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The Oil Manual | Global

Passing Clouds over the Oil Market

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Recent trends in refining margins, time spreads and inventories suggest a spell of weakness in oil markets. This will likely weigh on prices near term but we expect this to be temporary. The medium-term outlook remains constructive and we still see Brent reaching $85/bbl by year-end.

Despite flat price strength in recent weeks, incoming data points have been mixed at best: After reaching $85/bbl, Brent prices have sold off recently in lockstep with other risk assets. Yet, there is more to it than wider macro concerns. Oil demand growth has been lackluster in several countries recently, e.g. India, South Korea. Inventory data has come in weaker-than-expected. Refining margins have come under pressure, reaching levels in Europe where runs cuts typically take place. Time spreads have struggled to perform, reflecting less market tightness, and take-away capacity available in the Permian by late 2019 has increased following several operator announcements.

Yet, some of these are likely transitory and the medium-term outlook remains constructive: These factors put a cap on oil prices in the next few months. Yet, the pillars of oil market strength over the last few months are still there: inventories and spare capacity are both low by historical standards, leaving little buffer in the oil market. Iran's exports will likely continue to fall as US sanctions kick-in. Pipeline capacity in the Permian will still be a bottleneck during much of 2019. Production declines in Venezuela continue and Angola's supply looks to roll over into year-end again. Finally, the implementation of IMO 2020 will accelerate refinery crude runs from mid-2019 onwards.

Our updated balances continue to point towards draws in coming quarters: We have lowered our oil demand growth for 2019 from +1.6 to +1.5 mb/d to take into account some risk of demand erosion. Also, we have added ~0.3 mb/d to our 2019 Permian forecast. At the same time, we have revised our Iranian production forecast lower by ~0.2 mb/d for next year, and have reduced our Canadian production forecast after the recent decline in WCS prices. Saudi Arabia, Kuwait, the UAE, Iraq and Russia continue to produce at all-time high levels in our balances, further eating into spare capacity. Yet, we continue to see a deficit during the remainder of 2018 and 2019.

On that basis, we stick to our call for Brent to reach $85/bbl by year-end: Our forecast for OECD inventory draws would historically be consistent with a widening of the 1-12 month Brent time spread from $2.7/bbl at the moment to $6/bbl by early next year. That time spread typically supports Brent at $85/bbl. Rallying beyond that may be hard in the short term, but this outcome remains likely by year-end.

Passing Clouds over the Oil Market

Despite flat price strength in recent weeks, incoming data points have been mixed at best

Improving fundamentals have underpinned the rise in oil prices this year. By now, global inventories are low and spare capacity is much reduced. These factors have driven Brent to a peak of ~$85/bbl this year.

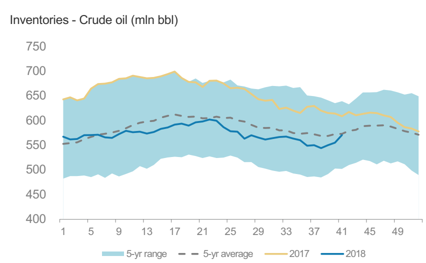
But recent macro volatility has weighed on oil futures too, and Brent has given up some of this recent strength. Yet, there is more to it than rising US interest rates and a correction in the S&P 500. At the margin, recent data points on oil market fundamentals have turned weaker too.

First, inventory data has come in weaker than expected. Judging by countries with weekly reporting (US, Singapore, ARA region, Japan), crude inventories have followed normal seasonal patterns but product inventories have built sharply.

Refiners enjoyed a period of strong margins over the summer months, and as a result, ran at high rates of utilisation. During July, global refinery crude runs were up 1.5 mb/d y/y, and this appears to have continued in August.

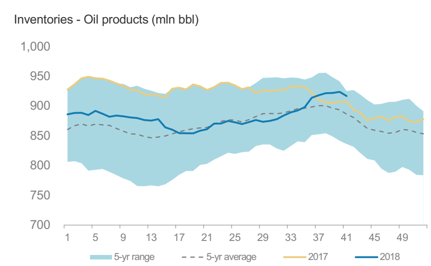
This will have held back crude stocks, but caused product inventories to build more than normal. Prior to this week's draw, product inventories in weekly-reporting countries had built ~40 mb over an eight-week period, compared to a five-year seasonal average of ~5 mb/d.

Exhibit 1: Crude inventories in countries with weekly reporting are not particularly elevated...



Source: EIA, IE, PJK, Genscape, PAJ

Exhibit 2: ...but product stocks have been building more than normal, led by the US

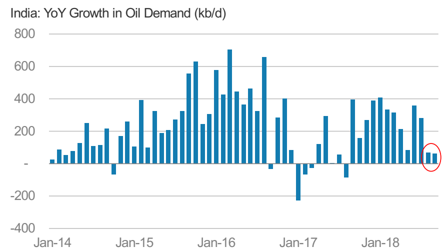


Source: EIA, IE, PJK, Genscape, PAJ

Second, there are some tentative signs of demand erosion: The build in product inventories suggests demand has not been strong enough to absorb this, at least at current prices. Oil demand growth in India has slowed from 300 kb/d y/y so far this year, to just 65 kb/d in the last two months. Similarly, South Korean demand has fallen y/y for the last two months, after growing at a rate of 50-100 kb/d y/y earlier this year.

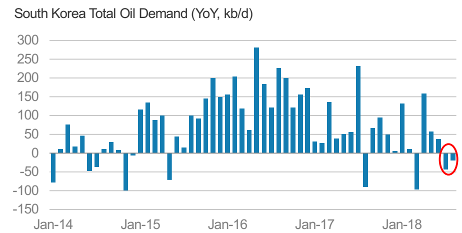
Still, whether this is truly a response to higher prices is hard to judge. As shown in Exhibit 5, the trend rate of growth in global oil demand has been very resilient over the last decade, albeit with heavy volatility around this trend. It may be the case that recent weakness in demand data is once again that – volatility. For the time being however, it would fit with the hypothesis that demand growth may be slowing.

Exhibit 3: India has seen two months of more lacklustre YoY growth...



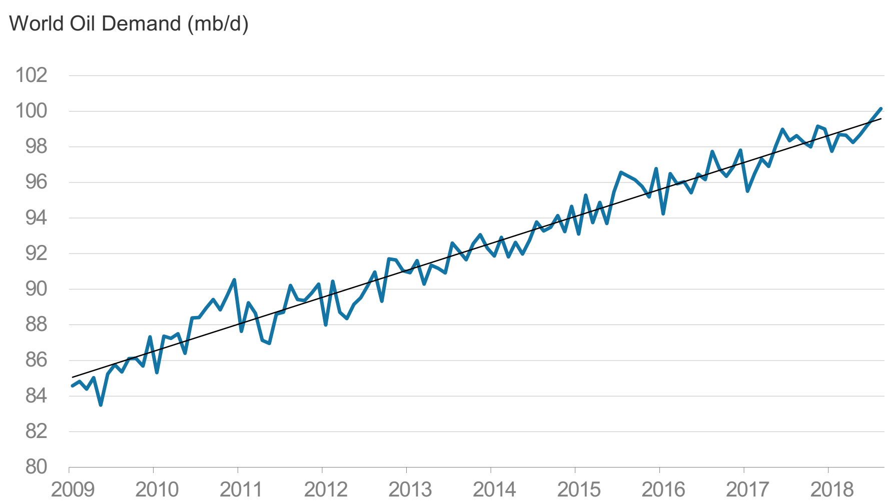
Source: India Ministry of Energy

Exhibit 4: ...and so has South Korea, where demand has been falling for 2 months...



Source: KNOC

Exhibit 5: ...but over the last decade, the trend rate of growth in oil demand has been remarkably persistent



Source: IEA, Morgan Stanley Research

Third, refining margins are under pressure, particularly gasoline crack spreads in Europe: As product stocks have struggled to clear, refining margins have come under pressure. This has been most notable in Europe.

US refiners continue to benefit from discounted crude, and therefore still run at high rates. Oil demand in Asia has been holding up, which is also supporting margins there. Yet, in Northwest Europe, benchmark cracking margins based on Brent have fallen sharply from an above-normal $10/bbl as recently as August to a new five-year seasonal low of just $4.5/bbl.

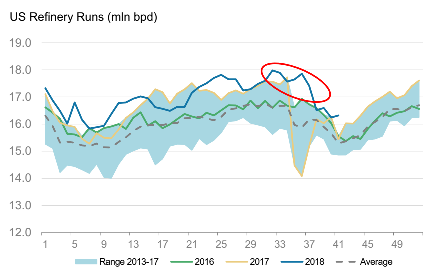
As a result, we understand that several European refiners are now considering, or already implementing, run cuts as well as seasonal maintenance. This weighs on crude demand, and therefore also on oil prices.

Gasoline is a key driver of this weakness. In Europe, the gasoline-to-Brent spread has fallen from a healthy ~$15/bbl in August to a post-2011 low of $(0.5)/bbl today.

The root cause of this collapse lies in the United States. US refineries continue to run at historically high rates of utilisation. Yet, more than any refinery system in the world, US refiners are set up to produce gasoline, which accounts for a high ~60% of their output. On top, US refiners are increasingly processing lighter crudes, which tend to be rich in gasoline, exacerbating the effect.

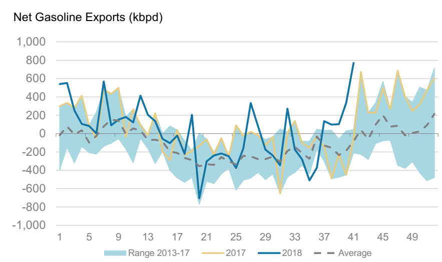
High refinery runs and a lighter crude slate have been yielding large volumes of gasoline, which the US is increasingly exporting. As shown in Exhibit 7, net gasoline exports from the US have surged in recent months. Part of this found its way to Europe, where it is depressing gasoline crack spreads and weighing heavily on overall refining margins. This effect is unlikely to change soon.

Exhibit 6: With access to deeply discounted crudes, US refineries still run hard...



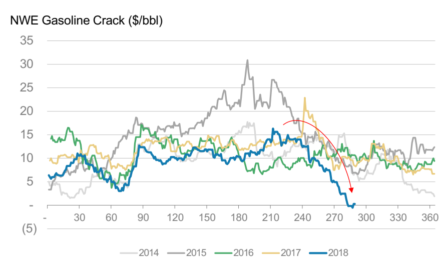
Source: EIA

Exhibit 7: ....which produces large amounts of gasoline, which are increasingly exported



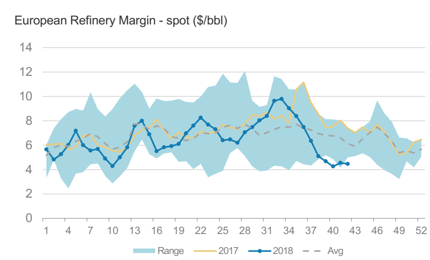
Source: EIA

Exhibit 8: This is depressing gasoline crack spreads for European refineries...



Source: Platts, Bloomberg

Exhibit 9: ...and weighing on overall refining margins, which are at 5-year seasonal lows



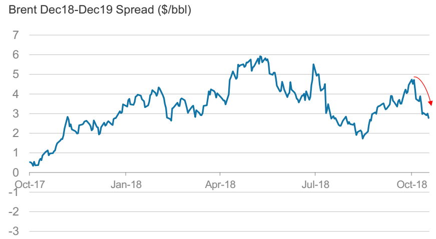
Source: Platts, Bloomberg

Fourth, time spreads are sending a cautious message: Time spreads play an instrumental role in hedging inventory position, and are therefore the most 'real-time' indicator of inventory trends and hence of the supply/demand balance.

Recently however, time spreads have started deteriorating again. Over the last week, the WTI curve has moved into a contango structure for the period to May 2019. The Brent curve is still in backwardation but the Dec '18-Dec '19 spread has fallen from $4.7 to $2.6/bbl.

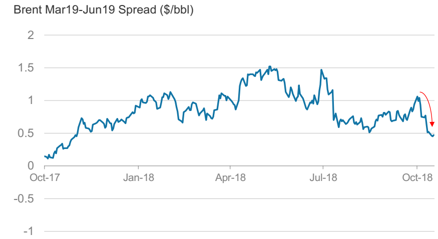
This reflects a weaker supply/demand balance than we initially expected. Also, it reduces the roll yield that is available to financial investors, likely slowing inflows into oil futures (see The Power of Backwardation (15 Jan 2018)).

Exhibit 10: The Brent Dec'18 - Dec'19 spread has weakened from recent highs...



Source: Reuters

Exhibit 11: ...whilst the Mar'19-Jun'19 spread has reached a 12 month low.



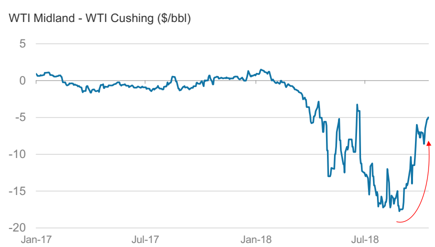
Source: Reuters

Finally, Permian bottlenecks have temporarily moderated: Over much of the summer, WTI Midland traded at a sharp ~$17/bbl discount to WTI Cushing, reflecting the congestion in take-away capacity from the Permian. Surprisingly, the Permian rig count held up during that period but the number of active frac spreads declined sharply. This suggests a slowdown in production growth from the Permian basin – see our note Pressing 'Pause' on the Permian (July 2018).

Recently however, some of these bottlenecks have been relieved. Line fill at the Sunrise pipeline has created extra demand for oil and the Midland discount has shrunk sharply to ~$5/bbl - see Exhibit 12. At the same time, completion activity has increased again and the frac spread count has ticked up.

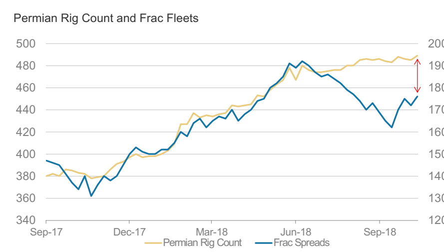
As we will discuss below, Permian pipeline bottlenecks will still be a constraining factor for production growth in 2019 but modestly less so than before.

Exhibit 12: As WTI Midland prices have rallied...



Source: Bloomberg

Exhibit 13: ...Permian frac fleets have been rising again



Source: Baker Hughes, Bloomberg

Yet, some of these are likely transitory and the medium-term outlook remains constructive

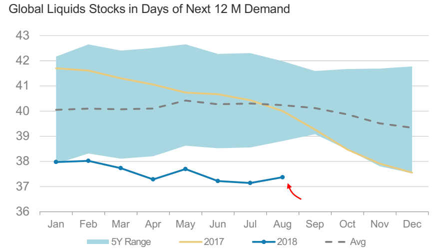
At the start of the year, we called for Brent to reach $75/bbl by 3Q (see here), which we increased in July to a forecast of $85/bbl for 3Q and year-end (see here). We maintain this forecast but the data points suggest it will be hard for prices to rally beyond that level, particularly in the short term.

Still, the medium term outlook for crude remains constructive, and the observations above will largely turn out to be transitory, we suspect. For starters, two factors characterise the oil market today:

First, inventories are still low: Exhibit 14 aggregates all available crude and product inventory data globally, including floating storage, and expresses it in days of demand cover. This monthly data gives a more complete picture than the weekly data discussed above. As shown, inventories showed a small month-on-month increase in August. Nevertheless, in days-of-demand, the inventory situation is still tight, currently at a seasonal post-2011 low.

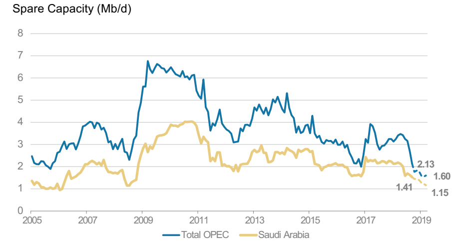
Second, spare capacity is limited: According to IEA data, OPEC spare capacity stood at 2.1 mb/d in September. This is already low by historical standards, especially relative to demand. However, we estimate that this will fall further to ~1.6 mb/d by December – a post-2005 low.

Exhibit 14: Inventories remain very low in days-of-demand cover....



Source: IEA, JODI, Xinhua, Morgan Stanley Research
Note: Non-OECD stocks are not yet reported - they are assumed flat from July

Exhibit 15: ....and OPEC spare capacity continues to decline, reaching a post-2005 low in Dec



Source: IEA, Morgan Stanley Research

Against this backdrop, four main factors will keep the oil market tight until early 2020 at least:

a) Iranian sanctions: Sanctions against Iran will come back into force on 4 November. However, several of Iran's traditional offtakers have already scaled back purchases substantially.

We set out our expectations for Iran's exports and production in To Waive or Not to Waive (July 18, 2018), arguing for a decline in exports from a peak of 2.7 mb/d in June to ~1.4 mb/d by 2019.

However, tanker tracking data from ClipperData suggests the pace of decline is quicker than we modeled. On their estimates, exports fell to 1.9 mb/d in Sept, and declined further to ~1.5 mb/d over the last four weeks.

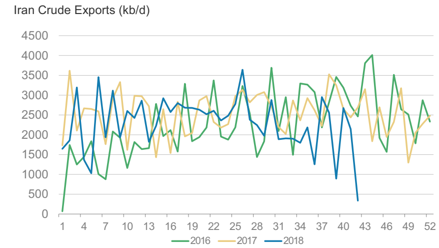
Our previous estimate was based on the expectations that only buyers in South Korea, Japan and Europe would comply with US sanctions. Increasingly, however, it seems that offtakers in India and China are scaling back purchases from Iran too.

Taking all this into account, we have lowered our forecast modestly further. We previously forecast production to fall from a recent peak of 3.8 mb/d to 2.7 mb/d by 4Q, and 2.5 mb/d in 2019. We have reduced this to 2.5 mb/d in 4Q and 2.3 mb/d in 2019 respectively.

Exhibit 16: Iranian exports were down 0.8 mb/d from June's peak by September...

