Commodities Research

Oil market outlook

December 2018

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Views on a page

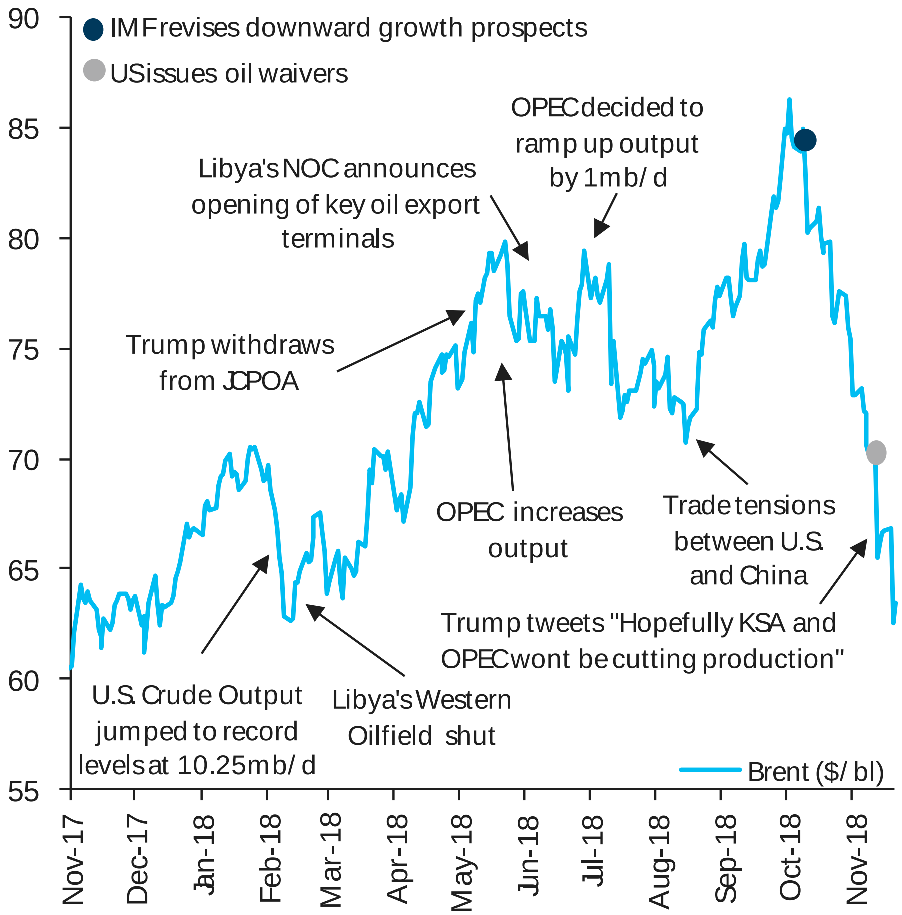
1. Brent prices of $85/b were unjustified by fundamentals, so too is the case for $60/b.
2. OPEC cut supply in line with our view but risks of compliance and elasticity of US supply may weigh on prices over next several months.
3. Price risks to the upside: US production cutbacks, stronger-than-forecast demand, supply disruptions (Iran, Venezuela, Iraq, Nigeria, Libya).
4. Price risks to the downside: US and other non-OPEC production outperformance, demand growth disappoints, trade tension and protectionism concerns.
5. In the medium term, we forecast Brent prices at $75 in 2020 and $80 in 2025, around $15 higher than the curve.

Barclays energy price forecasts														
			2018					2019						
	2016	2017	Q1	Q2	Q3	Q4	2018	Q1	Q2	Q3	Q4	2019	2020	2025
Brent	45.1	54.8	67.2	75	76	75	73	75	71	70	73	72	75	80
WTI	43.4	50.9	62.9	68	69	66	67	67	65	64	66	65	68	
WTI-Brent	1.7	-3.9	-4.3	-7.1	-6.4	-9.0	-6.7	-8.0	-6.5	-6.0	-7.0	-6.9	-7.0	
Henry Hub	2.49	2.96	3.05	2.82	2.95	3.63	3.11	3.51	2.67	2.74	2.78	2.72	3.06	
Brent (vs curve)						10	1	16	11	10		12	15	20
Brent (vs consensus)						-3	-1	-2	-7	-5		-3	3	n/ a
WTI (vs curve)						9	2	16	13	12		14	16	
WTI (vs consensus)						-4	-1	-1	-3	-5		-4	2	
Previous (Brent, Oct 2018)						77	72	75	71	70	73	72	75	80

