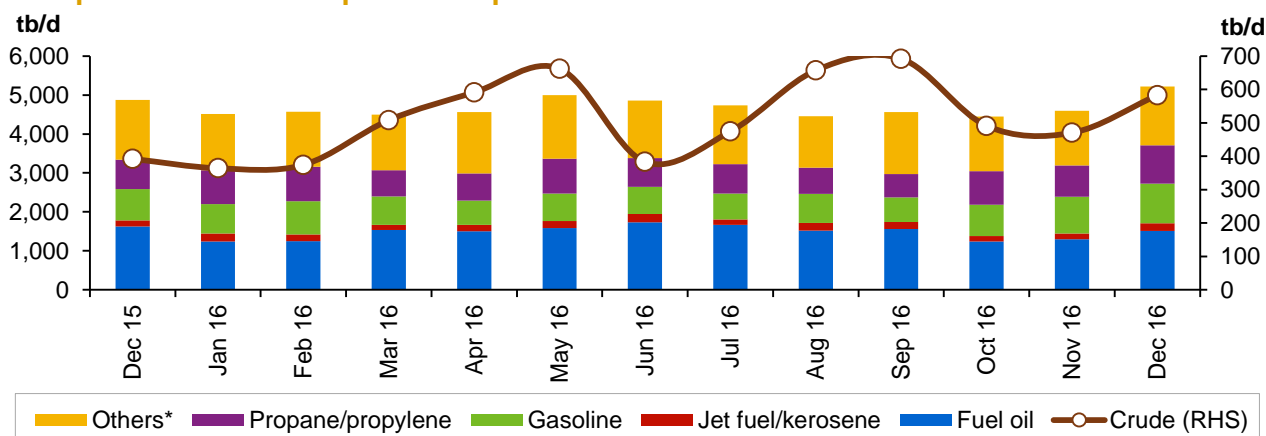
In October, the first and second **biggest crude suppliers** to the US maintained the same ranking seen a month earlier. Canada remained the premier crude supplier to the US accounting for 43% of total US

Oil Trade

crude imports, though this was 43 tb/d, or 1%, down from month ago. Saudi Arabia remained as the second largest supplier to the US in October, with also less crude exports to US compared to the previous month, falling by 186 tb/d. Venezuela came in as the third top supplier accounting for 10% of total US crude imports, though its exports to the US fell by 54 tb/d, or 7%, from the previous month.

Graph 8.2

US exports of crude and petroleum products



Note: *Others: Contains natural gas liquids, liquefied refinery gases (LRG's), other liquids and all finished petroleum products except gasoline, jet fuel/kerosene, fuel oil and propane/propylene.

Sources: US Energy Information Administration and OPEC Secretariat.

Total **crude imports** in October from **OPEC Member Countries** were 179 tb/d, or 6%, lower than in the previous month. Crude imports from OPEC Member Countries accounted for 41% of total US crude imports. As to US **product imports from OPEC Member Countries**, these were 46 tb/d, or 10%, lower than the previous month, although they remained almost stable from a year before.

Looking to the **product supplier share**, Canada and Russia maintained their position as the first and second suppliers to the US, accounting for 21% and 18%, respectively, of all US imports. Russia's product exports to the US were 105 tb/d higher in October than the previous month. Imports from Canada were 133 tb/d less than a month before. Algeria came in as the third largest supplier to the US with an average of 141 tb/d, and maintaining a stable share and stable volumes, compared to the previous month.

Looking into the **import regions**, in October 2016, the largest volumes of US crude imports were sourced from North America, with an average of 3.2 mb/d. North America came in as the top region for US crude imports, followed by Latin America which averaged 2 mb/d in October. The Middle East came in as the third-most important region with an average of 1.7 mb/d. Imports from Africa were up in October and averaged 561 tb/d.

Table 8.1

US crude and product net imports, tb/d

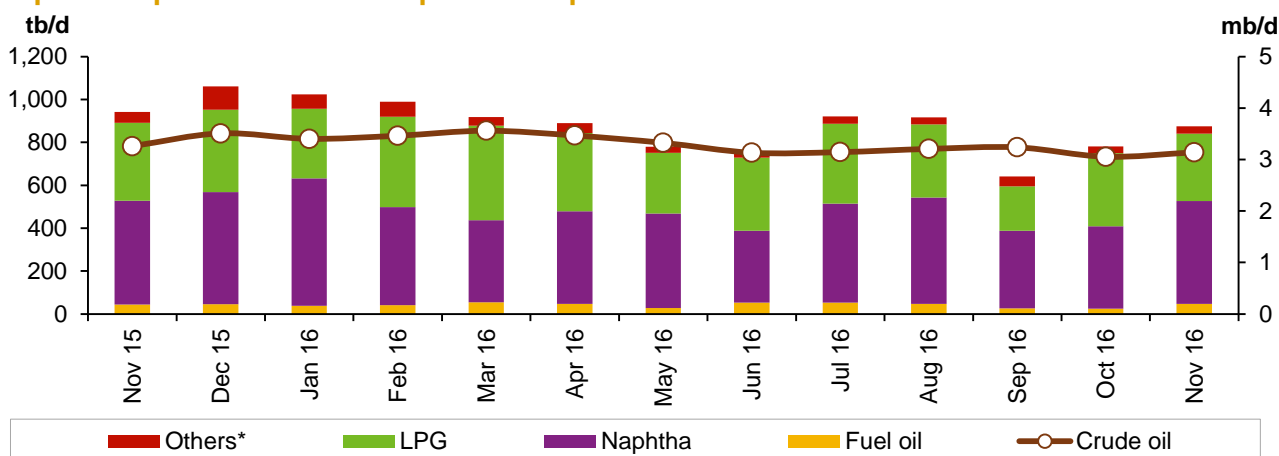
	Oct 16	Nov 16	Dec 16	Change Dec 16/Nov 16
Crude oil	7,116	7,401	7,246	-154
Total products	-2,335	-2,264	-3,272	-1,009
Total crude and products	4,781	5,137	3,974	-1,163

Sources: US Energy Information Administration and OPEC Secretariat.

Japan

Japan's **crude oil imports** increased by 85 tb/d, or 3%, to average 3.1 mb/d in November, following the drop experienced one month earlier. Y-o-y, crude imports showed a drop of 121 tb/d, or 4%. At the same time, Japan's refinery runs increased by almost 360 tb/d in November from a month ago.

Graph 8.3
Japan's imports of crude and petroleum products



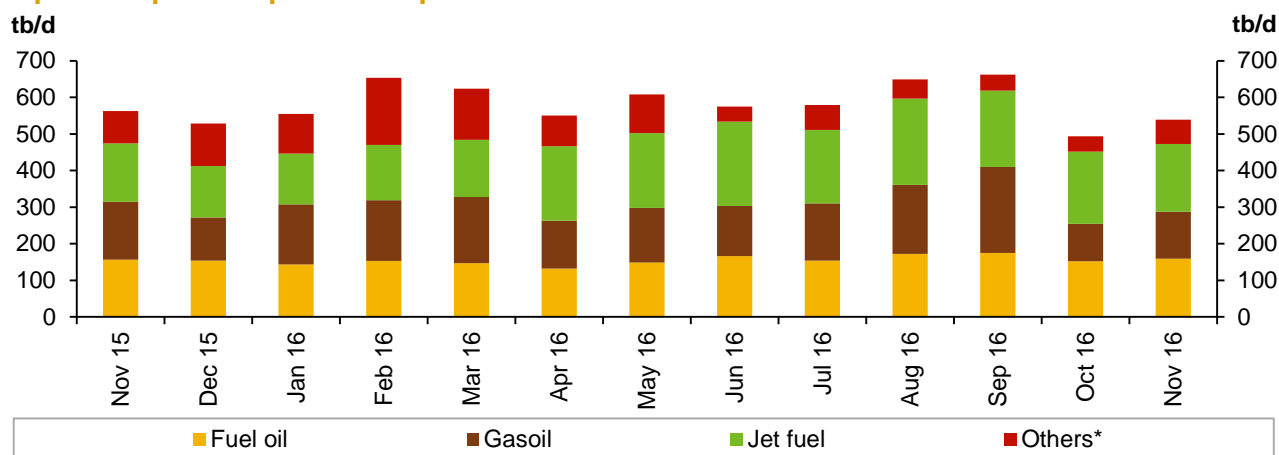
Note: *Others: Contains gasoline, jet fuel, kerosene, gasoil, asphalt and paraffin wax.
Sources: Ministry of Economy, Trade and Industry of Japan and OPEC Secretariat.

Looking at the **crude suppliers' share**, Saudi Arabia came in as the first crude supplier to Japan, as in previous months, with a share of 39% of total crude imports. However, this remains 30 tb/d below the levels seen in previous months. The UAE came in as the second largest supplier to Japan with a share of 25% of total crude exports. It increased its volumes by 83 tb/d, compared to the previous month. Iran came in as the third biggest supplier to Japan in November with a share of 8%.

Japan's **product imports** rose in November by 120 tb/d to average 560 tb/d, up by 27% m-o-m. However, this was still 3% less than last year. Japan's **domestic oil product sales** increased by 1.7% in November compared to a year earlier, marking the first increase in over a year.

As to **product exports**, Japan's exports in November went up by 46 tb/d to average 539 tb/d. Yet on an annual basis they showed a drop of 24 tb/d, or 4%.

Graph 8.4
Japan's exports of petroleum products



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

Oil Trade

Accordingly, **Japan's net imports increased by 160 tb/d in November to average 3.2 mb/d**, the highest level seen since May 2016. This reflects a monthly gain of 5% yet an annual drop of 4%.

Table 8.2

Japan's crude and product net imports, tb/d

	Sep 16	Oct 16	Nov 16	Change Nov 16/Oct 16
Crude oil	3,236	3,055	3,140	85
Total products	-229	-54	21	75
Total crude and products	3,008	3,001	3,161	160

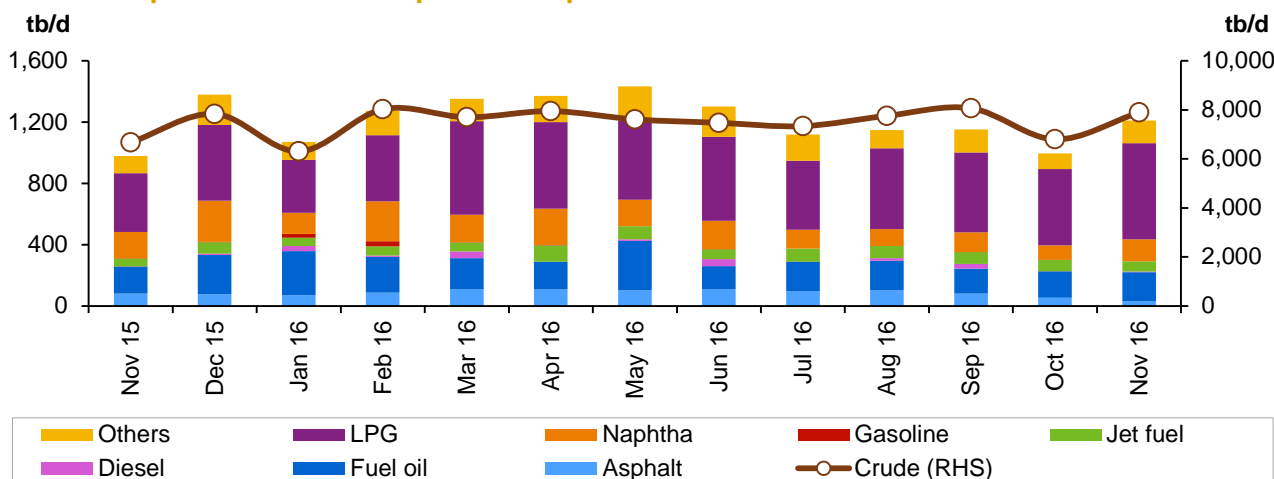
Sources: Ministry of Economy, Trade and Industry of Japan and OPEC Secretariat.