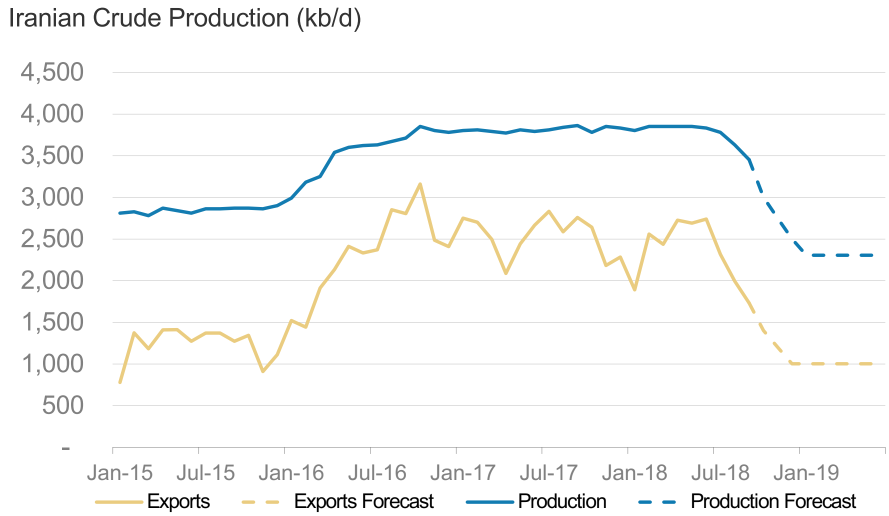
Source: ClipperData

Exhibit 17: ...and weekly data shows a continuation of this trend



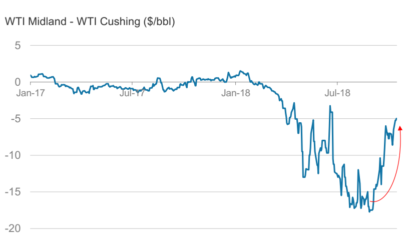
Source: ClipperData

Exhibit 18: We now forecast Iran's production to fall to 2.5 mb/d by 4Q and 2.3 mb/d in 2019



Source: IEA, Clipper Data, Morgan Stanley Research Estimates

Exhibit 19: The WTI Midland discount has narrowed from highs in early September



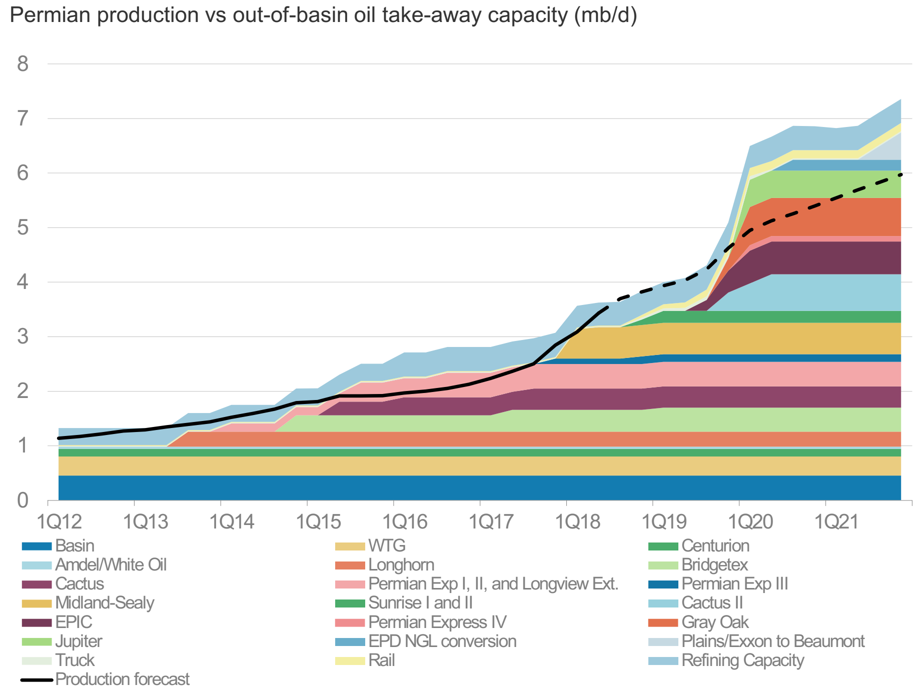
Source: Reuters

b) Permian bottlenecks: The Permian takeaway infrastructure outlook has changed somewhat since we wrote Pressing Pause on the Permian (12 Jul 2018). A combination of early start-ups and pipeline conversations give Permian production more room to grow in late 2019 and we revise up our growth forecast accordingly. Yet, for most of the year, pipeline capacity remains a constraint to production growth, in our view.

We now forecast 700 kb/d of growth from the Permian basin in 2019, up from 400 kb/d before. This reflects EPIC's announcement to use its upcoming NGL pipeline for crude oil instead, at least temporarily. This adds 400 kb/d of crude takeaway by 4Q 2019 (also see EPIC NGL Line to Convert; Permian Price Exposure Overhang Eroding (8 Oct 2018)). At the same time, the Gray Oak pipeline will likely start slightly earlier than expected before and the Cactus II pipeline looks to carry higher volumes than initially expected, adding another 400 kb/d by 4Q19 combined.

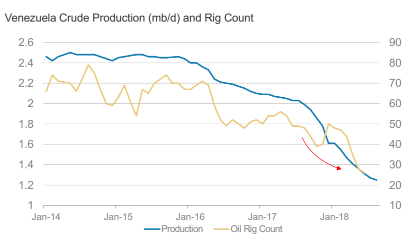
Still, our new forecast of 700 kb/d growth in 2019 is a meaningful slowdown from the >1.0 mb/d growth in 2018, and will require completion activity to be constrained. To achieve this, we still expect the Midland-Cushing differential to widen again later this year or early next.

Exhibit 20: We raise our Permian growth forecasts for 2019 with additional takeaway in 2H



Source: Company announcements, Morgan Stanley Research

Exhibit 21: Production and the rig count follow each other down in Venezuela



Source: IEA, Baker Hughes, Morgan Stanley Research

c) Venezuela: Production in Venezuela remains on a downward trend. Without a meaningful increase in investment, which does not seems to be forthcoming, we expect this to remain the case. Production fell to 1.25 mb/d in August, down from 1.6 mb/d in January – a steady decline of ~50 kb/d per month. On our forecasts, this slows down to a decline of 25 kb/d per month, but that still means production falls to 900 kb/d by Dec 2019.

d) IMO 2020: The upcoming sulfur regulation for the shipping industry is set to boost demand for middle distillate significantly, albeit at the expense of demand for high-sulfur fuel oil demand. Yet, producing more middle distillate can be done in only two ways: 1) squeezing more middle distillate out of a barrel of crude, or 2) processing more barrels of crude.

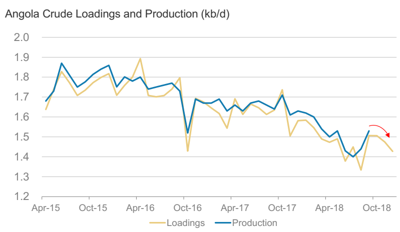
Refiners will maximize the former, and have some scope to do so. However, large increases in middle distillate yields require the construction of upgrading units, primarily cokers. These projects are both capital and time intensive.

At least for a while in late 2019 and part of 2020, we suspect that refiners will simply need to process more crude oil. In The Dark Side of IMO 2020 (Sept 12, 2018), we estimate that global crude runs will need to be ~1 mb/d higher in 2020 that they would be in a non-IMO scenario. This further tightens the crude market.

Our updated balances continue to point to draws in coming quarters

We make a number of changes to our balances since our last report (The Oil Manual: Supply Risks > Demand Risks (25 Sep 2018)). On the demand side, we lower our global growth forecast modestly from +1.5 mb/d to +1.4 mb/d for 2019. Record oil prices in

Exhibit 22: Angola loadings program suggests production will roll over again by December



Source: Bloomberg

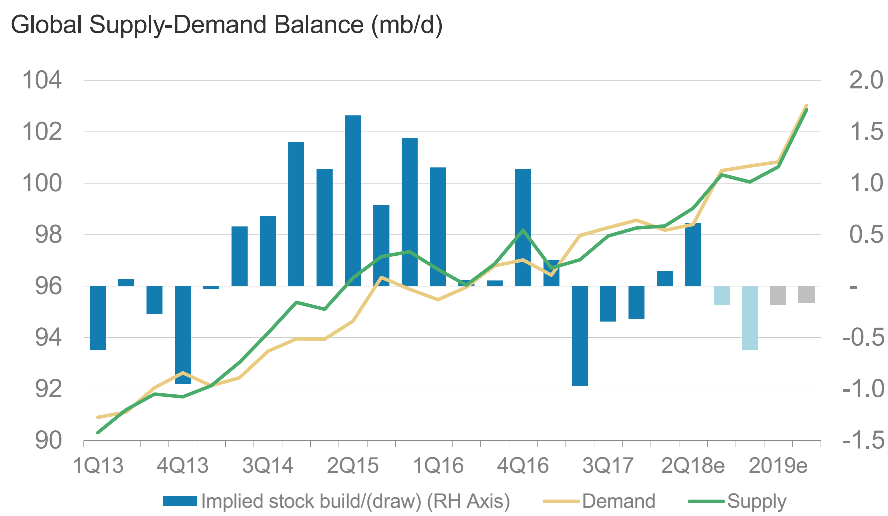
many EM currencies and some weaker data points recently suggest demand growth could slow down. Yet, we are reluctant to reduce it more at this stage, recognising the persistent trend rate of growth seen over the last several years - see Exhibit 5.

On the supply side, we have reduced our forecast for Iran and increased our forecast for the Permian as discussed above. On top, we have tweaked our forecast for Libya higher, given better-than-expected recent production but have reduced our forecast for Canada slightly, due to the sharp increase in the discount for WCS vs WTI – see grey box. For the remaining months of 2018, we have also slightly reduced our production forecast for Angola, given the country's recent tanker loading program - see Exhibit 22.

Our forecasts also call for historically high production from GCC states and Russia. We assume Saudi Arabia will reach 10.7 mb/d in 4Q and average 10.8 mb/d in 2019. Russia, the UAE and Kuwait reach 11.3 mb/d, 3.1 mb/d and 2.9 mb/d in 2019 on our forecasts respectively, all multi-year highs, leaving little spare capacity.

Yet, our balances continue to show modest undersupply. We model a supply/demand deficit of 0.6 mb/d in 4Q and 0.2 mb/d across 2019. On that basis, we forecast OECD inventories to fall further from 2.85 bln bbls in August to 2.81 bln bbls by December 2018 and 2.76 bln bbls by Dec 2019.

Exhibit 23: Global balance

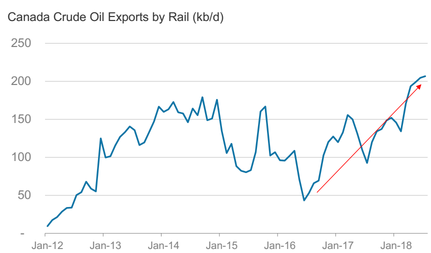


Source: IEA, Morgan Stanley Research

Exhibit 24: The discount of WCS vs WTI has increased sharply...

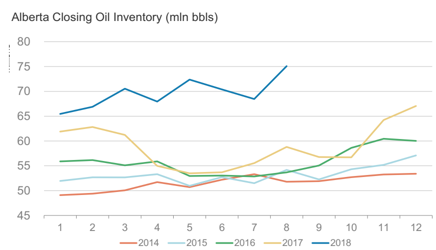
Source: Thomson Reuters

Exhibit 25: ...and although crude exports by rail have more than doubled...



Source: NEB

Exhibit 26: ...this has been insufficient to prevent stocks from building sharply in Alberta



Source: AER

Canada - larger discounts weighing on production

Bottlenecks in the Permian are not the only concern. In Canada, a lack of takeaway capacity in Alberta has taken the discount of West Canadian Select (WCS) to WTI to a record $43/bbl. Ongoing refinery maintenance in PADD 2, the largest US offtaker of Canadian crude, has put pressure on differentials recently and driven inventories higher, but we think this wide discount could persist for some time. New pipeline capacity does not come online until late 2019, when the Enbridge line 3 replacement should add 370 kb/d of incremental capacity (Canada NEB, Oct 2014). And while crude-by-rail has provided some relief, new regulations aiming to improve safety have reduced the availability of tank cars as older cars are phased out.

In the long term, a Canadian court has recently overturned approval for the Trans Mountain pipeline expansion project, halting construction until the concerns of the First Nations communities and the impact of increased tanker traffic have been properly considered (The Guardian, 30 Aug 2018), meaning these issues could persist even beyond the Enbridge start up.

On that basis, we stick to our call for Brent to reach $85/bbl by year-end

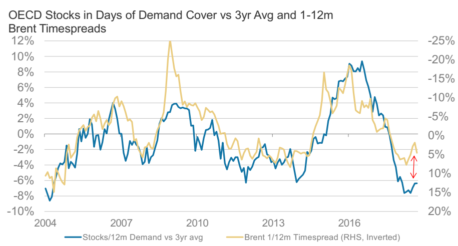
With this outlook for global inventories, we still see oil prices supported at ~$85/bbl. The relationship between inventories and spot oil prices can be murky; we approach it in two stages.

First, inventories correlate closely with time spreads. There are good reasons for this: upwards sloping forward curves incentivise storage builds, especially when the cost of storage is less than the spread between current and forward prices. Downward sloping curves do the opposite, and the market creates this structure when barrels need to be drawn out of storage.

Currently, the spread between the 1st and the 12th month Brent future is ~$2.7/bbl, or 3.5%. If history is any guide, this should widen to ~7% at our forecast for OECD inventories. Exhibit 27 and Exhibit 31 show the historical relationship between OECD inventories and the 1st-to-12th month Brent time spread.

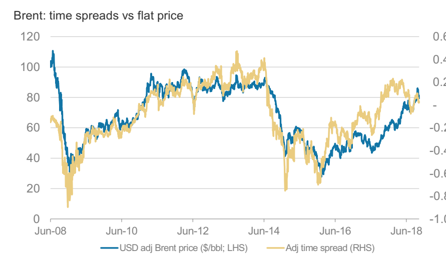
Currently, this spread is around 3.5%. As we forecast modest undersupply, more barrels need to be drawn from storage. This requires a deeper backwardation – i.e. steeper downward sloping forward curve. If history is any guide, the 1-12 Brent spread should increase to around 7% in coming months, at our inventory forecast.

Exhibit 27: Inventories and time spreads move together...



Source: IEA, Morgan Stanley Research

Exhibit 28: ...and so do time spreads and flat prices, after some adjustments,



Source: IEA, Morgan Stanley Research

Second, time spreads – after some adjustments – correlate with spot prices. In Exhibit 30, we take the 1-12 month time spread, subtract the 12 month US treasury rate, and divide this difference by the options-implied volatility of Brent futures, i.e. similar to the calculation of a Sharpe ratio. We overlay this 'adjusted time spread' with the spot price of Brent crude oil, adjusted for the strength of the US dollar.

Exhibit 30 shows the co-movement between these two variables – the adjusted time spread and the USD-adjusted oil price – over the last decade. The blue dots highlight the period from mid 2008 to Jan 2016, during which the R-squared of this relationship was 81%.

Surprisingly, this relationship changed in early 2016. The yellow dots highlight the period Jan 2016 to Apr 2018, and shows a period during which spot prices were relatively depressed compared to time spreads. In this phase, time spreads reflected an improvement in fundamentals that spot prices were slow to discount.

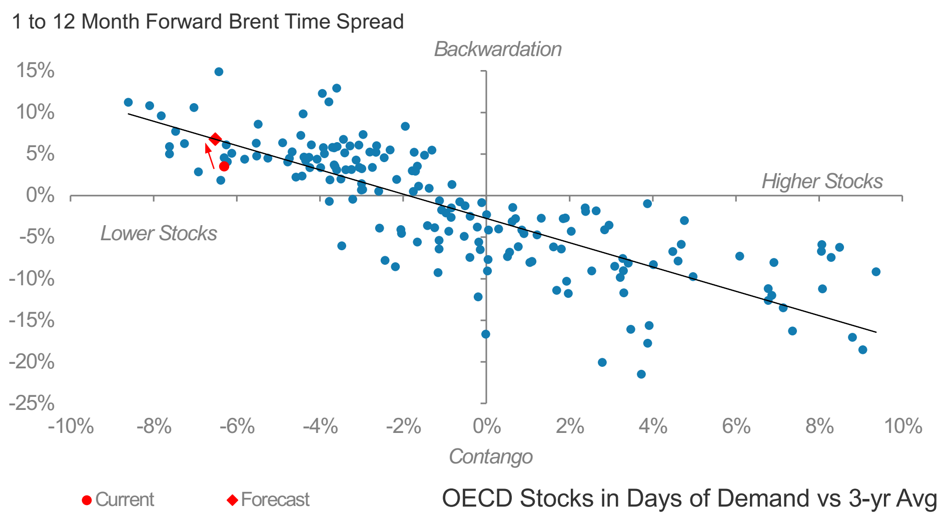
Why this happened is hard to know for sure. The period Jan 2016 - Apr 2018 represented the early stages of the oil price recovery. During this period, investors focussed heavily on the likelihood of 'peak oil demand' on one hand and the abundance of low-cost US shale supply on the other. Combined, this supported a 'lower for longer' narrative. This could explain the muted spot price recovery during that period, although time spreads already indicated improving fundamentals.

Then, something intriguing happened over the last few months: the relationship reverted back to the pre-2016 regime. This is highlighted by the green dots in Exhibit 30, which have moved from the 'yellow' territory back to the 'blue' territory since April 2018. The current relationship between spot price and time spread is once again in-line with the pre-2016 regime. Perhaps investors have given up on the lower-for-longer story.

We use the pre-2016 relationship between the adjusted time spread and USD-adjusted spot price. If the 1-12 time spread increases to 7%, then this analysis suggests $85/bbl should be supported (this assumes that interest rates, the USD and Brent price volatility are broadly unchanged over the next few months).

This analysis provides some context around the current oil price in absolute terms. The rally in Brent prices from ~$30/bbl in early 2016 to ~$80/bbl at the moment may seem aggressive. However, this is not necessarily an overshoot: this move has been consistent with the inventory draws that have taken place over that period, following the analysis above.

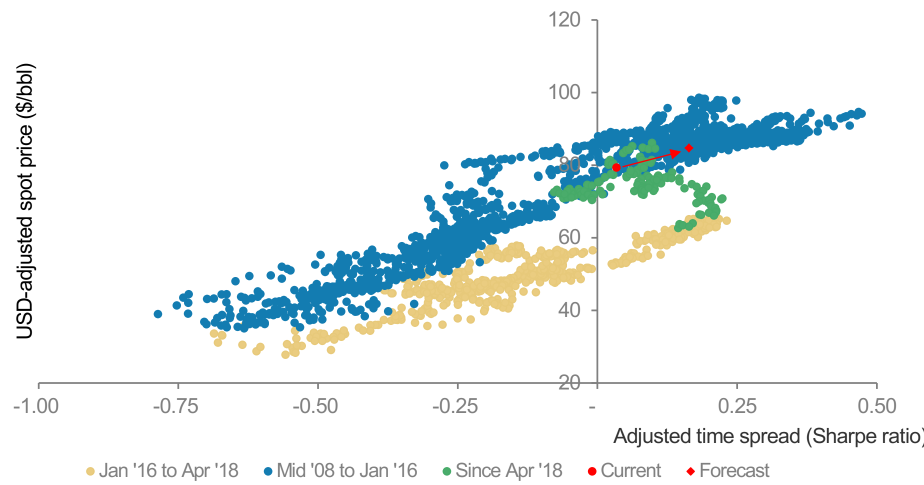
Exhibit 29: We expect inventories to draw, and see time spreads moving higher as a result....