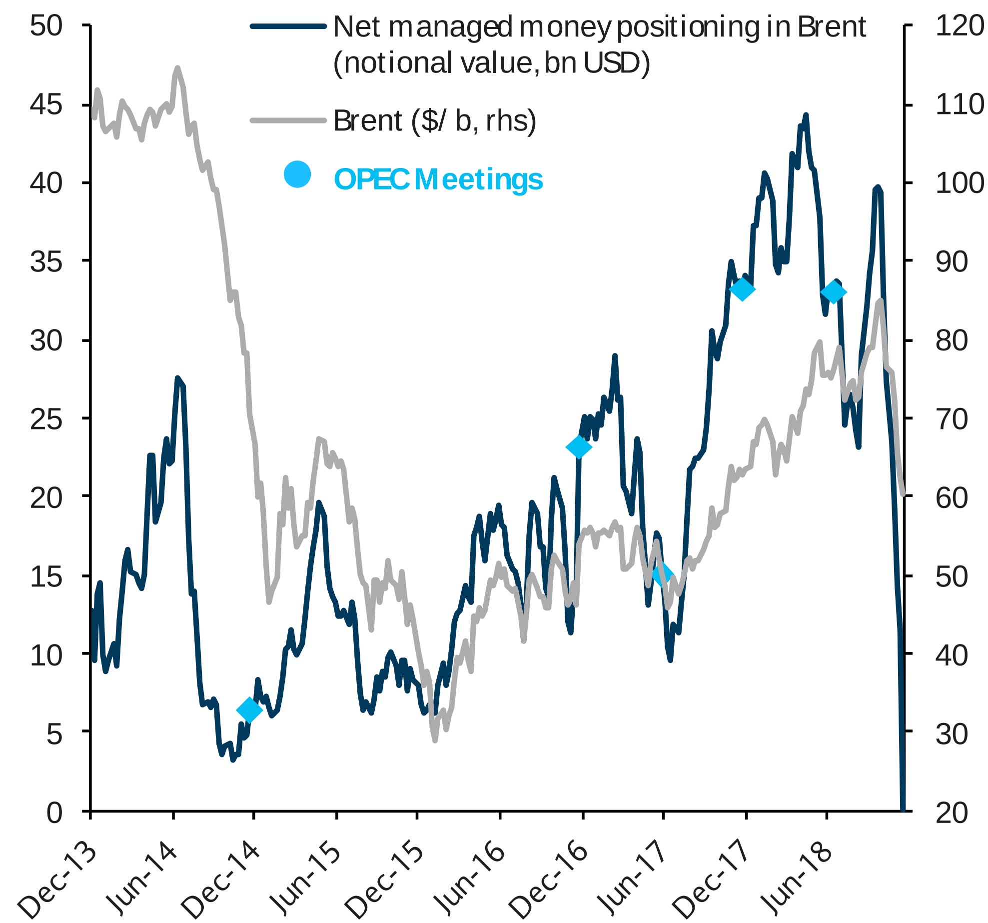
Source: Bloomberg, Barclays Research

The bull narrative has collapsed but prices have overshot

Oil prices have erased all their gains over the last year



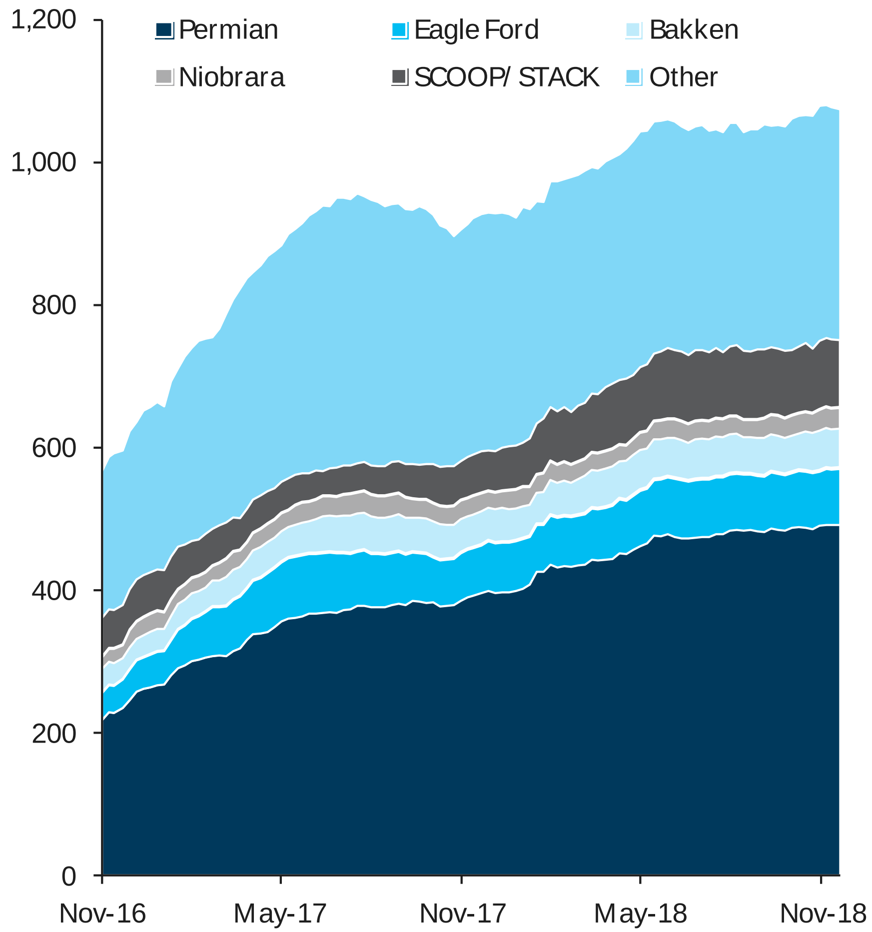
The liquidation of net length across the energy complex exacerbated the move



