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The Oil Manual | Global

OPEC: To Cut or Not To Cut

There are compelling arguments on either side. Yet, on balance, we see a far greater probability that OPEC reaches an agreement to balance the market in 2019. That should see price recover above \$70/b. In the case of no agreement, prices should still find support in the high-\$50s, at least near term.

OPEC has scheduled several meetings between 4-6 December. Following the recent drop in oil prices, production cuts are on the table once again. There are compelling reasons both for and against this, which we set out below. On balance, however, we expect that OPEC will manage the market in 2019 and assess the probability of an agreement to reduce production at around 2-in-3. In that scenario, Brent prices likely recover back into the \$70s, we estimate.

On the other hand, in the 1-in-3 probability that OPEC does not come to an agreement, there is still downside to Brent prices, although probably not much below the high-\$50s in the next few months.

Oil fundamentals have weakened since Brent peaked at \$85/bbl, justifying much of the recent price decline, in our view. However, this opens up a relatively favourable risk/reward outlook around the OPEC meeting.

The case against an OPEC cut – a historical perspective: 1978-1986...

OPEC's only tool is to shift production from one period to another. This can smooth out temporary imbalances but is a poor tool to deal with structural changes. If supply growth is simply too high, only the price signal can rebalance the market. If OPEC decides not to cut production, it will most likely be because of the similarities with late 2014, which itself had parallels with the 1980s:

Between 1978 and 1981, output from Iran and Iraq fell sharply from 7.9 mb/d to 2.2 mb/d, first as a result of the Iranian Revolution and later exacerbated by the effects of the Iran/Iraq war. In response, oil prices rallied sharply from ~\$14 during 1978 to ~\$40 by the end of 1979. Measured in today's dollars, the latter equaled ~\$125/bbl.

The implications for the rest of the world turned out to be straightforward: oil demand growth slowed severely in the early 1980s and non-OPEC supply accelerated strongly. Between 1981 and 1985, non-OPEC supply increased 4 mb/d, driven by the North Sea, Alaska and the US Lower 48, amongst others.

With non-OPEC growth vastly exceeding global demand growth, OPEC was squeezed. Initially, it responded in the traditional way of a swing supplier: it cut production in order to balance the market. Saudi Arabia in particular reduced production very substantially, from over 10 mb/d in 1981 to just 3.3 mb/d in 1985. For a brief period during 1985, Saudi Arabia produced less oil than the United Kingdom.

MORGAN STANLEY & CO. INTERNATIONAL PLC+

Martijn Rats, CFA

EQUITY ANALYST AND COMMODITIES STRATEGIST

Martijn.Rats@morganstanley.com +44 20 7425-6618

Amy Sergeant, CFA

COMMODITY STRATEGIST

Amy.Sergeant@morganstanley.com +44 20 7677-6937

Exhibit 1: Upcoming OPEC Meetings

Date	Meeting
4 Dec	OPEC and non-OPEC Ministerial Meeting
5 Dec	Joint Ministerial Monitoring Committee (JMMC) meeting
6 Dec	175th Ordinary OPEC Meeting

Source: OPEC, News articles

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OPEC: To Cut or Not to Cut

This supported oil prices, which were relatively steady at \$30-35/bbl during most of the early 1980s. However, by 1985 Saudi Arabia and its key OPEC partners had lost so much market share that its total revenue had nevertheless declined substantially. On top, the role of swing supplier is hard to fulfill when market share drops below a critical level. At the November 1985 OPEC meeting, Saudi Arabia changed tack and switched strategy from focussing on price to focussing on market share. In the following eight months, oil prices fell 65%, from \$30 to \$10/bbl and non-OPEC supply slowed.

...fast forward to 2014

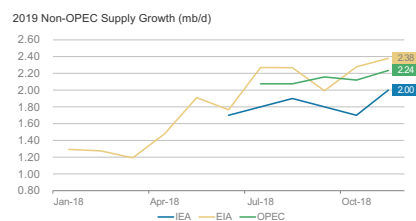
By November 2014, OPEC faced a similar situation once again. Oil prices had been high at \$100-120/bbl for the preceding four years, but this had started to weigh on demand which in 2014 grew just 0.9 mb/d. At the same time, non-OPEC production growth was accelerating, growing 2.4 mb/d that year, boosted by US shale which accounted for 1.3 mb/d of this.

Drawing on the experience of the early 1980s, OPEC decided not to cut production. Saudi Arabia and its OPEC partners once again switched to a strategy focussed on market share. In response, oil prices – again – fell by 70%, reaching ~\$30/bbl in 2016 – history repeating itself.

By late 2016 however, the consequences of this had become clear. Upstream investment had been decimated, down ~50% from 2014 for a second consecutive year, rig counts were down sharply around the world, and US production had started to decline. Against this backdrop, OPEC, together with Russia and several other non-OPEC partners, decided to implement a production cut.

This cut accelerated a rebalancing process that was already taking place. It put a floor under oil prices, with the objective of incentivising some investment again and preventing a lack of supply in the next decade, which is also not in OPEC's interest.

Exhibit 2: The three public forecasting agencies have been raising non-OPEC growth forecast, and now see supply from this group growing 2-2.4 mb/d next year



Source: IEA, EIA, OPEC,

From the November 2016 OPEC meeting, oil prices increased from ~\$45 to \$67/bbl by end-2017, peaking at \$85/bbl recently. Capex increased too, by ~4% in 2017 and is on track to grow 3% in 2018. These are modest increases, but increases nonetheless.

In many ways, the current outlook has greater similarities with late 2014 than with late 2016. The IEA, EIA and the OPEC secretariat all forecast non-OPEC production to grow 2.0-2.4 mb/d next year, of which US accounts for ~1.5 mb/d (incl. NGLs). This is close to 2014 when non-OPEC grew 2.4 mb/d but very different from 2016 when it declined (0.7) mb/d.

If OPEC decides to cut production, non-OPEC production will arguably not slow down. Most likely, OPEC will losing further market share. If history is any guide, this stores up problems for the future.

The case in favour of an OPEC cut

Yet, what 'will happen' and what probably 'should happen' are not always the same, and there are also compelling arguments why OPEC will cut after all. We highlight three in particular:

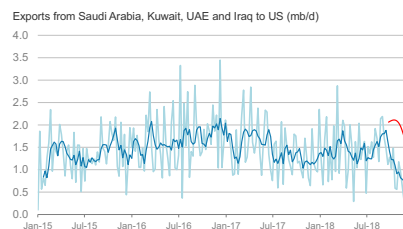
First, there seems to be a consensus building around this. Several OPEC oil minister indicated after the Joint Ministerial Monitoring Committee meeting earlier this month that production cuts are under consideration.

"The consensus is that we need to do whatever it takes to balance the market. If that means trimming supplies by a million (bpd), we will." - Saudi Arabia oil minister Khalid al-Falih (Nov 12, 2018)

"We have cut in the past to reach market balance, and if we need to cut production to keep the market balanced, we will" - OPEC's president and U.A.E. energy minister Suhail Al Mazrouei (Nov 14, 2018)

Second, market share strategies can be prohibitively expensive and this can outweigh the long-term benefits. At the time of the November 2014 OPEC meeting, oil prices had fallen to ~\$75/bbl and break-even oil prices of US shale projects were generally considered to be ~\$60-70/bbl – lower, but not by much. In the end, WTI had to fall to \$30-40/bbl to drive shale production into decline. It is unlikely OPEC will want to test that again.

Exhibit 3: Export loading from Middle East OPEC to the US are dropping fast, currently at a 4-year low already



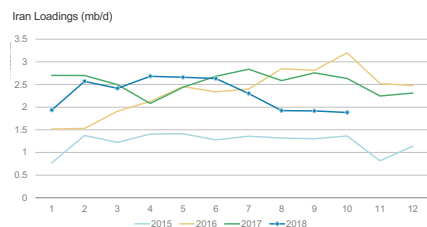
Source: ClipperData

Third, tanker tracking data show a sharp fall off in loadings in Saudi Arabia and its direct neighbours for export to the United States. In our view, this signals a willingness to actively manage the market.

Our estimates for non-OPEC growth are less optimistic than those of most key agencies. We see non-OPEC supply growing 1.7 mb/d, of which the US crude and condensate accounts for 1.1 mb/d. As a result, our estimate of the 'call on OPEC' is ~31.7 mb/d next year, compared to 31.3-31.5 mb/d estimated by IEA, EIA and the OPEC secretariat.

Still, with OPEC production in October at ~33.0 mb/d, this implies the need for a 1.3 mb/d cut from that level. Our estimates still assume that declines in Iranian and Venezuelan production will account for the vast majority of this.

Exhibit 4: Iran's seaborne exports fell sharply from June to August but were broadly stable in September and October



Source: ClipperData

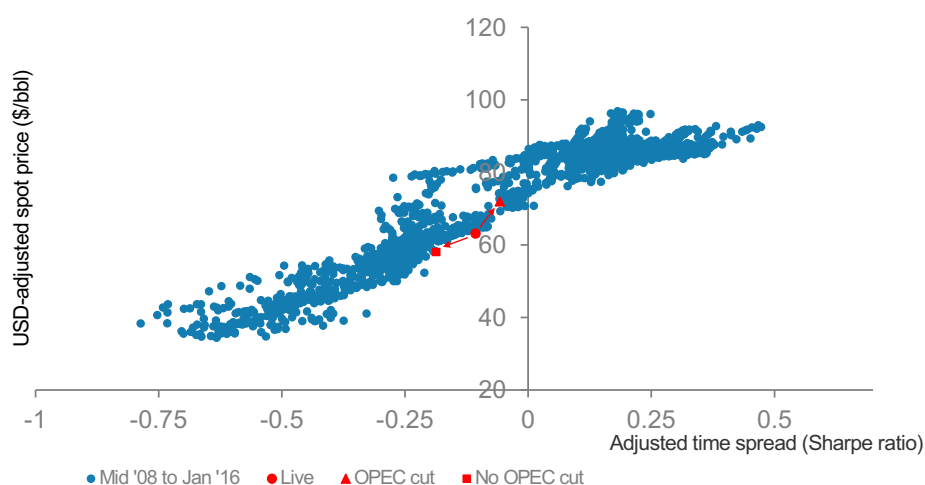
On our estimates, OPEC-ex-Iran would need to cut production by just 0.2-0.3 mb/d from the October 2018 level to balance the market across 2019 (although this may need to be as high as 1.0 mb/d in 1Q19 when demand is seasonally weak). Our call is that those production cuts will take place. That should lead to a balanced market in which inventories are stable.

Still, there are important risks to this call. We assume that production in Iran and Venezuela will continue to decline but the magnitude is hard to estimate. Seaborne exports from Iran fell earlier in the year, from ~2.7 mb/d in April to 1.9 mb/d in August. However, despite sanctions coming into effect on November 4, exports have stopped declining since, remaining at 1.9 mb/d in September and October.

If those declines are smaller than expected, the implied production cut for the rest of OPEC would be larger. Larger cuts are harder to stomach. If OPEC simply struggles to come to a consensus, or takes the same view as in late 2014, it may not cut after all.

[Exhibit 5](#) explores the price implications for both scenarios. Here, we show the relationship between an adjusted Brent price and adjusted time spreads (for more detail see our recent video [Regime Shift in the Oil Market](#)). The round marker highlights the current position in this plane. As shown, Brent's flat price is already at its historical lows given where time spreads are. This highlights that the recent decline is already discounting a significant weakening in market fundamentals.

Exhibit 5: The risk/reward outlook around the OPEC meeting appears asymmetric to us
Brent crude oil: time spread vs flat price (\$/bbl)



Note: Flat price adjusted for the strength of the US dollar using a trade-weighted index; adjusted time spreads reflect the percentage different between the 1st and 12th month Brent futures, taken as a spread over the 1-yr risk free rate and scaled by the implied volatility in option on Brent futures.
Source: Bloomberg, Morgan Stanley Research

In the case OPEC cuts production and balances supply/demand, inventories would stabilize. Under those conditions, the slope of the forward curve should historically have been broadly flat, and time spreads near zero. That leaves the adjusted time spread in this analysis only marginally in negative territory - see triangle-shaped marker. At those time spreads, oil prices have historically traded above \$70/bbl.

In the case OPEC does not cut production and its member countries continue to produce at current levels, this would be too optimistic. In that scenario, OECD inventories would start to build, by around 0.4-0.5 mb/d across 1H19. In that scenario, the forward curve would need to go deeper into contango. Given the historical relationship between inventories and time spreads, we estimate a 5% spread between the 1st and 12th month Brent contract possible under those conditions, taking the adjusted time spread to $\sim(0.2)$ - see square marker. Under those conditions, Brent's flat price should still be supported in the high-\$50s. If this oversupply persists, prices would eventually go lower than that. However, that will likely take longer to play out.

With a 2-in-3 chance that prices recover back into the \$70s, and a 1-in-3 chance they trade down into the high-\$50s, the risk/reward outlook around the OPEC meeting is arguably attractive at current prices.

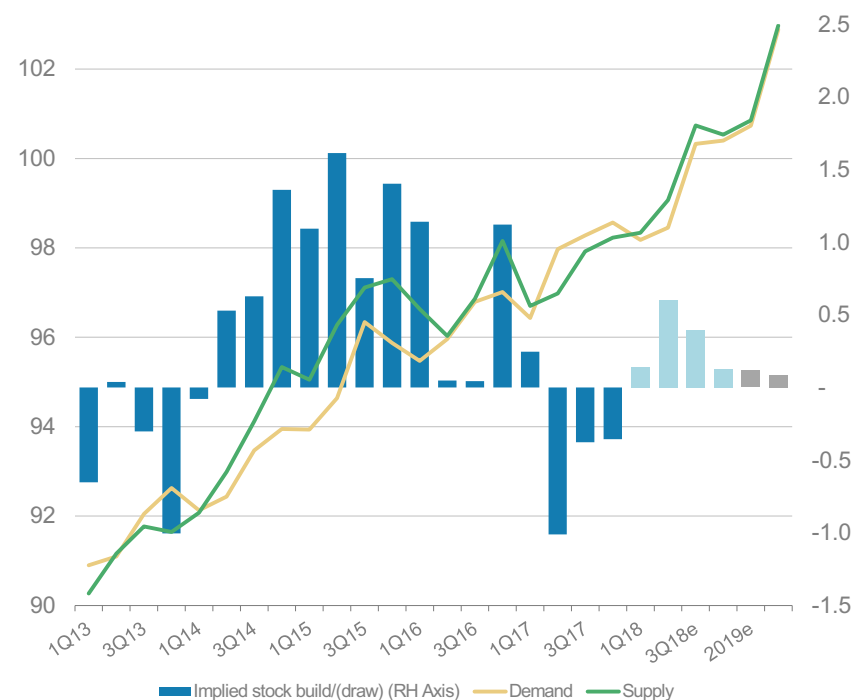
Balance Overview

Exhibit 6: Global Balance Summary (mmb/d)