China

China's **crude imports** increased by 1.1 mb/d, or 16%, in November to average 7.9 mb/d, compensating for the drop in crude imports it saw a month earlier. At the same time, China's refinery throughput increased by almost 100 tb/d. On an annual comparison, China's crude imports were 1.2 mb/d, or 18%, higher than the previous year. On a year-to-date basis, the figures reflect an increase of 907 tb/d, or 14%.

Graph 8.5

China's imports of crude and petroleum products



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

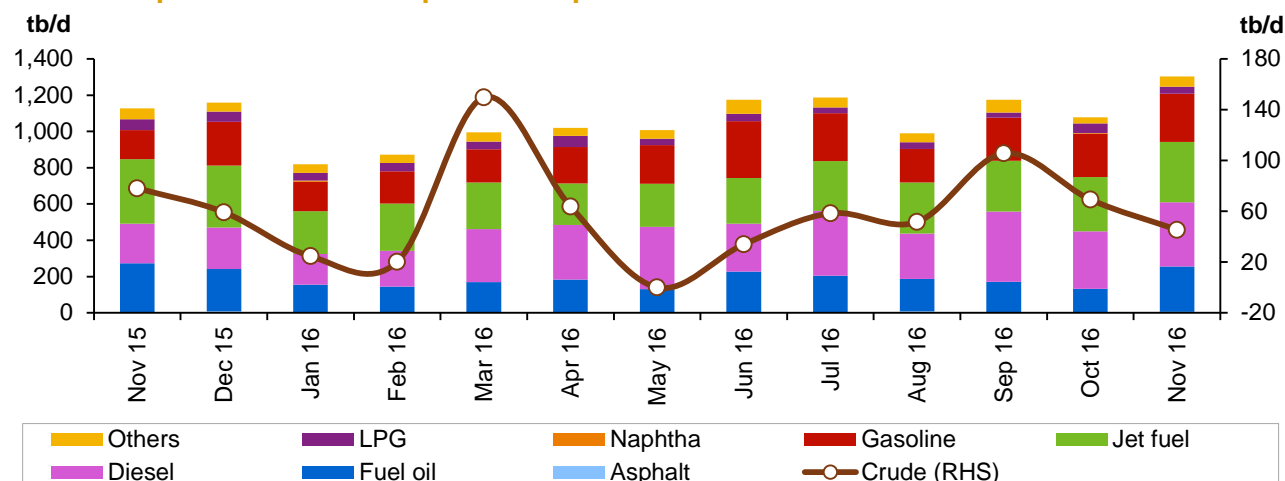
Saudi Arabia, Russia and Angola were the **top crude suppliers** to China in November accounting for 15%, 14% and 11% of total imports, respectively. Crude imports from all top suppliers were higher than the previous month. Imports from Saudi Arabia were up by 210 tb/d, or 22%, while imports from Russia and Angola increased by 4 tb/d and 273 tb/d, respectively. Iraq came in fourth place, although its exports to China were 180 tb/d, or 21%, less than a month earlier.

China's **product imports** were also up in November, increasing by 215 tb/d to reach 1.2 mb/d.

In November, China **exported 45 tb/d of crude oil**. **Product exports**, meanwhile, were up by 224 tb/d compared to a month earlier, to average 1.3 mb/d, thereby reaching a record high level. On a y-o-y basis, it reflects an increase of 175 tb/d or 16%.

Graph 8.6

China's exports of crude and petroleum products



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

As a result, **China's net oil imports increased by 1.1 mb/d from the previous month to average 7.8 mb/d**, and were up by 1.3 mb/d from a year before.

Table 8.3

China's crude and product net imports, tb/d

	Sep 16	Oct 16	Nov 16	Change Nov 16/Oct 16
Crude oil	7,961	6,728	7,848	1,120
Total products	-23	-83	-93	-9
Total crude and products	7,938	6,645	7,756	1,111

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

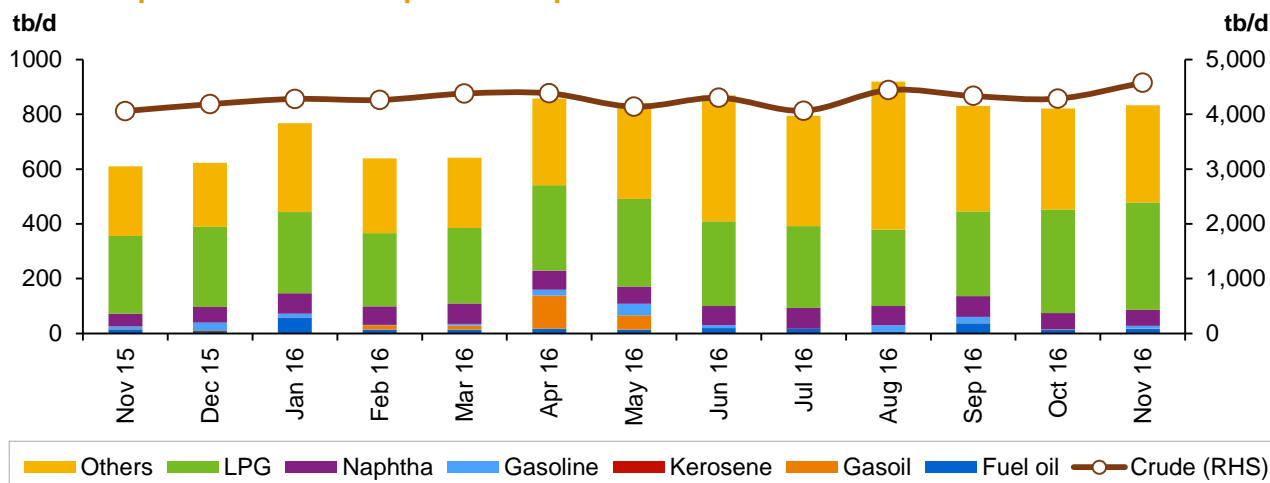
India

In November, Indian **crude imports** increased by 290 tb/d, or 7%, from the previous month to average 4.6 mb/d. At the same time, crude imports reflected an annual gain of 517 tb/d, or 13%. Meanwhile, refinery runs in India were reported higher in November.

Indian **product imports** in November increased both on a monthly and annual basis by 12 tb/d and 223 tb/d, respectively, to average 833 tb/d in November. An increase in monthly product imports came on the back of higher LPG and gasoline imports in November, which went up by 14 tb/d and 9 tb/d, respectively, from a month ago.

Oil Trade

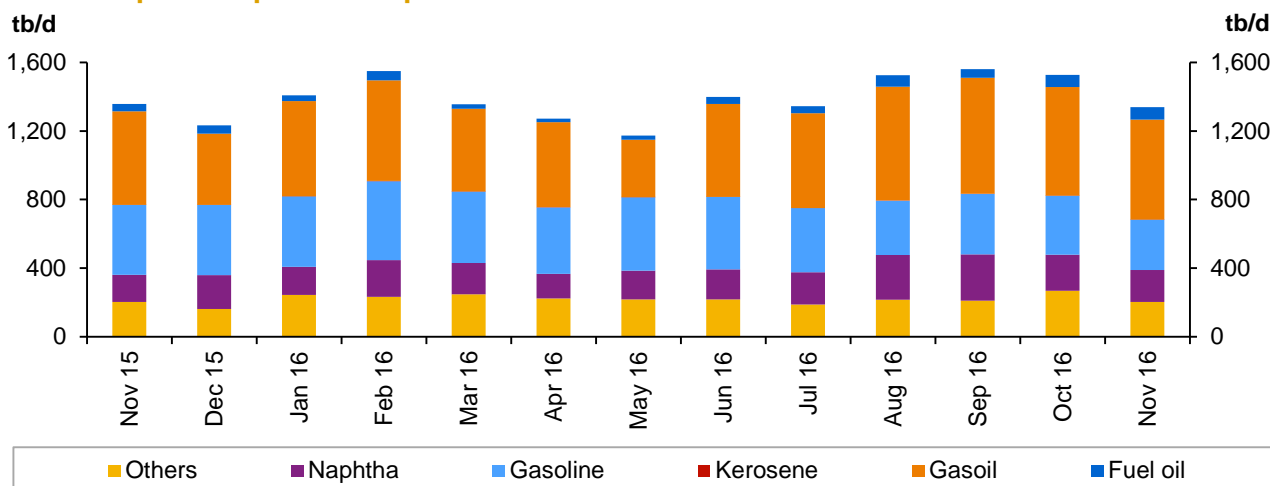
Graph 8.7
India's imports of crude and petroleum products



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

India's **product exports** were 188 tb/d, or 12%, down in November to average 1.3 mb/d, with all product categories showing declines, except fuel oil. On a y-o-y basis, product exports were 19 tb/d, or 1%, lower than a year earlier.

Graph 8.8
India's exports of petroleum products



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

Consequently, **India's net imports increased by 490 tb/d to average 4.1 mb/d in November**, reflecting an increase of 14% m-o-m and 23% y-o-y.

Table 8.4
India's crude and product net imports, tb/d

	Sep 16	Oct 16	Nov 16	Change Nov 16/Oct 16
Crude oil	4,334	4,286	4,576	290
Total products	-730	-705	-506	200
Total crude and products	3,604	3,581	4,071	490

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.

FSU

In November, total crude oil exports from the former Soviet Union (FSU) dropped by 122 tb/d, or 2%, to average 6.9 mb/d. Crude exports through Russian pipelines declined as well by 127 tb/d, or 3%, to average 4.3 mb/d.

Total shipments from the **Black Sea** went up by 92 tb/d, or 17%, to average 624 tb/d. This increase came as a result of higher exports through the Novorossiysk port. Total **Baltic Sea** exports dropped by 228 tb/d in November, mainly because exports through the Primorsk port terminal dropped. Total shipments via the **Druzhba pipeline** went down by 28 tb/d to average 1.1 mb/d, while **Kozmino** shipments rose by 25 tb/d, or 4%, to average 674 tb/d.

Exports through the **Lukoil system** experienced a gain of 21 tb/d in the Barents Sea and a drop of 7 tb/d in Baltic Sea, both from the previous month.

Russian Far East total exports were down by 15 tb/d, or 4%, from the previous month as volumes from the De Kastri port terminal dropped by 17 tb/d from a month before to average 232 tb/d. **Total exports from Central Asia** stood at 190 tb/d, which was 20 tb/d less.