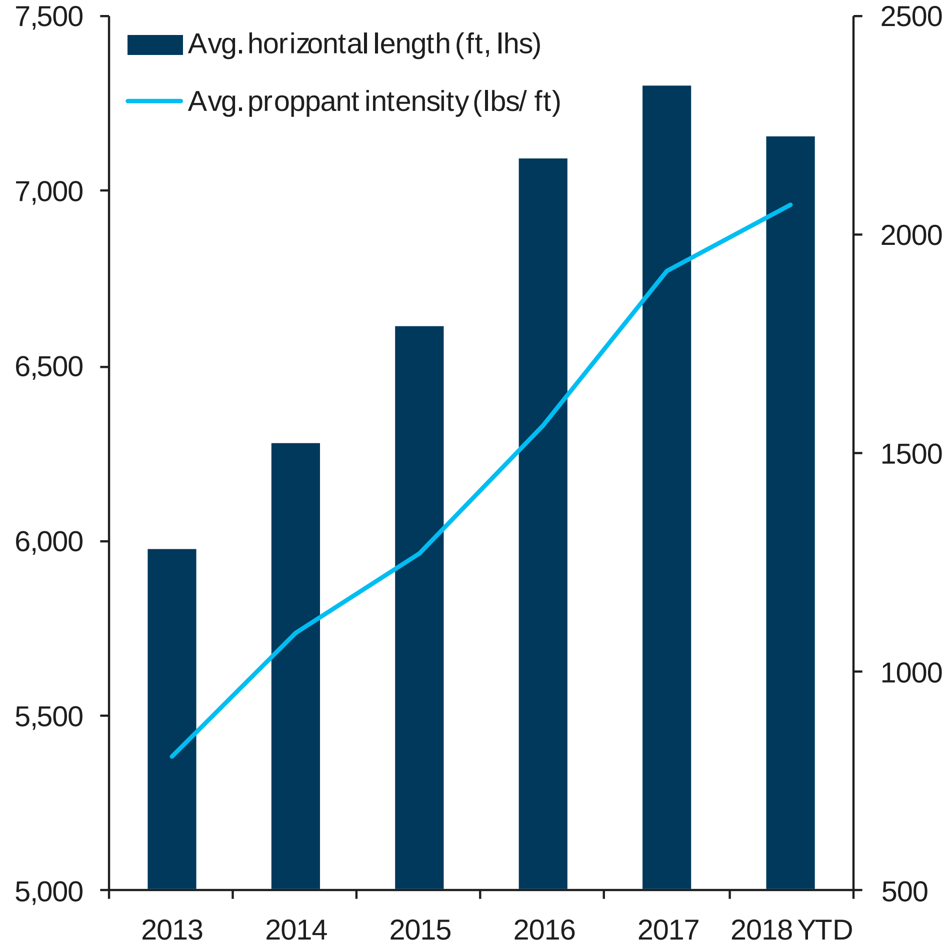
Source: Bloomberg, Barclays Research

Tight oil growth outside of Permian lending a helping hand