	2017					2018					YoY Change			YoY Change			
	2016	1Q17	2Q17	3Q17	4Q17	2017	1Q18	2Q18	3Q18	4Q18	2018	2019	2020	2017	2018	2019	2020
Demand	96.3	96.4	98.0	98.3	98.6	97.8	98.2	98.5	100.3	100.4	99.3	100.7	102.9	1.5	1.5	1.4	2.1
OECD	46.9	46.9	47.0	47.6	48.0	47.4	47.8	47.1	48.1	48.4	47.8	48.1	48.9	0.4	0.5	0.3	0.8
US 50	19.7	19.5	20.1	20.0	20.2	20.0	20.2	20.3	20.7	20.4	20.4	20.7	21.0	0.3	0.5	0.2	0.4
Euro 5	8.1	8.2	8.3	8.4	8.2	8.3	8.2	8.2	8.2	8.3	8.2	8.2	8.4	0.1	-0.1	0.0	0.2
Non-OECD	49.4	49.6	51.0	50.7	50.5	50.4	50.4	51.4	52.3	52.0	51.5	52.7	54.0	1.1	1.1	1.1	1.4
China	12.0	12.4	12.9	12.3	12.7	12.6	12.7	13.0	13.5	13.5	13.2	13.7	14.3	0.6	0.6	0.5	0.6
India	4.4	4.5	4.7	4.4	4.7	4.6	4.8	4.9	4.5	4.9	4.8	4.9	5.1	0.1	0.2	0.1	0.1
Non-OPEC Supply	57.1	57.5	57.5	58.0	58.7	57.9	59.1	60.0	61.2	61.2	60.4	62.1	63.8	0.8	2.4	1.8	1.7
US	12.5	12.7	13.0	13.2	14.1	13.3	14.4	15.1	16.0	16.2	15.4	16.8	18.2	0.8	2.1	1.4	1.4
Canada	4.5	4.9	4.5	4.9	5.0	4.8	5.2	5.0	5.1	5.2	5.1	5.2	5.1	0.3	0.3	0.1	0.0
Russia	11.3	11.5	11.3	11.3	11.3	11.4	11.3	11.4	11.6	11.8	11.6	11.9	12.0	0.0	0.2	0.3	0.1
OPEC NGLs/Condensates	6.8	6.9	6.9	6.9	6.8	6.9	6.9	6.9	7.0	6.9	6.9	6.9	6.9	0.1	0.1	-0.1	0.0
Call on OPEC Crude	32.4	32.1	33.6	33.3	33.0	33.0	32.2	31.5	32.2	32.3	32.1	31.7	32.1	0.6	-0.9	-0.3	0.4
OPEC Crude	33.0	32.3	32.6	33.0	32.6	32.6	32.3	32.1	32.6	32.5	32.4	31.8	32.2	-0.4	-0.2	-0.5	0.4
Implied stock build/(draw)	0.6	0.2	-1.0	-0.4	-0.4	-0.4	0.1	0.6	0.4	0.1	0.3	0.1	0.1	-1.0	0.7	-0.2	0.0

Source: EIA, IEA, Rystad, Morgan Stanley Research estimates (2018-20)

Exhibit 7: Global Balance (mmb/d)



Source: EIA, IEA, Rystad, Morgan Stanley Research estimates (e)

Oil Price Forecasts

Exhibit 8: Bull, base, and bear case estimates for Brent and WTI at end of period

(\$/bbl)	WTI		
	Bear case	Base case	Bull case
4Q18	58.5	68.5	78.5
1Q19	58.5	68.5	78.5
2Q19	58.5	68.5	78.5
3Q19	58.5	68.5	78.5
4Q19	61.0	71.0	81.0
1Q20	67.0	77.0	87.0
2Q20	67.0	77.0	87.0
3Q20	67.0	77.0	87.0
4Q20	67.0	77.0	87.0
LT	54.0	64.0	74.0

(\$/bbl)	Brent		
	Bear case	Base case	Bull case
4Q18	67.5	77.5	87.5
1Q19	67.5	77.5	87.5
2Q19	67.5	77.5	87.5
3Q19	67.5	77.5	87.5
4Q19	70.0	80.0	90.0
1Q20	75.0	85.0	95.0
2Q20	75.0	85.0	95.0
3Q20	75.0	85.0	95.0
4Q20	75.0	85.0	95.0
LT	60.0	70.0	80.0

Source: Morgan Stanley Research estimates

Exhibit 9: Price forecast chart for Brent

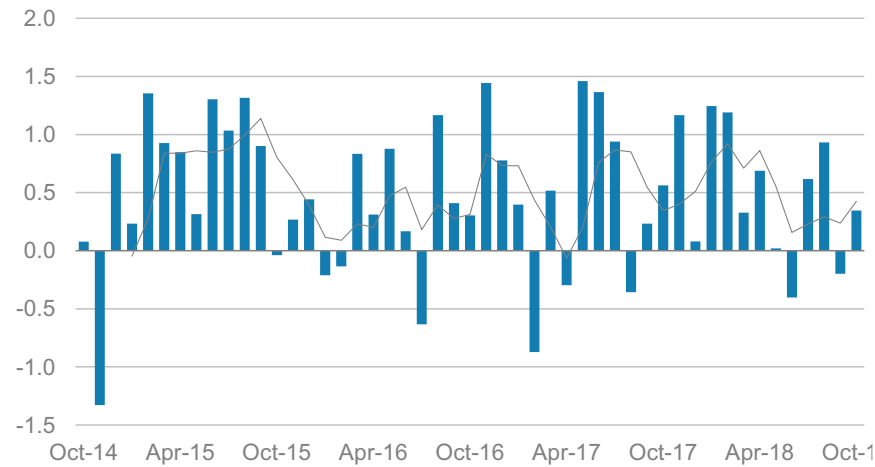
Brent price target (\$/bbl)



Source: Morgan Stanley Research estimates

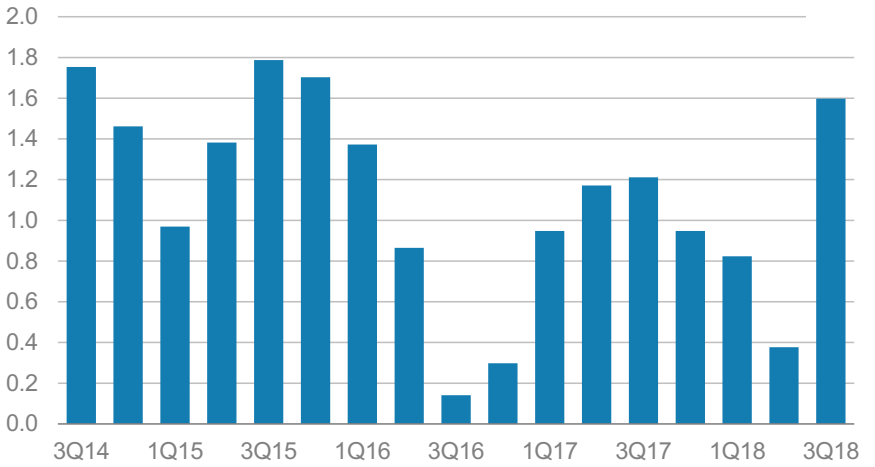
Supply – Demand Overview

Exhibit 10: OECD Demand Growth (annual, mmb/d)



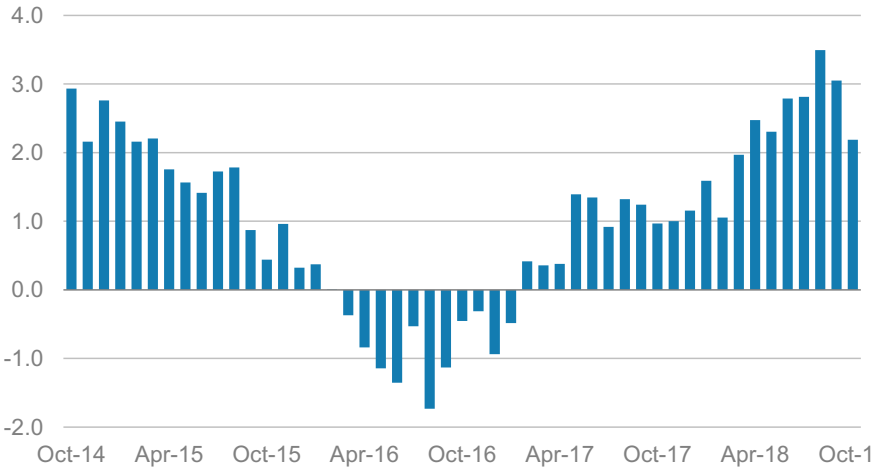
Source: IEA

Exhibit 11: Non-OECD Demand Growth (annual, mmb/d)



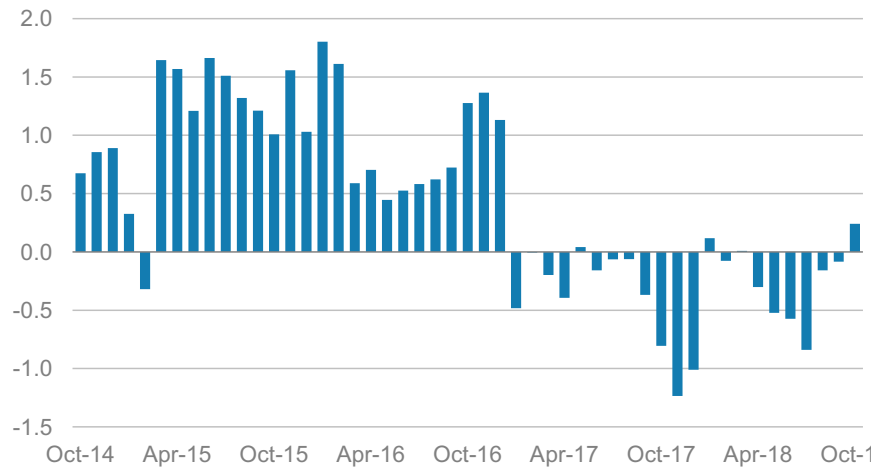
Source: IEA

Exhibit 12: Non-OPEC Supply Growth (annual, mmb/d)



Source: IEA

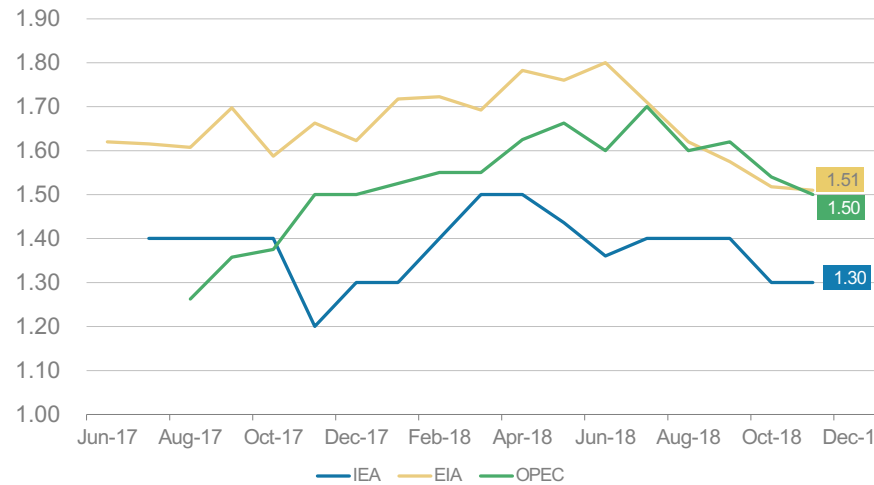
Exhibit 13: OPEC Supply Growth (annual, mmb/d)



Source: IEA

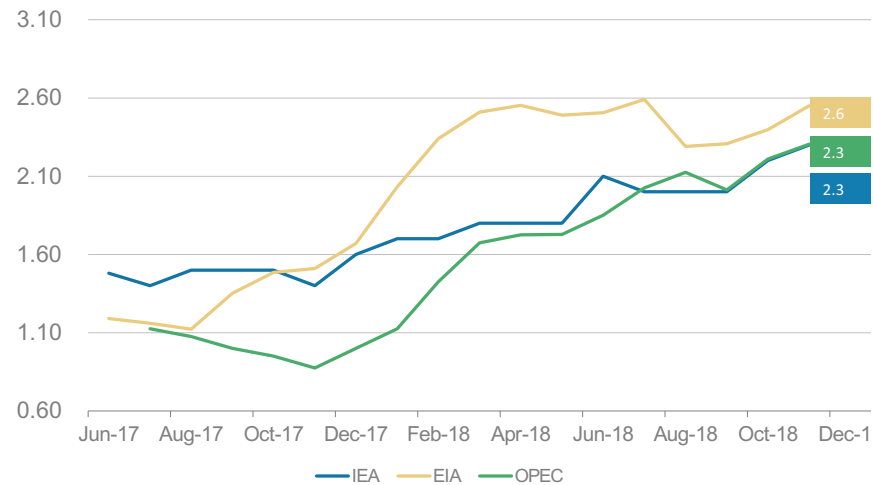
Key Agency Revisions (2018)

Exhibit 14: Oil Demand Growth 2017-18 (mmb/d)



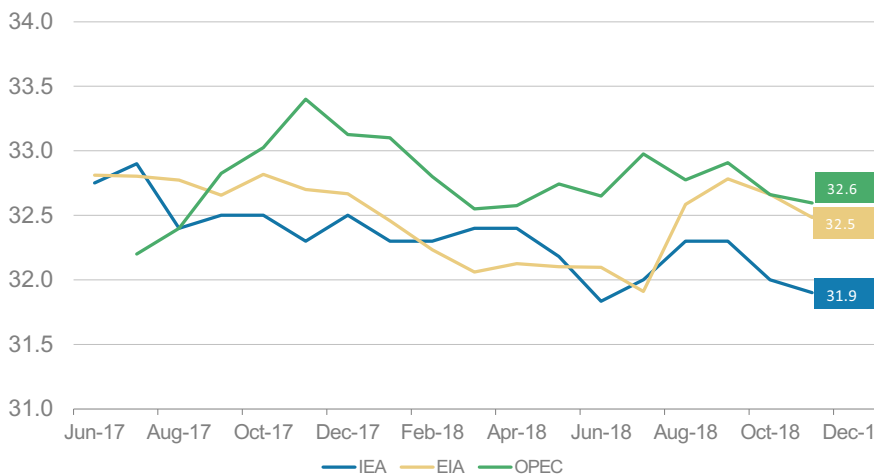
Source: EIA, IEA, OPEC

Exhibit 15: Non-OPEC Supply Growth 2017-18 (mmb/d)



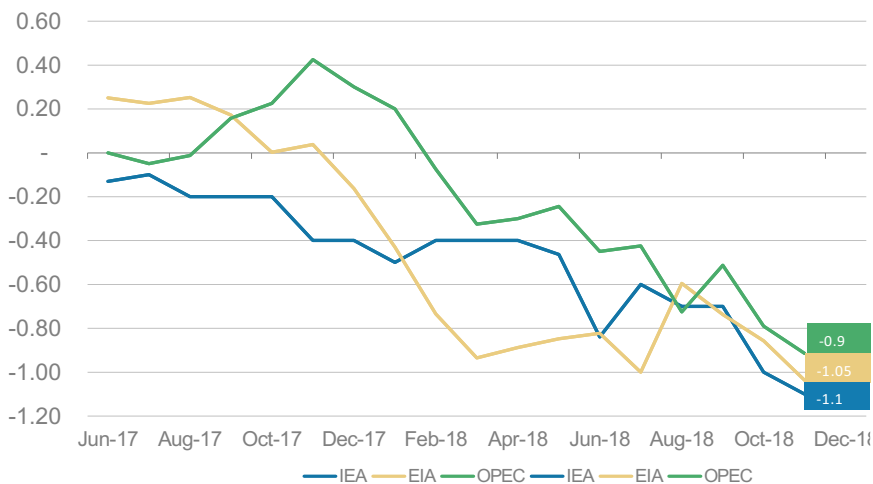
Source: EIA, IEA, OPEC

Exhibit 16: Call on OPEC 2018 (mmb/d)



Source: EIA, IEA, OPEC

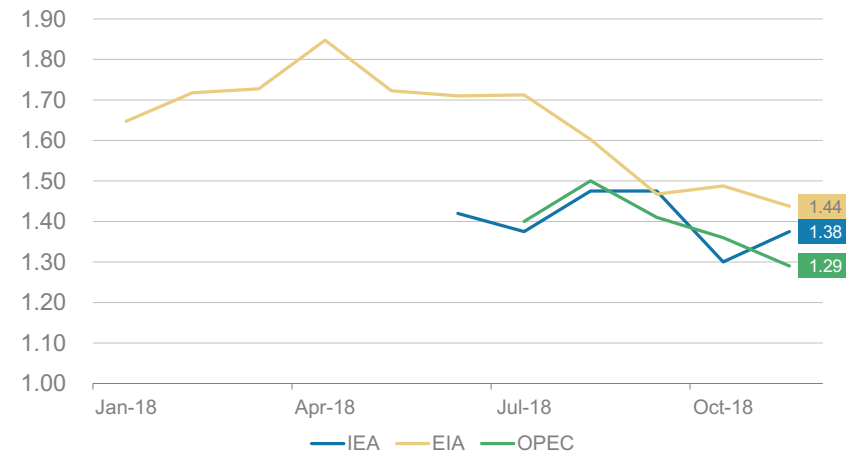
Exhibit 17: Change in the Call on OPEC 2017-18 (mmb/d)