Source: IEA, Bloomberg, Morgan Stanley Research

Exhibit 30: ...which should be consistent with Brent at $85/bbl

Brent crude oil: time spread vs flat price ($/bbl)



Source: IEA, Bloomberg, Morgan Stanley Research

Heavy sour crude should continue to shine, and stay elevated vs light sweet

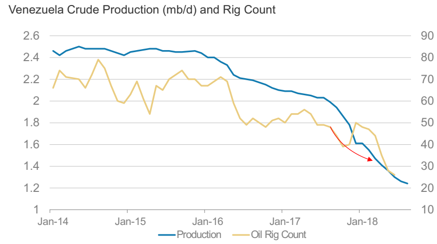
We maintain our view that light sweet crudes should outperform heavy sour crudes when the IMO 2020 sulphur regulations come in (see The Dark Side of IMO 2020 (12 Sept 2018)). But in the near term, several factors could keep sour crudes prices supported for some time.

Heavy, sour crude markets have been tightening for some time. Venezuelan crude production was down 750 kb/d YoY in August, with ongoing structural and economic issues that seem unlikely to be resolved any time soon; Canadian heavy oil has faced pipeline constraints (see above) which are unlikely to abate until late 2019; and fuel oil markets are still relatively strong with robust world trade and rising demand in power generation against a backdrop of refinery upgrades and falling fuel oil yields.

Iranian crude exports have been falling fast, and on our estimates, the upcoming sanctions could remove as much as 1.7 mb/d of medium sour crude from the waterborne oil market. Sour crude prices have been supported in recent weeks, with the Brent-Dubai spread starting to narrow again, Mars trading almost $5/bbl above WTI and Urals briefly trading almost flat to Brent prices.

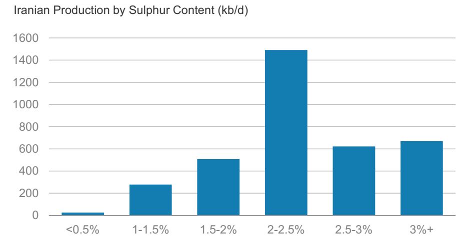
New refinery start-ups in Asia, including China's Hengli refinery and Malaysia's RAPID refinery, are designed to take medium-heavy, sour crude, from Saudi Arabia in particular. This should continue to draw crude from the Middle East and keep heavy, sour crudes supported, all while supply from Iran is falling.

Exhibit 31: Venezuela's output was down 750 kb/d YoY in August



Source: IEA

Exhibit 32: Iran's crude has an average API gravity of 34.5 and a 2.5% sulphur content, making it a light-medium sour crude



Source: Rystad Energy

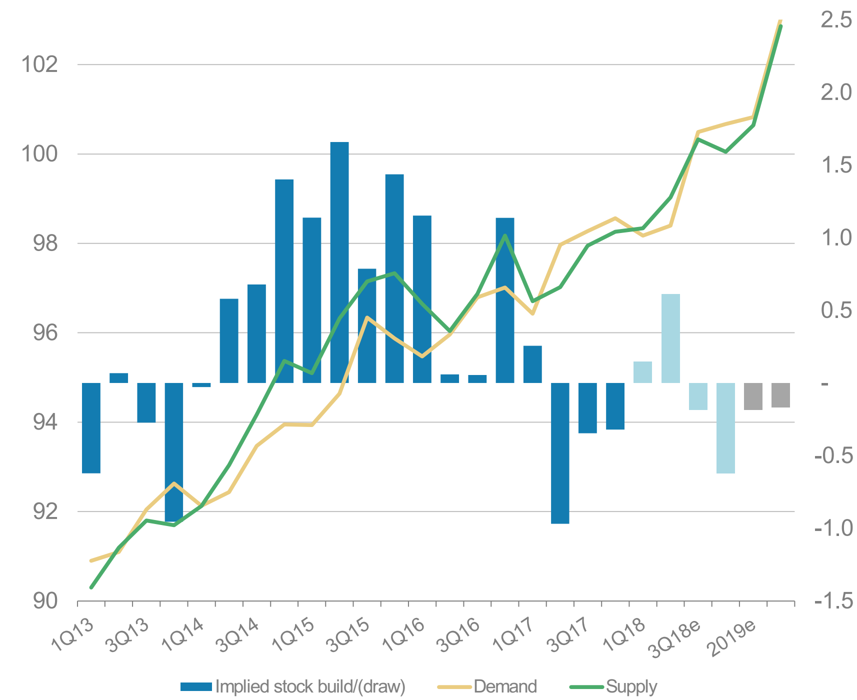
Balance Overview

Exhibit 33: 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	98.4	100.5	100.7	**99.4**	**100.8**	**103.0**	1.5	1.6	1.4	2.2
OECD	**46.9**	46.9	47.0	47.6	48.0	**47.4**	47.8	47.1	48.0	48.3	**47.8**	**48.0**	**48.8**	0.4	0.4	0.2	0.8
US 50	**19.7**	19.5	20.1	20.0	20.2	**20.0**	20.2	20.3	20.4	20.4	**20.3**	**20.5**	**20.9**	0.3	0.4	0.2	0.3
Euro 5	**8.1**	8.2	8.3	8.4	8.2	**8.3**	8.2	8.2	8.3	8.3	**8.2**	**8.3**	**8.4**	0.1	0.0	0.0	0.2
Non-OECD	**49.4**	49.6	51.0	50.7	50.5	**50.4**	50.4	51.3	52.5	52.4	**51.6**	**52.8**	**54.2**	1.1	1.2	1.2	1.4
China	**12.0**	12.4	12.9	12.3	12.7	**12.6**	12.7	13.0	13.7	13.7	**13.3**	**13.7**	**14.3**	0.6	0.7	0.4	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**	**5.0**	**5.1**	0.1	0.2	0.2	0.1
Non-OPEC Supply	**57.1**	57.5	57.5	58.0	58.7	**57.9**	59.1	60.0	60.8	61.2	**60.3**	**61.8**	**63.5**	0.8	2.3	1.6	1.7
US	**12.5**	12.7	13.0	13.2	14.1	**13.3**	14.4	15.1	15.5	15.7	**15.2**	**16.3**	**17.9**	0.8	1.9	1.2	1.6
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	11.7	**11.5**	**11.6**	**11.7**	0.0	0.2	0.1	0.1
OPEC NGLs/Condensates	**6.8**	6.9	6.9	6.9	6.9	**6.9**	6.9	6.9	7.0	6.8	**6.9**	**6.9**	**7.1**	0.1	0.0	0.0	0.1
Call on OPEC Crude	**32.4**	32.0	33.6	33.3	32.9	**33.0**	32.2	31.5	32.7	32.6	**32.3**	**32.1**	**32.4**	0.6	-0.7	-0.2	0.4
OPEC Crude	**33.0**	32.3	32.6	33.0	32.6	**32.6**	32.3	32.1	32.6	32.0	**32.2**	**31.9**	**32.3**	-0.4	-0.4	-0.4	0.4
Implied stock build/(draw)	**0.6**	0.3	-1.0	-0.3	-0.3	**-0.3**	0.1	0.6	-0.2	-0.6	**0.0**	**-0.2**	**-0.2**	-0.9	0.3	-0.2	0.0

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

Exhibit 34: Global Balance (mmb/d)



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

Oil Price Forecasts

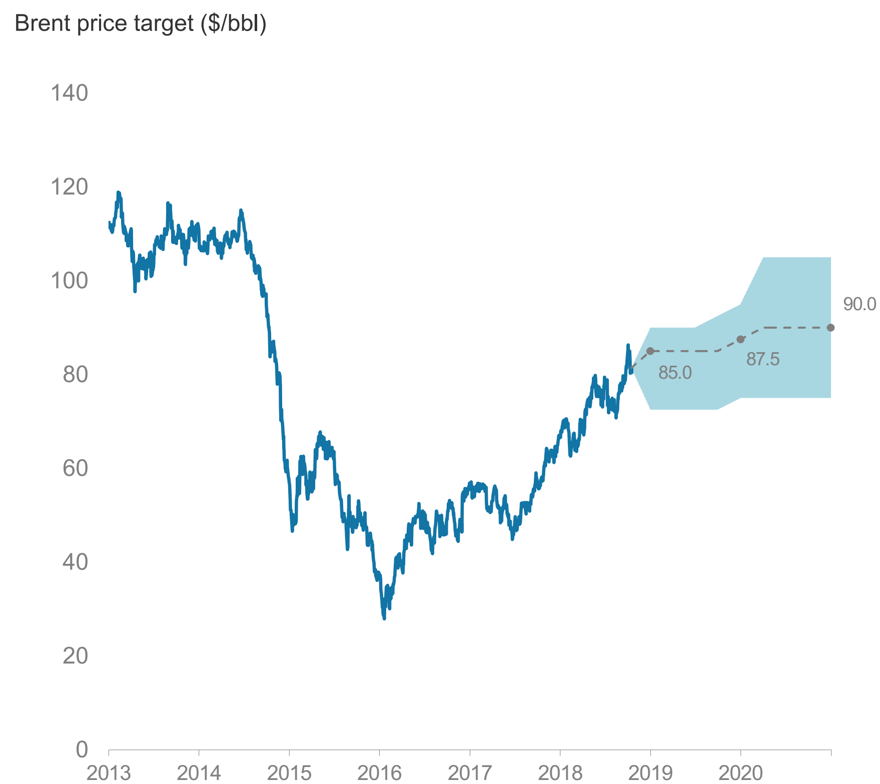
Exhibit 35: Bull, base, and bear case estimates for Brent and WTI at end of period

	WTI		
($/bbl)	Bear case	Base case	Bull case
3Q18	66.0	79.0	83.5
4Q18	66.0	79.0	83.5
1Q19	66.0	79.0	83.5
2Q19	66.0	79.0	83.5
3Q19	66.0	79.0	86.0
4Q19	68.0	80.5	88.0
1Q20	68.0	83.0	98.0
2Q20	68.0	83.0	98.0
3Q20	68.0	83.0	98.0
4Q20	68.0	83.0	98.0
LT	53.0	63.0	73.0

	Brent		
($/bbl)	Bear case	Base case	Bull case
3Q18	72.5	85.0	90.0
4Q18	72.5	85.0	90.0
1Q19	72.5	85.0	90.0
2Q19	72.5	85.0	90.0
3Q19	72.5	85.0	92.5
4Q19	75.0	87.5	95.0
1Q20	75.0	90.0	105.0
2Q20	75.0	90.0	105.0
3Q20	75.0	90.0	105.0
4Q20	75.0	90.0	105.0
LT	60.0	70.0	80.0

Source: Morgan Stanley Research estimates

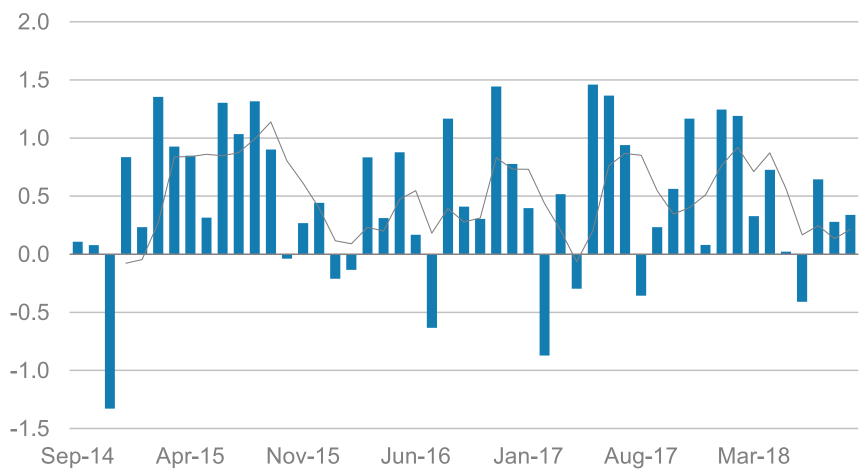
Exhibit 36: Price forecast chart for Brent



Source: Morgan Stanley Research estimates

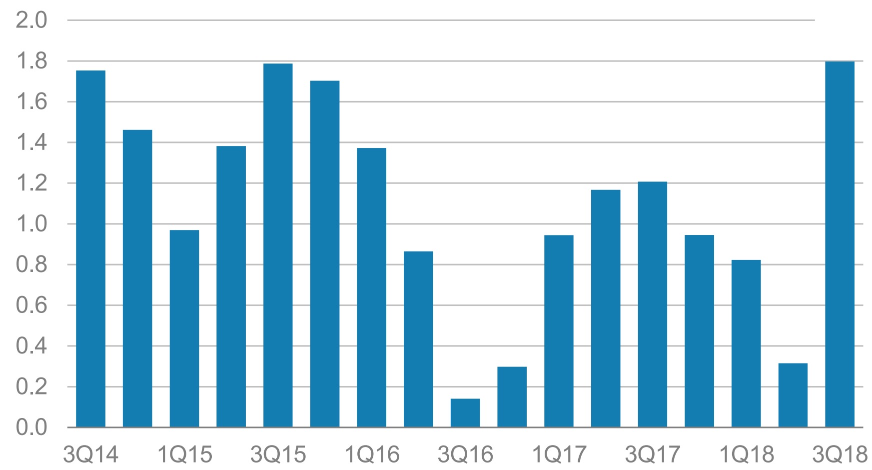
Supply – Demand Overview

Exhibit 37: OECD Demand Growth (annual, mmb/d)



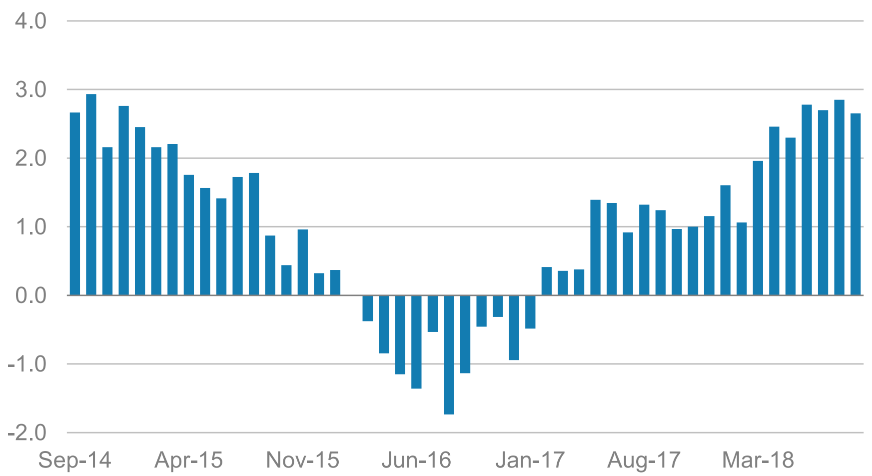
Source: IEA

Exhibit 38: Non-OECD Demand Growth (annual, mmb/d)



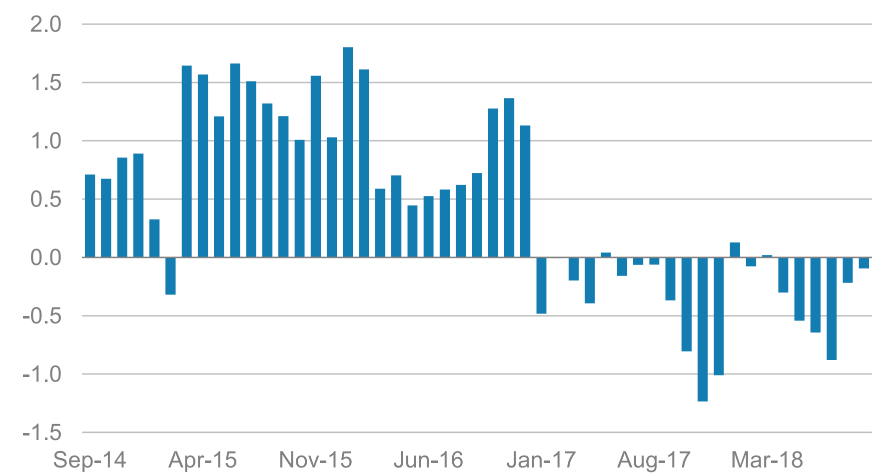
Source: IEA

Exhibit 39: Non-OPEC Supply Growth (annual, mmb/d)



Source: IEA

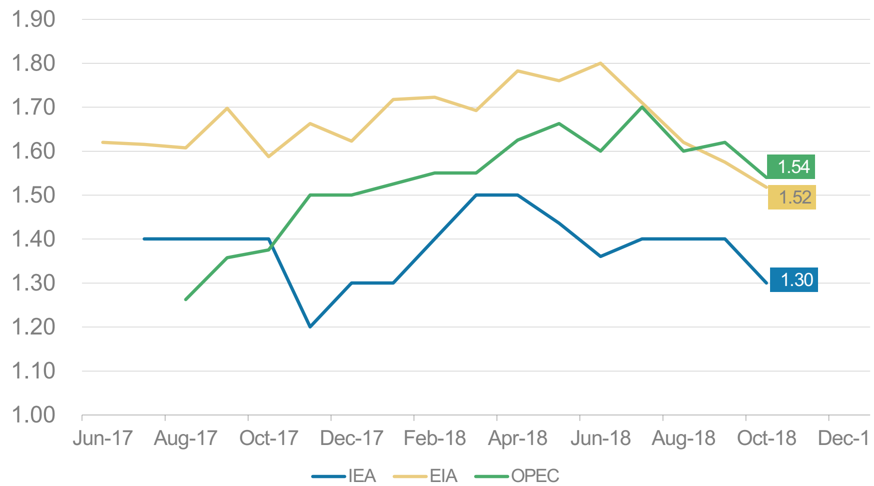
Exhibit 40: OPEC Supply Growth (annual, mmb/d)



Source: IEA

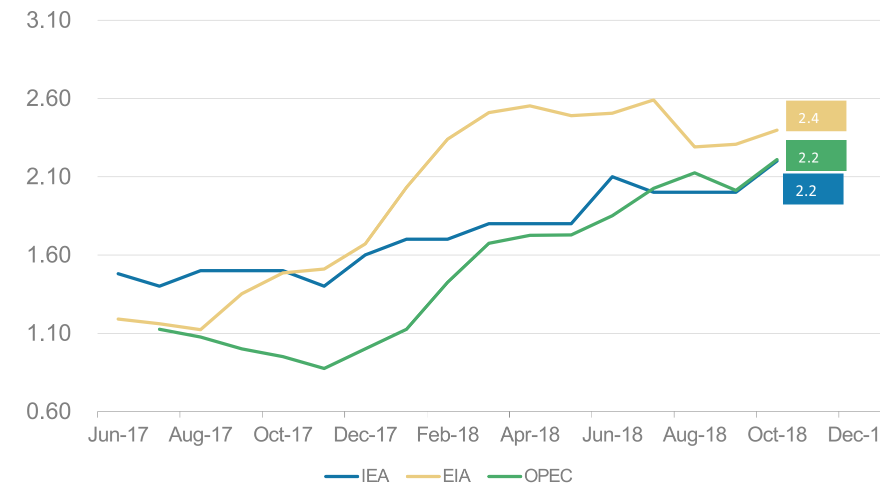
Key Agency Revisions (2018)

Exhibit 41: Oil Demand Growth 2017-18 (mmb/d)