US rig count has steadied recently



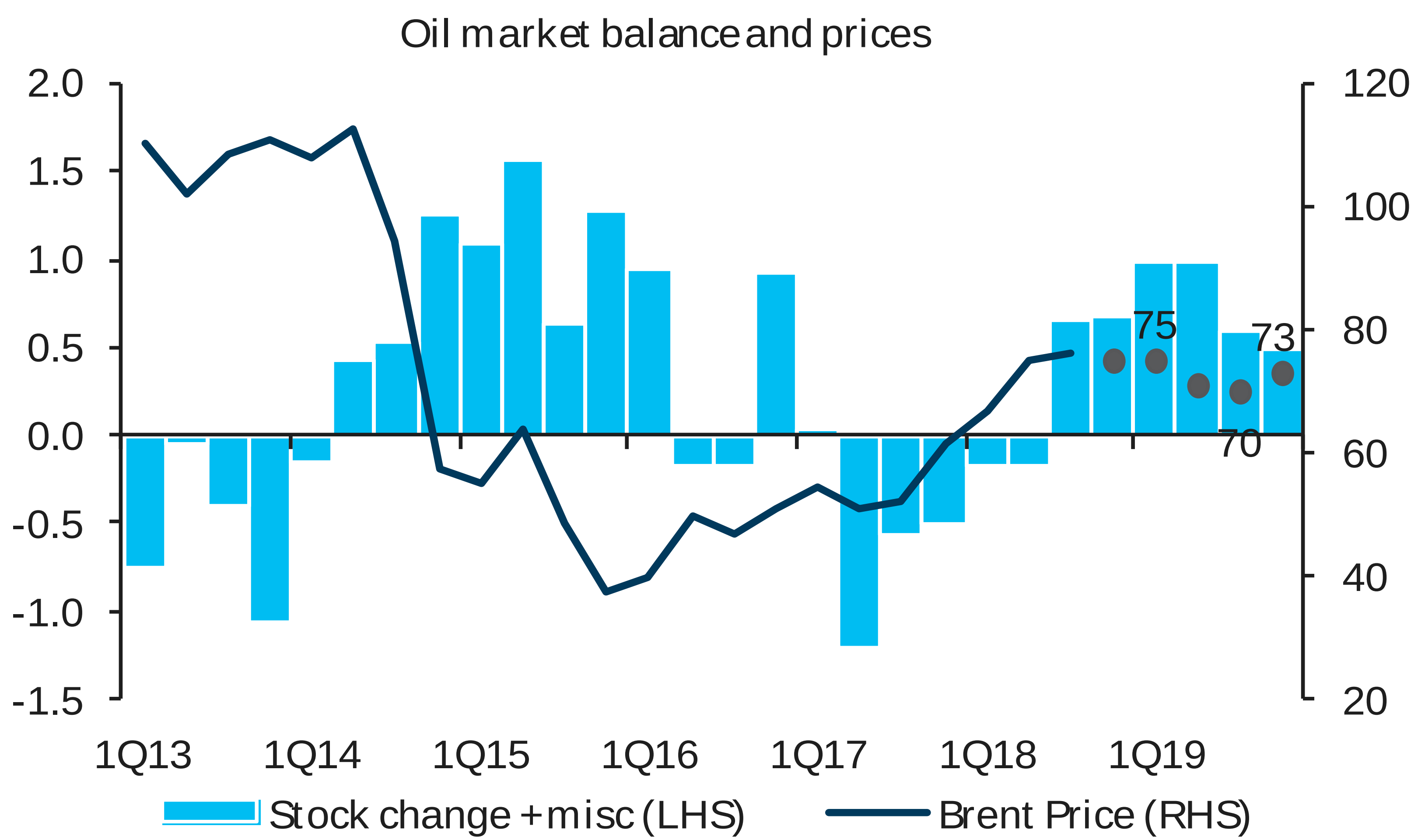
Productivity gains in the Permian are flattening