Total exports from the **Black Sea** went up by 121 tb/d. This was affected mainly by higher shipments from the Novorossiysk port terminal (CPC). In the **Mediterranean Sea**, BTC supplies showed a drop of 97 tb/d, or 14%, from the previous month, to average 574 tb/d.

FSU total product exports were up by 484 tb/d, or 19%, from last month to average 3.1 mb/d. This increase came as a result of higher exports of naphtha, fuel oil, VGO and gasoil.

Oil Trade

Table 8.5

Recent FSU exports of crude and petroleum products by sources, *tb/d*

		2015	3Q15	4Q15	Oct 16	Nov 16
Transneft system						
Europe	Black sea total	597	622	580	532	624
	Novorossiysk port terminal - total	597	622	580	532	624
	of which: Russian oil	439	461	425	350	484
	Others	159	161	156	182	140
	Baltic sea total	1,430	1,632	1,561	1,813	1,585
	Primorsk port terminal - total	897	1,062	1,005	1,140	913
	of which: Russian oil	897	1,062	1,005	1,140	913
	Others	0	0	0	0	0
	Ust-Luga port terminal - total	533	570	556	673	671
	of which: Russian oil	350	388	360	464	456
	Others	183	182	196	209	216
	Druzhba pipeline total	1,071	1,047	1,097	1,120	1,092
	of which: Russian oil	1,039	1,015	1,066	1,088	1,060
	Others	32	32	31	32	32
Asia	Pacific ocean total	620	645	658	649	674
	Kozmino port terminal - total	620	645	658	649	674
	China (via ESPO pipeline) total	326	348	311	324	336
	China Amur	326	348	311	324	336
Total Russian crude exports		4,044	4,295	4,207	4,437	4,310
Lukoil system						
Europe & North America	Barents sea total	136	157	163	142	163
	Varandey offshore platform	136	157	163	142	163
Europe	Baltic sea total	16	14	14	15	8
	Kalinigrad port terminal	16	14	14	15	8
Other routes						
Asia	Russian Far East total	320	424	274	391	376
	Aniva bay port terminal	110	128	95	141	144
	De Kastri port terminal	211	296	179	250	232
	Central Asia total	228	183	200	211	190
	Kenkiyak-Alashankou	228	183	200	211	190
Europe	Black sea total	979	979	948	1,133	1,255
	Novorossiysk port terminal (CPC)	875	862	822	1,014	1,172
	Supsa port terminal	84	81	77	65	44
	Batumi port terminal	20	36	49	55	39
	Kulevi port terminal	0	0	0	0	0
	Mediterranean sea total	582	701	663	680	583
	BTC	582	701	663	680	583
Russian rail						
	Russian rail	15	46	35	37	38
	of which: Russian oil	8	42	33	35	37
	Others	6	4	2	2	1
Total FSU crude exports		6,320	6,798	6,505	7,046	6,924
Products						
	Gasoline	157	204	139	191	152
	Naphtha	506	474	536	487	553
	Jet	30	39	54	40	27
	Gasoil	1,004	999	859	752	933
	Fuel oil	1,361	1,065	1,013	818	1,093
	VGO	260	282	323	306	320
Total FSU product exports		3,318	3,064	2,925	2,594	3,078
Total FSU oil exports		9,638	9,862	9,430	9,640	10,002

Sources: Argus Nefte Transport and Argus Global Markets.

Stock Movements

OECD commercial oil stocks fell in November to stand at 2,993 mb, around 271 mb above the latest five-year average. Crude and products indicated a surplus of around 190 mb and 82 mb above the seasonal norm, respectively. In terms of days of forward cover, OECD commercial stocks stood at 63.7 days, 5.3 days higher than the latest five-year average.

Preliminary data for December shows that total commercial oil stocks in the US fell by 20.7 mb to 1,321.9 mb. At this level, they are around 32.5 mb above the same period a year ago and 184 mb higher than the latest five-year average. Within components, crude and products fell by 6.7 mb and 14 mb, respectively.

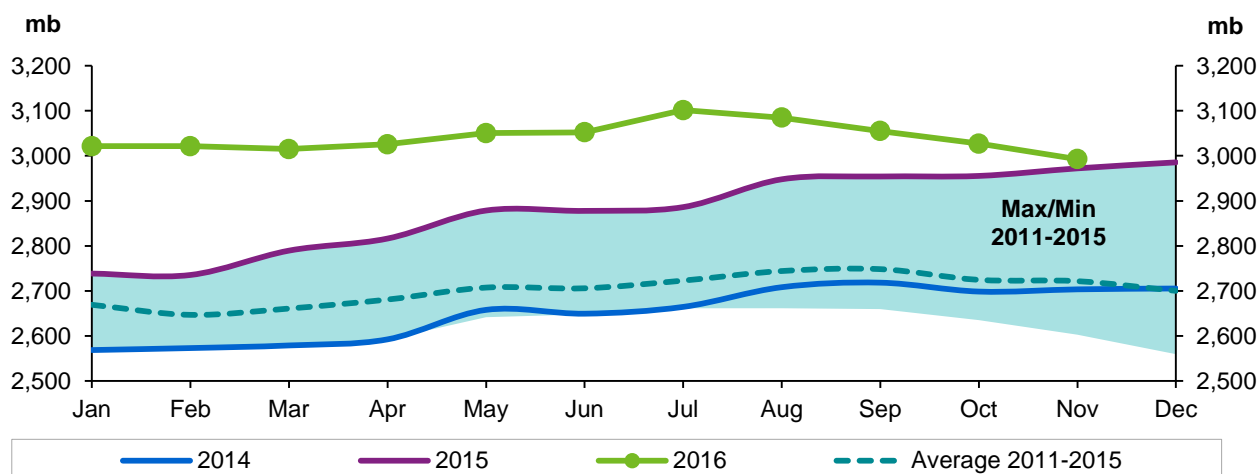
The latest information for China shows total commercial oil inventories fell by 3.3 mb in November to stand at 363.2 mb. Crude fell by 3.6 mb, while product inventories rose by 0.2 mb.

OECD

Preliminary data for November shows that **total OECD commercial oil stocks** fell for the fourth consecutive month, by 34.3 mb, to stand at 2,993 mb, which is around 20.6 mb higher than the same time one year ago and 271 mb above the latest five-year average. From January to November of this year, OECD commercial stock builds have shown considerable signs of slowing, as they increased by only 7 mb, compared with a build of 267 mb the previous year during the same period. The main reason behind a slowing build this year could be lower global supply growth compared with the considerable growth seen a year earlier. Within the components, crude and products fell by 4.6 mb and 29.7 mb, respectively.

Graph 9.1

OECD's commercial oil stocks



Sources: Argus Media, Euroilstock, IEA, METI, OPEC Secretariat and US Energy Information Administration.

OECD commercial **crude** stocks decreased slightly by 4.6 mb in November to stand at 1,507 mb, 37 mb above the same time one year earlier and around 190 mb higher than the latest five-year average. OECD America and OECD Asia Pacific experienced a stock draw, while OECD Europe's stocks witnessed a build.

OECD **product** inventories fell by 29.7 mb in November, following a sharp drop of 39.2 mb in October. At 1,485 mb, OECD product inventories are 26.7 mb below a year ago at the same time and 82 mb above the seasonal norm. All three regions experienced a stock draw.

In terms of **days of forward cover**, OECD commercial stocks declined by 1.5 days in November to stand at 63.7 days, which is 0.3 days above the same month in the previous year and 5.3 days higher

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than the latest five-year average. Within the regions, OECD Americas had 6.9 more days of forward cover than the historical average to stand at 64.3 days in November. OECD Asia Pacific stood 4.4 days above the seasonal average to finish the month of November at 50.7 days. At the same time, OECD Europe indicated a surplus of 2.5 days above the seasonal norm, averaging 71.1 days in November.

Commercial stocks in **OECD Americas** fell by 12.5 mb in November for the fourth consecutive month to stand at 1,590 mb. At this level, they are 27 mb above a year ago and 205 mb higher than the seasonal norm. Within the components, crude and products fell by 3.1 mb and 9.5 mb, respectively.

Commercial **crude** oil stocks in OECD Americas fell at the end of November, ending the month at 830 mb, which was 30 mb above the same time one year ago, and 146 mb above the latest five-year average. Lower US crude imports were behind the drop in crude oil stocks.

Product stocks in OECD Americas fell by 9.5 mb in November, following a sharp drop of 30.4 mb in October. At 761 mb, they are 3.1 mb below the same time one year ago and 58 mb higher than the seasonal norm. Higher consumption could be behind the drop in OECD Americas' product stocks.

OECD Europe's commercial stocks fell by 12.8 mb in November, ending the month at 963 mb, which is 17 mb lower than the same time a year ago, but 45 mb above the latest five-year average. Crude rose by 3.6 mb, while product stocks fell by 16.4 mb.

OECD Europe's commercial **crude** stocks rose in November, ending the month at 417 mb, which is 5.1 mb higher than a year earlier and 24.2 mb higher than the latest five-year average. The build in crude oil stocks came mainly from higher crude production from the North Sea, which outpaced the increase in crude throughput.

OECD Europe's commercial **product** stocks fell by 16.4 mb to end November at 546 mb, which is 22 mb lower than a year ago at the same time and 21 mb higher than the seasonal norm. This build could be attributed to higher demand in the region.

OECD Asia Pacific commercial oil stocks fell by 8.9 mb in November to settle at 439 mb, which is 11 mb higher than a year ago, and 22 mb above the five-year average. Within the components, both crude and products fell by 5.1 mb and 3.8 mb, respectively.

In November, OECD Asia Pacific's **crude** inventories ended the month at 260 mb, which is 5.1 mb below a year ago, yet 19.2 mb above the seasonal norm. OECD Asia Pacific's total **product** inventories ended November at 176 mb, standing 8.6 mb higher than the same time a year ago and 2.7 mb above the seasonal norm.

Table 9.1
OECD's commercial stocks, mb

	Sep 16	Oct 16	Nov 16	Change Nov 16/Oct 16	Nov 15
Crude oil	1,501	1,512	1,507	-4.6	1,470
Products	1,554	1,515	1,485	-29.7	1,502
Total	3,055	3,027	2,993	-34.3	2,972
Days of forward cover	65.5	65.2	63.7	-1.5	63.4

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

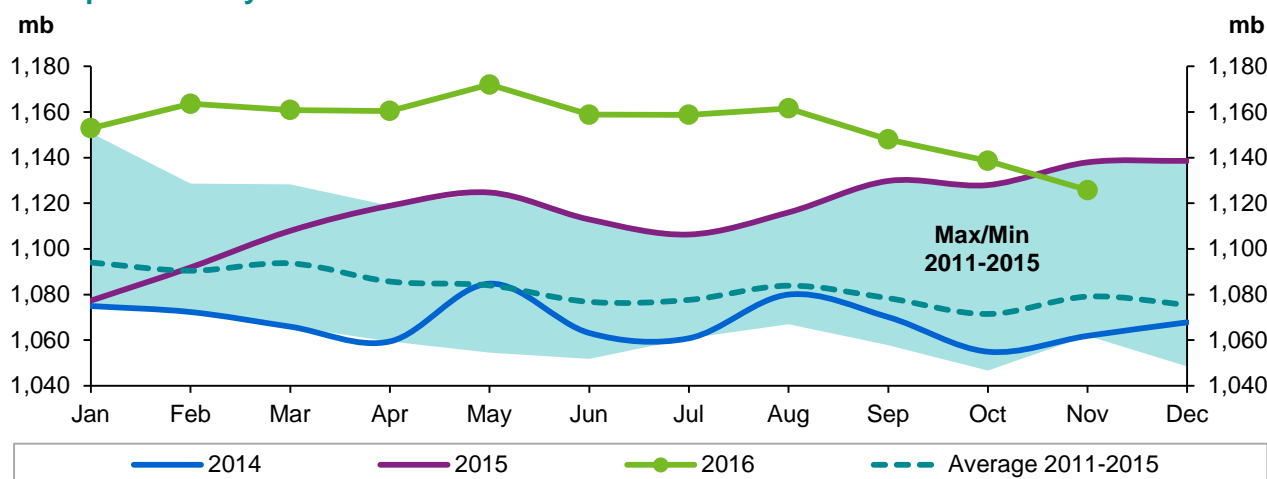
Sources: Argus Media, Euroilstock, IEA, METI, OPEC Secretariat and US Energy Information Administration.