Source: EIA, IEA, OPEC

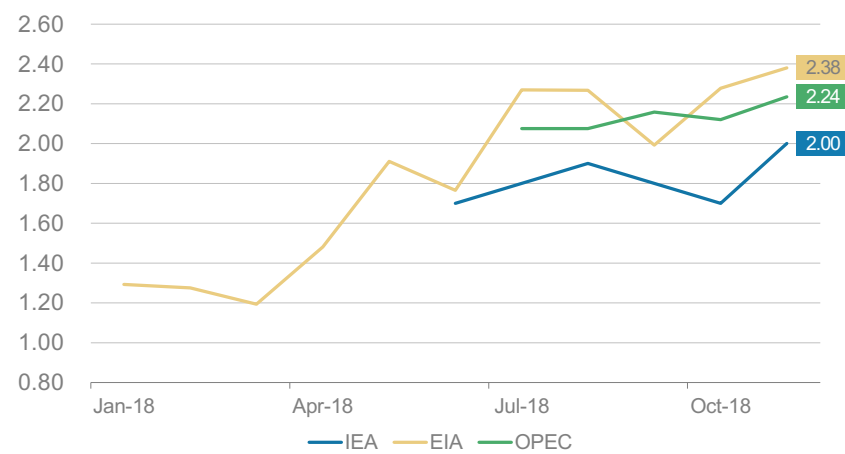
Key Agency Revisions (2019)

Exhibit 18: Oil Demand Growth 2018-19 (mmb/d)



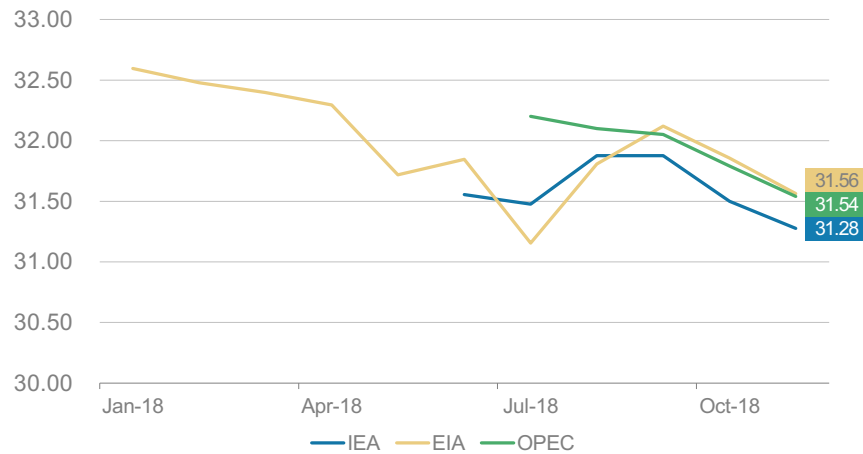
Source: EIA, IEA, OPEC

Exhibit 19: Non-OPEC Supply Growth 2018-19 (mmb/d)



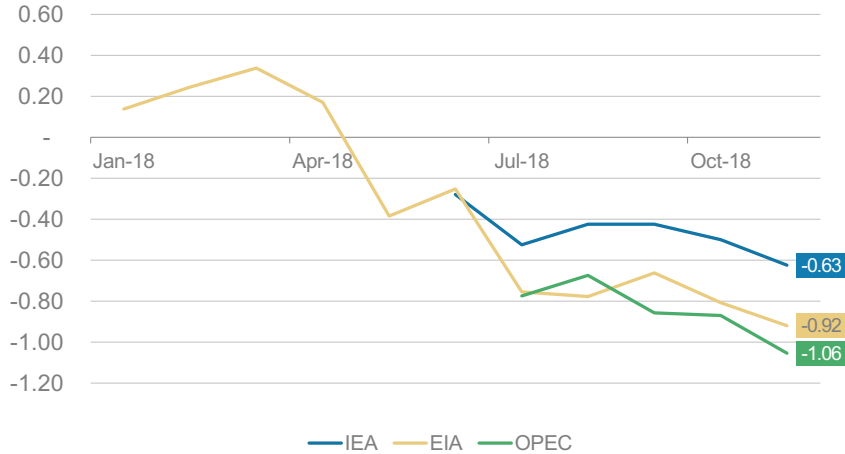
Source: EIA, IEA, OPEC

Exhibit 20: Call on OPEC 2019 (mmb/d)



Source: EIA, IEA, OPEC

Exhibit 21: Change in the Call on OPEC 2018-19 (mmb/d)



Source: EIA, IEA, OPEC

Prices & Differentials

Exhibit 22: Crude Prices (\$/bbl)



Source: Bloomberg

Exhibit 24: Brent vs. WTI (\$/bbl)



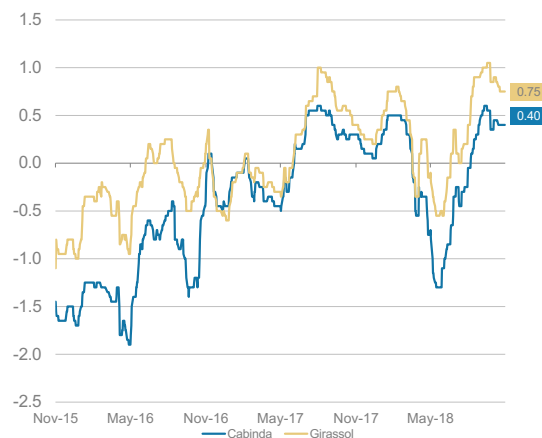
Source: Bloomberg

Exhibit 26: Brent vs. Dubai (\$/bbl)



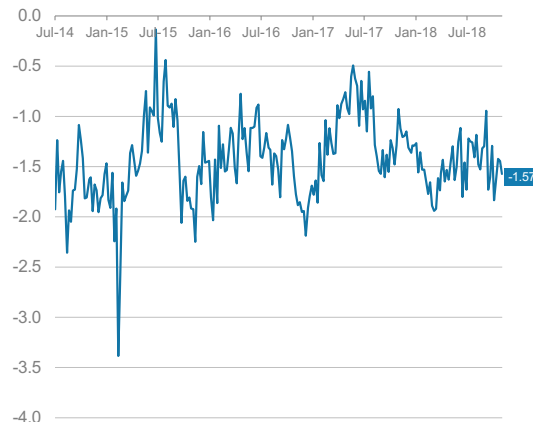
Source: Bloomberg

Exhibit 23: Angola vs. Brent (\$/bbl)



Source: Platts, Bloomberg

Exhibit 25: Sweet vs. Sour: Discount per 1% of Sulphur Content (\$/bbl)



Source: Platts, Bloomberg

Exhibit 27: Heavy - Light: Premium per Degree of API Gravity (\$/bbl)



Source: Platts, Bloomberg

Crude Oil Forward Curves and Time Spreads

Exhibit 28: Brent Forward Curve (\$/bbl)

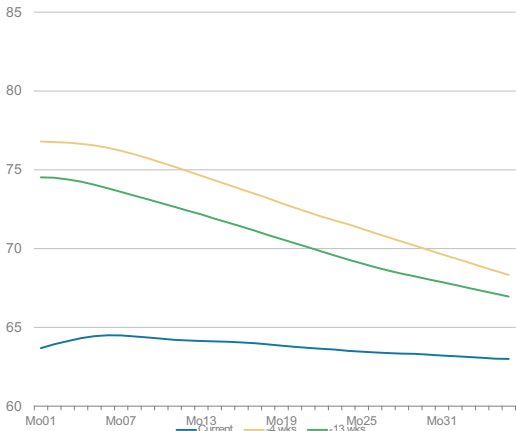


Exhibit 29: Brent Time Spreads (\$/bbl)



Exhibit 30: WTI Forward Curve (\$/bbl)

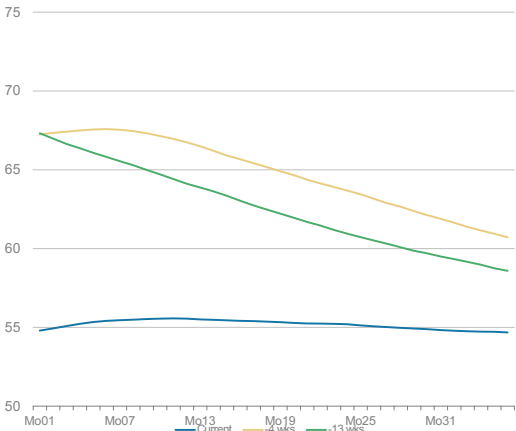


Exhibit 31: WTI Time Spreads (\$/bbl)



Exhibit 32: Dubai Forward Curve (\$/bbl)

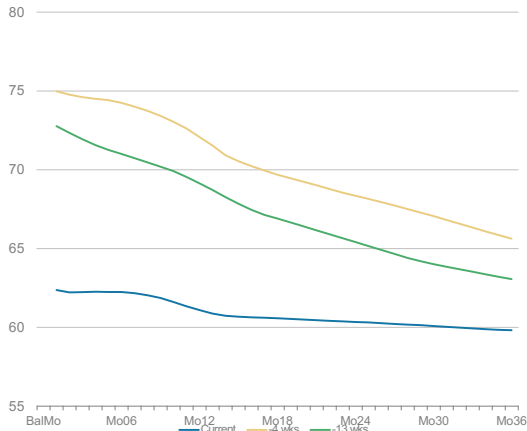
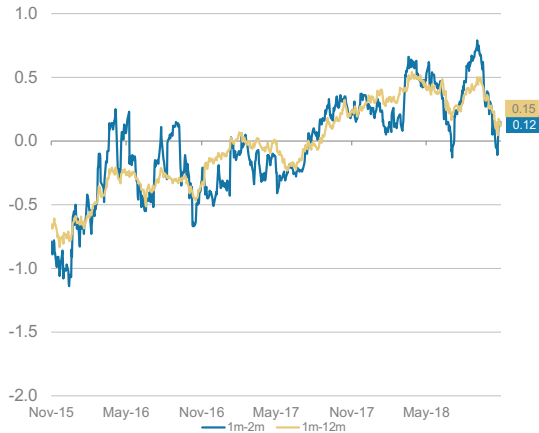
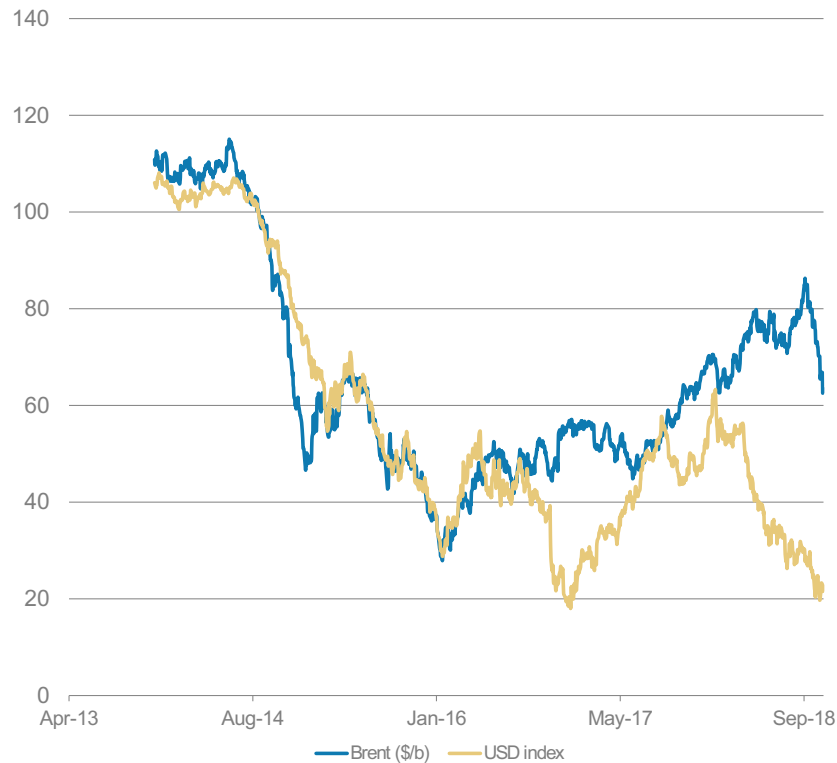


Exhibit 33: Dubai Time Spreads (\$/bbl)



Oil vs. Other Things

Exhibit 34: Brent Crude vs. Inverse TWD



Source: Reuters

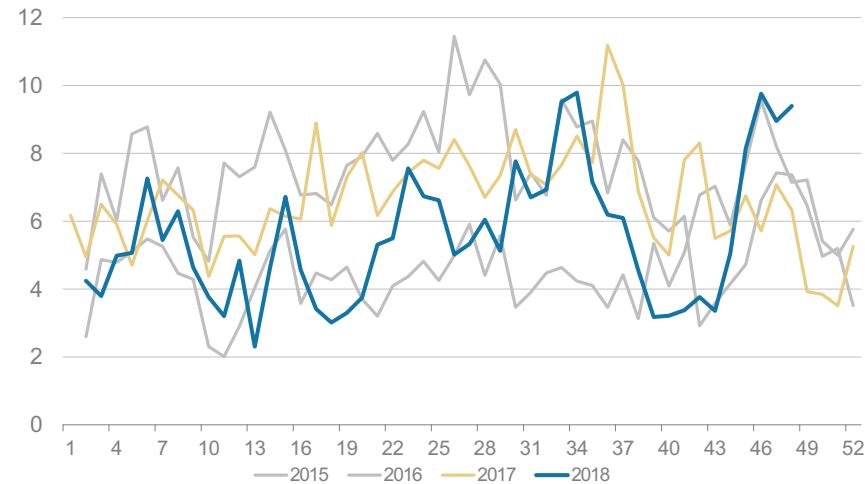
Exhibit 35: Brent Crude vs. Inflation vs. Base Metals



Source: Bloomberg

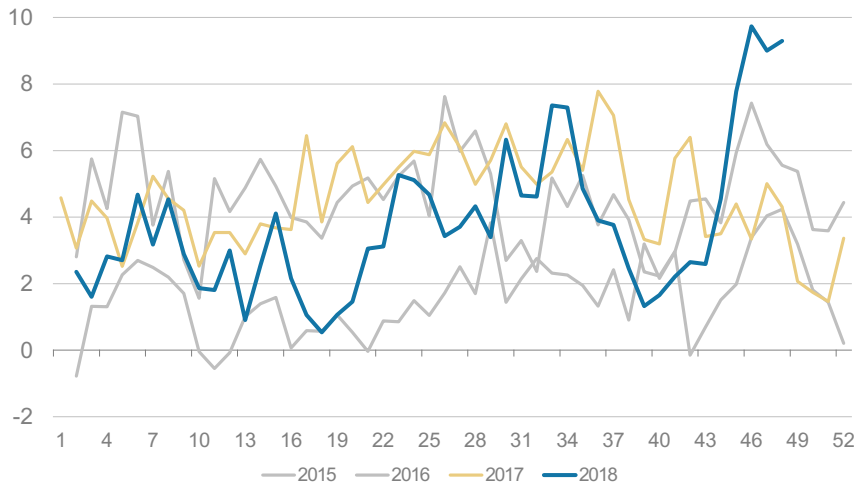
Refining Margins

Exhibit 36: Rotterdam – Brent Cracking (\$/bbl)



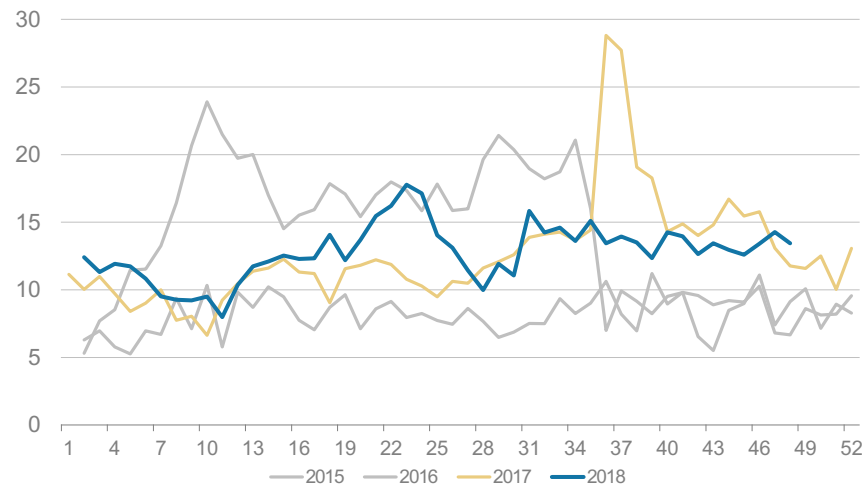
Source: Thomson Reuters

Exhibit 37: Rotterdam – Brent Hydroskimming (\$/bbl)