Source: Baker Hughes, EIA, Barclays Research

Therefore, if OPEC does not cut, the market balance remains in surplus next year

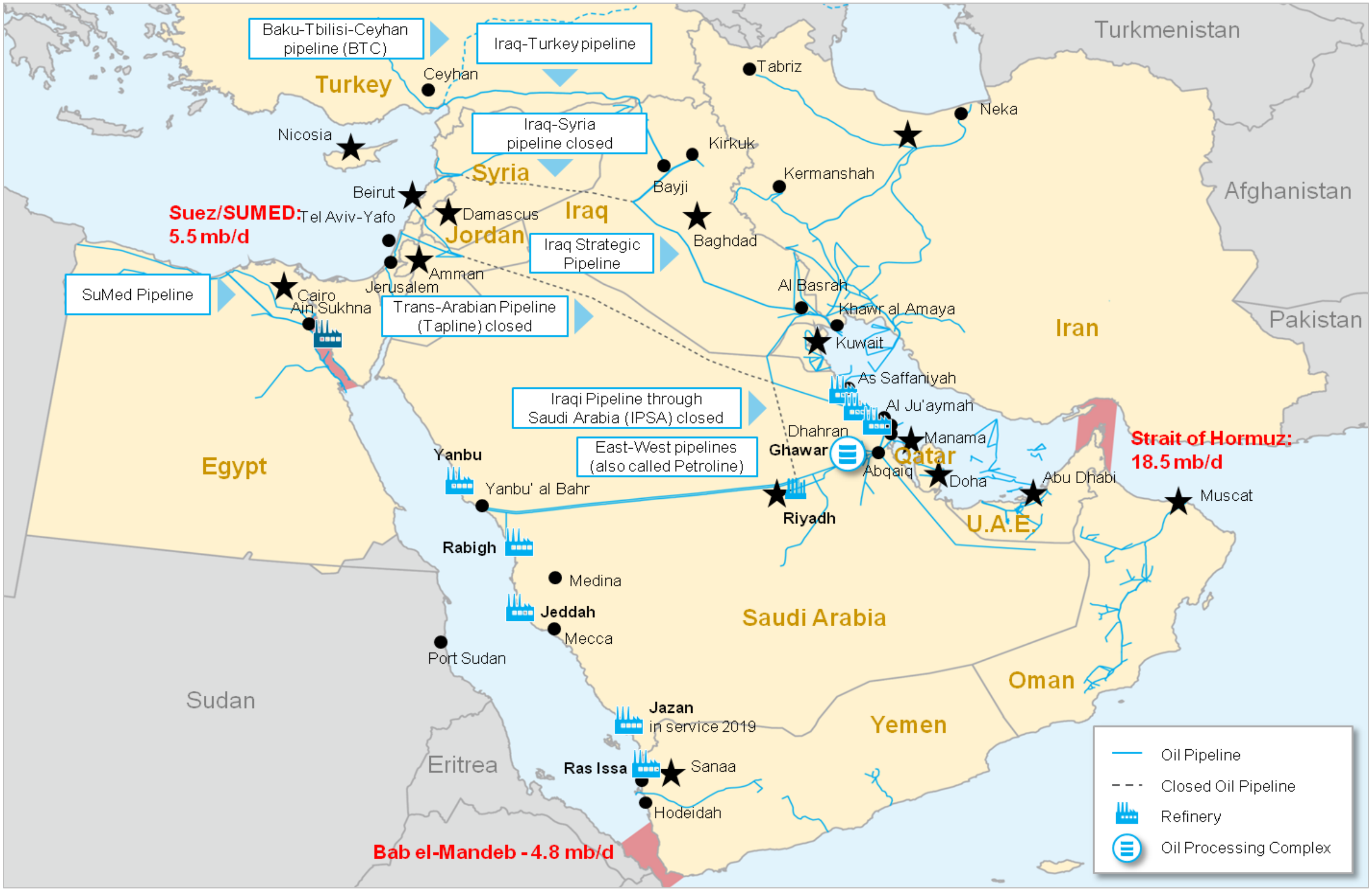
The supply deficit last year and this year has helped support prices. If the market flips to surplus Saudi Arabia will not need to raise output above 10.5 mb/d on average



Source: IEA, EIA, Barclays Research

JCPOA exit raises tension in the Middle East

Key oil transit chokepoints and infrastructure are at risk of disruption in the months ahead