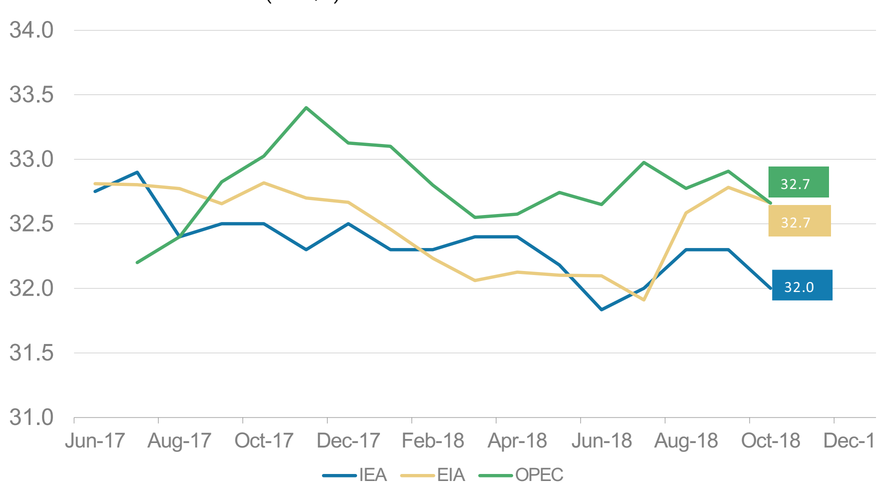
Source: EIA, IEA, OPEC

Exhibit 42: Non-OPEC Supply Growth 2017-18 (mmb/d)



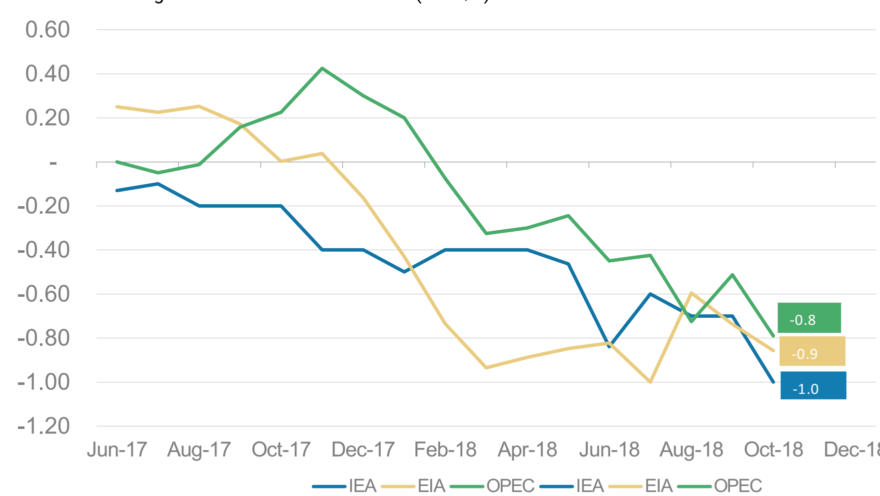
Source: EIA, IEA, OPEC

Exhibit 43: Call on OPEC 2018 (mmb/d)



Source: EIA, IEA, OPEC

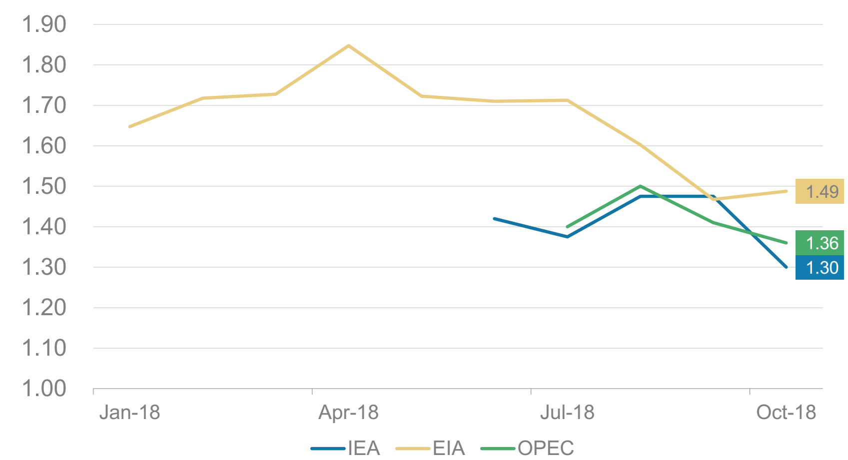
Exhibit 44: Change in the Call on OPEC 2017-18 (mmb/d)



Source: EIA, IEA, OPEC

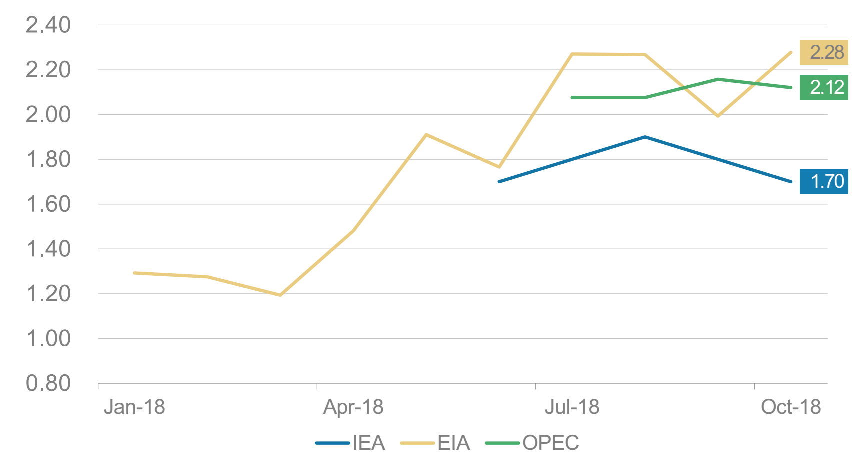
Key Agency Revisions (2019)

Exhibit 45: Oil Demand Growth 2017-18 (mmb/d)



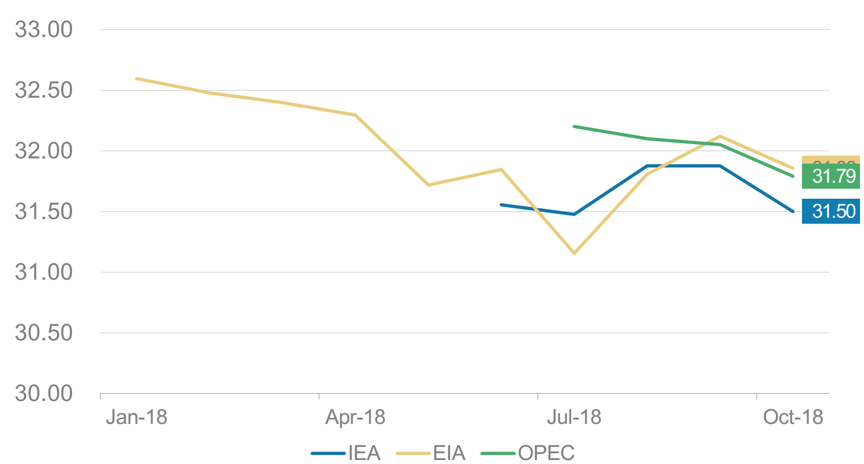
Source: EIA, IEA, OPEC

Exhibit 46: Non-OPEC Supply Growth 2017-18 (mmb/d)



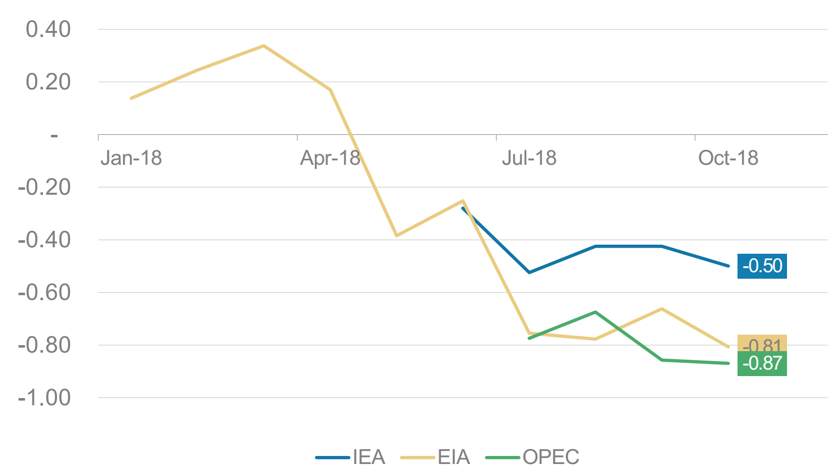
Source: EIA, IEA, OPEC

Exhibit 47: Call on OPEC 2018 (mmb/d)



Source: EIA, IEA, OPEC

Exhibit 48: Change in the Call on OPEC 2017-18 (mmb/d)



Source: EIA, IEA, OPEC

Prices & Differentials

Exhibit 49: Crude Prices ($/bbl)

Source: Bloomberg

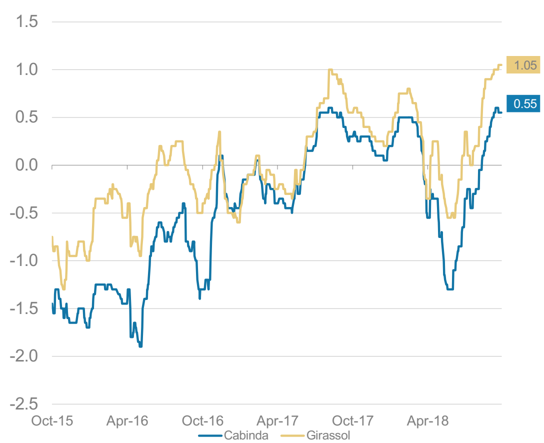
Exhibit 51: Brent vs. WTI ($/bbl)

Source: Bloomberg

Exhibit 53: Brent vs. Dubai ($/bbl)

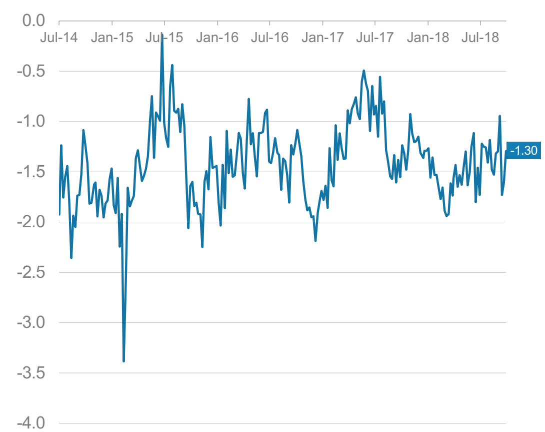
Source: Bloomberg

Exhibit 50: Angola vs. Brent ($/bbl)



Source: Platts, Bloomberg

Exhibit 52: Sweet vs. Sour: Discount per 1% of Sulphur Content ($/bbl)



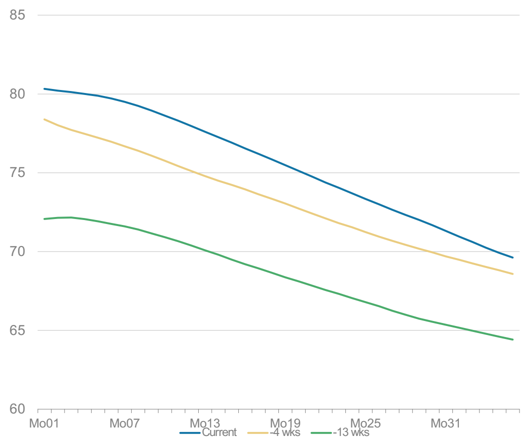
Source: Platts, Bloomberg

Exhibit 54: Heavy - Light: Premium per Degree of API Gravity ($/bbl)

Source: Platts, Bloomberg

Crude Oil Forward Curves and Time Spreads

Exhibit 55: Brent Forward Curve ($/bbl)

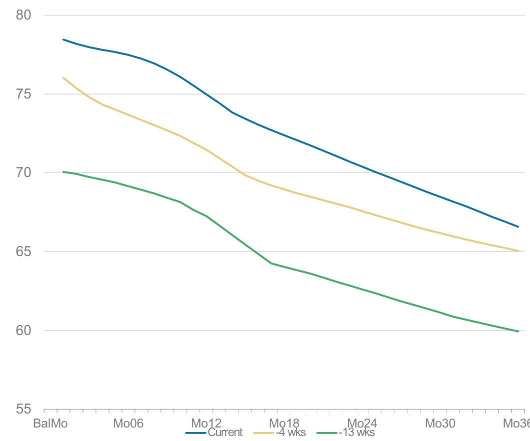


Source: Bloomberg

Exhibit 57: WTI Forward Curve ($/bbl)

Source: Bloomberg

Exhibit 59: Dubai Forward Curve ($/bbl)

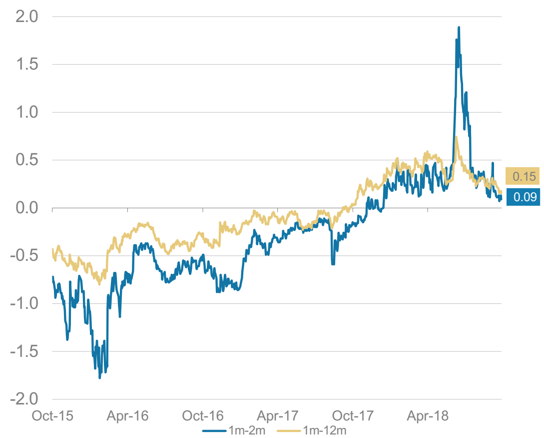


Source: Bloomberg

Exhibit 56: Brent Time Spreads ($/bbl)

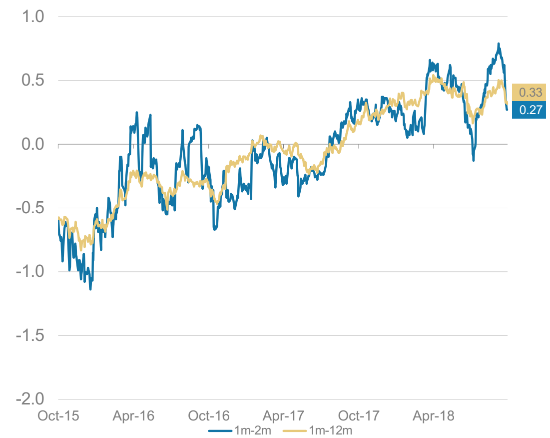
Source: Bloomberg

Exhibit 58: WTI Time Spreads ($/bbl)



Source: Bloomberg

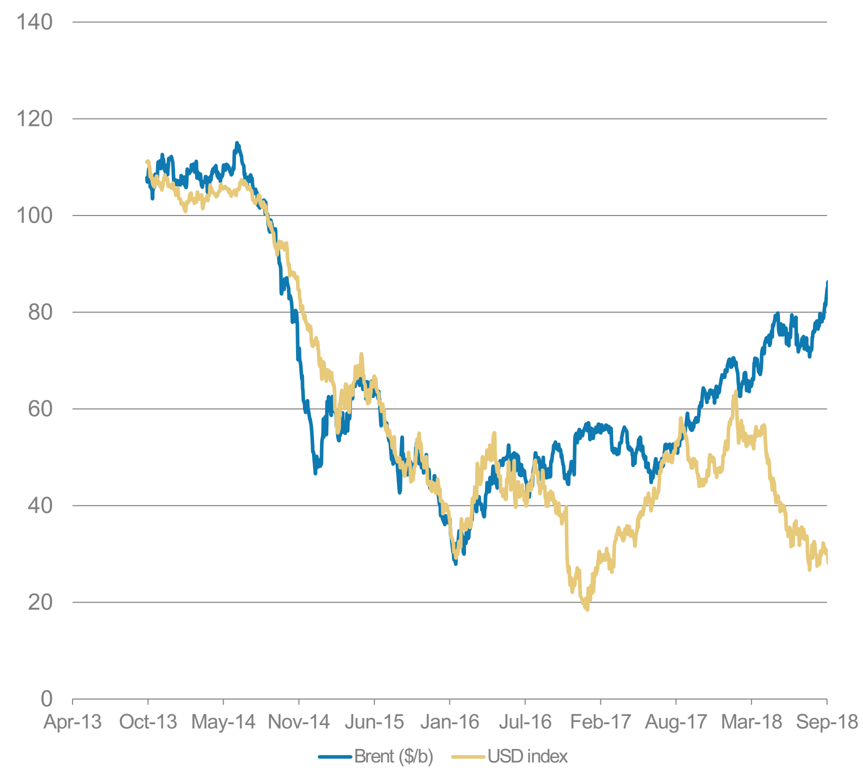
Exhibit 60: Dubai Time Spreads ($/bbl)



Source: Bloomberg

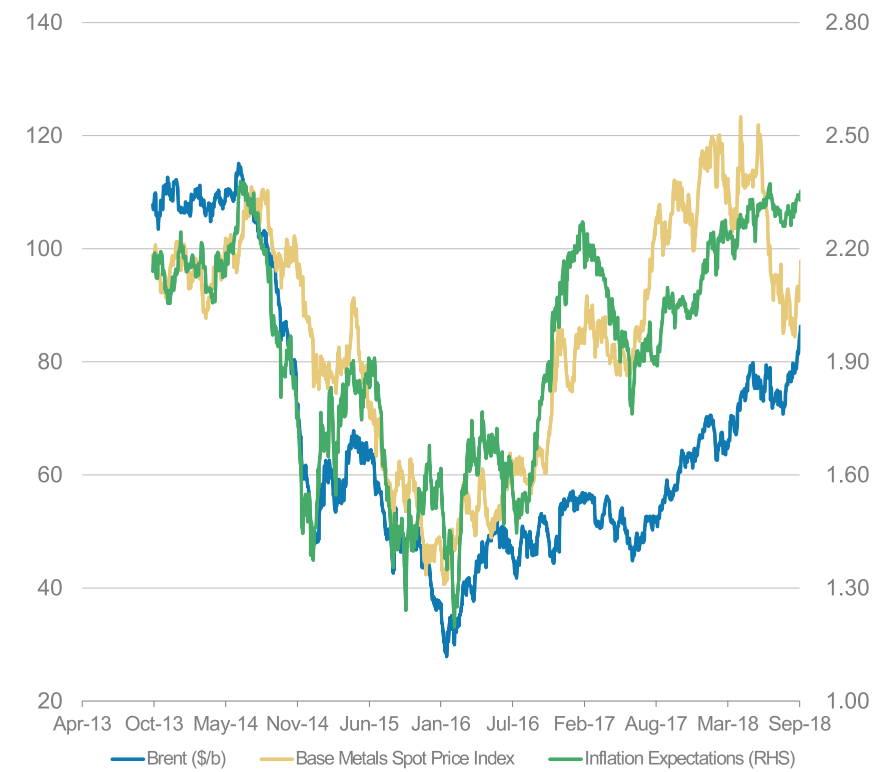
Oil vs. Other Things

Exhibit 61: Brent Crude vs. Inverse TWD



Source: Reuters

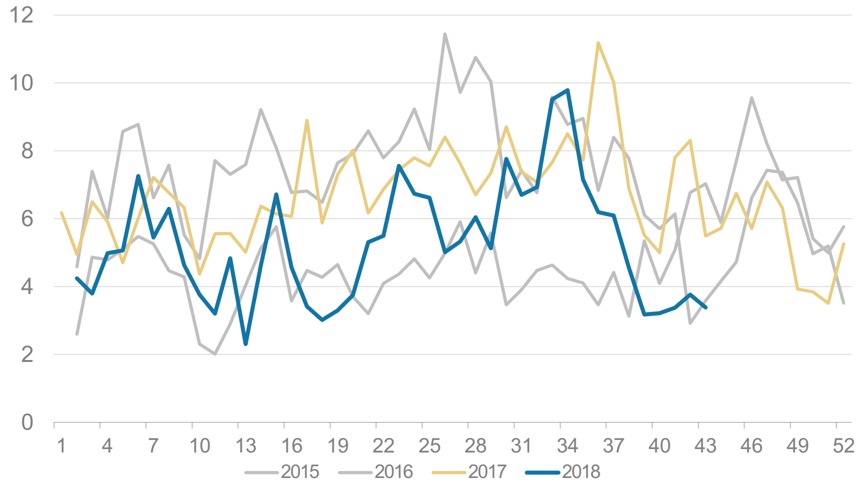
Exhibit 62: Brent Crude vs. Inflation vs. Base Metals