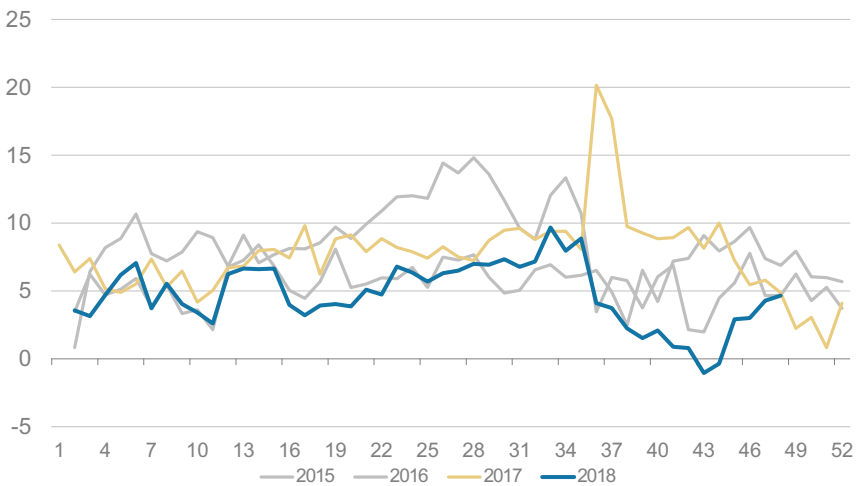
Source: Thomson Reuters

Exhibit 38: USGC – WTI Cracking (\$/bbl)



Source: Thomson Reuters

Exhibit 39: USGC – Brent Cracking (\$/bbl)



Source: Thomson Reuters

Exhibit 40: Med – Urals Cracking (\$/bbl)

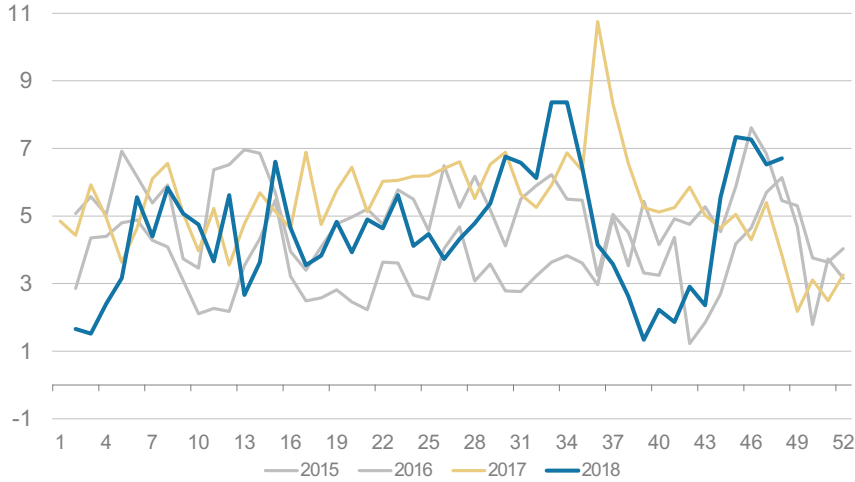


Exhibit 41: Med – Urals Hydroskimming (\$/bbl)

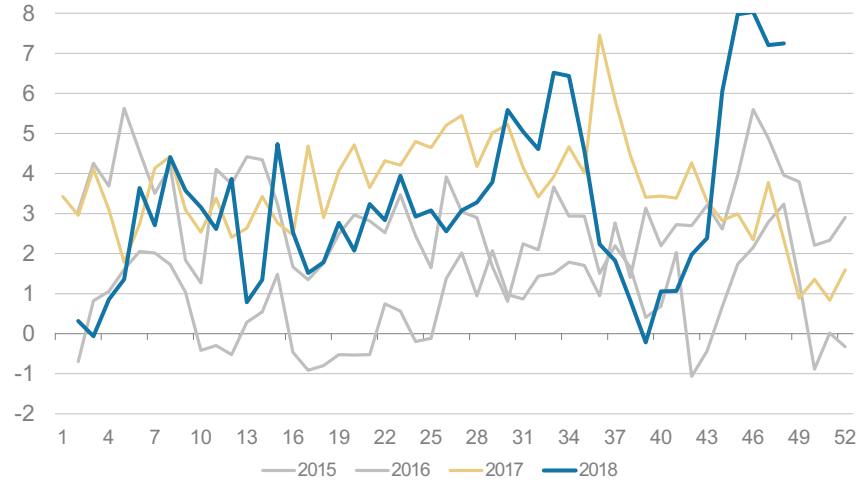


Exhibit 42: Singapore – Dubai Cracking (\$/bbl)

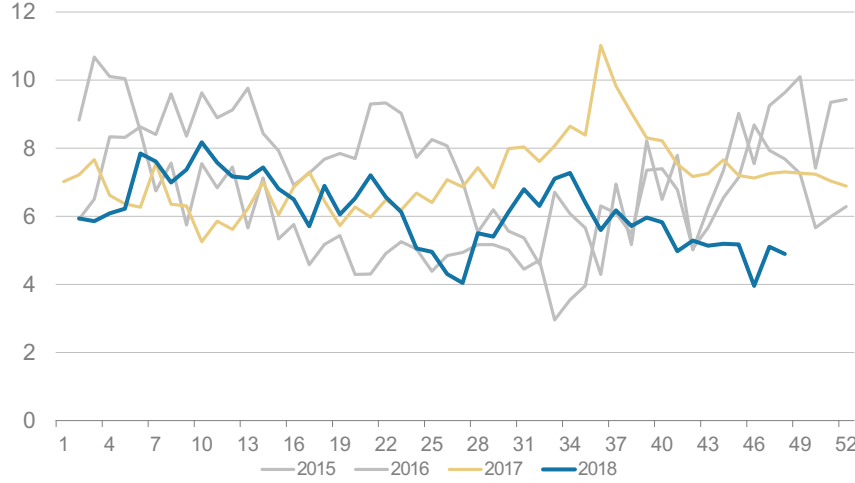
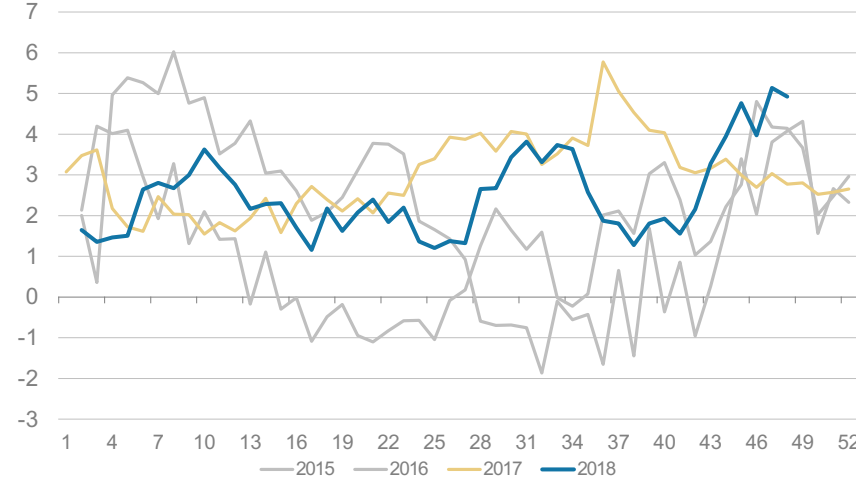
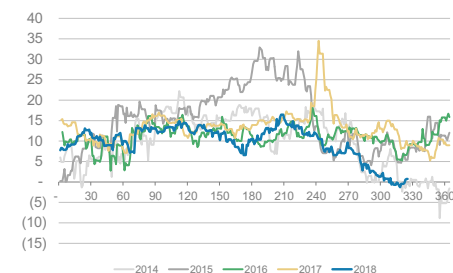


Exhibit 43: Singapore – Dubai Hydroskimming (\$/bbl)



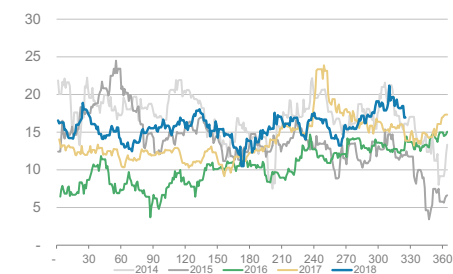
Product Cracks

Exhibit 44: Gasoline US vs. WTI (\$/bbl)



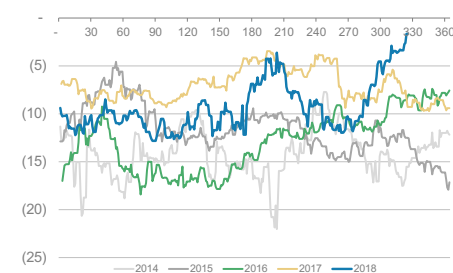
Source: Platts, Bloomberg

Exhibit 45: Diesel US vs. WTI (\$/bbl)



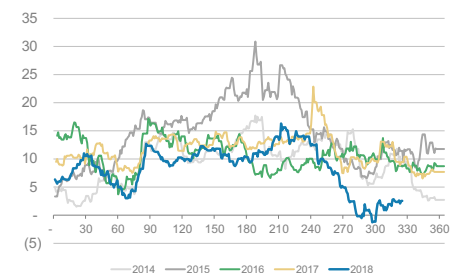
Source: Platts, Bloomberg

Exhibit 46: US Fuel Oil Crack (\$/bbl)



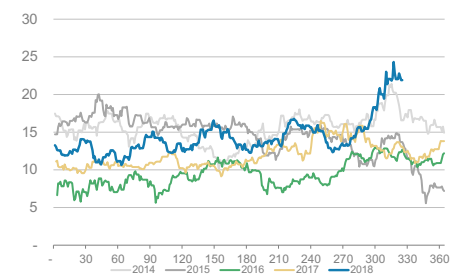
Source: Platts, Bloomberg

Exhibit 47: Gasoline NWE vs. Brent (\$/bbl)



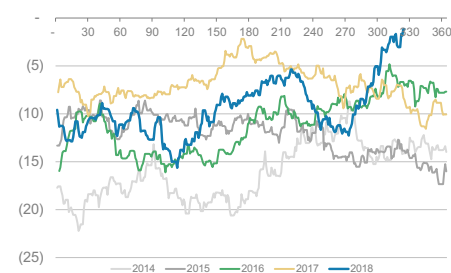
Source: Platts, Bloomberg

Exhibit 48: Diesel NWE vs. Brent (\$/bbl)



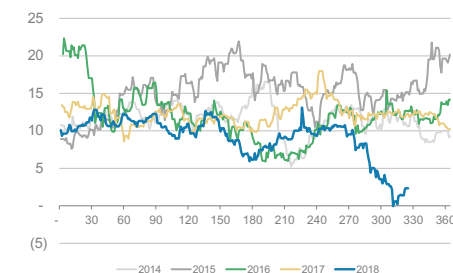
Source: Platts, Bloomberg

Exhibit 49: Fuel Oil NWE vs. Brent (\$/bbl)



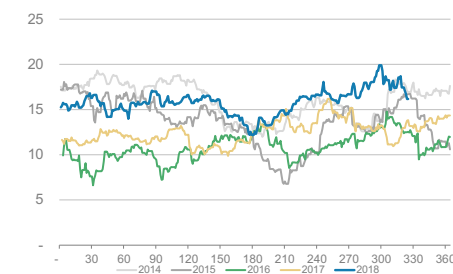
Source: Platts, Bloomberg

Exhibit 50: Gasoline Singapore vs. Brent (\$/bbl)



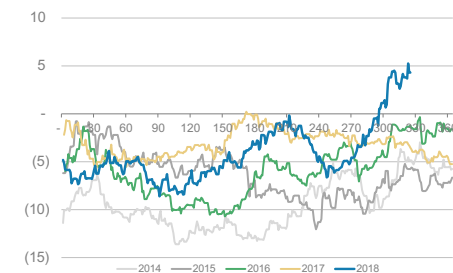
Source: Platts, Bloomberg

Exhibit 51: Gasoil Singapore vs. Brent (\$/bbl)



Source: Platts, Bloomberg

Exhibit 52: Fuel Oil Singapore vs. Brent (\$/bbl)



Source: Platts, Bloomberg

European Product Crack Forward Curves

Exhibit 53: Gasoline Crack NWE Forward Curve (\$/bbl)

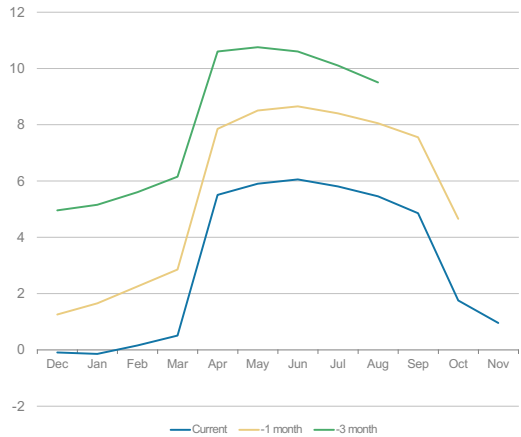


Exhibit 55: Naphtha Crack NWE Forward Curve (\$/bbl)

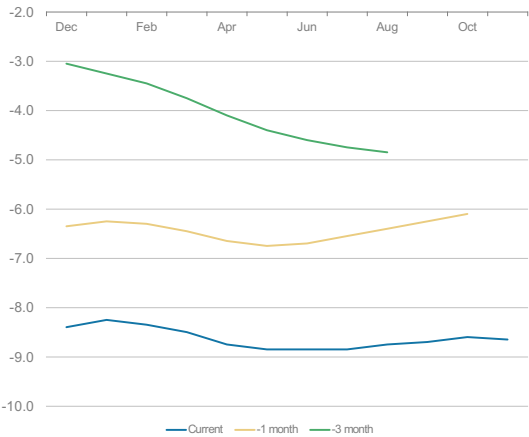


Exhibit 57: Gasoil 0.1% Crack NWE Forward Curve (\$/bbl)

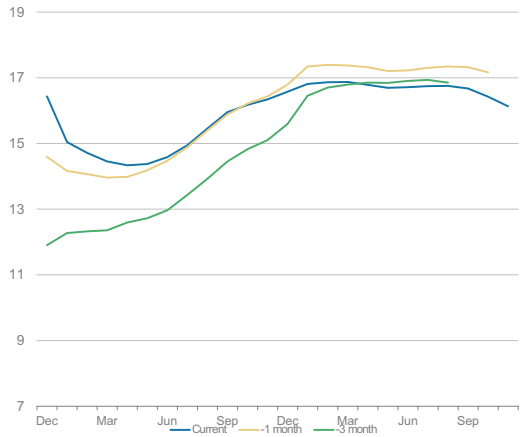


Exhibit 54: ULSD 10ppm Crack Forward Curve (\$/bbl)

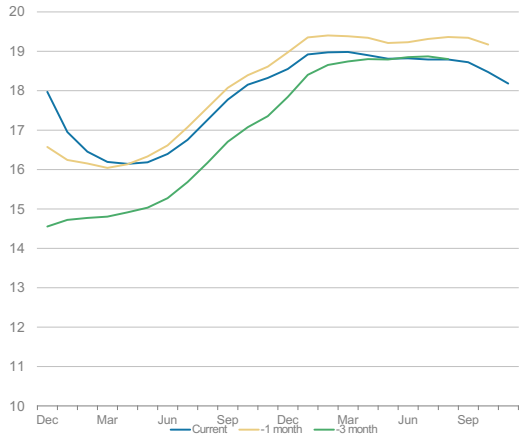


Exhibit 56: Jet Kero Crack NWE Forward Curve (\$/bbl)