Source: S&P Global Platts, EIA, Barclays Research

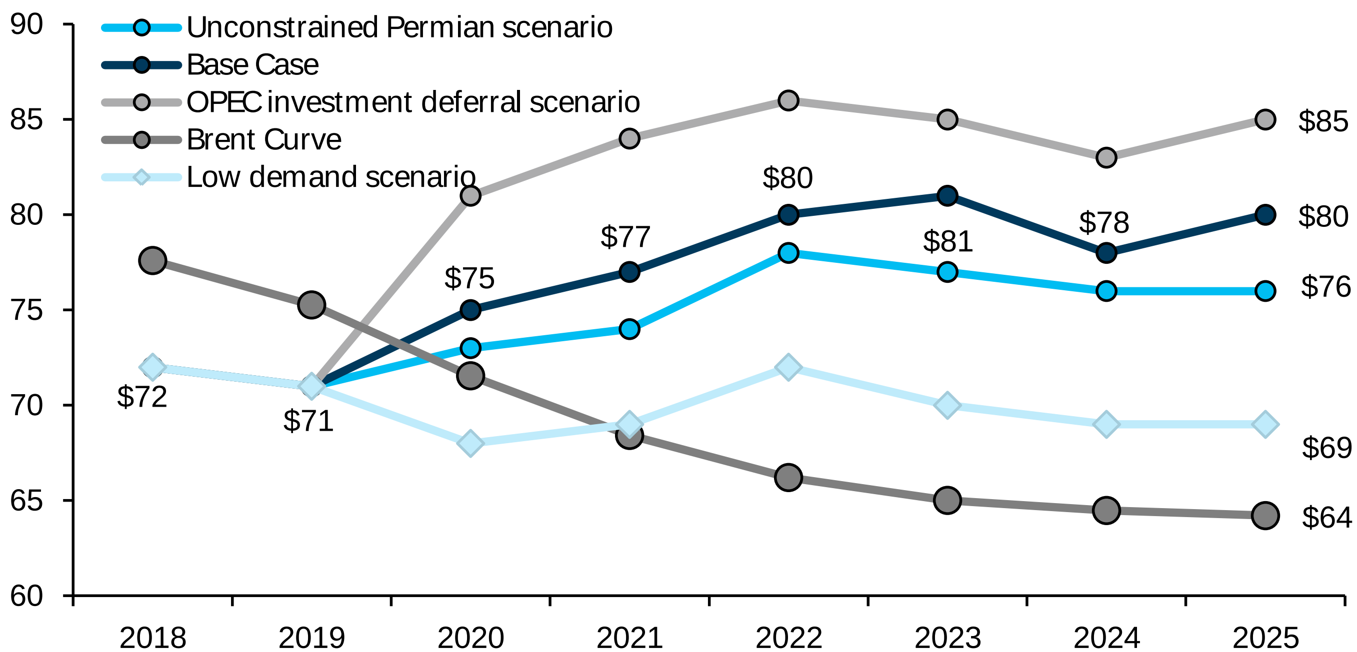
Medium-term oil price outlook:

Full report: Oil Special Report: Resisting Temptation, 4 Sep 2018

Key takeaways from our September report

Prices range from below $70/b to above $80 in 2020, between $70-85 by 2025

- The most substantial change from last year is associated with the 1.5 mb/d reduction in supply from key OPEC countries, and the higher required WTI price needed to offset it over a multi-year period.
- Though we expect a price range above $80 to become the new norm next decade, our market balances do not justify those price levels in the next one to two years.
- There are many other possible reasons to be bullish during that time frame, but the “supply gap” is not one of them.
- Note: WTI discount range from $5-8/b.