Source: Bloomberg

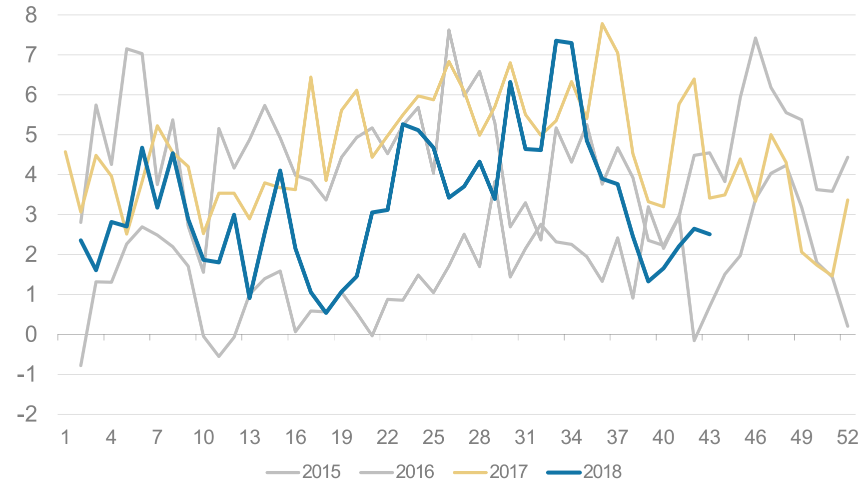
Refining Margins

Exhibit 63: Rotterdam – Brent Cracking ($/bbl)



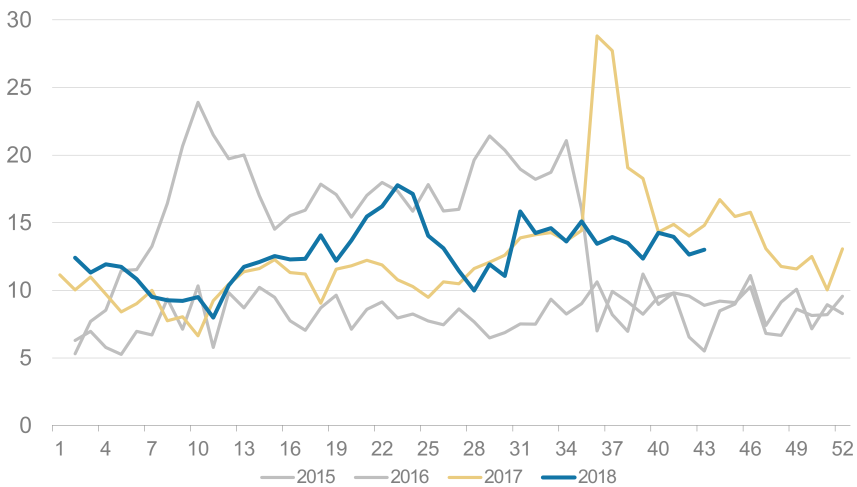
Source: Thomson Reuters

Exhibit 64: Rotterdam – Brent Hydroskimming ($/bbl)



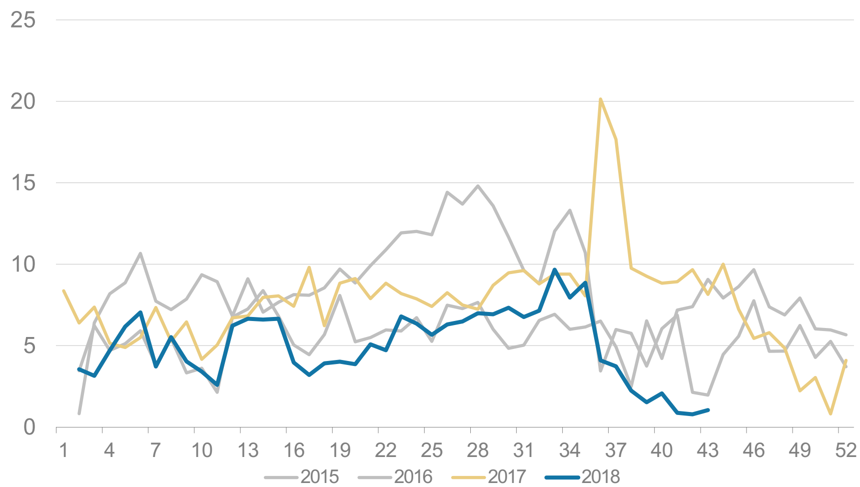
Source: Thomson Reuters

Exhibit 65: USGC – WTI Cracking ($/bbl)



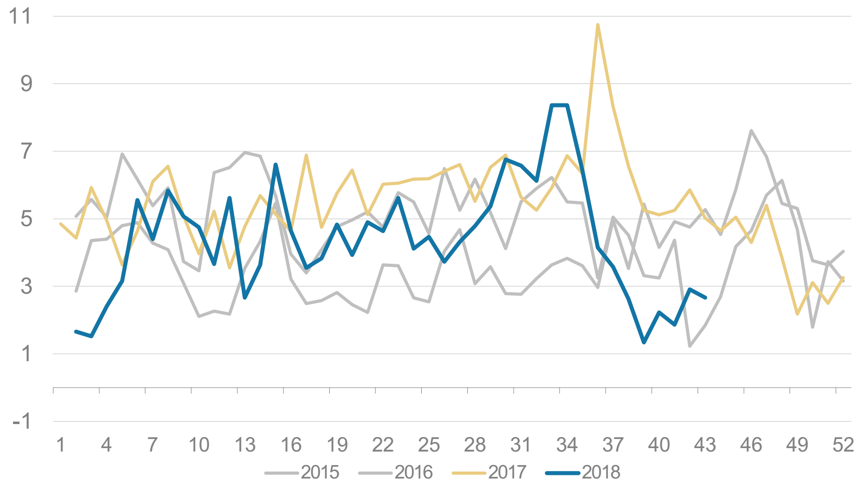
Source: Thomson Reuters

Exhibit 66: USGC – Brent Cracking ($/bbl)



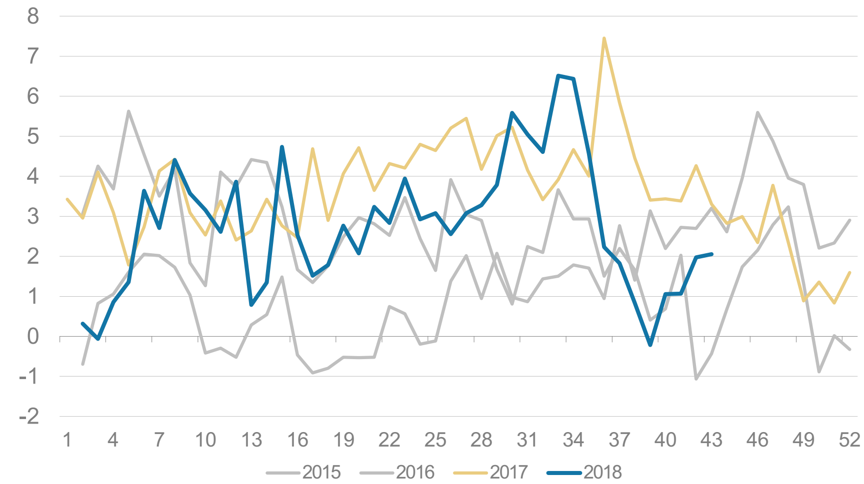
Source: Thomson Reuters

Exhibit 67: Med – Urals Cracking ($/bbl)



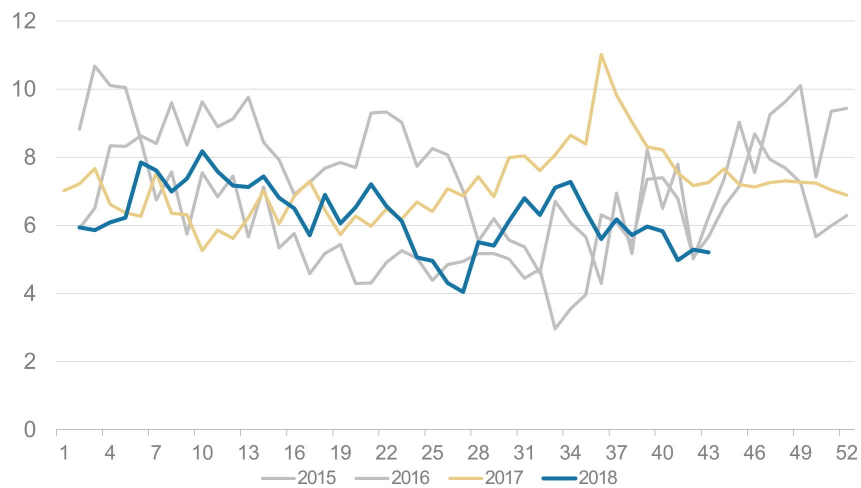
Source: Thomson Reuters

Exhibit 68: Med – Urals Hydroskimming ($/bbl)



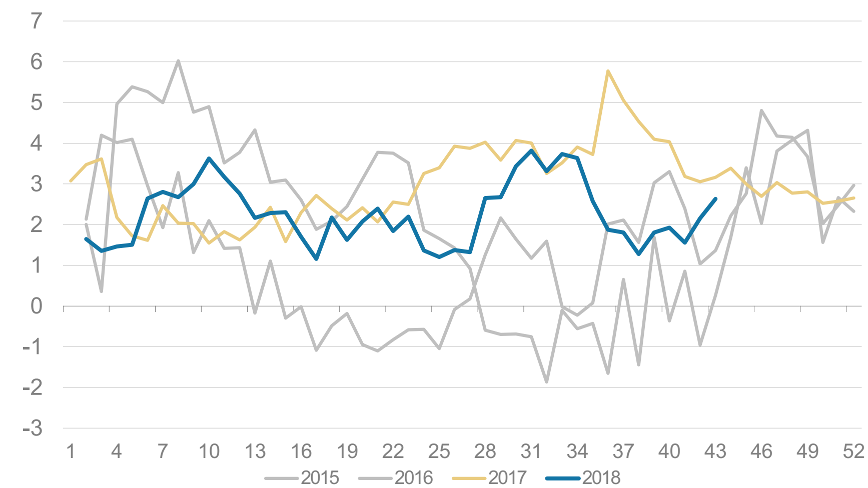
Source: Thomson Reuters

Exhibit 69: Singapore – Dubai Cracking ($/bbl)



Source: Thomson Reuters

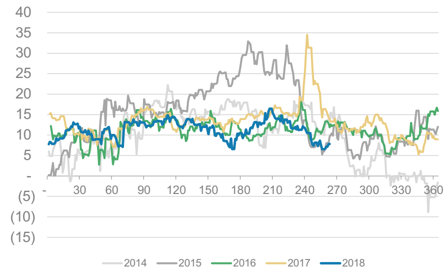
Exhibit 70: Singapore – Dubai Hydroskimming ($/bbl)



Source: Thomson Reuters

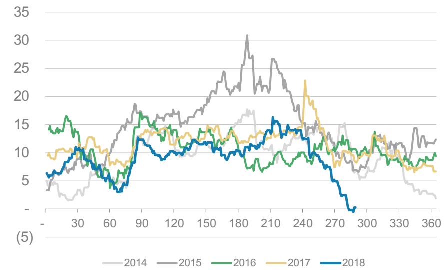
Product Cracks

Exhibit 71: Gasoline US vs. WTI ($/bbl)



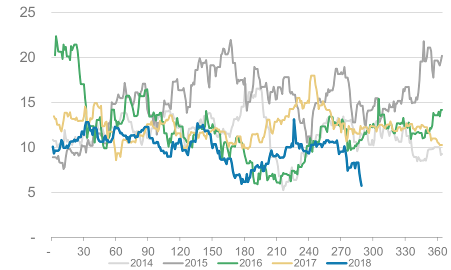
Source: Platts, Bloomberg

Exhibit 74: Gasoline NWE vs. Brent ($/bbl)



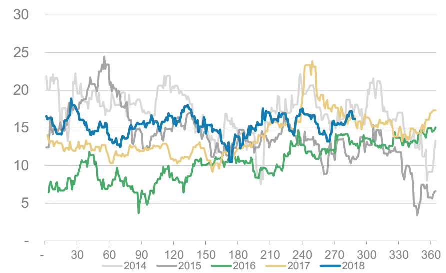
Source: Platts, Bloomberg

Exhibit 77: Gasoline Singapore vs. Brent ($/bbl)



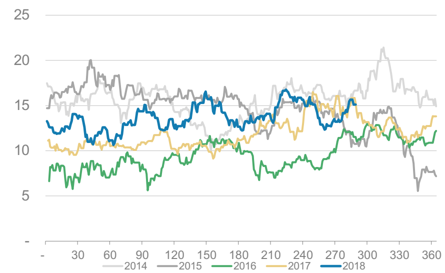
Source: Platts, Bloomberg

Exhibit 72: Diesel US vs. WTI ($/bbl)



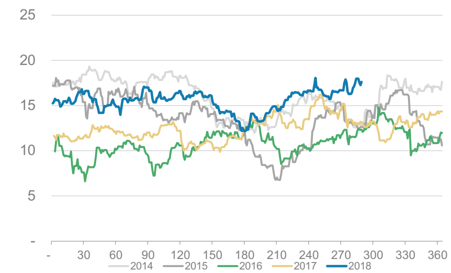
Source: Platts, Bloomberg

Exhibit 75: Diesel NWE vs. Brent ($/bbl)



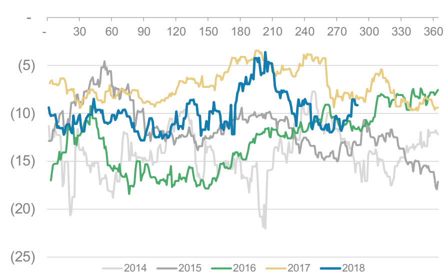
Source: Platts, Bloomberg

Exhibit 78: Gasoil Singapore vs. Brent ($/bbl)



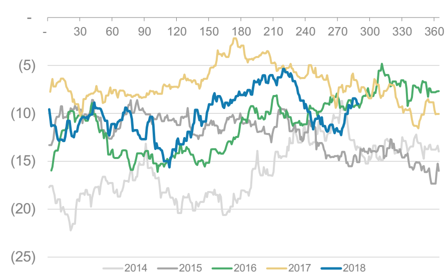
Source: Platts, Bloomberg

Exhibit 73: US Fuel Oil Crack ($/bbl)



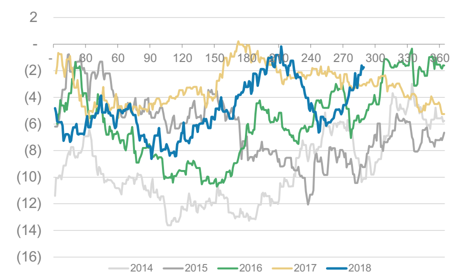
Source: Platts, Bloomberg

Exhibit 76: Fuel Oil NWE vs. Brent ($/bbl)



Source: Platts, Bloomberg

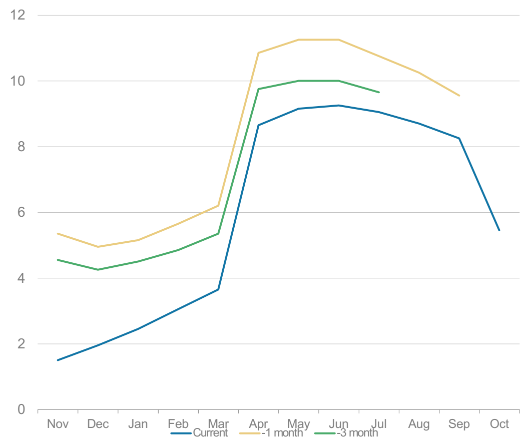
Exhibit 79: Fuel Oil Singapore vs. Brent ($/bbl)



Source: Platts, Bloomberg

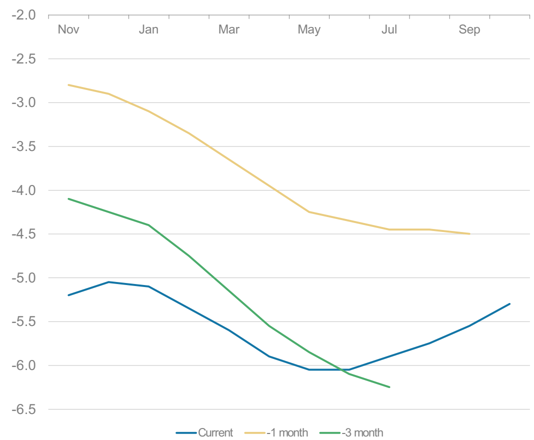
European Product Crack Forward Curves

Exhibit 80: Gasoline Crack NWE Forward Curve ($/bbl)



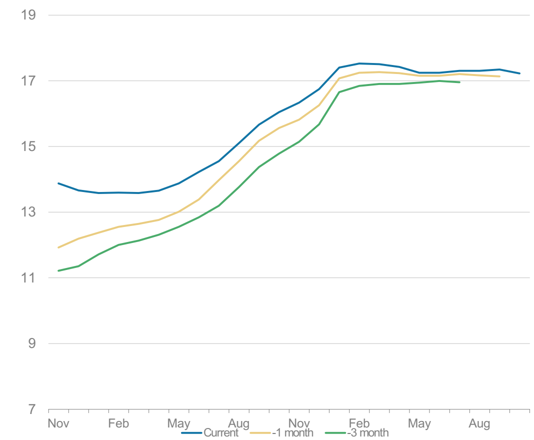
Source: Bloomberg

Exhibit 82: Naphtha Crack NWE Forward Curve ($/bbl)