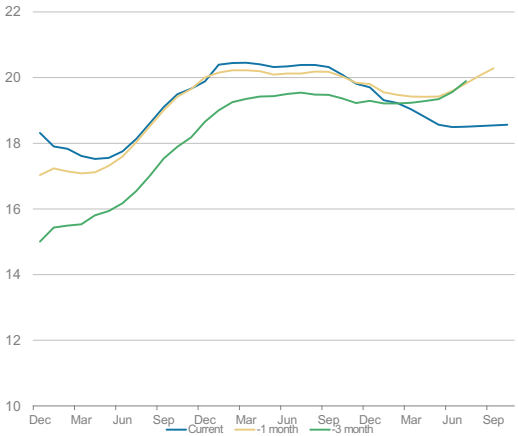
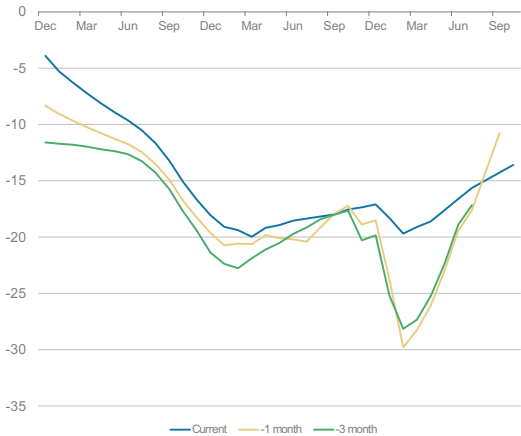


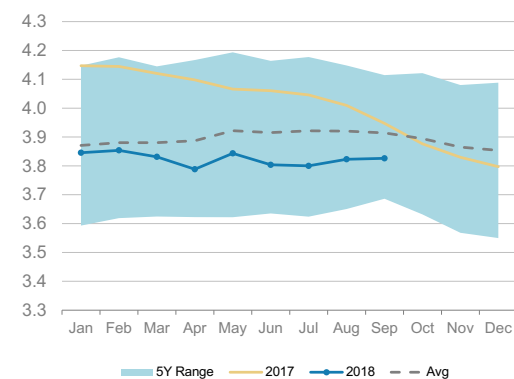
Exhibit 58: Fuel Oil 3.5% Crack Forward Curve (\$/bbl)



Global Stocks – Monthly

Exhibit 59: Total Liquid Stocks (bln bbls)

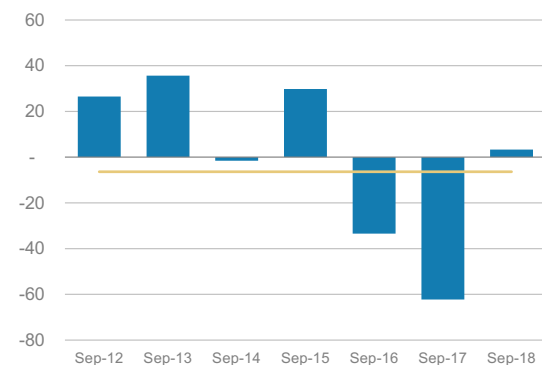
Total Liquid Stocks (bln bbls)



Source: IEA, JODI, Xinhua

Exhibit 60: Historical Global Liquids Stock Change (Latest Month)

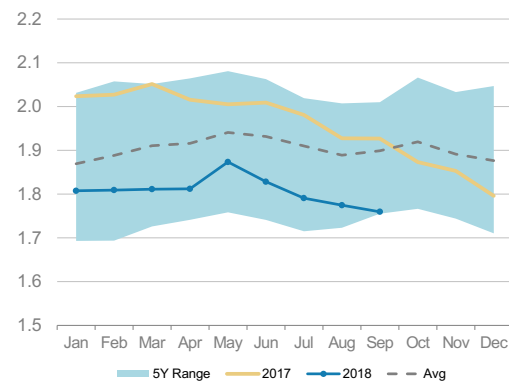
MoM Change in Global Liquids Stocks in Sept of Each Year (mln bbls)



Source: IEA, JODI, Xinhua

Exhibit 61: Total Crude Stocks (bln bbls)

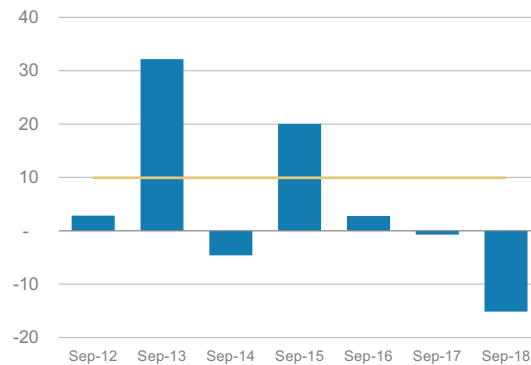
Total Crude Stocks (bln bbls)



Source: IEA, JODI, Xinhua

Exhibit 62: Historical Global Crude Stock Change (Latest Month)

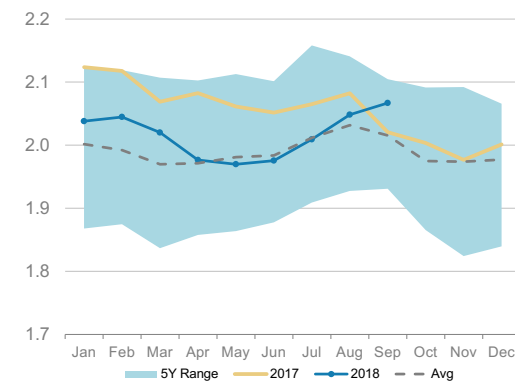
MoM Change in Global Crude Stocks in Sept of Each Year (mln bbls)



Source: IEA, JODI, Xinhua

Exhibit 63: Total Product Stocks (bln bbls)

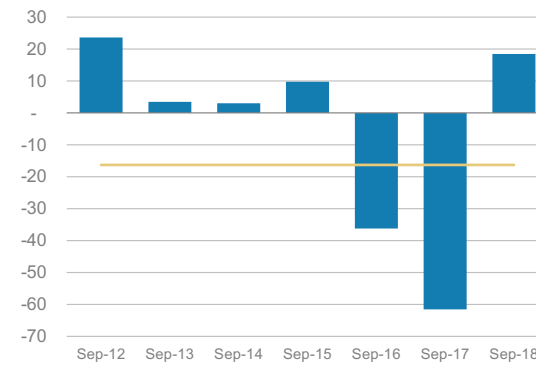
Total Product Stocks



Source: IEA, JODI, Xinhua

Exhibit 64: Historic Global Products Stock Change (Latest Month)

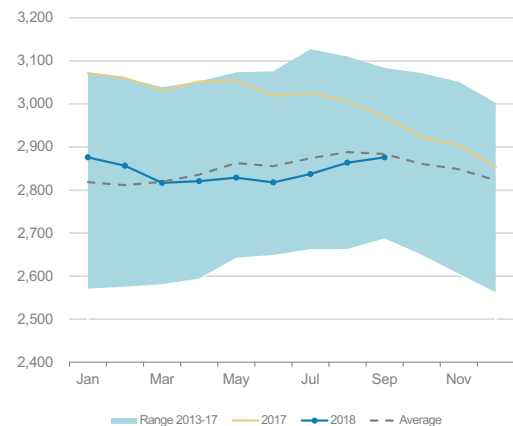
MoM Change in Global Product Stocks in Sept of Each Year (mln bbls)



Source: IEA, JODI, Xinhua

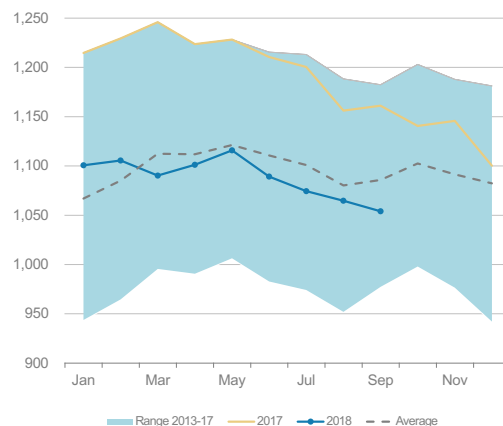
OECD Stocks – Monthly

Exhibit 65: OECD Total Liquid Stocks (bln bbls)



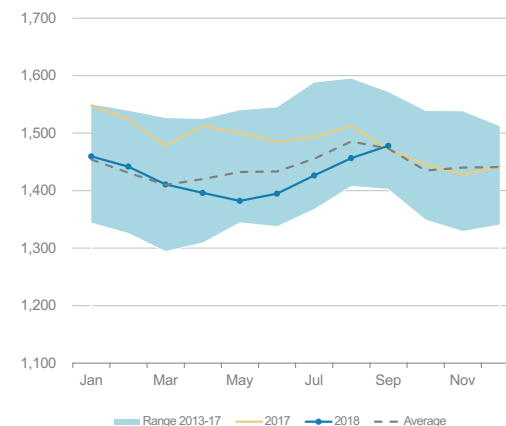
Source: IEA

Exhibit 67: OECD Total Crude Stocks (bln bbls)



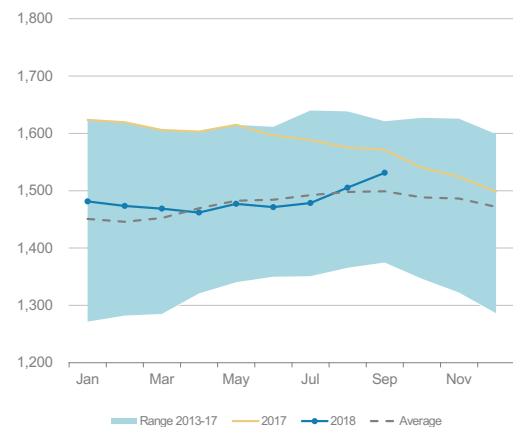
Source: IEA

Exhibit 69: OECD Total Product Stocks (bln bbls)



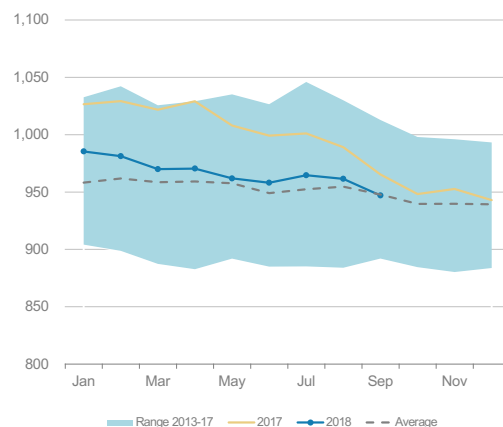
Source: IEA

Exhibit 66: OECD Americas Total Liquid Stocks (bln bbls)



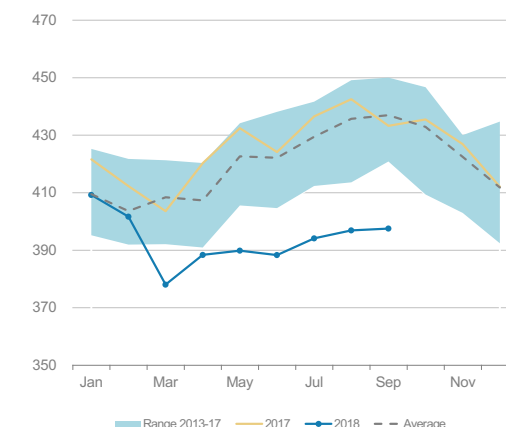
Source: IEA

Exhibit 68: OECD Europe Total Liquid Stocks (bln bbls)



Source: IEA

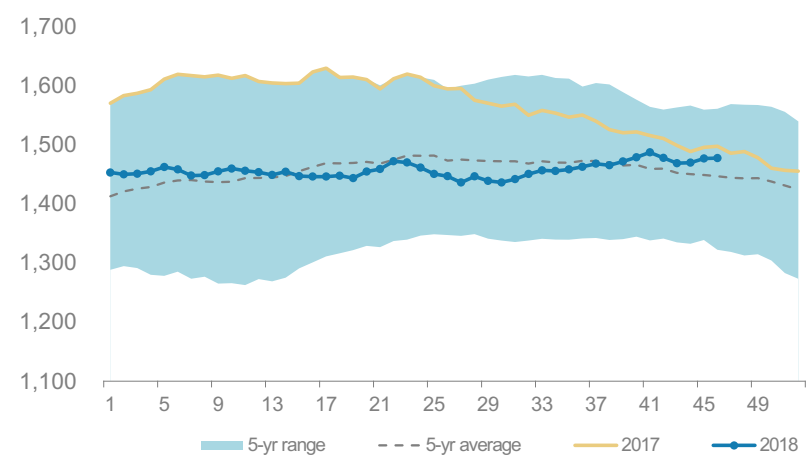
Exhibit 70: OECD Asia Oceania Total Liquid Stocks (bln bbls)



Source: IEA

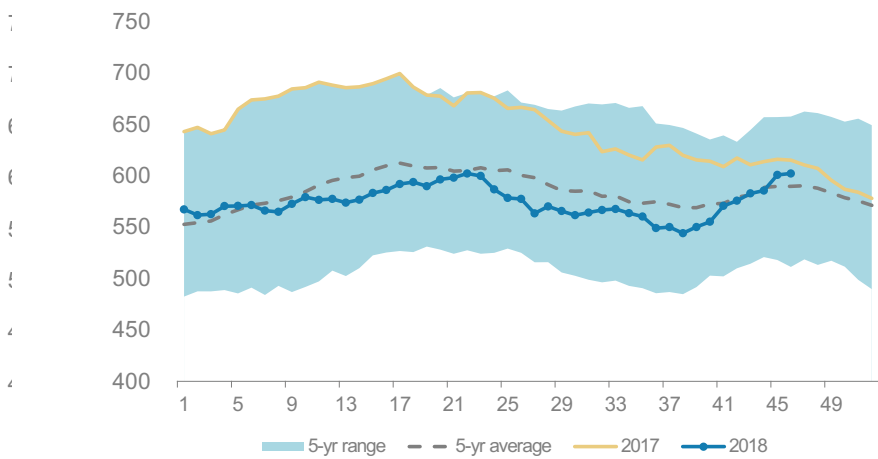
Global Stocks – Weekly

Exhibit 71: Total Oil (US, Japan, ARA, Singapore)



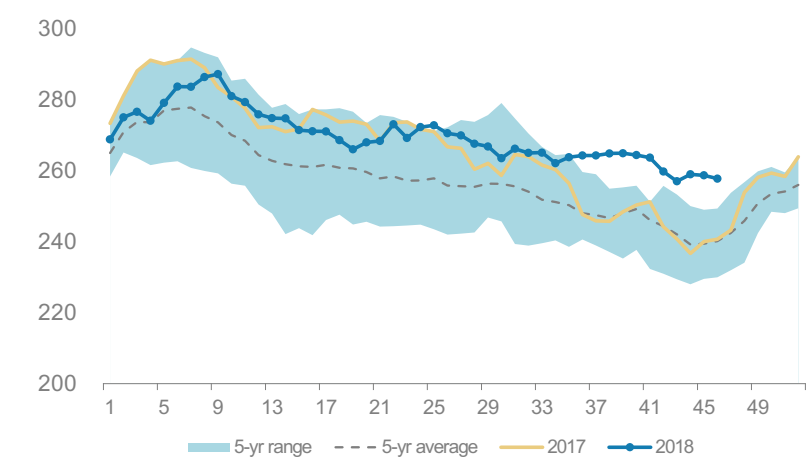
Source: EIA, PAJ, Genscape

Exhibit 72: Crude (US, Japan, ARA)



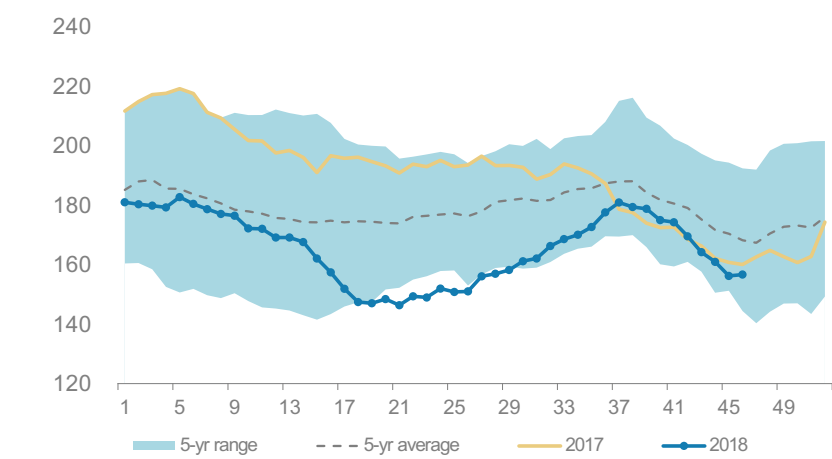
Source: EIA, PAJ, PKJ, IE

Exhibit 73: Gasoline (US, Japan, ARA, Singapore)