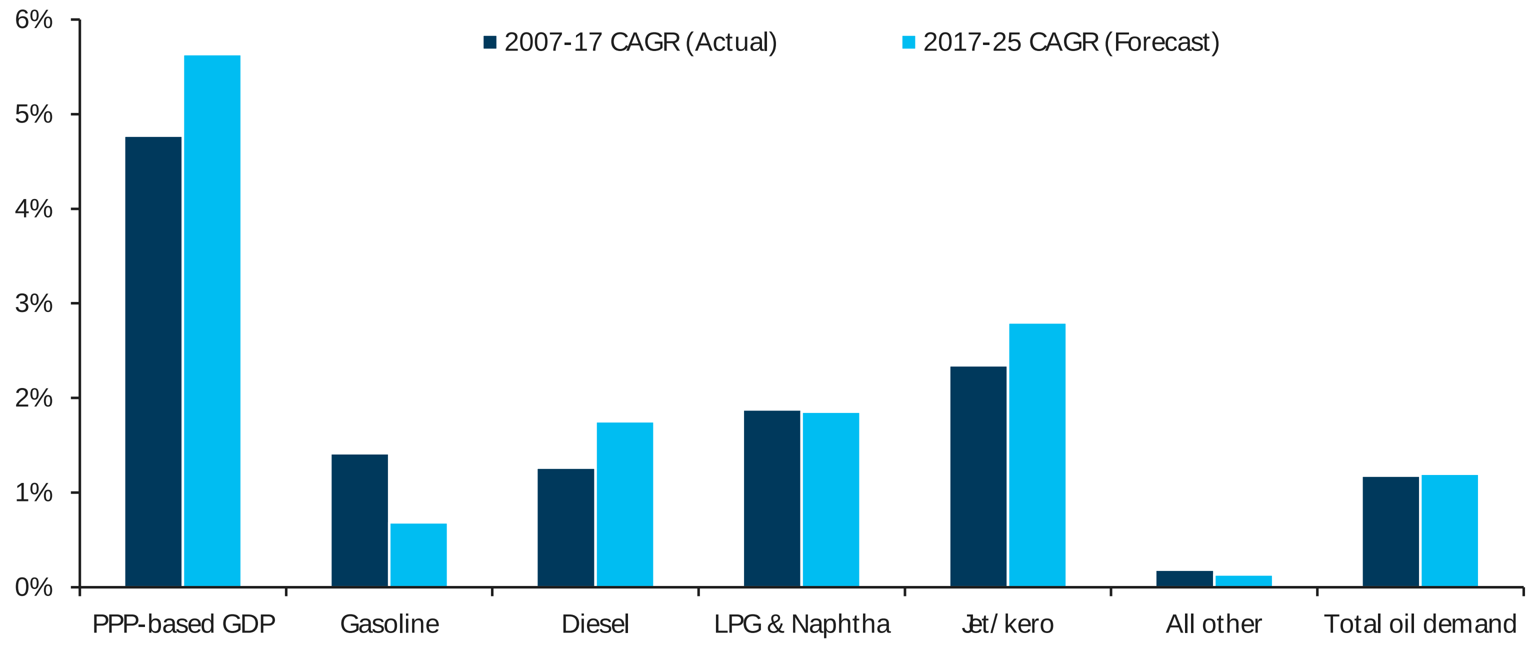


Source: Barclays Research

In our base case, we expect global liquids demand to grow to about 107.6 mb/d by 2025

- Our estimates are based on higher world GDP growth, coupled with lower unemployment rates in developed countries and rising per capita income levels in the developing world.
- Electric vehicles gain popularity, primarily due to policy push. We expect 55 mn EVs on the road by 2025, an increase of 10% from our prior estimate.
- Diesel demand is likely to soar at the expense of fuel oil demand, as the International Maritime Organization (IMO) implements a significantly lower sulfur cap for marine bunker fuel.

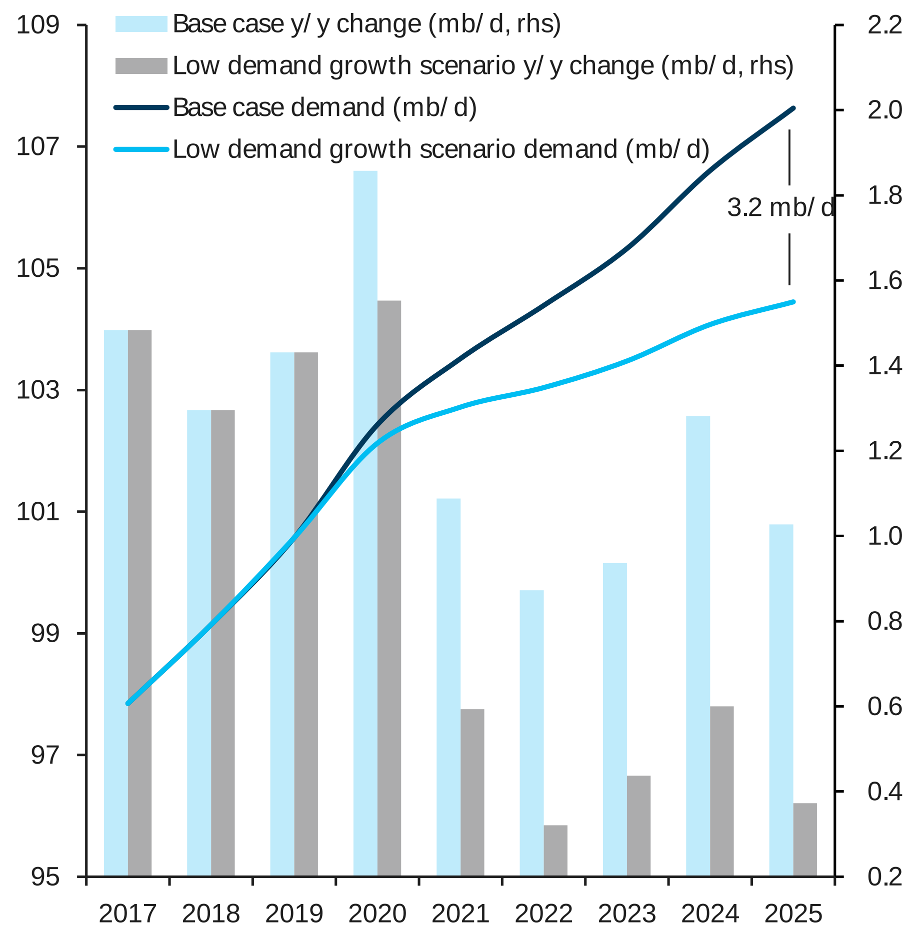
World oil demand growth by product



Source: IEA, WIND , Bloomberg, Barclays Research

If global economic growth disappoints, demand growth could be significantly below our base case.