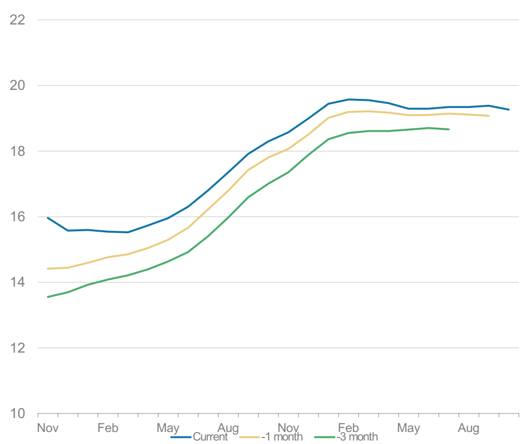
Source: Bloomberg

Exhibit 84: Gasoil 0.1% Crack NWE Forward Curve ($/bbl)



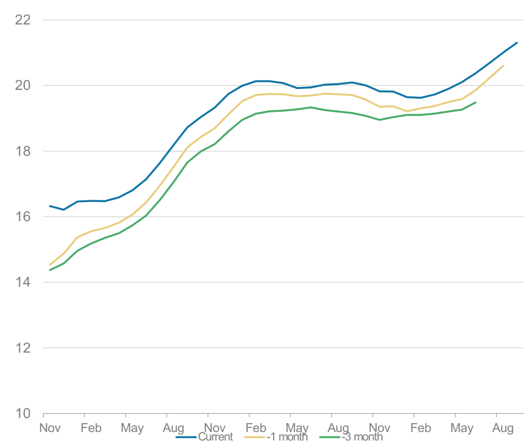
Source: Bloomberg

Exhibit 81: ULSD 10ppm Crack Forward Curve ($/bbl)



Source: Bloomberg

Exhibit 83: Jet Kero Crack NWE Forward Curve ($/bbl)



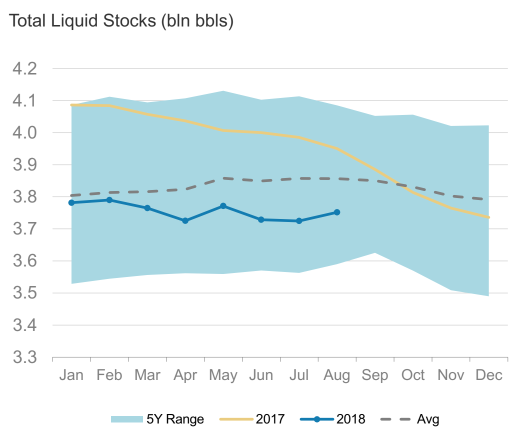
Source: Bloomberg

Exhibit 85: Fuel Oil 3.5% Crack Forward Curve ($/bbl)

Source: Bloomberg

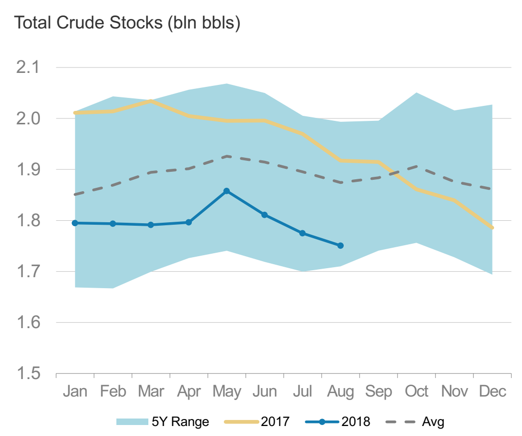
Global Stocks – Monthly

Exhibit 86: Total Liquid Stocks (**bln bbls**)



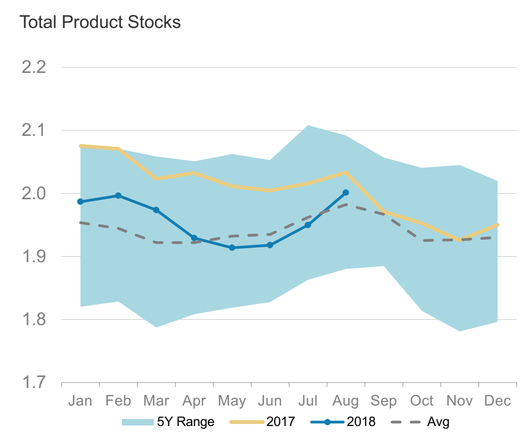
Source: IEA, JODI, Xinhua

Exhibit 88: Total Crude Stocks (bln bbls)



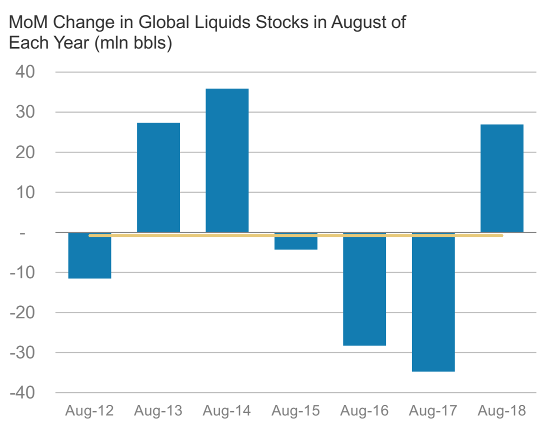
Source: IEA, JODI, Xinhua

Exhibit 90: Total Product Stocks (bln bbls)



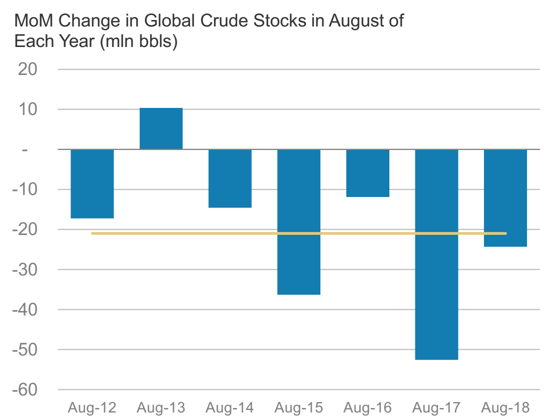
Source: IEA, JODI, Xinhua

Exhibit 87: Historical Global Liquids Stock Change (Latest Month)



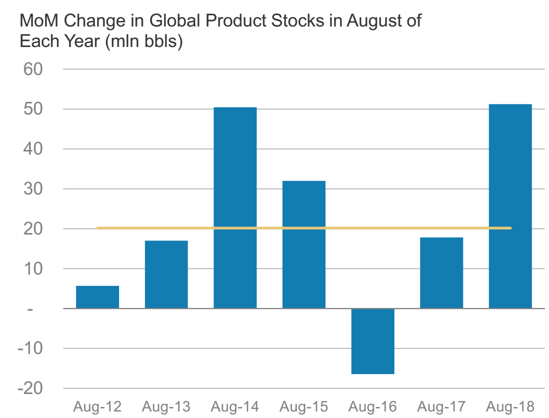
Source: IEA, JODI, Xinhua

Exhibit 89: Historical Global Crude Stock Change (Latest Month)



Source: IEA, JODI, Xinhua

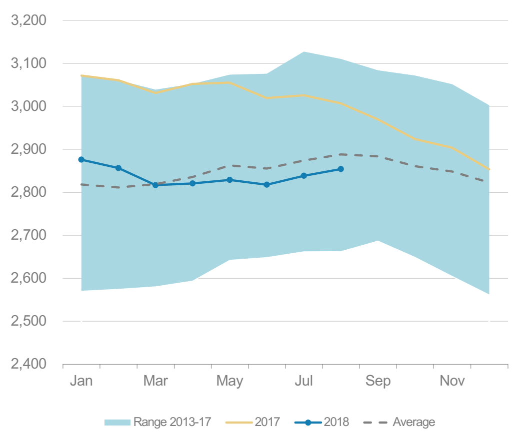
Exhibit 91: Historic Global Products Stock Change (Latest Month)



Source: IEA, JODI, Xinhua

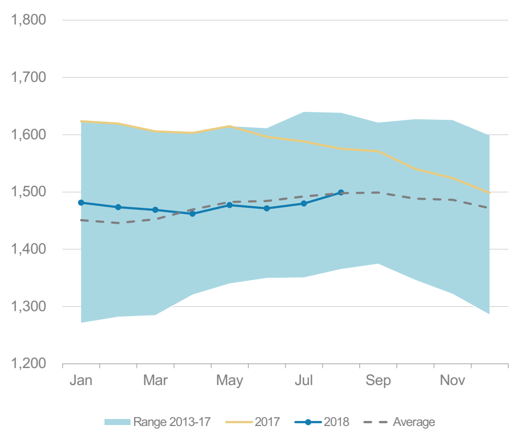
OECD Stocks – Monthly

Exhibit 92: OECD Total Liquid Stocks (bln bbls)



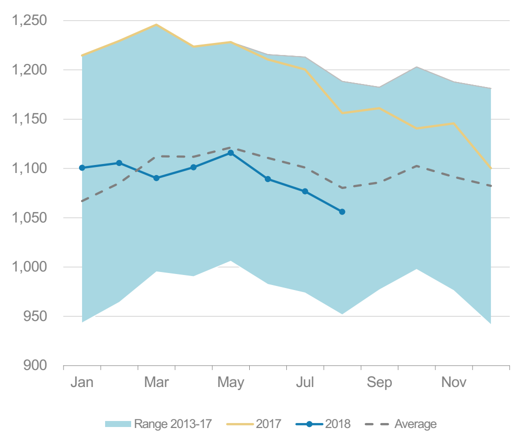
Source: IEA

Exhibit 93: OECD Americas Total Liquid Stocks (bln bbls)



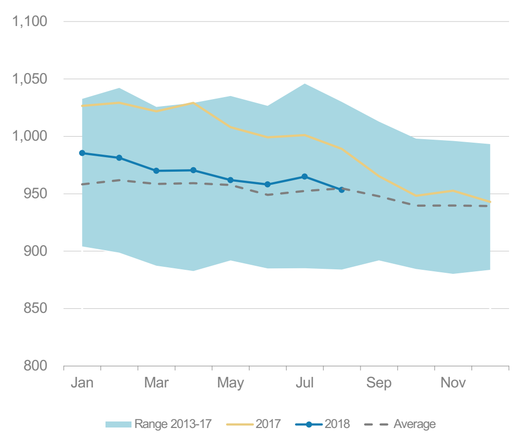
Source: IEA

Exhibit 94: OECD Total Crude Stocks (bln bbls)



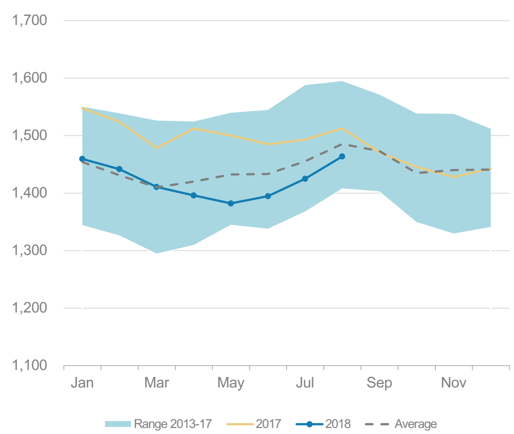
Source: IEA

Exhibit 95: OECD Europe Total Liquid Stocks (bln bbls)



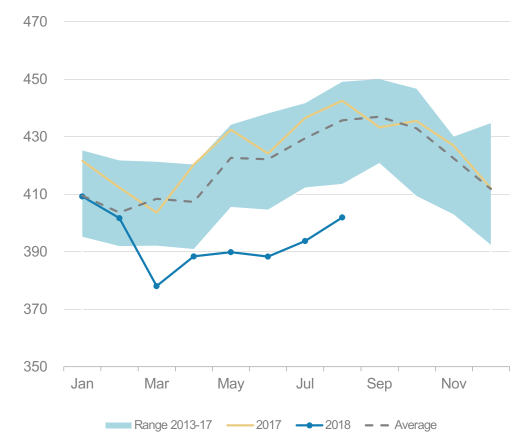
Source: IEA

Exhibit 96: OECD Total Product Stocks (bln bbls)



Source: IEA

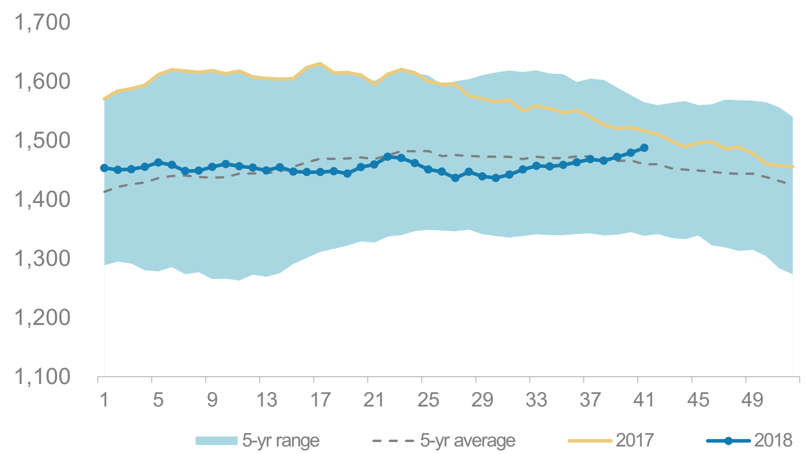
Exhibit 97: OECD Asia Oceania Total Liquid Stocks (bln bbls)



Source: IEA

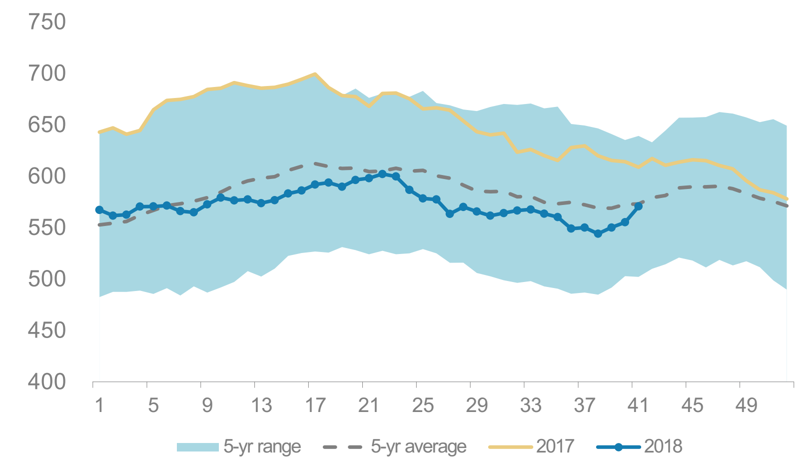
Global Stocks – Weekly

Exhibit 98: Total Oil (US, Japan, ARA, Singapore)



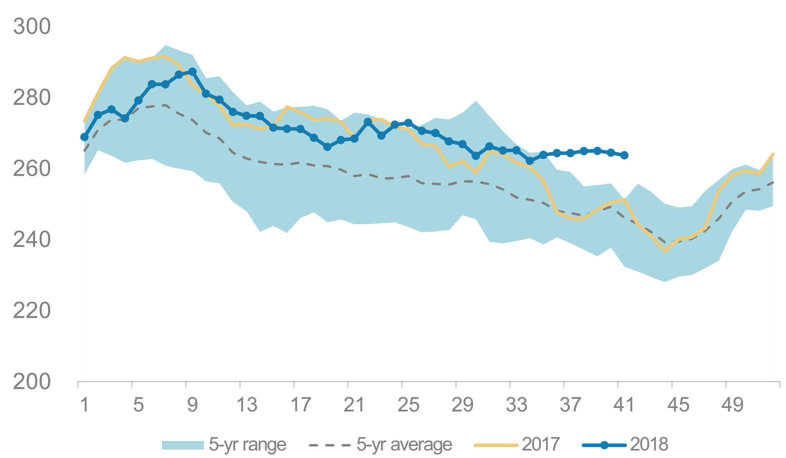
Source: EIA, PAJ, Genscape

Exhibit 99: Crude (US, Japan, ARA)



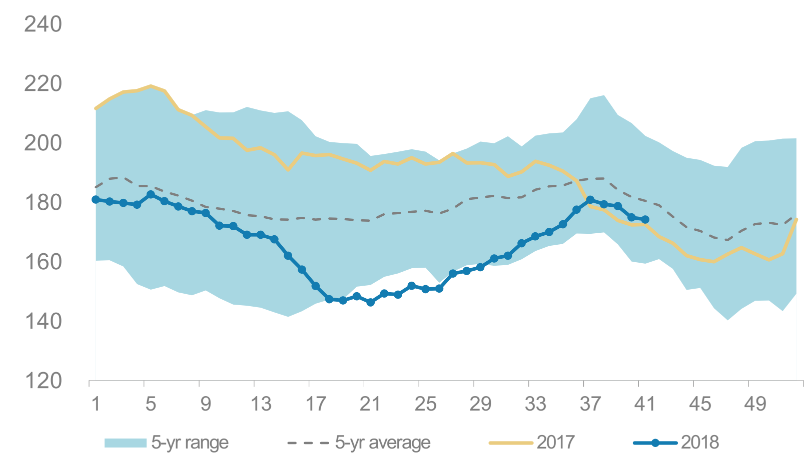
Source: EIA, PAJ, PKJ, IE

Exhibit 100: Gasoline (US, Japan, ARA, Singapore)



Source: EIA, PAJ, PKJ, IE

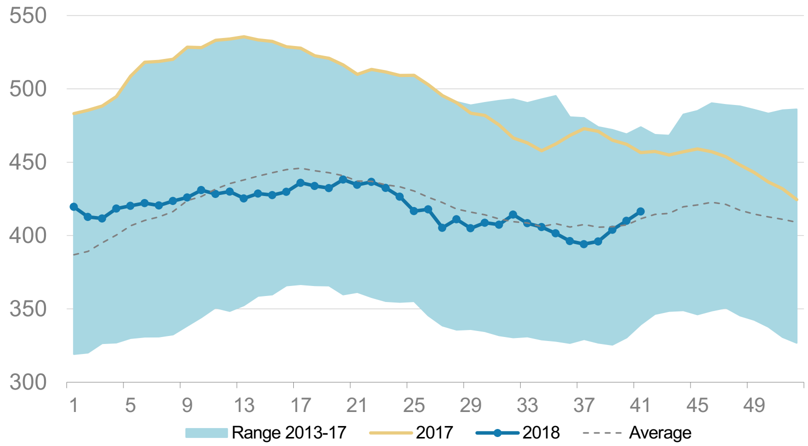
Exhibit 101: Distillates (US, Japan, ARA, Singapore)



Source: EIA, PAJ, PKJ, IE

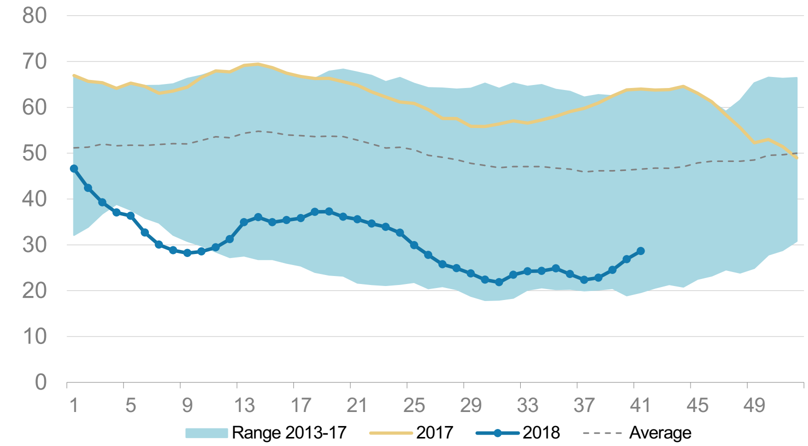
US Stocks – Weekly

Exhibit 102: US Crude – Total (mmb)