EU plus Norway

Preliminary data for November shows total **European stocks** fell by 12.8 mb to stand at 1,125.8 mb, which is 12.2 mb, or 1.1%, below the same time a year ago and 46.7 mb, or 4.3%, higher than the latest five-year average. Crude stocks rose by 3.6 mb, while product stocks fell by 16.4 mb.

European **crude** inventories rose in November, reversing the decline of the last five consecutive months. At 478.4 mb, European crude stocks stood at 2.2 mb, or 0.5%, lower than the same period a year ago, but were 10.0 mb, or 2.1%, higher than the seasonal norm. The increase in crude oil stocks came on the back of higher domestic production, as refinery throughput increased by around 330,000 b/d, to reach 10.85 mb/d in November.

Graph 9.2
EU-15 plus Norway's total oil stocks



Source: Euroilstock.

By contrast, European **product** stocks fell by 16.4 mb, ending November at 647.4 mb, which is 9.9 mb, or 1.5%, below the same time a year ago, though they were 36.6 mb, or 6.0%, above the seasonal norm. All products, with the exception of naphtha, saw stock draws.

Distillate stocks fell by 13.8 mb in November to stand at 435.8 mb. At this level, distillate inventories were 5.3 mb, or 1.2%, lower than the same time one year ago, but they were still 43.7 mb, or 11.1%, above the latest five-year average. **Gasoline** stocks also decreased by 2.5 mb in November to stand at 113.1 mb, which was 0.5 mb, or 0.4%, above a year earlier, and 4.1 mb, or 3.8%, higher than the seasonal norm. The fall in distillate and gasoline stocks could be attributed to higher domestic demand.

Residual fuel oil stocks fell by 0.6 mb in November to stand at 74.2 mb, which was 7.0 mb, or 8.7%, less than the same month a year ago and 8.7 mb, or 10.5%, lower than the latest five-year average.

Table 9.2
EU-15 plus Norway's total oil stocks, mb

	Sep 16	Oct 16	Nov 16	Change Nov 16/Oct 16	Nov 15
Crude oil	483.4	474.8	478.4	3.6	480.6
Gasoline	117.4	115.6	113.1	-2.5	112.7
Naphtha	24.2	23.8	24.2	0.4	22.3
Middle distillates	446.9	449.6	435.8	-13.8	441.1
Fuel oils	76.1	74.8	74.2	-0.6	81.3
Total products	664.6	663.8	647.4	-16.4	657.3
Total	1,148.0	1,138.6	1,125.8	-12.8	1,137.9

Sources: Argus and Euroilstock.

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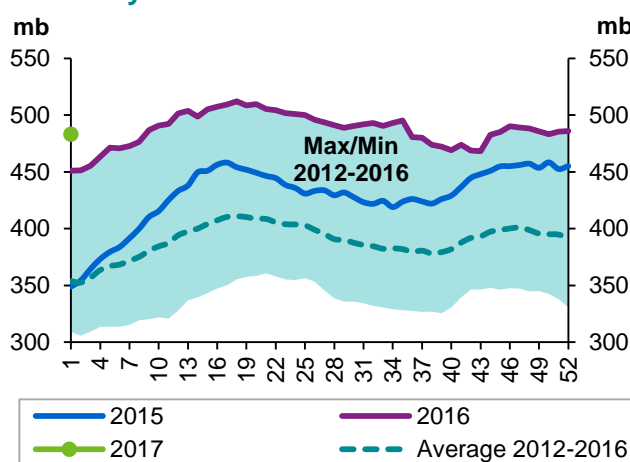
US

Preliminary data for December shows that **total commercial oil stocks** in the US fell by 20.7 mb for the second consecutive month to stand at 1,321.9 mb, which is around 32.5 mb, or 2.5%, above the same period a year ago and 206.4 mb, or 18.5%, higher than the latest five-year average. Within the components, crude and products fell by 6.7 mb and 14 mb, respectively.

US **commercial crude stocks** fell in December to stand at 479 mb, which is 29.8 mb, or 6.6%, above the same time one year ago and 122 mb, or 34%, above the latest five-year average. The drop could be attributed to an increase of about 400,000 b/d of crude oil moving into refineries to average 16.6 mb/d. In contrast, stocks in Cushing, Oklahoma rose by more than 2 mb, ending December at 67.5 mb.

Graph 9.3

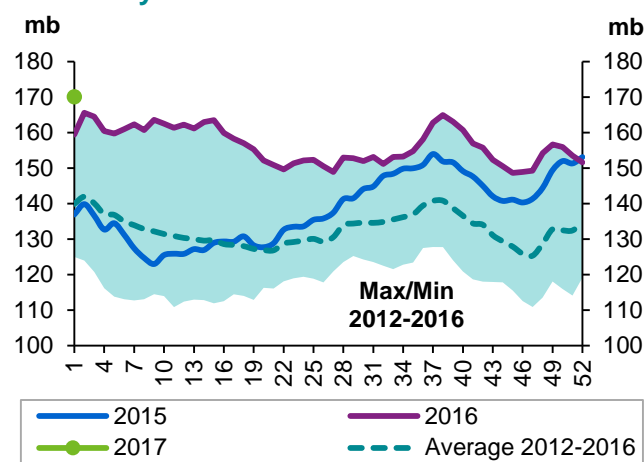
US weekly commercial crude oil inventories



Sources: US Energy Information Administration and OPEC Secretariat.

Graph 9.4

US weekly distillates inventories



Sources: US Energy Information Administration and OPEC Secretariat.

Total product stocks also declined, dropping by 14.0 mb in December, to end the month at 842.9 mb, which is around 2.7 mb, or 0.3%, above the level seen at the same time a year ago, and 84.0 mb, or 11.1%, above the seasonal norm. Within products, the picture was mixed; gasoline and distillate stocks experienced builds, while jet fuel, propylene and other unfinished products saw declines.

Gasoline stocks rose by 5.9 mb in December to settle at 235.5 mb, which is in line with the same period a year ago and 3.9 mb, or 1.7%, above the latest five-year average. The build came mainly from lower consumption, which averaged 8.97 mb/d, lower than in the previous month. Higher gasoline output also contributed to this build.

Distillate stocks rose by 5.0 mb in December to end the month at 161.7 mb, which is a slight surplus over the same period a year ago, but 19.8 mb, or 14%, above the latest five-year average. The build in middle distillate stocks came from higher output, which increased by nearly 30,000 b/d, to average around 5.1 mb/d. Lower demand also contributed to the build.

In contrast, **jet fuel** stocks fell by 0.8 mb, ending December at 43.0 mb, which is 2.6 mb, or 6.4%, above the same period a year ago, and 3.6 mb, or 9.1%, higher than the latest five-year average.

Residual fuel oil inventories rose by 2.0 mb to 42.5 mb in December, which is 0.3 mb, or 0.8%, higher than the same period a year ago, and 6.1 mb, or 16.6%, above the seasonal norm.

Table 9.3

US onland commercial petroleum stocks, mb

	Oct 16	Nov 16	Dec 16	Change Dec 16/Nov 16	Dec 15
Crude oil	488.8	485.8	479.0	-6.7	449.2
Gasoline	224.9	229.5	235.5	5.9	235.5
Distillate fuel	153.9	156.7	161.7	5.0	161.3
Residual fuel oil	39.3	40.4	42.5	2.0	42.1
Jet fuel	44.5	43.8	43.0	-0.8	40.4
Total	1,355.2	1,342.6	1,321.9	-20.7	1,289.5
SPR	695.1	695.1	695.1	0.0	695.1

Sources: US Energy Information Administration and OPEC Secretariat.

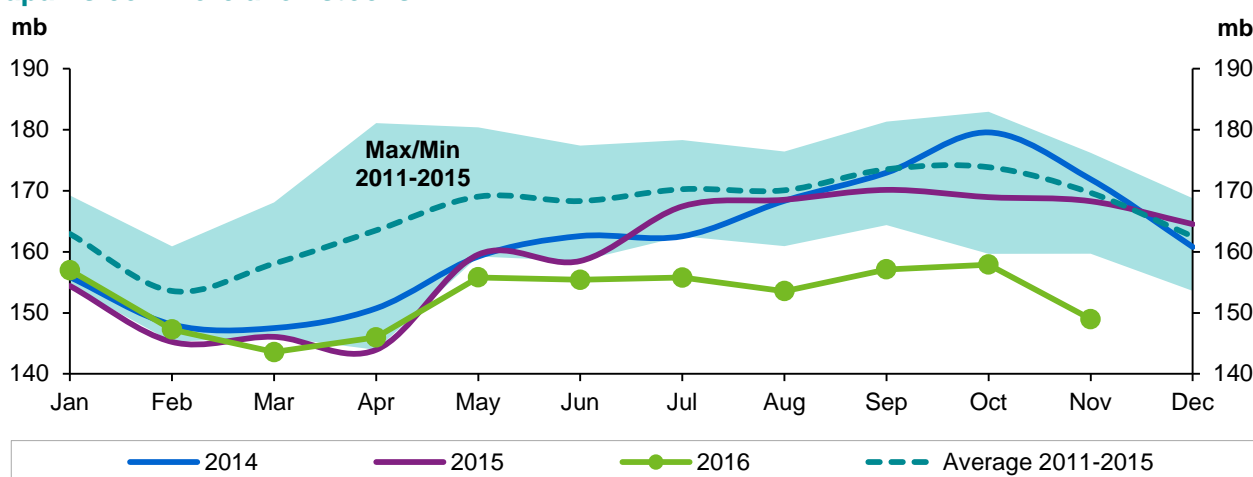
Japan

In Japan, total **commercial oil stocks** fell by 8.9 mb in November, reversing the build of the previous two months. At 149.0 mb, Japanese total commercial stocks were 19.3 mb, or 11.5%, less than the same time a year ago and 20.7 mb, or 12.2%, below the latest five-year average. Within components, crude and products fell by 5.1 mb and 3.8 mb, respectively.