Source: EIA, PAJ, PKJ, IE

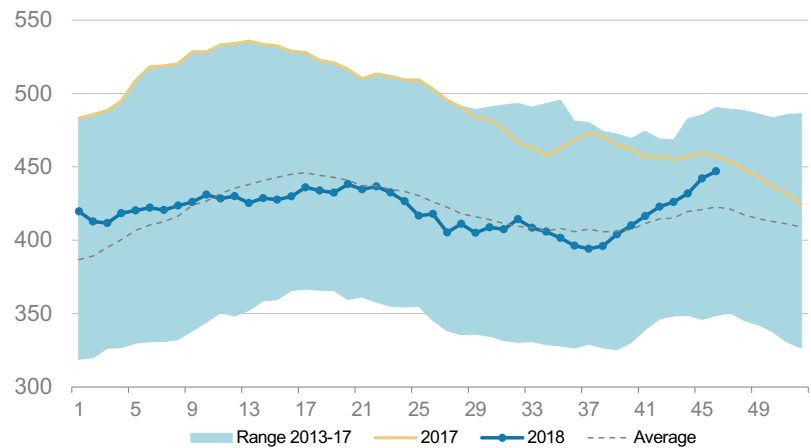
Exhibit 74: Distillates (US, Japan, ARA, Singapore)



Source: EIA, PAJ, PKJ, IE

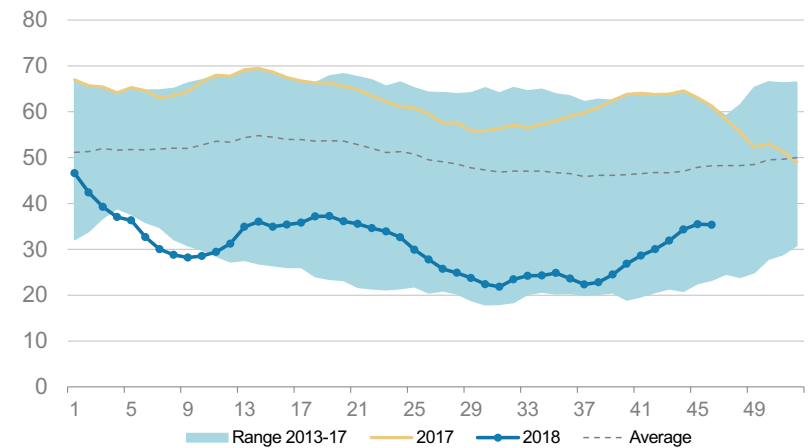
US Stocks – Weekly

Exhibit 75: US Crude – Total (mmb)



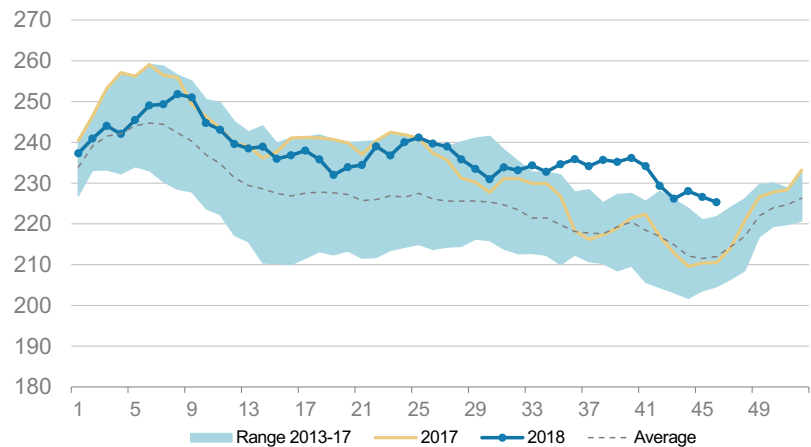
Source: EIA, Reuters

Exhibit 76: US Crude – Cushing (mmb)



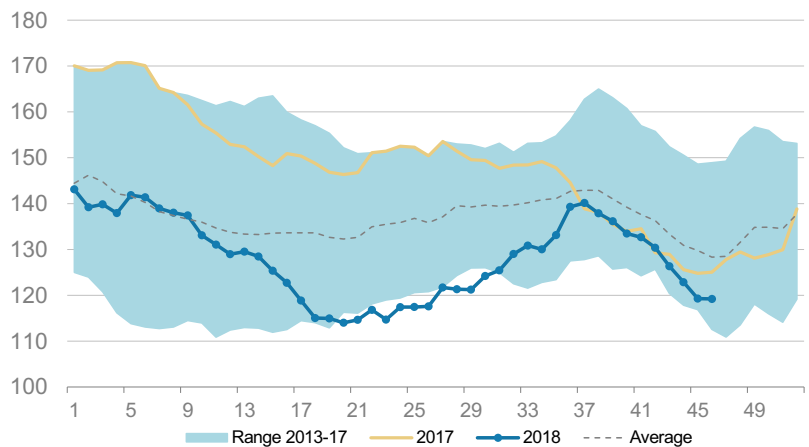
Source: EIA, Reuters

Exhibit 77: US Gasoline (mmb)



Source: EIA, Reuters

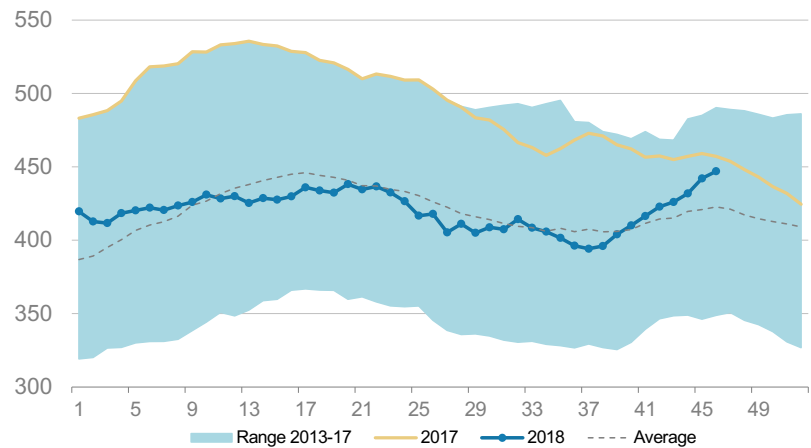
Exhibit 78: US Distillate (mmb)



Source: EIA, Reuters

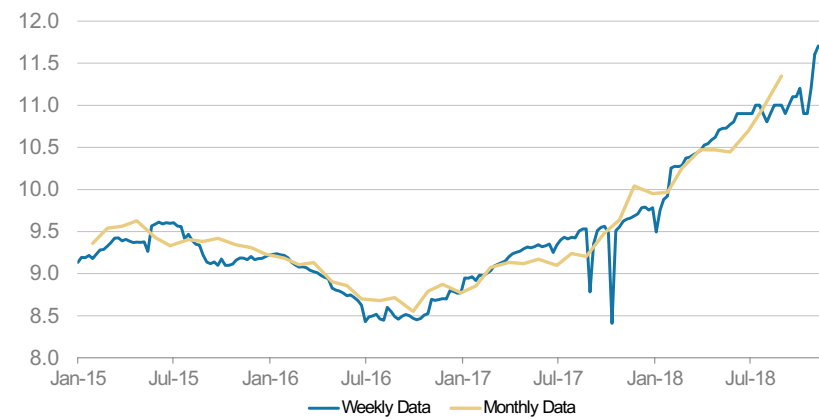
EIA – Crude Oil

Exhibit 79: Crude Oil Stocks (mmb)



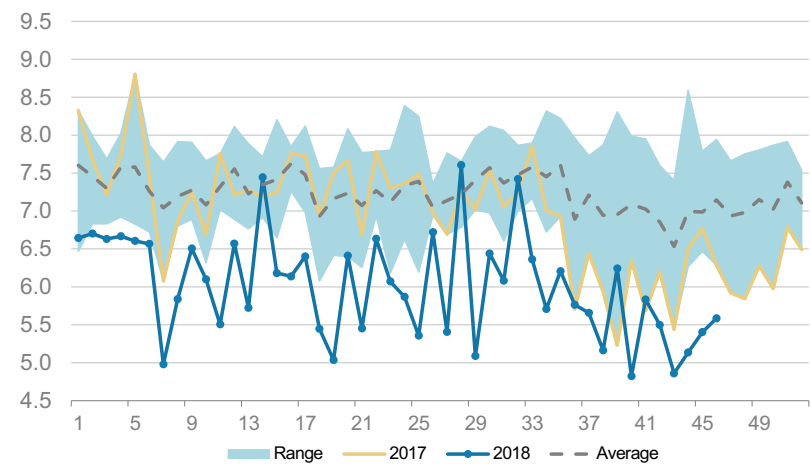
Source: EIA, Reuters

Exhibit 80: Crude Oil Production (mmb/d)



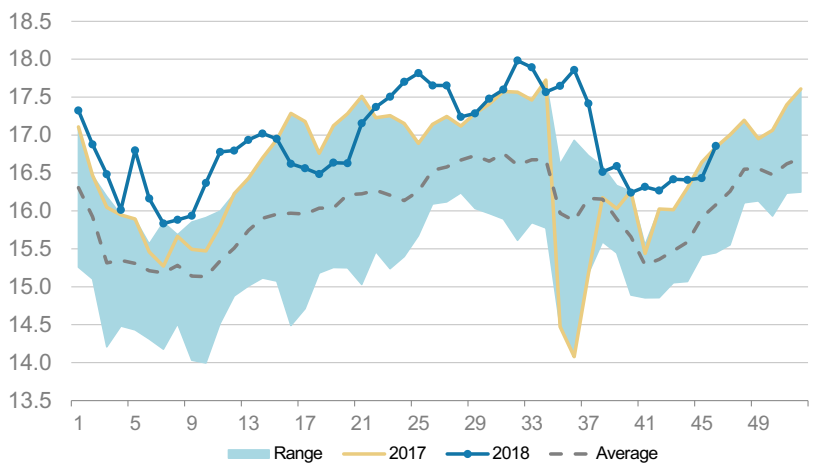
Source: EIA, Reuters

Exhibit 81: Net Crude Imports (mmb/d)



Source: EIA, Reuters

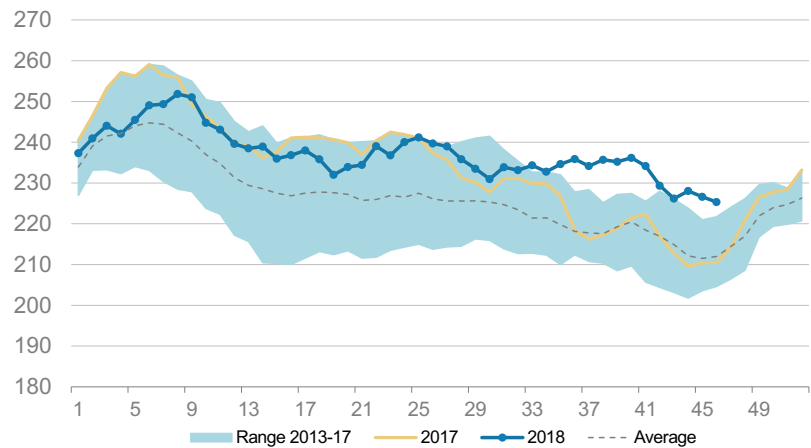
Exhibit 82: Crude Runs (mmb/d)



Source: EIA, Reuters

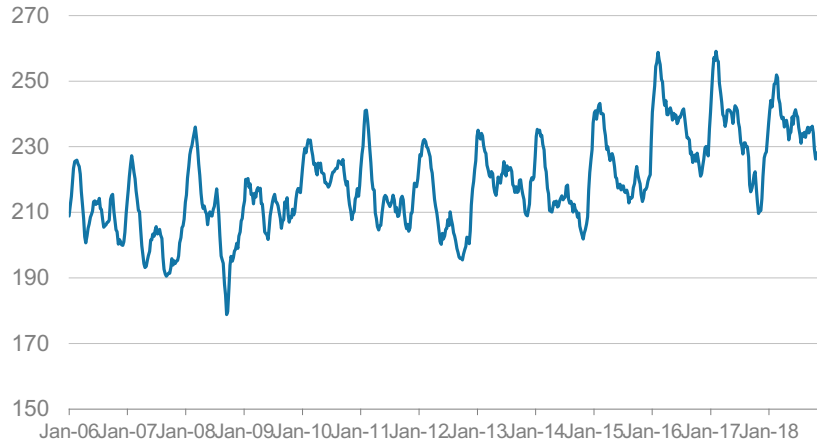
EIA – Gasoline

Exhibit 83: Gasoline Stocks (mmb)



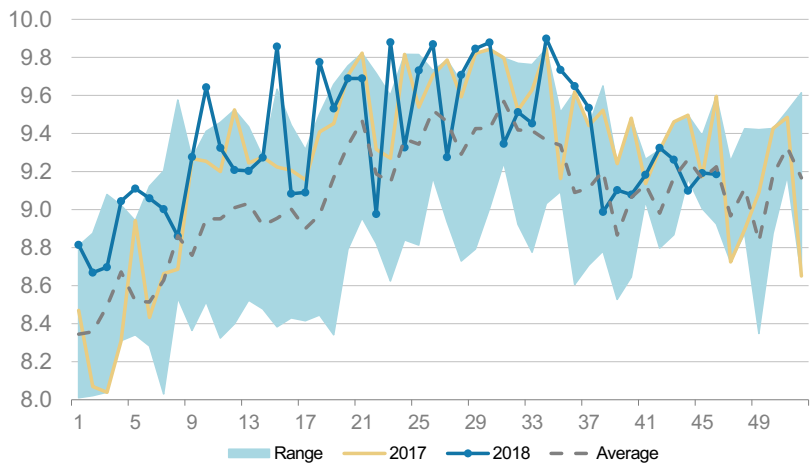
Source: EIA, Reuters

Exhibit 84: Long-term Gasoline Stocks (mmb)



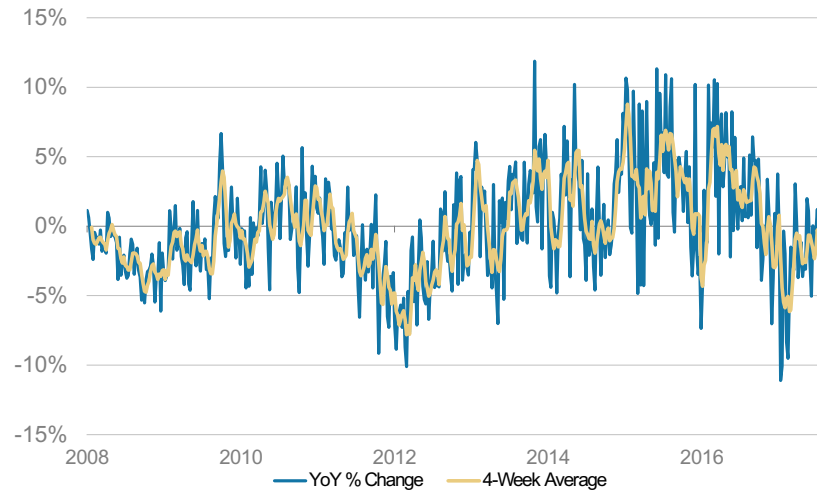
Source: EIA, Reuters

Exhibit 85: Gasoline Product Supplied (mmb/d)