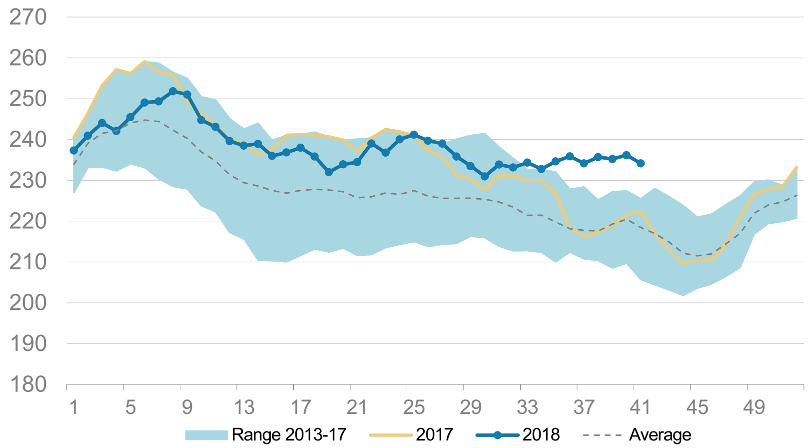
Source: EIA, Reuters

Exhibit 103: US Crude – Cushing (mmb)



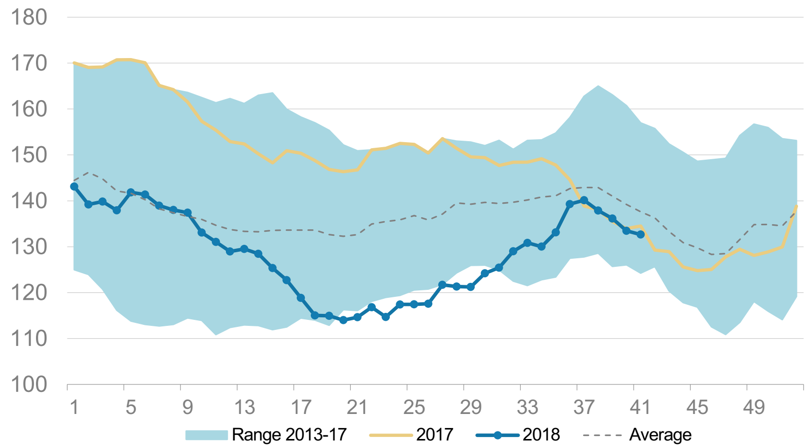
Source: wEIA, Reuters

Exhibit 104: US Gasoline (mmb)



Source: EIA, Reuters

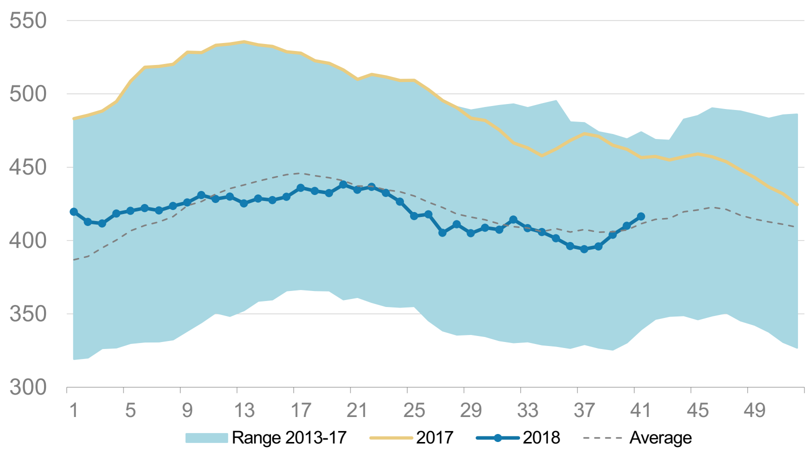
Exhibit 105: US Distillate (mmb)



Source: EIA, Reuters

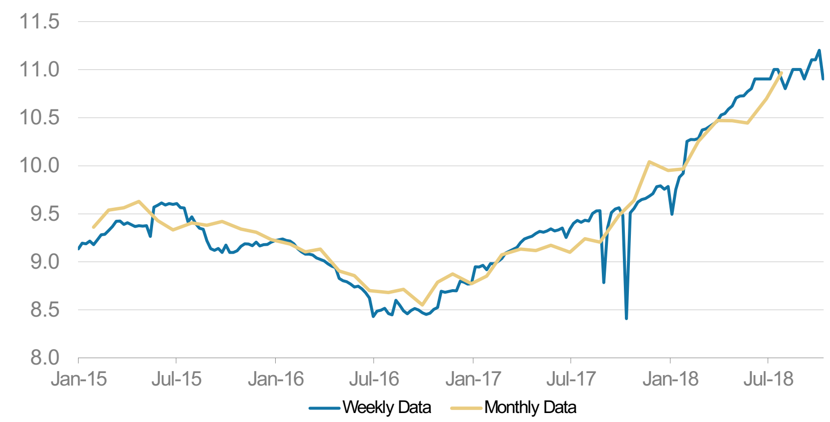
EIA – Crude Oil

Exhibit 106: Crude Oil Stocks (mmb)



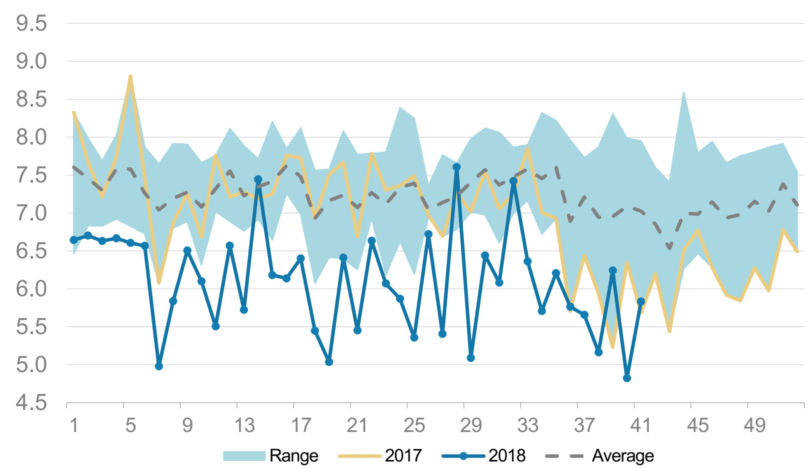
Source: EIA, Reuters

Exhibit 107: Crude Oil Production (mmb/d)



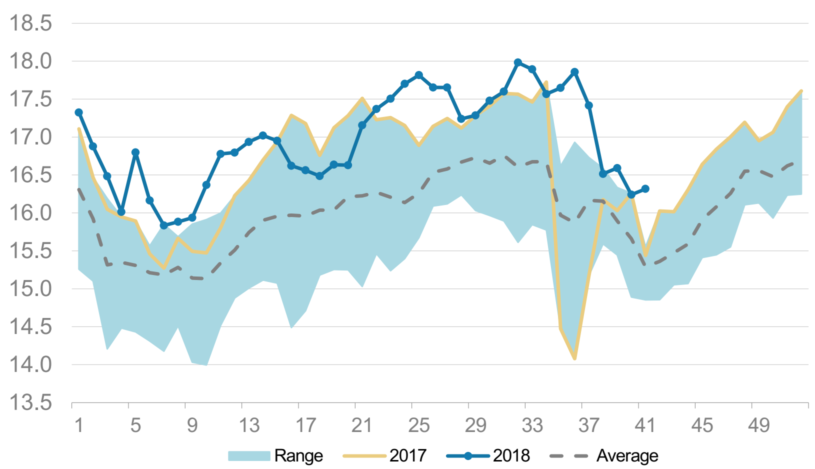
Source: EIA, Reuters

Exhibit 108: Net Crude Imports (mmb/d)



Source: EIA, Reuters

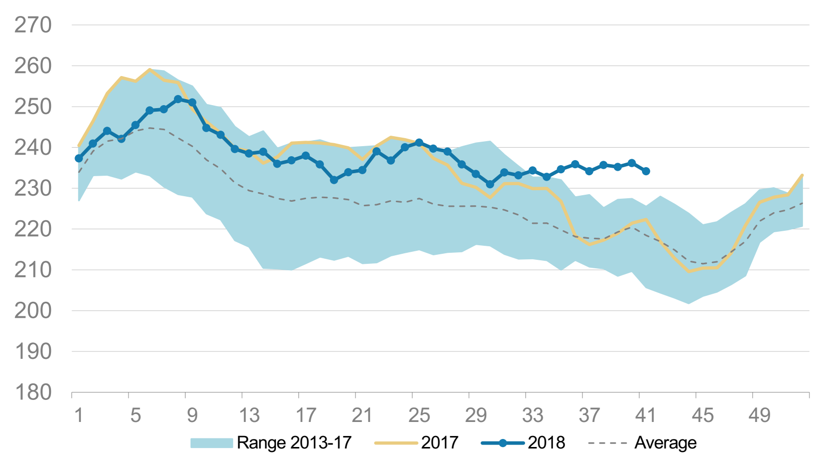
Exhibit 109: Crude Runs (mmb/d)



Source: EIA, Reuters

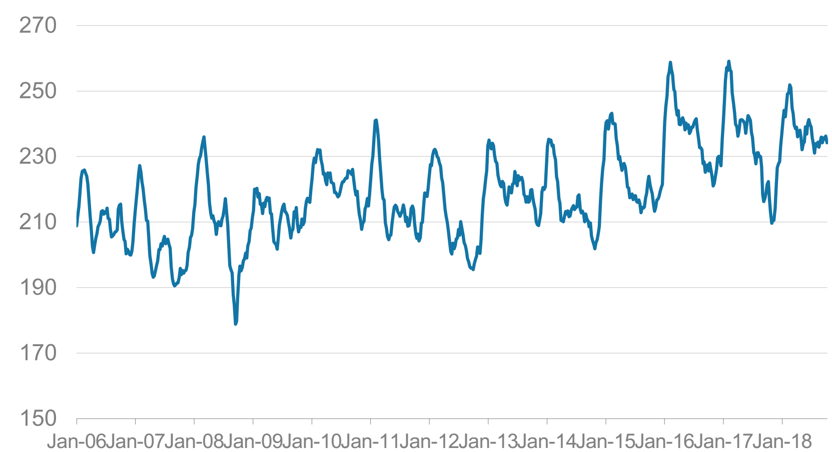
EIA – Gasoline

Exhibit 110: Gasoline Stocks (mmb)



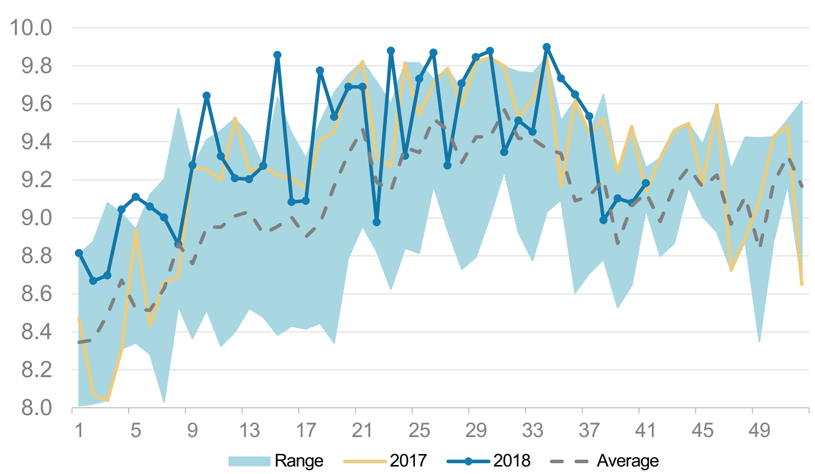
Source: EIA, Reuters

Exhibit 111: Long-term Gasoline Stocks (mmb)



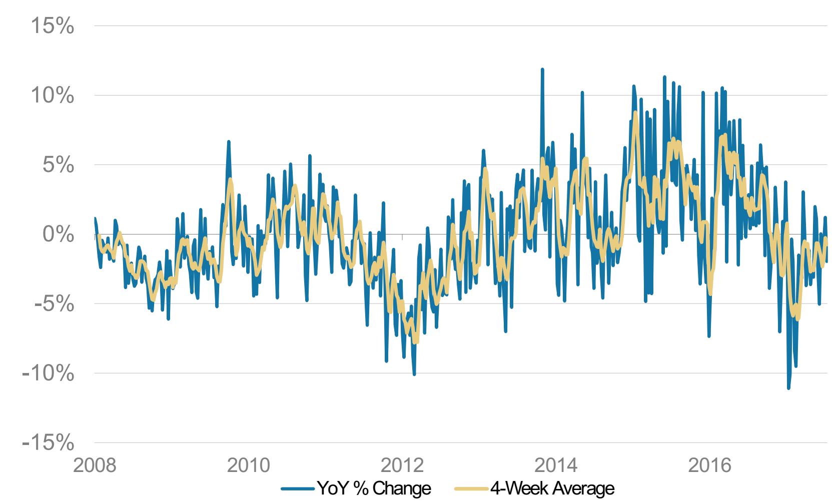
Source: EIA, Reuters

Exhibit 112: Gasoline Product Supplied (mmb/d)



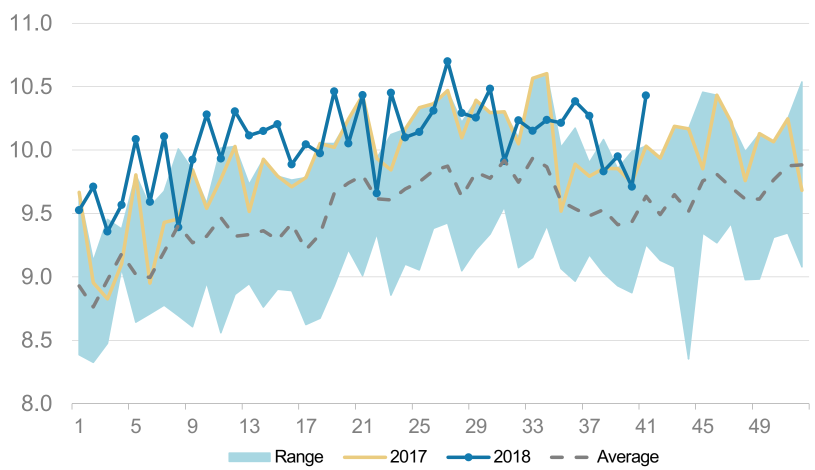
Source: EIA, Reuters

Exhibit 113: Gasoline Product Supplied (% YoY)



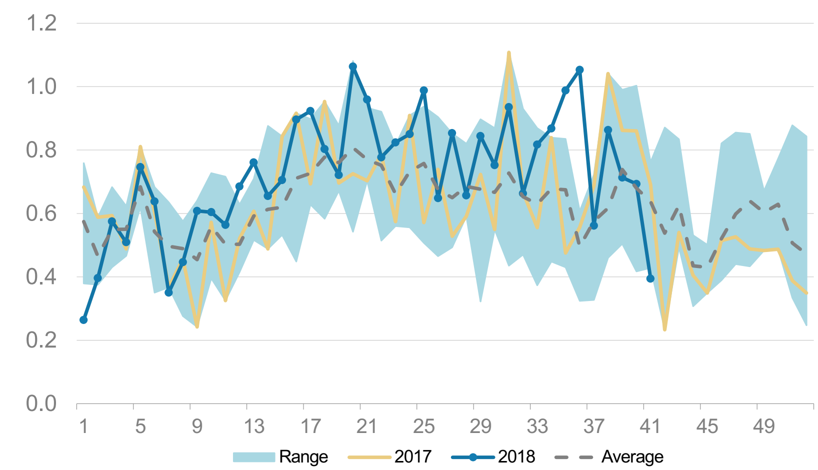
Source: EIA, Bloomberg

Exhibit 114: Gasoline Production (mmb/d)



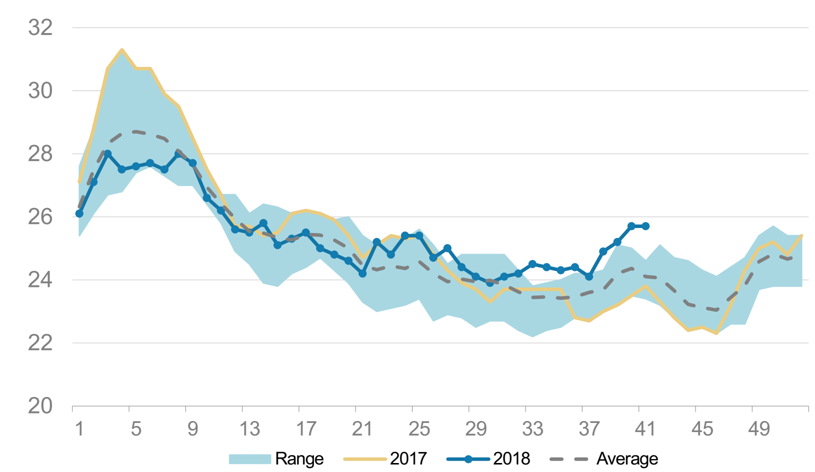
Source: EIA, Reuters

Exhibit 115: Gasoline Imports (mmb/d)



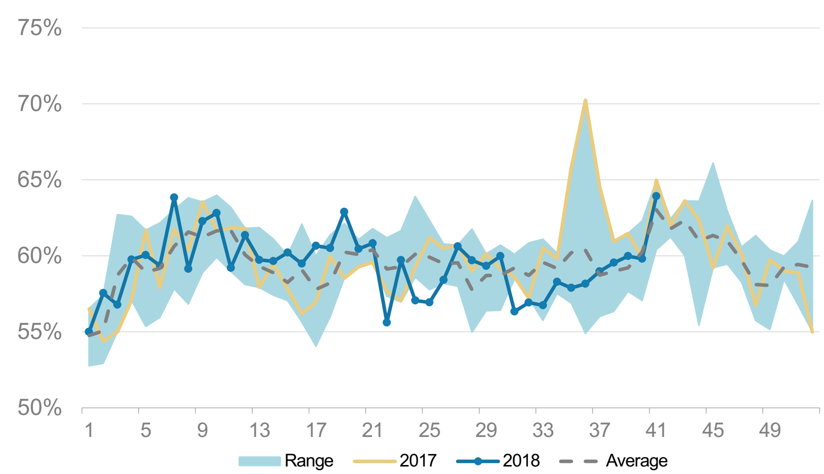
Source: EIA, Reuters

Exhibit 116: Gasoline Stocks Days of Supply (4 wk avg)