Japanese commercial **crude** oil stocks fell in November to stand at 87.3 mb, which was 11.2 mb, or 11.4%, below the same period a year ago, and 9.1 mb, or 9.4%, below the seasonal norm. The drop was driven by higher crude throughput, which increased by around 360,000 b/d to average 3.26 mb/d. Higher crude imports limited a further drop in crude inventories. Indeed, crude imports rose in November by 85,000 b/d to stand at 3.1 mb/d.

Japan's total **product** inventories also fell by 3.8 mb in November to stand at 61.7 mb; this was 8.1 mb, or 11.6%, lower than the previous year in the same month and 11.6 mb, or 15.9%, less than the seasonal norm. This drop came on the back of higher domestic product sales, which increased by more than 385,000 b/d to average 3.27 mb/d. It should be noted that Japan's total oil sales rose in November from a year ago, marking the first rise in 14 months, with cold weather helping to boost consumption of all products.

Graph 9.5

Japan's commercial oil stocks

Source: Ministry of Economic, Trade and Industry of Japan.

Distillate stocks fell by 2.9 mb in November to stand at 29.9 mb, which is 4.3 mb, or 12.6%, lower than the same period a year ago and 5.5 mb, or 15.6%, below the seasonal average. Within distillate components, jet fuel and kerosene fell by 1.2% and 7.1%, respectively, while gasoil rose by 7.3%. The fall in jet fuel and kerosene came mainly from higher domestic sales, which increased by 11.8% and

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25.1%, respectively. In contrast, the 9.6% build in gasoil oil stocks could be attributed to higher production.

Gasoline inventories also fell by 0.2 mb, ending November at 9.5 mb, 1.0 mb, or 9.5%, lower than a year ago at the same time and 2.1 mb, or 18.2%, lower than the seasonal norm. The fall in gasoline stocks could be driven by lower imports as domestic sales experienced a drop.

Total **residual fuel oil** stocks rose by 0.2 mb in November to stand at 13.4 mb, which is 1.6 mb, or 10.7%, lower than a year ago and 2.0 mb, or 13.0%, below the latest five-year average. Within fuel oil components, fuel oil A fell by 3.5%, driven by higher domestic sales, while fuel oil B.C stocks rose by 3.8% on the back of higher production.

Table 9.4
Japan's commercial oil stocks*, mb

	Sep 16	Oct 16	Nov 16	Change Nov 16/Oct 16	Nov 15
Crude oil	88.8	92.4	87.3	-5.1	98.5
Gasoline	10.2	9.7	9.5	-0.2	10.5
Naphtha	10.5	9.8	8.8	-0.9	10.0
Middle distillates	34.1	32.8	29.9	-2.9	34.2
Residual fuel oil	13.5	13.3	13.4	0.2	15.0
Total products	68.3	65.5	61.7	-3.8	69.8
Total**	157.1	157.9	149.0	-8.9	168.3

Note: * At the end of the month.

** Includes crude oil and main products only.

Source: Ministry of Economy, Trade and Industry of Japan.

China

The latest information for China showed total **commercial oil inventories** fell by 3.3 mb in November to stand at 363.2 mb, which is 15.7 mb lower than the previous year. Within the components, crude fell by 3.6 mb, while product inventories rose by 0.2 mb.

In November, commercial **crude** stocks fell to 226.5 mb, following a stock draw of 4.4 mb a month earlier, and standing 18.7 mb below the previous year at the same time. This drop could be attributed to lower crude production, which decreased by 0.25% from the previous month.

Table 9.5
China's commercial oil stocks, mb

	Sep 16	Oct 16	Nov 16	Change Nov 16/Oct 16	Nov 15
Crude oil	234.5	230.1	226.5	-3.6	245.2
Gasoline	66.9	67.8	68.4	0.6	56.3
Diesel	53.4	51.8	49.8	-2.0	63.1
Jet kerosene	17.8	16.8	18.5	1.7	14.4
Total products	138.0	136.4	136.6	0.2	133.7
Total	372.6	366.5	363.2	-3.3	378.9

Sources: China Oil and Gas Petrochemicals and OPEC Secretariat.

On the other hand, total **product** stocks in China rose marginally by 0.2 mb in November, reversing the drop of the last three months. At 136.6 mb, total product stocks were 2.9 mb above the same time a year ago. Gasoline and kerosene inventories increased, while diesel experienced a fall.

Gasoline stocks rose slightly in November to stand at 68.4 mb – 12.1 mb above the same time a year ago. The build in gasoline stocks was driven by higher output combined with lower demand, attributed to less travel due to cold weather. Kerosene rose by 1.7 mb to stand at 18.5 mb.

In contrast, **diesel** inventories fell by 2.0 mb to stand at 49.8 mb. The fall in diesel stocks came on the back of healthy consumption, driven by higher agricultural and industrial activities.

Singapore and Amsterdam-Rotterdam-Antwerp (ARA)

At the end of November, product stocks in **Singapore** rose by 1.3 mb to stand at 50.1 mb, which was 2.3 mb, or 4.8%, above the same period a year ago. Within products, the picture was mixed, with light distillate and middle distillate stocks rising, while fuel oil stock inventories fell.

Light and **middle distillate** stocks rose in November by 0.2 mb and 1.9 mb, respectively. At 12.9 mb, light distillates stood some 0.5 mb, or 3.9%, lower than the previous year at the same time, while middle distillates ended November at 14.9 mb, which was 2.5 mb, or 20.1%, higher than a year ago in the same period. The build in both products was driven by higher imports to the hub, combined with lower demand in the region.

In contrast, **residual fuel oil** stocks fell by 0.9 mb in November to end the month at 22.3 mb. At this level, they are 0.3 mb or 1.5% higher than the same time a year ago. The fall could be attributed to more demand by marine bunkers in the region.

Product stocks in **Amsterdam-Rotterdam-Antwerp (ARA)** rose by 0.6 mb in November, reversing the fall of the previous three months. At 39.3 mb, they were 9.3 mb, or 19.1%, lower than at the same time a year ago. Within products, gasoline, naphtha and fuel oil saw builds, while gasoil and jet oil both experienced a stock draw.

Gasoline inventories rose by 1.7 mb, ending November at 8.1 mb, which is 2.1 mb, or around 35.6 %, lower than the same month of the previous year. This build could be attributed to lower demand in the region. **Fuel oil stocks** increased by 0.3 mb in November to stand at 4.2 mb, which is 3.6 mb, or nearly 46%, lower than at the same time a year ago. The build was mainly driven by lower demand from marine bunkers in the region.

In contrast, **gasoil** fell by 1.3 mb in November to stand at 20.5 mb. At this level, it stood at 6.4 mb, or 23.7%, below a year ago at the same time.

Balance of Supply and Demand

Demand for OPEC crude in 2016 stands at 31.2 mb/d, which is 1.8 mb/d higher than 2015 level. In 2017, the demand for OPEC crude is projected at 32.1 mb/d, around 0.9 mb/d more than this year.

Estimate for 2016

Demand for OPEC crude for 2016 stood at 31.2 mb/d, representing an increase of 1.8 mb/d from the previous year's level. The first and the second quarter rose by 1.1 mb/d and 2.4 mb/d, respectively, versus the same quarters a year earlier. The third and the fourth quarter also indicate growth of 2.2 mb/d and 1.6 mb/d, respectively.

Table 10.1

Summarized supply/demand balance for 2016*, mb/d

	2015	1Q16	2Q16	3Q16	4Q16	2016
(a) World oil demand	93.19	93.42	93.55	95.41	95.35	94.44
Non-OPEC supply**	57.85	57.86	56.37	56.72	57.61	57.14
OPEC NGLs and non-conventionals	5.94	6.05	6.08	6.11	6.15	6.10
(b) Total non-OPEC supply and OPEC NGLs	63.80	63.91	62.45	62.83	63.75	63.24
Difference (a-b)	29.39	29.51	31.10	32.58	31.59	31.20
OPEC crude oil production	31.47	31.87	32.11	32.57	33.11	32.42
Balance	2.08	2.36	1.00	0.00	1.52	1.21

Note: * 2016 = Estimate.

** Data includes Indonesia.

Totals may not add up due to independent rounding.

Source: OPEC Secretariat.

Forecast for 2017

For 2017, demand for OPEC crude is projected to increase by 0.9 mb/d to average 32.1 mb/d. The first and the second quarters are expected to increase by 1.6 mb/d and 0.4 mb/d, respectively, while the third and the fourth quarters are projected to increase by 0.7 mb/d and 0.9 mb/d, respectively, versus the same quarters this year.

Table 10.2

Summarized supply/demand balance for 2017*, mb/d

	2016	1Q17	2Q17	3Q17	4Q17	2017
(a) World oil demand	94.44	94.59	94.61	96.63	96.52	95.60
Non-OPEC supply**	57.14	57.34	56.92	57.09	57.67	57.26
OPEC NGLs and non-conventionals	6.10	6.17	6.21	6.26	6.33	6.24
(b) Total non-OPEC supply and OPEC NGLs	63.24	63.51	63.13	63.35	64.00	63.50
Difference (a-b)	31.20	31.08	31.48	33.28	32.52	32.10

Note: * 2017 = Forecast.

** Data includes Indonesia.

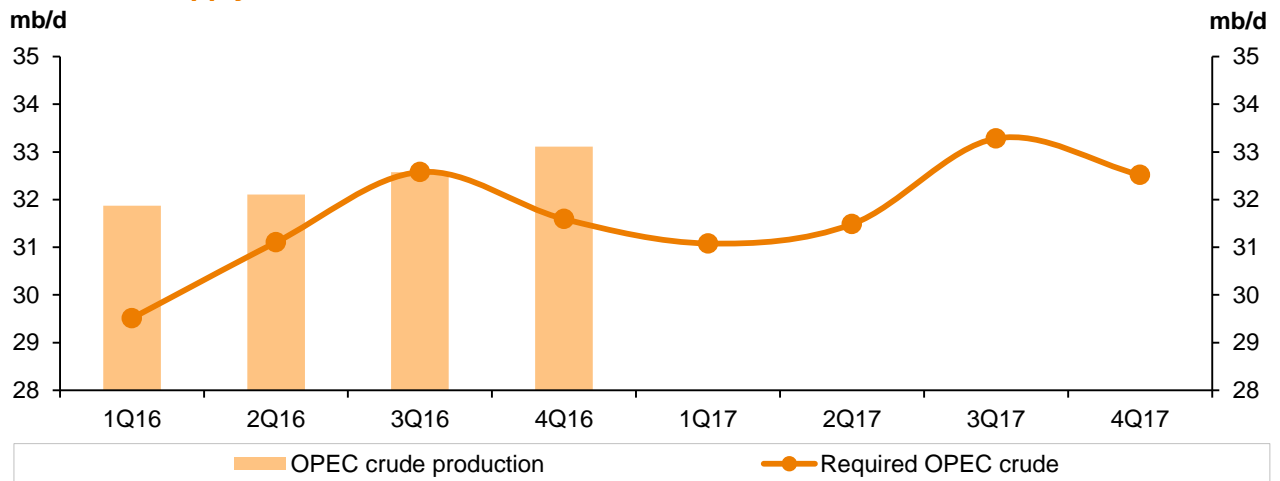
Totals may not add up due to independent rounding.