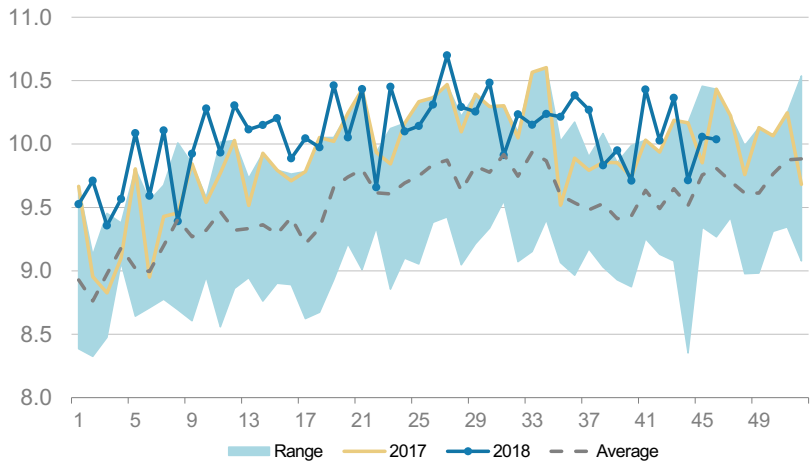
Source: EIA, Reuters

Exhibit 86: Gasoline Product Supplied (% YoY)



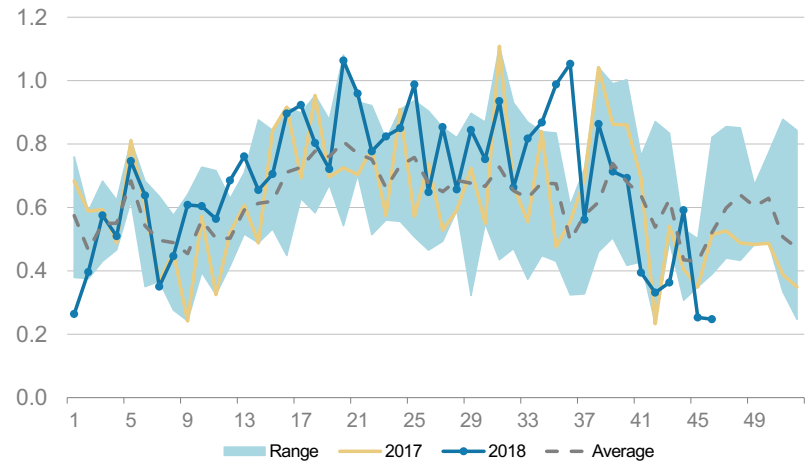
Source: EIA, Bloomberg

Exhibit 87: Gasoline Production (mmb/d)



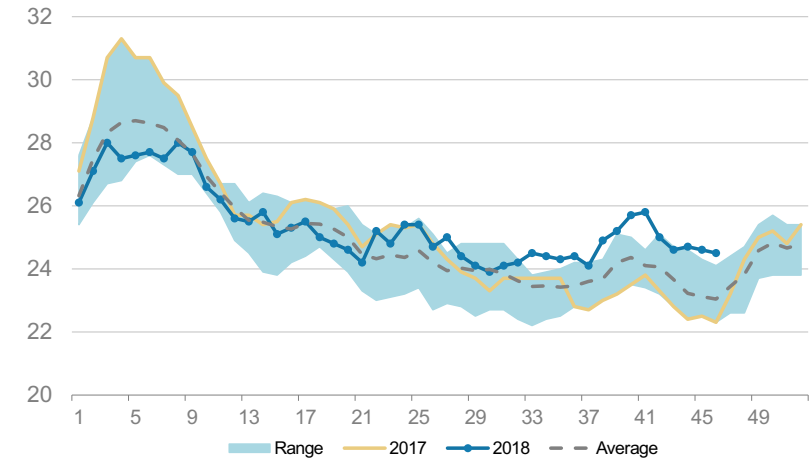
Source: EIA, Reuters

Exhibit 88: Gasoline Imports (mmb/d)



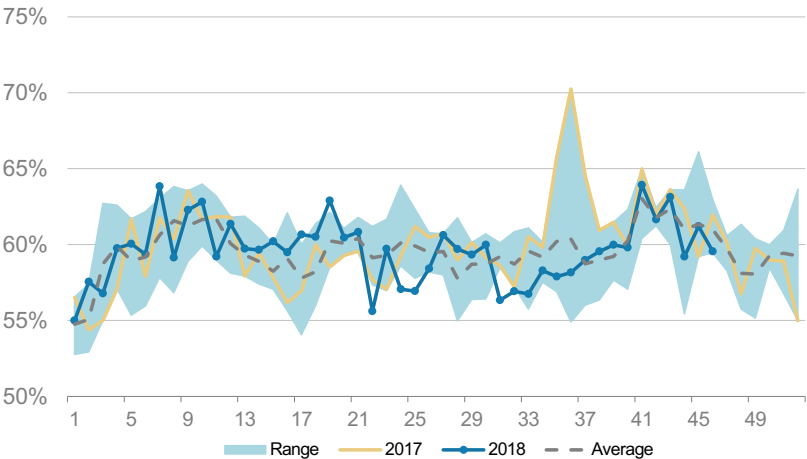
Source: EIA, Reuters

Exhibit 89: Gasoline Stocks Days of Supply (4 wk avg)



Source: EIA, Bloomberg

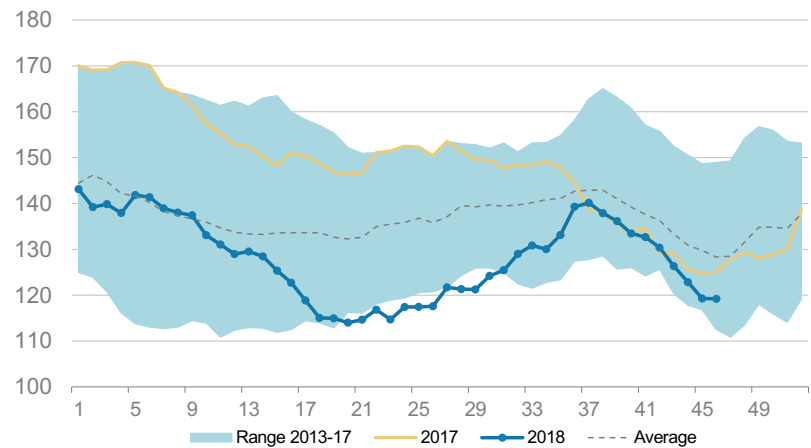
Exhibit 90: Gasoline Yield (%)



Source: EIA, Reuters

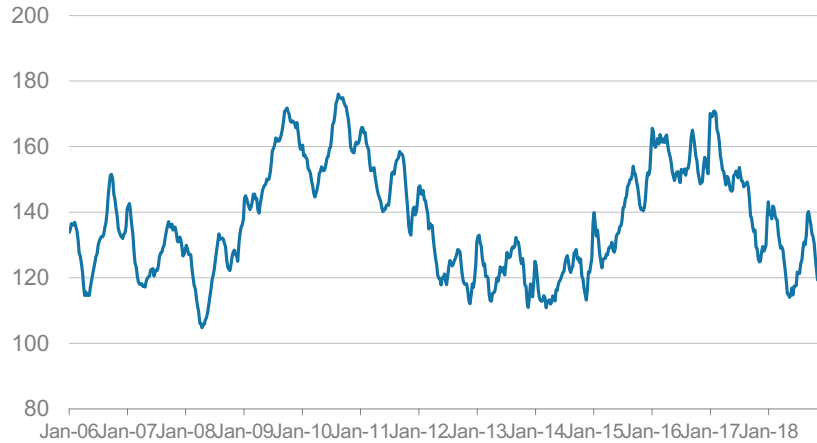
EIA – Distillate

Exhibit 91: Distillate Stocks (mmb)



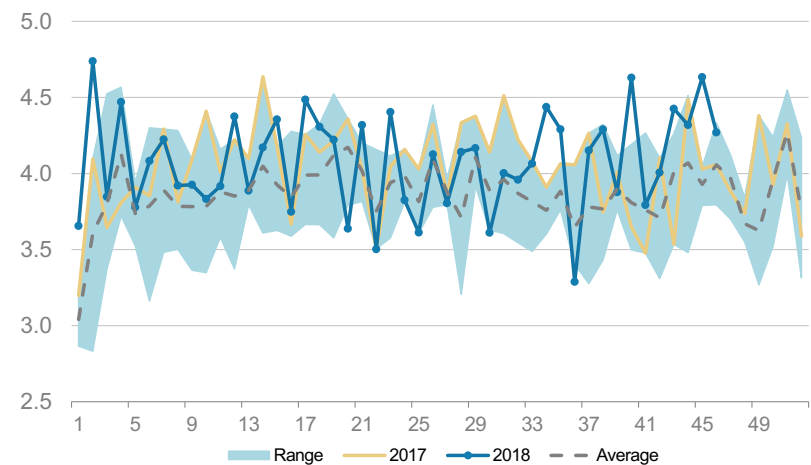
Source: EIA, Reuters

Exhibit 92: Long-term Distillate Stocks (mmb)



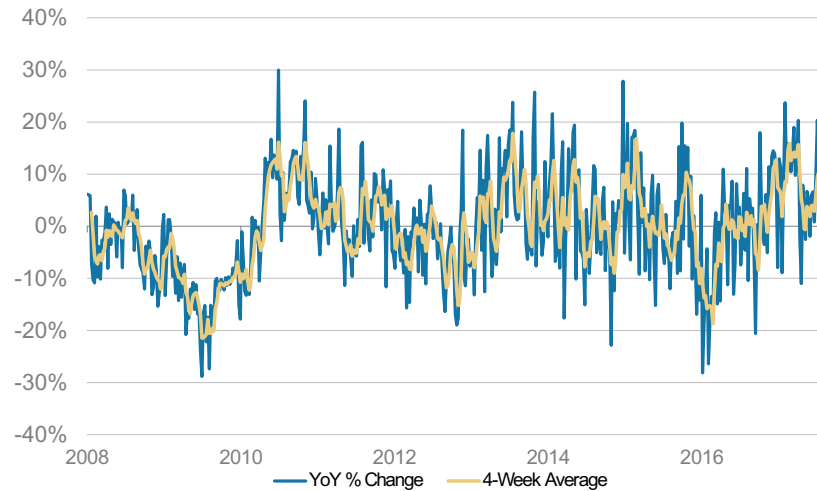
Source: EIA, Reuters

Exhibit 93: Distillate Product Supplied (mmb/d)



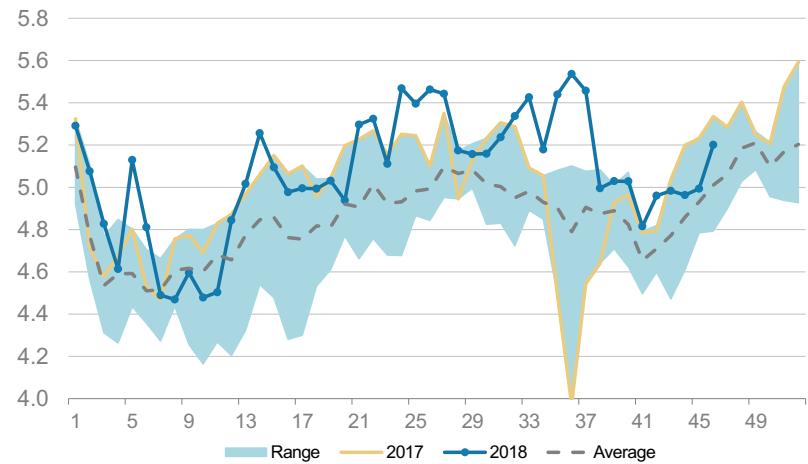
Source: EIA, Reuters

Exhibit 94: Distillate Product Supplied (% YoY)



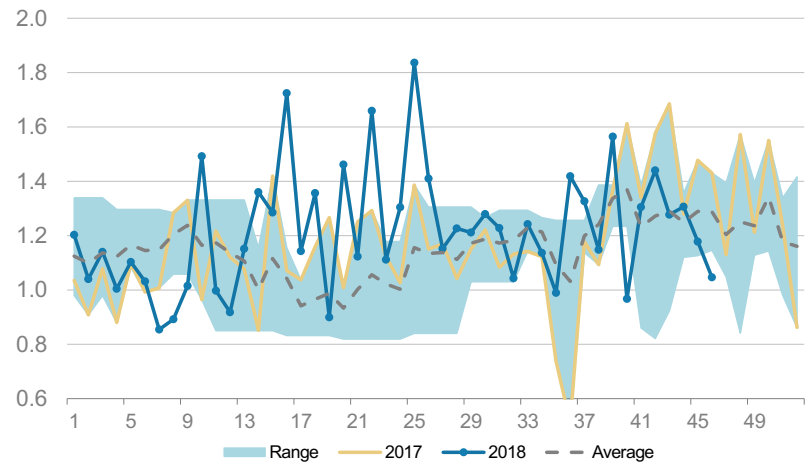
Source: EIA, Bloomberg

Exhibit 95: Distillate Production (mmb/d)



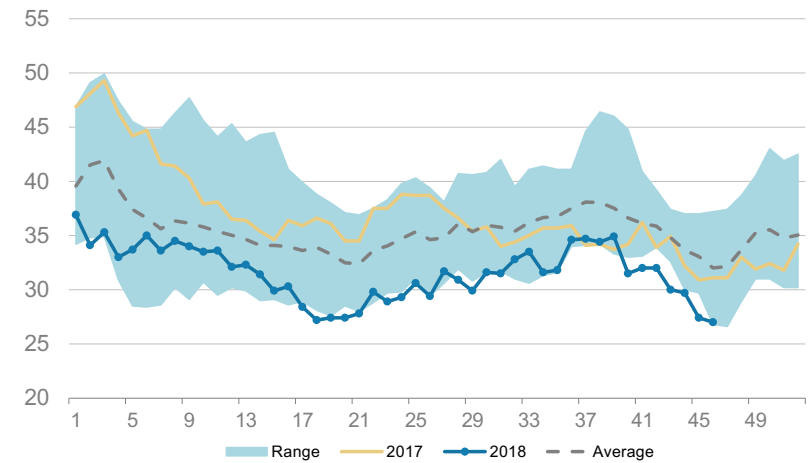
Source: EIA, Reuters

Exhibit 96: Distillate Exports (mmb/d)



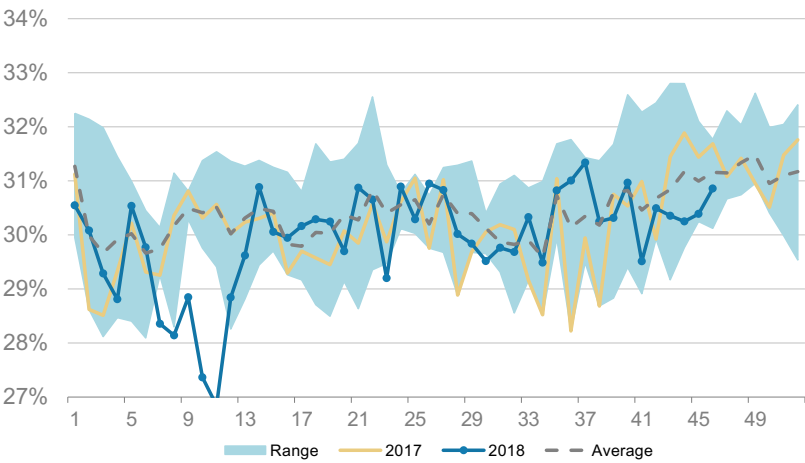
Source: EIA, Reuters

Exhibit 97: Distillate Stocks Days of Supply (4 wk avg)



Source: EIA, Reuters

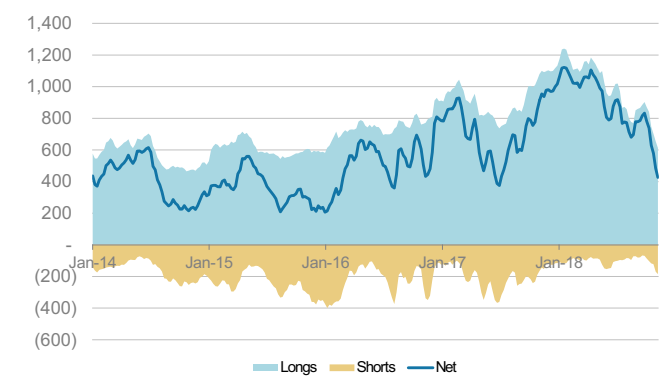
Exhibit 98: Distillate Yield (%)