Source: EIA, Bloomberg

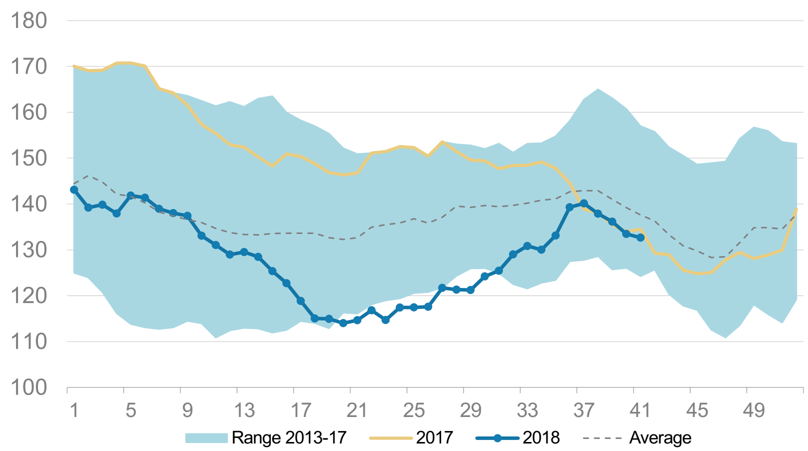
Exhibit 117: Gasoline Yield (%)



Source: EIA, Reuters

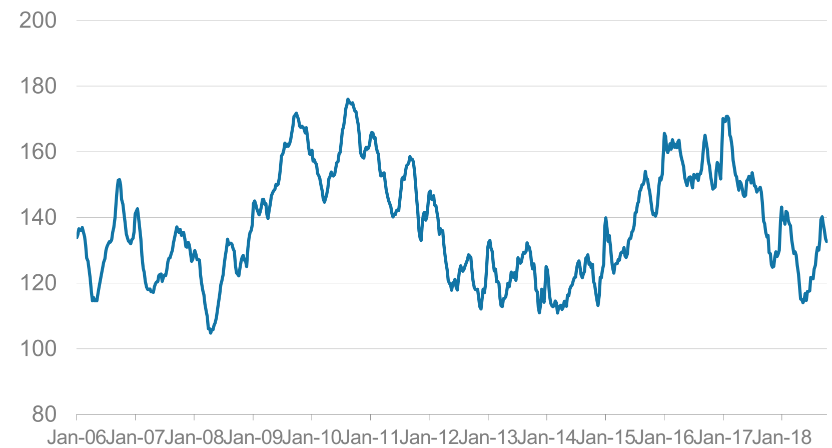
EIA – Distillate

Exhibit 118: Distillate Stocks (mmb)



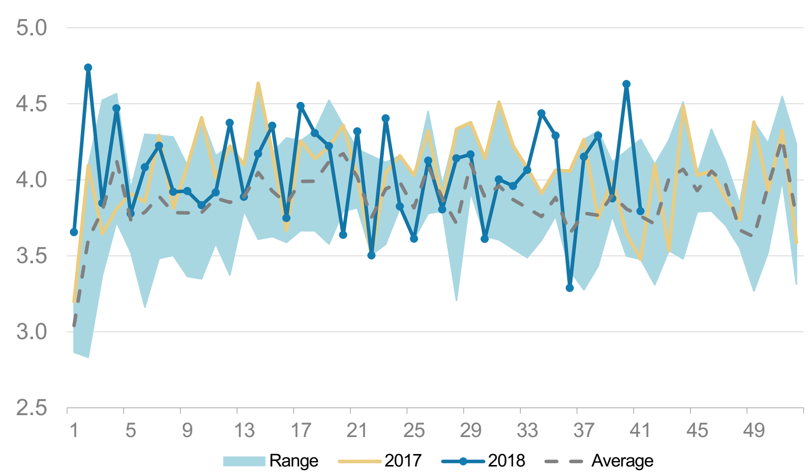
Source: EIA, Reuters

Exhibit 119: Long-term Distillate Stocks (mmb)



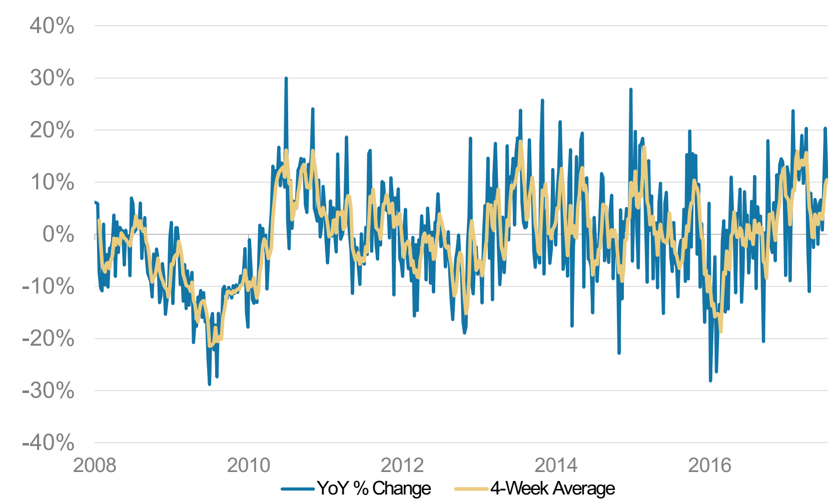
Source: EIA, Reuters

Exhibit 120: Distillate Product Supplied (mmb/d)



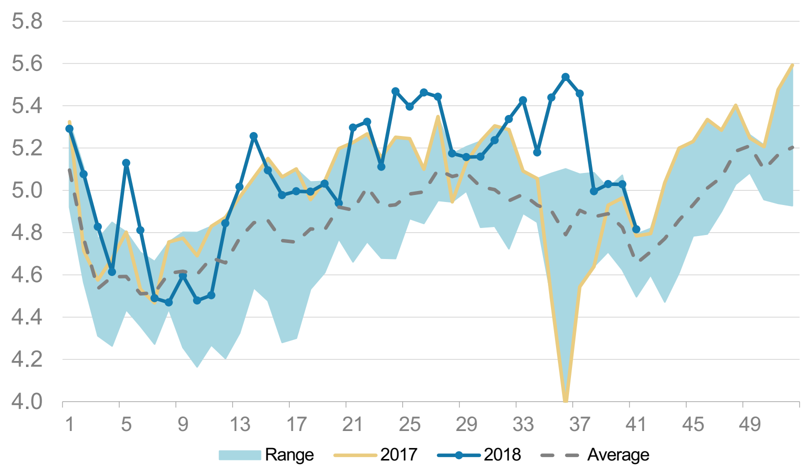
Source: EIA, Reuters

Exhibit 121: Distillate Product Supplied (% YoY)



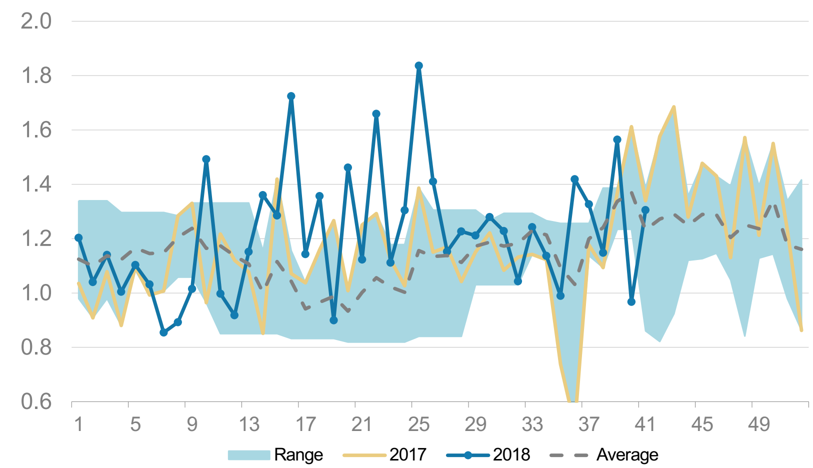
Source: EIA, Bloomberg

Exhibit 122: Distillate Production (mmb/d)



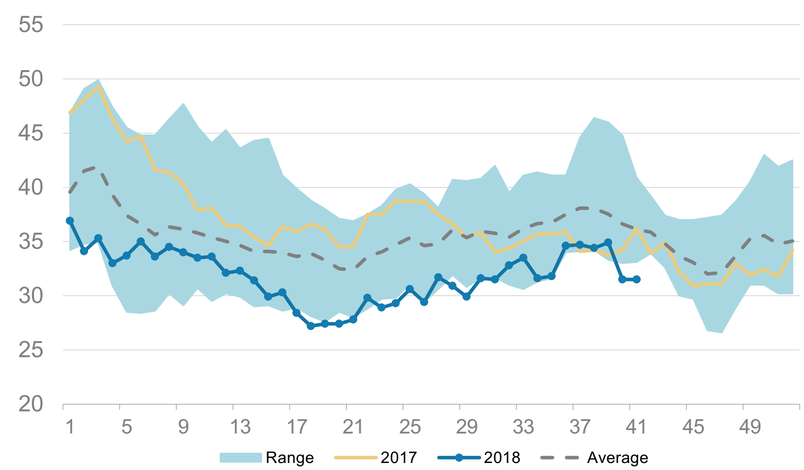
Source: EIA, Reuters

Exhibit 123: Distillate Exports (mmb/d)



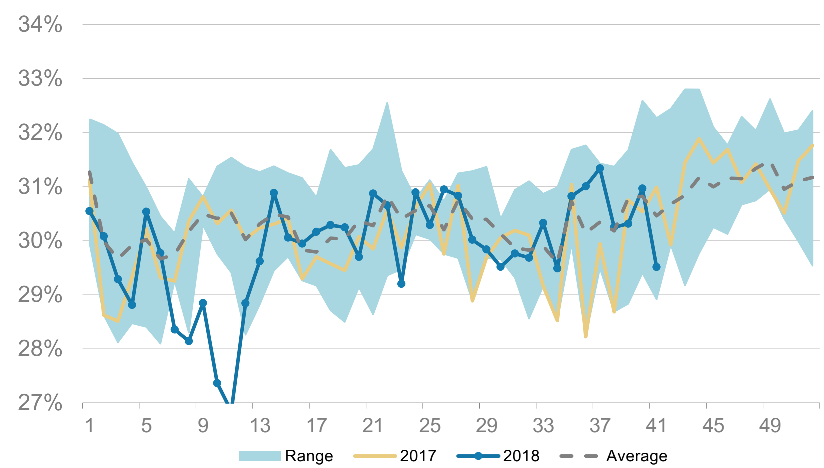
Source: EIA, Reuters

Exhibit 124: Distillate Stocks Days of Supply (4 wk avg)



Source: EIA, Reuters

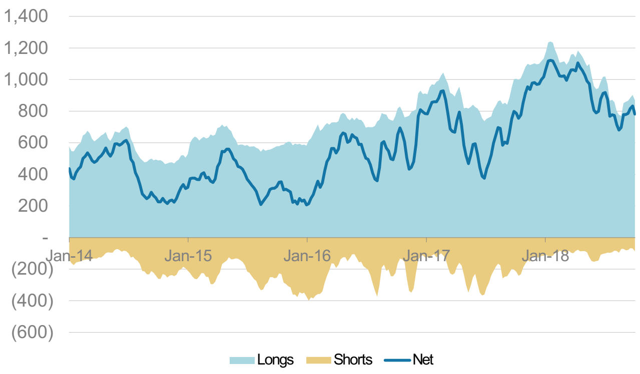
Exhibit 125: Distillate Yield (%)



Source: EIA, Reuters

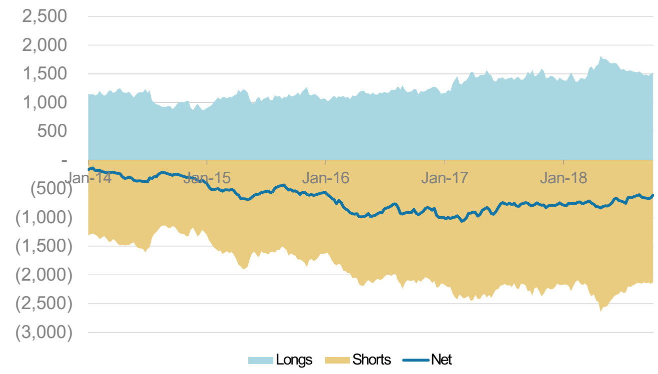
Positioning

Exhibit 126: Managed Money Crude Positioning ('000 lots)



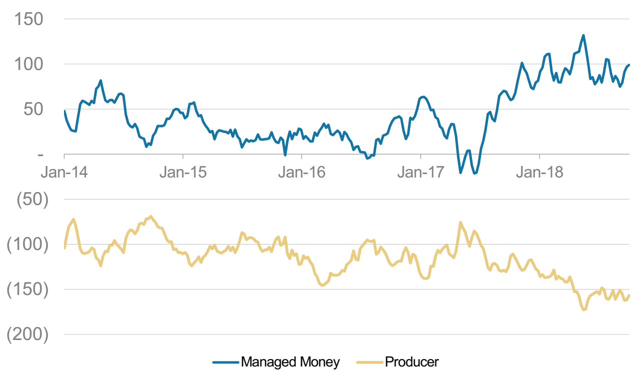
Source: ICE, CFTC, Reuters

Exhibit 127: Producer/Merchant Crude Positioning ('000 lots)



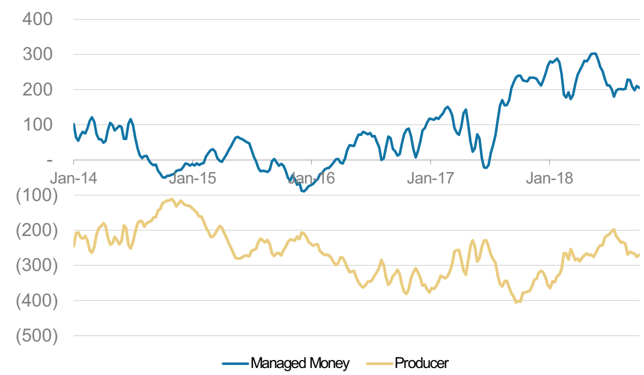
Source: ICE, NYMEX, CFTC, Reuters

Exhibit 128: Net Long Positioning – Gasoline ('000 lots)



Source: NYMEX, CFTC, Reuters

Exhibit 129: Net Long Positioning – Distillate ('000 lots)



Source: ICE, CFTC, Reuters

Supply/Demand Balance

Exhibit 130: 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**	**48.0**	**48.3**	**47.8**	**48.0**	**48.8**	**0.4**	**0.4**	**0.4**	**0.2**	**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	20.4	20.4	20.3	20.5	20.9	0.2	0.3	0.4	0.2	0.3
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	8.3	8.3	8.2	8.3	8.4	0.0	0.1	0.0	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	3.6	4.0	3.8	3.8	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	11.2	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**	**51.3**	**52.5**	**52.4**	**51.6**	**52.8**	**54.2**	**0.7**	**1.1**	**1.2**	**1.2**	**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	13.7	13.7	13.3	13.7	14.3	0.4	0.6	0.7	0.4	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	5.0	5.1	0.2	0.1	0.2	0.2	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	3.6	3.5	3.6	3.7	-0.1	0.0	0.2	0.1	0.1
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	20.3	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**	**98.4**	**100.5**	**100.7**	**99.4**	**100.8**	**103.0**	**1.1**	**1.5**	**1.6**	**1.4**	**2.2**
Supply																							
Non-OPEC Crude + Condensate	**46.6**	**46.3**	**44.6**	**45.1**	**46.2**	**45.6**	**46.2**	**45.5**	**45.7**	**46.5**	**46.0**	**47.1**	**47.1**	**47.7**	**48.4**	**47.6**	**48.8**	**50.2**	**-1.1**	**0.4**	**1.6**	**1.3**	**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	11.0	11.2	10.7	11.7	12.9	-0.6	0.5	1.4	1.0	1.2
- 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	9.7	-0.5	0.5	1.5	1.1	1.3
- 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	2.8	2.8	2.9	2.8	2.8	-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	4.3	4.2	4.3	4.4	0.0	0.3	0.3	0.1	0.1
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	1.0	1.1	1.1	0.0	0.0	0.1	0.2	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	1.6	1.5	1.6	1.8	0.0	0.0	-0.1	0.0	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	11.3	11	11	11	0.2	0.0	0.2	0.1	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	1.9	1.9	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	2.6	2.7	2.6	2.9	3.2	0.1	0.1	0.0	0.3	0.3
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	0.8	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	6.7	6.6	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.4	6.5	6.3	6.1	-0.3	-0.2	-0.1	-0.2	-0.2

Source: IEA, Morgan Stanley Research estimates

Supply/Demand Balance (cont'd)

Exhibit 131: 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	7.2	7.5	7.3	7.6	7.8	0.3	0.3	0.5	0.3	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	0.5	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	2.4	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	2.6	2.6	0.1	0.1	0.1	0.0	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**	**60.8**	**61.2**	**60.3**	**61.8**	**63.5**	**-0.7**	**0.8**	**2.3**	**1.6**	**1.7**
OPEC NGLs	6.6	6.7	6.8	6.9	6.8	6.8	6.9	6.9	6.9	6.9	6.9	6.9	6.9	7.0	6.8	6.9	6.9	7.1	0.2	0.1	0.0	0.0	0.1
Call on OPEC crude + Δstock	**30.8**	**31.4**	**32.7**	**33.1**	**32.5**	**32.4**	**32.0**	**33.6**	**33.3**	**32.9**	**33.0**	**32.2**	**31.5**	**32.7**	**32.6**	**32.3**	**32.0**	**32.4**	**1.6**	**0.6**	**-0.7**	**-0.2**	**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**	**32.0**	**32.2**	**31.9**	**32.3**	**0.9**	**-0.4**	**-0.4**	**-0.4**	**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	10.6	10.3	10.8	10.7	0.3	-0.5	0.3	0.5	-0.1
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	2.8	3.5	2.3	2.6	0.7	0.3	-0.3	-1.2	0.3
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	4.6	4.5	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	3.0	2.9	3.1	3.1	0.1	-0.1	0.0	0.1	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	2.8	2.9	2.9	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	1.4	1.5	1.4	1.4	-0.1	-0.1	-0.2	-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	1.8	1.6	1.8	1.8	-0.3	0.1	0.1	0.2	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	1.0	1.0	1.0	1.0	0.0	0.4	0.1	0.0	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	1.1	1.3	1.0	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)	**1.3**	**1.2**	**0.1**	**0.1**	**1.1**	**0.6**	**0.3**	**-1.0**	**-0.3**	**-0.3**	**-0.3**	**0.1**	**0.6**	**-0.2**	**-0.6**	**0.0**	**-0.2**	**-0.2**					

* 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 MISC
Overweight/Buy	**1178**	**37%**	**308**	**42%**	**26%**	**562**	**40%**
Equal-weight/Hold	**1378**	**44%**	**343**	**46%**	**25%**	**625**	**44%**
Not-Rated/Hold	**49**	**2%**	**5**	**1%**	**10%**	**7**	**0%**
Underweight/Sell	**554**	**18%**	**83**	**11%**	**15%**	**224**	**16%**
TOTAL	**3,159**		**739**			**1418**	

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