Source: OPEC Secretariat.

Balance of Supply and Demand

Graph 10.1

Balance of supply and demand



Source: OPEC Secretariat.

Table 10.3:

World oil demand and supply balance, mb/d

	2013	2014	2015	1Q16	2Q16	3Q16	4Q16	2016	1Q17	2Q17	3Q17	4Q17	2017
World demand													
OECD	46.1	45.8	46.4	46.8	46.2	47.3	46.7	46.7	46.9	46.3	47.5	46.9	46.9
Americas	24.2	24.2	24.6	24.6	24.7	25.1	24.8	24.8	24.8	24.8	25.4	24.9	25.0
Europe	13.6	13.5	13.7	13.6	13.9	14.4	13.8	13.9	13.7	13.9	14.4	13.8	14.0
Asia Pacific	8.3	8.1	8.0	8.6	7.6	7.7	8.2	8.0	8.5	7.6	7.7	8.1	8.0
DCs	29.1	29.9	30.6	30.7	31.0	31.5	31.2	31.1	31.3	31.6	32.1	31.9	31.7
FSU	4.5	4.6	4.6	4.5	4.4	4.7	5.0	4.7	4.6	4.4	4.8	5.1	4.7
Other Europe	0.6	0.7	0.7	0.7	0.6	0.7	0.8	0.7	0.7	0.7	0.7	0.8	0.7
China	10.3	10.7	11.0	10.8	11.3	11.2	11.6	11.2	11.1	11.6	11.5	11.9	11.5
(a) Total world demand	90.7	91.7	93.2	93.4	93.6	95.4	95.3	94.4	94.6	94.6	96.6	96.5	95.6
Non-OPEC supply													
OECD	22.2	24.3	25.3	25.3	24.2	24.6	24.9	24.8	25.0	24.6	24.6	25.0	24.8
Americas	18.2	20.1	21.1	21.0	20.1	20.5	20.6	20.5	20.7	20.4	20.6	20.7	20.6
Europe	3.6	3.6	3.8	3.9	3.7	3.6	3.9	3.8	3.9	3.7	3.5	3.8	3.7
Asia Pacific	0.5	0.5	0.5	0.4	0.4	0.4	0.4	0.4	0.4	0.5	0.4	0.4	0.4
DCs	11.8	12.0	12.2	12.0	12.0	12.2	12.3	12.1	12.2	12.2	12.3	12.4	12.3
FSU	13.6	13.5	13.7	14.0	13.7	13.7	14.1	13.9	13.9	13.8	14.0	14.0	13.9
Other Europe	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.2
China	4.2	4.3	4.4	4.2	4.1	4.0	3.9	4.1	4.0	3.9	3.9	3.9	3.9
Processing gains	2.1	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2
Total non-OPEC supply	54.1	56.4	57.9	57.9	56.4	56.7	57.6	57.1	57.3	56.9	57.1	57.7	57.3
OPEC NGLs + non-conventional oils	5.6	5.8	5.9	6.1	6.1	6.1	6.1	6.1	6.2	6.2	6.3	6.3	6.2
(b) Total non-OPEC supply and OPEC NGLs	59.7	62.2	63.8	63.9	62.5	62.8	63.8	63.2	63.5	63.1	63.3	64.0	63.5
OPEC crude oil production (secondary sources)	30.5	30.3	31.5	31.9	32.1	32.6	33.1	32.4					
Total supply	90.2	92.5	95.3	95.8	94.6	95.4	96.9	95.7					
Balance (stock change and miscellaneous)	-0.5	0.9	2.1	2.4	1.0	0.0	1.5	1.2					
OECD closing stock levels, mb													
Commercial	2,559	2,705	2,986	3,015	3,052	3,055							
SPR	1,584	1,580	1,587	1,593	1,591	1,594							
Total	4,144	4,285	4,572	4,608	4,643	4,649							
Oil-on-water	909	924	1,017	1,055	1,094	1,068							
Days of forward consumption in OECD, days													
Commercial onland stocks	55.9	58.3	63.9	65.2	64.6	65.4							
SPR	34.6	34.1	33.9	34.5	33.7	34.1							
Total	90.4	92.4	97.8	99.7	98.3	99.5							
Memo items													
FSU net exports	9.0	8.9	9.1	9.5	9.4	8.9	9.1	9.2	9.3	9.4	9.2	9.0	9.2
(a) - (b)	31.0	29.5	29.4	29.5	31.1	32.6	31.6	31.2	31.1	31.5	33.3	32.5	32.1

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

Source: OPEC Secretariat.

Table 10.4

OECD oil stocks and oil on water at the end of period

	<u>2013</u>	<u>2014</u>	<u>2015</u>	<u>3Q14</u>	<u>4Q14</u>	<u>1Q15</u>	<u>2Q15</u>	<u>3Q15</u>	<u>4Q15</u>	<u>1Q16</u>	<u>2Q16</u>	<u>3Q16</u>
Closing stock levels, mb												
OECD onland commercial	2,559	2,705	2,986	2,718	2,705	2,789	2,878	2,954	2,986	3,015	3,052	3,055
Americas	1,286	1,414	1,561	1,385	1,414	1,458	1,508	1,542	1,561	1,589	1,609	1,616
Europe	881	886	990	898	886	939	940	967	990	1,005	1,006	990
Asia Pacific	392	405	435	436	405	392	430	445	435	421	438	450
OECD SPR	1,584	1,580	1,587	1,578	1,580	1,583	1,585	1,579	1,587	1,593	1,591	1,594
Americas	697	693	697	693	693	693	696	697	697	697	697	697
Europe	470	470	473	469	470	470	471	467	473	477	473	476
Asia Pacific	417	417	416	417	417	420	418	415	416	419	421	421
OECD total	4,144	4,285	4,572	4,297	4,285	4,372	4,463	4,533	4,572	4,608	4,643	4,649
Oil-on-water	909	924	1,017	952	924	864	916	924	1,017	1,055	1,094	1,068
Days of forward consumption in OECD, days												
OECD onland commercial	56	58	56	59	58	61	61	64	64	65	65	65
Americas	54	55	53	56	58	60	60	63	64	64	64	65
Europe	66	67	65	66	66	69	66	70	73	72	70	72
Asia Pacific	47	49	48	53	47	52	56	54	51	55	57	55
OECD SPR	33	34	35	34	34	35	34	34	34	34	34	34
Americas	29	29	29	28	28	28	28	28	28	28	28	28
Europe	31	32	35	35	35	35	33	34	35	34	33	35
Asia Pacific	49	50	51	50	48	55	54	51	49	55	55	52
OECD total	90	91	90	93	92	96	95	98	98	100	98	100

Sources: Argus Media, Euroilstock, IEA, JODI, METI, OPEC Secretariat and US Energy Information Administration.

Table 10.5

Non-OPEC supply and OPEC natural gas liquids, mb/d

							Change						Change 17/16
	2013	2014	2015	3Q16	4Q16	2016	16/15	1Q17	2Q17	3Q17	4Q17	2017	
US	11.2	13.0	14.0	13.4	13.6	13.6	-0.4	13.7	13.6	13.7	13.8	13.7	0.1
Canada	4.0	4.3	4.4	4.6	4.6	4.4	0.0	4.6	4.6	4.6	4.7	4.6	0.2
Mexico	2.9	2.8	2.6	2.5	2.4	2.5	-0.1	2.3	2.3	2.3	2.2	2.3	-0.2
OECD Americas*	18.2	20.1	21.1	20.5	20.6	20.5	-0.5	20.7	20.4	20.6	20.7	20.6	0.1
Norway	1.8	1.9	1.9	1.9	2.1	2.0	0.0	2.0	1.9	1.9	2.0	2.0	0.0
UK	0.9	0.9	1.0	1.0	1.0	1.0	0.0	1.1	1.0	0.9	1.0	1.0	0.0
Denmark	0.2	0.2	0.2	0.1	0.2	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	0.6	0.7	0.6	0.0	0.6	0.6	0.6	0.6	0.6	0.0
OECD Europe	3.6	3.6	3.8	3.6	3.9	3.8	0.0	3.9	3.7	3.5	3.8	3.7	-0.1
Australia	0.4	0.4	0.4	0.4	0.4	0.4	0.0	0.4	0.4	0.4	0.4	0.4	0.0
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	0.5	0.5	0.5	0.4	0.4	0.4	0.0	0.4	0.5	0.4	0.4	0.4	0.0
Total OECD	22.2	24.3	25.3	24.6	24.9	24.8	-0.5	25.0	24.6	24.6	25.0	24.8	0.0
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	0.9	0.8	0.9	0.0	0.9	0.9	0.9	0.9	0.9	0.0
Indonesia	0.9	0.9	0.9	0.9	0.9	0.9	0.0	0.9	0.9	0.8	0.8	0.8	-0.1
Malaysia	0.6	0.7	0.7	0.7	0.7	0.7	0.0	0.7	0.7	0.8	0.8	0.7	0.0
Thailand	0.4	0.4	0.4	0.4	0.4	0.4	0.0	0.4	0.4	0.4	0.4	0.4	0.0
Vietnam	0.3	0.3	0.4	0.3	0.3	0.3	0.0	0.3	0.3	0.3	0.3	0.3	0.0
Asia others	0.2	0.2	0.2	0.2	0.2	0.2	0.0	0.3	0.3	0.3	0.3	0.3	0.0
Other Asia*	3.5	3.5	3.6	3.6	3.6	3.6	0.0	3.6	3.5	3.5	3.5	3.5	-0.1
Argentina	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
Brazil	2.6	2.9	3.1	3.3	3.3	3.1	0.1	3.3	3.3	3.4	3.5	3.4	0.3
Colombia	1.0	1.0	1.0	0.9	0.9	0.9	-0.1	0.9	0.9	0.9	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	0.3	0.3	0.3	0.3	0.3	0.0
Latin America	4.8	5.0	5.2	5.2	5.2	5.1	-0.1	5.3	5.3	5.3	5.4	5.3	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	0.9	0.9	1.0	1.0	1.0	1.0	0.0	1.0	1.0	1.0	1.0	1.0	0.0
Syria	0.1	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	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Middle East	1.4	1.3	1.3	1.3	1.3	1.3	0.0	1.2	1.2	1.2	1.2	1.2	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
Congo	0.3	0.3	0.3	0.3	0.3	0.3	0.0	0.3	0.3	0.4	0.4	0.3	0.0
Egypt	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
Equatorial Guinea	0.3	0.3	0.3	0.3	0.3	0.3	0.0	0.3	0.3	0.3	0.3	0.3	0.0
South Africa	0.2	0.1	0.1	0.1	0.1	0.1	0.0	0.2	0.2	0.2	0.2	0.2	0.0
Sudans	0.2	0.3	0.3	0.3	0.3	0.3	0.0	0.3	0.3	0.3	0.3	0.3	0.0
Africa other	0.3	0.3	0.3	0.3	0.4	0.3	0.0	0.3	0.3	0.3	0.4	0.3	0.0
Africa	2.1	2.1	2.1	2.1	2.2	2.1	0.0	2.1	2.2	2.2	2.2	2.2	0.1
Total DCs	11.8	12.0	12.2	12.2	12.3	12.1	-0.1	12.2	12.2	12.3	12.4	12.3	0.1
FSU	13.6	13.5	13.7	13.7	14.1	13.9	0.2	13.9	13.8	14.0	14.0	13.9	0.1
Russia	10.6	10.7	10.8	11.0	11.2	11.1	0.2	11.0	11.0	11.1	11.1	11.0	0.0
Kazakhstan	1.6	1.6	1.6	1.4	1.7	1.6	0.0	1.7	1.7	1.7	1.7	1.7	0.1
Azerbaijan	0.9	0.9	0.9	0.8	0.8	0.9	0.0	0.8	0.8	0.8	0.8	0.8	0.0
FSU others	0.4	0.4	0.4	0.4	0.4	0.4	0.0	0.4	0.4	0.4	0.4	0.4	0.0
Other Europe	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.1	0.2	0.2	0.2	0.2	0.0
China	4.2	4.3	4.4	4.0	3.9	4.1	-0.3	4.0	3.9	3.9	3.9	3.9	-0.2
Non-OPEC production	52.0	54.2	55.7	54.5	55.4	55.0	-0.7	55.1	54.7	54.9	55.5	55.1	0.1
Processing gains	2.1	2.2	2.2	2.2	2.2	2.2	0.0	2.2	2.2	2.2	2.2	2.2	0.0
Non-OPEC supply	54.1	56.4	57.9	56.7	57.6	57.1	-0.7	57.3	56.9	57.1	57.7	57.3	0.1
OPEC NGL	5.4	5.6	5.7	5.8	5.9	5.8	0.1	5.9	5.9	6.0	6.1	6.0	0.1
OPEC non-conventional	0.2	0.3	0.3	0.3	0.3	0.3	0.0	0.3	0.3	0.3	0.3	0.3	0.0
OPEC (NGL+NCF)	5.6	5.8	5.9	6.1	6.1	6.1	0.2	6.2	6.2	6.3	6.3	6.2	0.1
Non-OPEC & OPEC (NGL+NCF)	59.7	62.2	63.8	62.8	63.8	63.2	-0.6	63.5	63.1	63.3	64.0	63.5	0.3