Source: EIA, Reuters

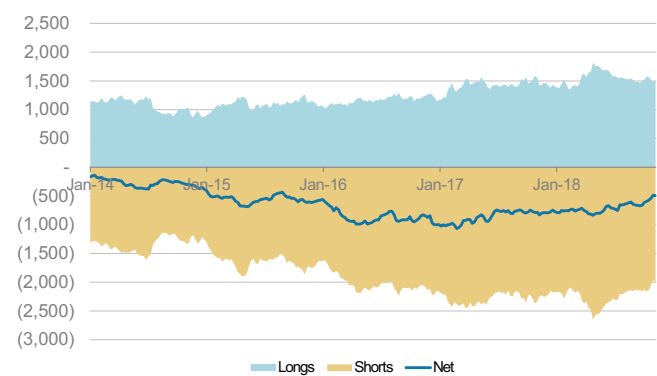
Positioning

Exhibit 99: Managed Money Crude Positioning ('000 lots)



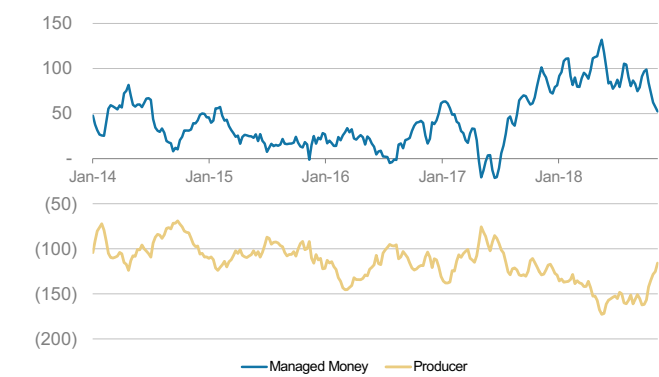
Source: ICE, CFTC, Reuters

Exhibit 100: Producer/Merchant Crude Positioning ('000 lots)



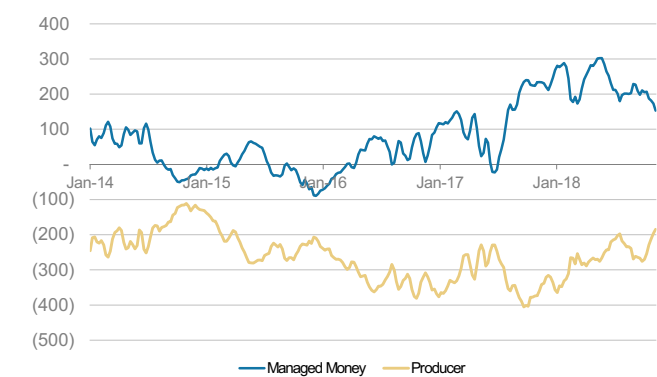
Source: ICE, NYMEX, CFTC, Reuters

Exhibit 101: Net Long Positioning – Gasoline ('000 lots)



Source: NYMEX, CFTC, Reuters

Exhibit 102: Net Long Positioning – Distillate ('000 lots)



Source: ICE, CFTC, Reuters

Supply/Demand Balance

Exhibit 103: Global Demand and Non-OPEC Supply (mb/d)

	2015	1Q16	2Q16	3Q16	4Q16	2016	1Q17	2Q17	3Q17	4Q17	2017	1Q18	2Q18	3Q18	4Q18	2018	2019	2020	2015-16	2016-17	2017-18	2018-19	2019-20
Demand																							
OECD	46.5	46.9	46.1	47.3	47.4	46.9	46.9	47.0	47.6	48.0	47.4	47.8	47.1	48.1	48.4	47.8	48.1	48.9	0.4	0.4	0.5	0.3	0.8
US50	19.5	19.5	19.5	19.9	19.8	19.7	19.5	20.1	20.0	20.2	20.0	20.2	20.3	20.7	20.4	20.4	20.7	21.0	0.2	0.3	0.5	0.2	0.4
Europe 5	8.1	8.0	8.1	8.3	8.2	8.1	8.2	8.3	8.4	8.2	8.3	8.2	8.2	8.2	8.3	8.2	8.2	8.4	0.0	0.1	-0.1	0.0	0.2
Japan	4.1	4.5	3.7	3.8	4.1	4.0	4.3	3.6	3.6	4.1	3.9	4.3	3.4	3.5	4.0	3.8	3.7	3.7	-0.1	-0.1	-0.1	-0.1	0.0
Canada	2.4	2.4	2.4	2.6	2.5	2.5	2.4	2.4	2.5	2.5	2.4	2.3	2.3	2.5	2.5	2.4	2.4	2.4	0.1	0.0	0.0	0.0	0.0
Mexico	2.0	2.1	2.0	2.0	2.1	2.1	2.0	2.0	2.0	1.9	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	0.0	-0.1	0.0	0.0	0.0
Other	10.3	10.3	10.4	10.8	10.8	10.6	10.5	10.6	11.0	11.1	10.8	10.8	10.8	11.1	11.2	11.0	11.1	11.3	0.3	0.2	0.2	0.1	0.3
Non-OECD	48.7	48.6	49.8	49.5	49.6	49.4	49.6	51.0	50.7	50.5	50.4	50.4	51.4	52.3	52.0	51.5	52.7	54.0	0.7	1.1	1.1	1.1	1.4
China	11.6	11.7	12.3	11.8	12.2	12.0	12.4	12.9	12.3	12.7	12.6	12.7	13.0	13.5	13.5	13.2	13.7	14.3	0.4	0.6	0.6	0.5	0.6
India	4.2	4.5	4.5	4.3	4.4	4.4	4.5	4.7	4.4	4.7	4.6	4.8	4.9	4.5	4.9	4.8	4.9	5.1	0.2	0.1	0.2	0.1	0.1
Russia	3.4	3.3	3.2	3.5	3.4	3.3	3.1	3.3	3.5	3.3	3.3	3.3	3.4	3.7	3.5	3.5	3.5	3.5	-0.1	0.0	0.2	0.0	0.0
Brazil	3.2	2.9	3.0	3.0	3.0	3.0	2.9	3.0	3.1	3.0	3.0	2.9	2.9	3.1	3.1	3.0	3.1	3.2	-0.2	0.0	0.0	0.1	0.1
Middle East	6.7	6.3	6.7	7.0	6.5	6.6	6.4	6.8	7.0	6.4	6.7	6.3	6.6	6.8	6.4	6.5	6.6	6.7	-0.1	0.1	-0.2	0.1	0.1
Other	19.6	19.9	20.2	19.9	20.2	20.0	20.2	20.4	20.4	20.4	20.3	20.3	20.6	20.7	20.7	20.6	20.9	21.3	0.4	0.3	0.2	0.3	0.4
Total demand	95.2	95.5	96.0	96.8	97.0	96.3	96.4	98.0	98.3	98.6	97.8	98.2	98.5	100.3	100.4	99.3	100.7	102.9	1.1	1.5	1.5	1.4	2.1
Supply																							
Non-OPEC Crude + Condensate	46.6	46.3	44.7	45.1	46.2	45.6	46.2	45.5	45.7	46.5	46.0	47.1	47.1	47.9	48.5	47.6	49.1	50.6	-1.0	0.4	1.7	1.5	1.4
United States	9.4	9.1	8.8	8.6	8.8	8.8	9.0	9.1	9.3	9.9	9.4	10.2	10.5	11.3	11.6	10.9	12.1	13.1	-0.6	0.5	1.6	1.2	1.1
- Shale production	5.8	5.5	5.3	5.2	5.3	5.3	5.4	5.6	5.8	6.5	5.8	6.7	7.2	7.7	7.9	7.4	8.4	9.6	-0.5	0.5	1.5	1.1	1.2
- Alaska	0.5	0.5	0.5	0.4	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.4	0.5	0.5	0.5	0.4	0.0	0.0	0.0	0.0	0.0
- Other Lower 48	3.2	3.1	3.0	2.9	3.0	3.0	3.1	3.0	3.0	2.9	3.0	3.0	2.9	3.2	3.2	3.1	3.2	3.1	-0.1	0.0	0.1	0.1	-0.1
Canada	3.7	3.8	3.1	3.8	4.0	3.7	4.1	3.7	4.0	4.1	4.0	4.2	4.1	4.3	4.2	4.2	4.3	4.4	0.0	0.3	0.2	0.1	0.0
Mexico	2.3	2.2	2.2	2.1	2.1	2.2	2.0	2.0	1.9	1.9	1.9	1.9	1.9	1.8	1.8	1.8	1.7	1.6	-0.1	-0.2	-0.1	-0.1	-0.1
UK	0.9	1.0	1.0	0.9	0.9	0.9	1.0	0.9	0.9	0.9	0.9	1.0	0.9	0.9	1.0	0.9	1.0	1.1	0.0	0.0	0.0	0.1	0.0
Norway	1.6	1.7	1.6	1.6	1.8	1.6	1.7	1.7	1.6	1.6	1.6	1.6	1.5	1.5	1.4	1.5	1.4	1.6	0.0	0.0	-0.1	-0.1	0.2
Russia	10.7	10.9	10.8	10.9	11.2	11.0	11.1	11.0	10.9	10.9	11.0	11.0	11.0	11.3	11.4	11.2	11.5	11.6	0.2	0.0	0.2	0.3	0.1
China	4.2	4.1	4.0	3.8	3.8	3.9	3.8	3.8	3.7	3.7	3.8	3.7	3.7	3.7	3.7	3.7	3.6	3.5	-0.3	-0.1	-0.1	-0.1	-0.1
Kazakhstan	1.7	1.7	1.6	1.5	1.8	1.6	1.8	1.8	1.8	1.8	1.8	1.9	1.9	1.8	1.9	1.9	1.8	1.8	0.0	0.2	0.1	0.0	0.0
Azerbaijan	0.8	0.9	0.9	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.7	0.0	0.0	0.0	0.0	0.0
Brazil	2.4	2.3	2.4	2.6	2.7	2.5	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.5	2.6	2.6	2.9	3.3	0.1	0.1	0.0	0.3	0.4
Colombia	1.0	0.9	0.9	0.8	0.8	0.9	0.8	0.9	0.9	0.9	0.9	0.8	0.9	0.9	0.9	0.9	0.8	0.8	-0.1	0.0	0.0	0.0	-0.1
Indonesia	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.7	0.8	0.7	0.7	0.1	0.0	0.0	0.0	0.0
Other	7.1	6.9	6.6	6.7	6.7	6.8	6.6	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.4	6.5	6.4	6.4	-0.3	-0.2	-0.1	-0.1	-0.1

Source: IEA, Morgan Stanley Research estimates

Supply/Demand Balance (cont'd)

Exhibit 104: OPEC supply (mb/d)

	2015	1Q16	2Q16	3Q16	4Q16	2016	1Q17	2Q17	3Q17	4Q17	2017	1Q18	2Q18	3Q18	4Q18	2018	2019	2020	2015-16	2016-17	2017-18	2018-19	2019-20
Supply (cont'd)																							
NGLs	6.1	6.4	6.5	6.3	6.5	6.4	6.6	6.6	6.7	7.0	6.7	7.1	7.2	7.4	7.4	7.3	7.5	7.7	0.3	0.3	0.5	0.2	0.2
Unconventionals*	0.5	0.5	0.5	0.5	0.4	0.5	0.5	0.5	0.5	0.4	0.5	0.5	0.6	0.6	0.5	0.6	0.5	0.5	-0.1	0.0	0.1	-0.1	0.0
Biofuels	2.2	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	0.0	0.0	0.0	0.0	0.0
Processing gains	2.3	2.0	2.5	2.7	2.3	2.4	2.0	2.5	2.9	2.5	2.5	2.1	2.7	3.0	2.5	2.6	2.7	2.7	0.1	0.1	0.1	0.1	0.1
Total non-OPEC supply	57.8	57.4	56.4	56.9	57.7	57.1	57.5	57.5	58.0	58.7	57.9	59.1	60.0	61.2	61.2	60.4	62.2	63.8	-0.7	0.8	2.4	1.8	1.7
OPEC NGLs	6.5	6.7	6.8	6.8	6.8	6.8	6.9	6.9	6.9	6.8	6.9	6.9	6.9	7.0	6.9	6.9	6.9	6.9	0.2	0.1	0.1	-0.1	0.0
Call on OPEC crude + Δstock	30.8	31.4	32.7	33.1	32.5	32.4	32.1	33.6	33.3	33.0	33.0	32.2	31.5	32.2	32.3	32.1	31.7	32.1	1.6	0.6	-0.9	-0.4	0.4
OPEC	32.1	32.5	32.8	33.1	33.6	33.0	32.3	32.6	33.0	32.6	32.6	32.3	32.1	32.6	32.5	32.4	31.8	32.2	0.9	-0.4	-0.2	-0.5	0.4
Saudi Arabia	10.1	10.2	10.3	10.6	10.6	10.4	9.9	10.0	10.0	10.0	10.0	10.0	10.1	10.4	10.5	10.3	10.4	10.4	0.3	-0.5	0.3	0.2	0.0
Iran	2.8	3.1	3.6	3.7	3.8	3.6	3.8	3.8	3.8	3.8	3.8	3.8	3.8	3.6	3.0	3.6	2.4	2.6	0.7	0.3	-0.2	-1.2	0.2
Iraq	4.0	4.3	4.3	4.4	4.6	4.4	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.6	4.7	4.6	4.8	5.0	0.4	0.1	0.1	0.2	0.2
UAE	2.9	2.9	3.0	3.1	3.2	3.0	3.0	2.9	2.9	2.9	2.9	2.8	2.9	3.0	3.2	3.0	3.2	3.3	0.1	-0.1	0.0	0.3	0.0
Kuwait	2.8	2.9	2.9	2.9	2.9	2.9	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.8	2.8	2.7	2.8	2.8	0.1	-0.2	0.0	0.1	0.0
Neutral Zone	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	0.0	0.0	0.0	0.1	0.2	-0.1	0.0	0.0	0.1	0.1
Qatar	0.7	0.7	0.7	0.6	0.6	0.7	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.0	0.0	0.0	0.0	0.0
Angola	1.8	1.8	1.7	1.7	1.6	1.7	1.6	1.6	1.7	1.6	1.6	1.6	1.5	1.5	1.5	1.5	1.5	1.4	-0.1	-0.1	-0.1	-0.1	-0.1
Nigeria	1.8	1.7	1.5	1.3	1.5	1.5	1.4	1.5	1.6	1.6	1.5	1.7	1.5	1.6	1.7	1.6	1.7	1.8	-0.3	0.1	0.1	0.1	0.0
Libya	0.4	0.4	0.3	0.3	0.6	0.4	0.7	0.7	0.9	1.0	0.8	1.0	0.9	0.9	1.1	1.0	1.1	1.1	0.0	0.4	0.2	0.1	0.0
Algeria	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.0	1.0	1.0	1.0	1.1	1.1	1.0	1.0	1.0	0.0	-0.1	0.0	0.0	-0.1
Ecuador	0.5	0.5	0.6	0.6	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.0	0.0	0.0	0.0	0.0
Venezuela	2.5	2.4	2.3	2.2	2.1	2.2	2.1	2.0	2.0	1.8	2.0	1.5	1.4	1.3	1.2	1.4	1.1	0.9	-0.2	-0.3	-0.6	-0.3	-0.1
Gabon	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.0	0.0	0.0	0.0	0.0
Equatorial Guinea	0.2	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0
Congo	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.0	0.0	0.1	0.0	0.0
Implied stock build/(draw)	1.2	1.1	0.0	0.0	1.1	0.6	0.2	-1.0	-0.4	-0.4	-0.4	0.1	0.6	0.4	0.1	0.3	0.1	0.1					

* Unconventionals excluding Canadian oil sands production, which are included under crude+condensate
Source: IEA, Morgan Stanley Research estimates

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STOCK RATING CATEGORY	COVERAGE UNIVERSE		INVESTMENT BANKING CLIENTS (IBC)			OTHER MATERIAL INVESTMENT SERVICES CLIENTS (MISC)	
	COUNT	% OF TOTAL	COUNT	% OF TOTAL IBC	% OF RATING CATEGORY	COUNT	% OF TOTAL OTHER MSC
Overweight/Buy	1157	37%	305	42%	26%	544	39%
Equal-weight/Hold	1380	44%	335	46%	24%	632	45%
Not-Rated/Hold	47	1%	7	1%	15%	7	0%
Underweight/Sell	553	18%	82	11%	15%	220	16%
TOTAL	3,137		729			1403	

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