Note: * OECD Americas includes Chile. Other Asia includes Indonesia.

Totals may not add up due to independent rounding.

Source: OPEC Secretariat.

Table 10.6

World rig count, units

				Change								Change Dec/Nov
	2014	2015	2016	2016/15	1Q16	2Q16	3Q16	4Q16	Nov 16	Dec 16		
US	1,862	977	509	-468	551	420	479	586	580	634	54	
Canada	380	192	131	-61	172	49	122	180	173	209	36	
Mexico	86	52	26	-26	36	22	25	19	18	19	1	
OECD Americas	2,327	1,221	665	-556	759	490	626	785	771	862	91	
Norway	17	17	17	-1	18	17	18	13	15	16	1	
UK	16	14	9	-5	9	9	9	9	10	11	1	
OECD Europe	145	117	96	-21	104	92	94	94	97	99	2	
OECD Asia Pacific	26	17	7	-11	10	6	5	6	5	10	5	
Total OECD	2,499	1,355	768	-587	873	588	724	885	873	971	98	
Other Asia*	228	202	180	-22	176	178	185	181	183	182	-1	
Latin America	172	145	68	-77	83	62	64	64	64	63	-1	
Middle East	108	102	88	-14	98	92	85	75	74	74	0	
Africa	47	30	18	-12	21	19	15	17	17	17	0	
Total DCs	555	479	354	-126	378	351	349	337	338	336	-2	
Non-OPEC rig count	3,053	1,834	1,122	-712	1,251	939	1,073	1,223	1,211	1,307	96	
Algeria	48	51	54	3	52	54	55	53	53	52	-1	
Angola	15	11	6	-5	9	9	4	3	3	4	1	
Ecuador	24	12	4	-8	3	3	5	6	5	7	2	
Gabon	7	4	1	-3	1	1	0	0	0	0	0	
Iran**	54	54	57	3	57	57	57	57	57	57	0	
Iraq**	79	52	43	-9	49	42	39	41	41	41	0	
Kuwait**	38	47	44	-2	41	42	47	46	47	44	-3	
Libya**	10	3	1	-2	1	1	1	1	1	1	0	
Nigeria	34	30	25	-5	27	25	24	23	24	23	-1	
Qatar	10	8	8	0	7	7	7	10	9	10	1	
Saudi Arabia	134	155	156	1	157	154	155	157	158	156	-2	
UAE	34	42	51	8	50	50	51	52	51	50	-1	
Venezuela	116	110	100	-10	111	103	93	92	93	94	1	
OPEC rig count	603	578	549	-29	565	549	539	542	542	539	-3	
World rig count***	3,656	2,412	1,670	-742	1,816	1,488	1,612	1,765	1,753	1,846	93	
<i>of which:</i>												
Oil	2,795	1,727	1,170	-557	1,268	1,043	1,135	1,235	1,233	1,291	58	
Gas	743	563	370	-193	422	315	343	400	392	426	34	
Others	95	100	111	11	106	110	116	112	110	112	2	

Note: * Other Asia includes Indonesia.

** Estimated data when Baker Hughes Incorporated did not reported 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.

Monthly Endnotes

US begins selling strategic reserves to finance planned modernisation

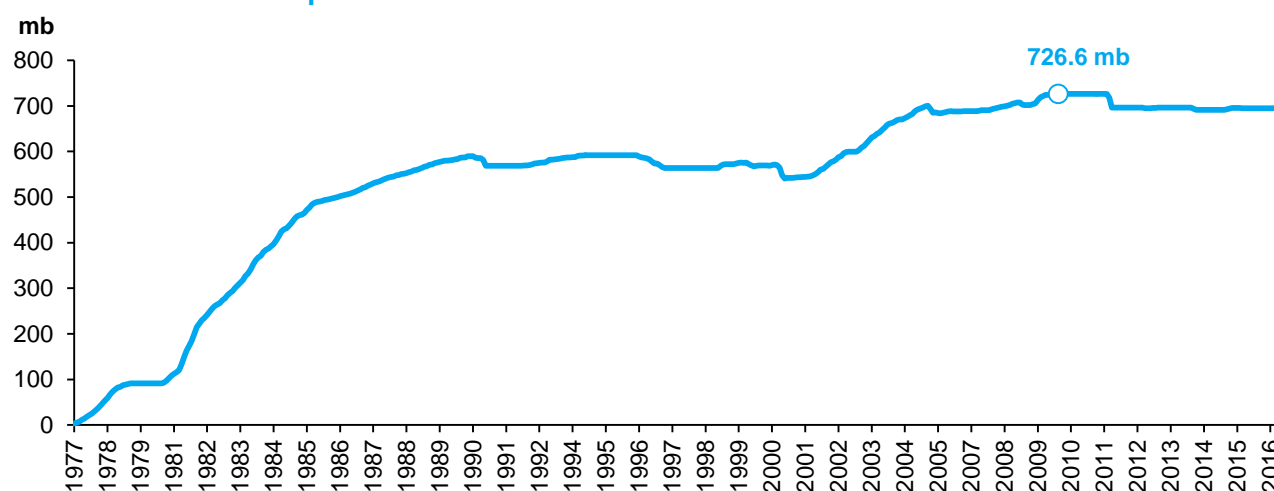
The US government issued a notice of sale for 8 mb of its Strategic Petroleum Reserves (SPR). Deliveries will be carried out over a two-month period starting in early February.

In December, the US Congress passes a law allowing the US Department of Energy to sell up to \$375.4 million worth of crude from the SPR in fiscal year 2017 to finance infrastructure improvements as part of a SPR modernisation programme and to add marine terminal capacity. The contracts are expected to be awarded in early February, with deliveries between 1 March and 30 April, although some February deliveries will also be provided. The equipment at the facilities was last updated in the 1990s.

The SPR currently holds the equivalent of 149 days of import protection, well above the 90 days required by the IEA. The US completed filling the SPR on 27 December 2009, reaching 726.6 mb (**Graph 11.1**).

Graph 11.1

US crude SPR developments since 1977



Source: US Energy Information Administration.

Over the years, the US government has carried out a number of sales, starting in 1985 (**Table 11.1**). These have included test sales in 1985, 1990 and 2014, and two emergency drawdowns in 1991 and 2005. The SPR has also been released 11 times through exchange arrangements, which provide for a loan of crude oil, which is then repaid with additional barrels as interest.

Table 11.1

US crude SPR releases, 1985-2017

Emergency drawdowns

1991 January	Operation Desert Storm IEA coordinated sale	17.3 mb
2005 September	Hurricane Katrina drawdown	11.0 mb

Crude oil test sales

1985 November	Test sale	1.0 mb
1990 September	Desert Shield test sale	4.0 mb
2014 March	Test sale	5.0 mb

Non-emergency sales

1996 January	The 1st Weeks Island decommissioning sale	5.1 mb
1996 April	The 2nd Weeks Island federal budget deficit reduction sale	12.8 mb
1996 October	The 3rd Weeks Island federal budget deficit reduction sale	10.2 mb
	<i>Total Weeks Island sales</i>	<i>28.1 mb</i>
2011 June	IEA coordinated release	30.6 mb
2017 January	SPR modernisation programme	8.0 mb

Sources: US Department of Energy and OPEC Secretariat.

Monthly Endnotes

The crude will come from three of the SPR storage sites: up to 3 mb from both Bryan Mound and Big Hill sights in Texas, and up to 2 mb from West Hackberry in Louisiana. Bryan Mound holds around 245.0 mb, of which 68.7 mb is sweet; Big Hill holds around 163.4 mb, of which 68.8 mb is sweet; and West Hackberry holds around 212.0 mb, of which 106.1 mb is sweet. A fourth site, Bayou Choctaw in eastern Louisiana, holds 73.6 mb in crude but is not part of the sale.

The long-expected sale comes at a time when markets are showing signs of rebalancing. While the extra barrels could weigh on market sentiment, any effect is likely to be temporary and should provide some further stimulus to the US economy.

China's teapot refiners face tighter quota restrictions in 2017

China's central government appears to have shifted its policy of giving China's independent 'teapot' refiners greater access to the international market.

In 2015, some independent refiners were allowed to import crude directly for the first time, rather than purchase it from one of the state-run companies. Then, in 2016, some independents were also provided with export quotas for key oil products – gasoline, gasoil and jet fuel – amounting to about 40 tb/d of the roughly 1.0 mb/d total.

In past years, the government has been releasing export quotas in four "batches", typically with the largest volumes in the first round. However, the first batch of quotas released for 2017 failed to include any allotments for independents, amid reports that the government intends to end its policy of providing export quotas to independents.

Meanwhile, the government was also looking into claims by state-owned refiners that independents were not paying sufficient sales taxes on imported crude and selling foreign crude to companies without import licenses. The country's policy-setting body, the National Development and Reform Commission (NDRC), said it would tighten supervision to ensure that independent refiners are adhering to all rules before awarding import quotas.

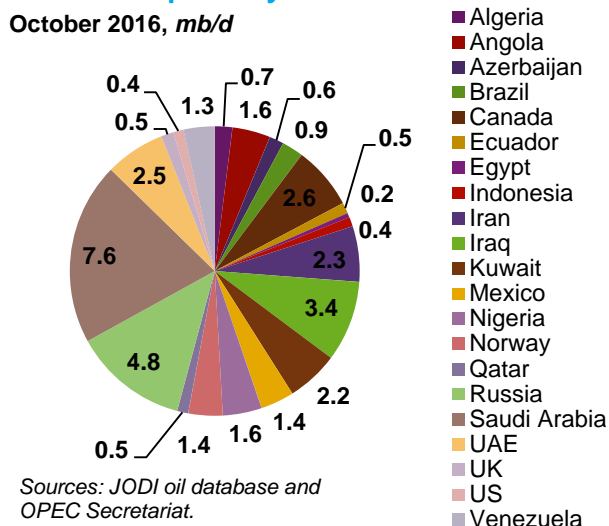
When crude import quotas for 2017 were released, non-state import quotas were left unchanged with around 1.75 mb/d, after a 1 mb/d increase in 2016, although this amount could be adjusted later. Together, these moves may dampen the emerging importance on the international market of China's burgeoning independent refining sector.

OPEC’s contribution to energy data transparency through the Joint Data Organisations Initiative (JODI)

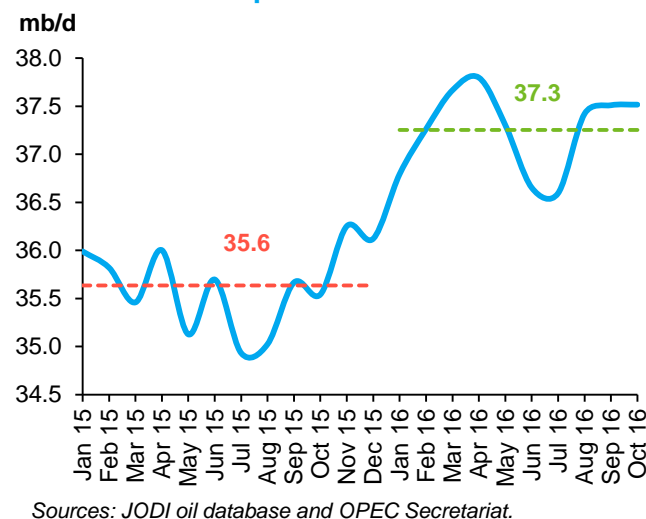
The importance of energy data transparency in the accuracy of oil market assessment and decision-making cannot be overemphasized. The JODI oil database is a unique, well-established database providing monthly official country data, with a mere two months reporting lag, for more than 100 countries worldwide, including all leading oil producing and consuming countries as well as major oil flows disaggregated by main petroleum product category. OPEC is one of the founder organizations of JODI and its contribution is substantial, particularly in terms of data submission both for oil and natural gas. The JODI oil database enhances significantly oil data transparency and additionally is an excellent tool for analyzing recent developments and trends in the oil market.¹ The following highlights a few distinct examples from the JODI oil database.

Graph 11.2 and **11.3** show monthly oil data exports for selected crude oil exporting countries, particularly focusing on October 2016, the latest available data point, as well as the most recent trends in 2016. October 2016 data for these countries captures roughly 90% of total world crude exports.² Moreover, the coverage of this data flow has increased significantly compared to some years ago (χ^2 -test / $p < 0.05$). The latest monthly trends of crude oil exports from these selected countries imply year-to-date gains of approximately 1.7 mb/d in 2016, very much in line with higher world crude production, demand and storage during the same time period. This increase marks statistically higher crude oil exported volumes (t -test / $p < 0.01$).

Graph 11.2:
Crude oil exports by selected countries



Graph 11.3:
Total crude oil exports for selected countries

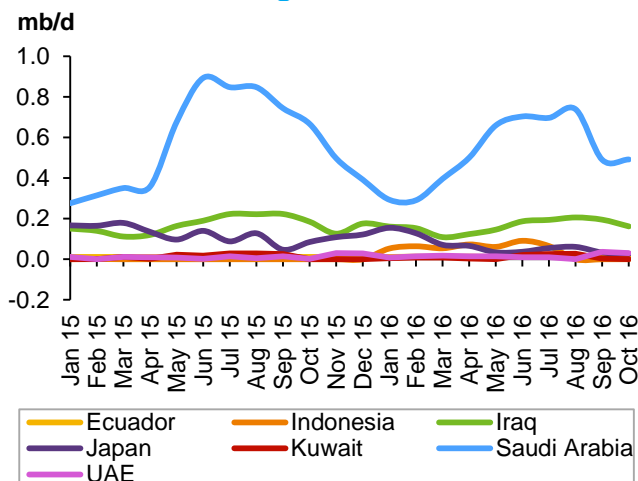


Graph 11.4 and **11.5** focus on direct burning of crude oil for electricity generation. The volumes reported under this flow would be included under oil demand. Crude burning has experienced an enormous decline historically, and currently it concerns only a few countries, mostly oil producing countries. Japan increased its use of crude for direct burning in 2011 after the sudden closure of its nuclear plants following the Fukushima disaster. However, since then, volumes have been on a constant declining trend. During 2016, the volumes of direct crude burning are shrinking for the majority of countries, as a result of substitution with other primary energy commodities. In total for all countries below, the decline has been estimated through a simple linear regression model to stand at $\hat{b} = 0.09$ tb/d per month.

¹ The JODI oil database can be retrieved by going to: <https://www.jodidata.org>.

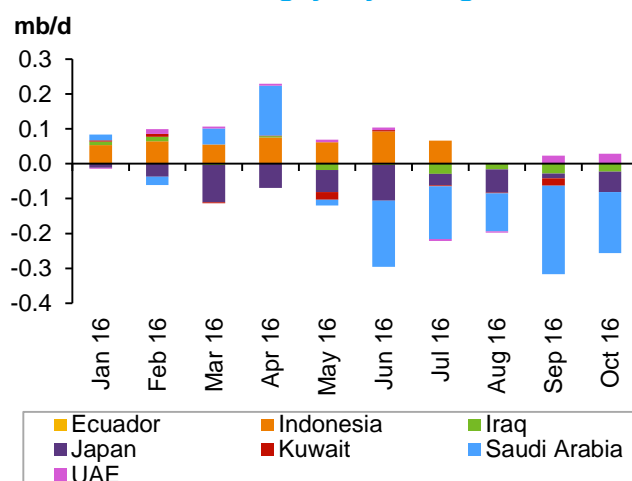
² Based on average world totals for 2015. Source: OPEC Annual Statistical Bulletin 2016.

Graph 11.4
Direct crude burning, volume



Sources: JODI oil database and OPEC Secretariat.

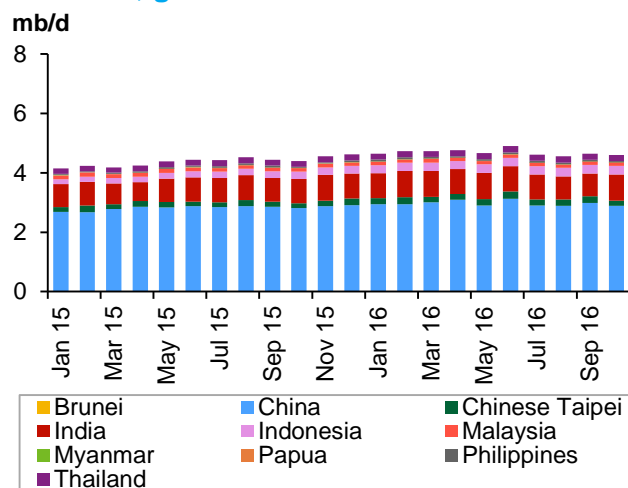
Graph 11.5
Direct crude burning, y-o-y change



Sources: JODI oil database and OPEC Secretariat.

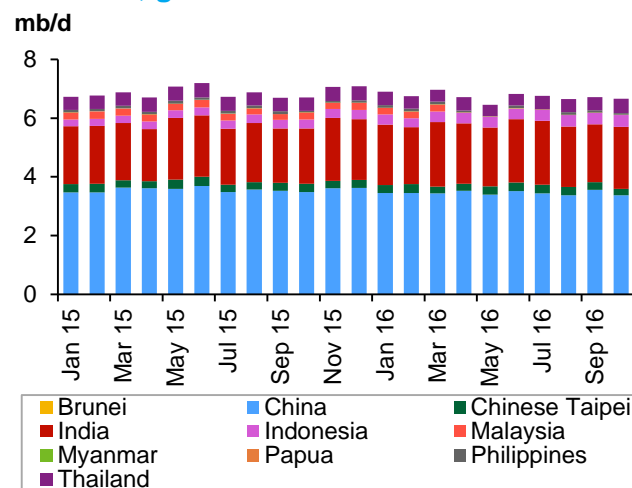
Graphs 11.6 and 11.7 illustrate the latest developments in non-OECD Asia, one of the world's most important regions for the downstream, and particularly addresses the supply of gasoline and gas diesel oil in the main refinery hubs of the region. China and India are the major gasoline and gas diesel oil producing countries with volumes produced primarily serving domestic demand as well as demand for neighboring countries in the region. Furthermore, produced gas diesel oil volumes are substantially higher than those for gasoline in both China (t-test / $p < 0.01$) and India (t-test / $p < 0.01$).

Graph 11.6
Refinery output in main non-OECD Asian countries, gasoline



Sources: JODI oil database and OPEC Secretariat.

Graph 11.7
Refinery output in main non-OECD Asian countries, gas/diesel oil



Sources: JODI oil database and OPEC Secretariat.

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
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
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

Glossary of terms

HH	Henry Hub
HSFO	high-sulphur fuel oil
SRFO	straight-run fuel oil
ICE	Intercontinental Exchange
IEA	International Energy Agency
IMF	International Monetary Fund
IOCs	international oil companies
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
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
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
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

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OPEC Basket average price

US\$/b



up 8.45 in December

December 2016	51.67
November 2016	43.22
2016	40.76

December OPEC crude production

mb/d, according to secondary sources



down 0.22 in December

December 2016	33.08
November 2016	33.31

Economic growth rate

per cent

	World	OECD	US	Japan	Euro-zone	China	India
2016	3.0	1.7	1.6	1.0	1.6	6.7	7.2
2017	3.2	1.8	2.2	1.1	1.4	6.2	7.1

Supply and demand

mb/d

2016		16/15	2017		17/16
World demand	94.4	1.3	World demand	95.6	1.2
Non-OPEC supply	57.1	-0.7	Non-OPEC supply	57.3	0.1
OPEC NGLs	6.1	0.2	OPEC NGLs	6.2	0.1
Difference	31.2	1.8	Difference	32.1	0.9

OECD commercial stocks

mb

	Sep 16	Oct 16	Nov 16	Nov 16/Oct 16	Nov 15
Crude oil	1,501	1,512	1,507	-4.6	1,470
Products	1,554	1,515	1,485	-29.7	1,502
Total	3,055	3,027	2,993	-34.3	2,972
Days of forward cover	65.5	65.2	63.7	-1.5	63.4

Next report to be issued on 13 February 2017.