- Low demand scenario of 4.1% CAGR (vs 5.6% in the base case)
- 23% share of EVs/total car sales, 10 pp higher than our base case assumption of 13%.
- 2025 global oil demand would be 3.2 mb/d below the base case.
- Economic growth risks arise from escalating trade war concerns between the US and China and a potentially significant knock-on effect of sharply higher shipping, airline transit, and agricultural costs, due to IMO regulations that are set to kick in in 2020.

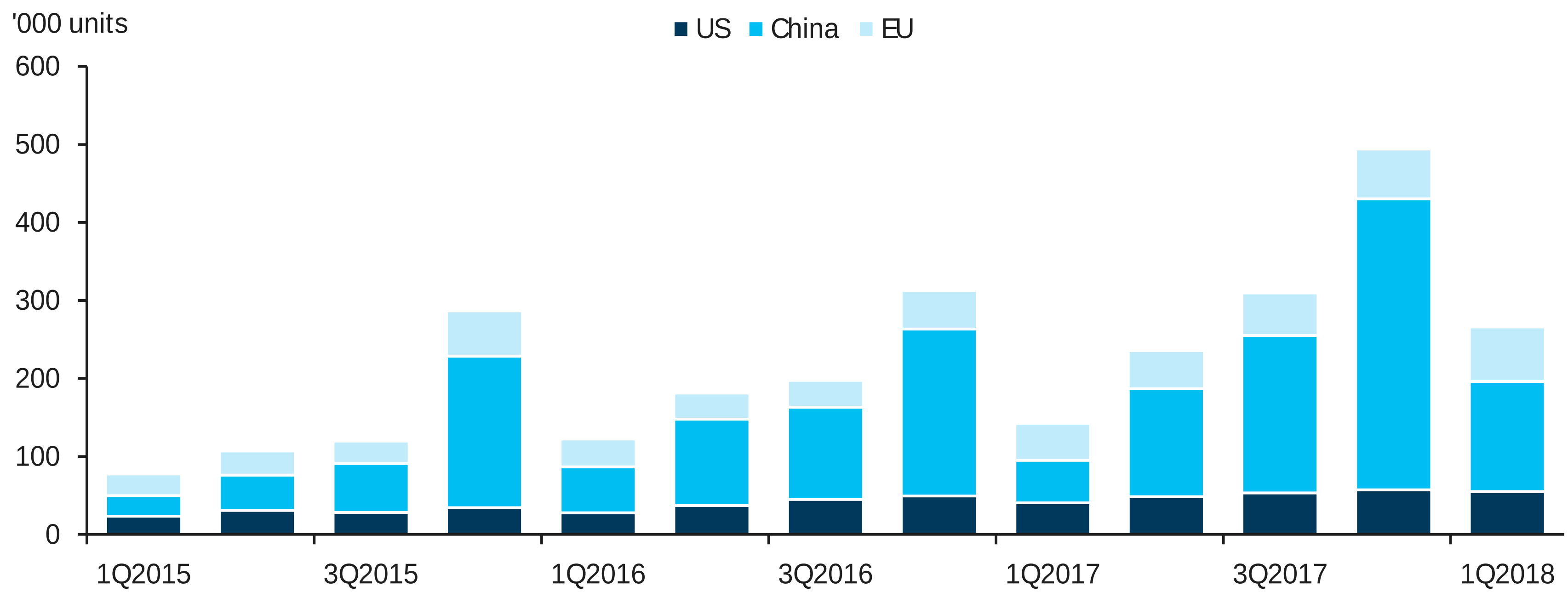


Source: IEA, WIND , Bloomberg, Barclays Research

Growing popularity of EVs also weighing on gasoline demand growth

- EV (including battery-electric vehicles (BEV) and plug-in hybrid vehicles (PHEV)) sales grew to more than 1.1mn units last year, more than double the volume sold in 2015 and over 50% higher than 2016.
- We estimate that most of the growth came from China, which accounted for almost two-thirds of worldwide EV sales.
- The growth in China's EV sales has been robust despite a significant reduction in government subsidies over the past few years.

China leads the charge on electric vehicle sales

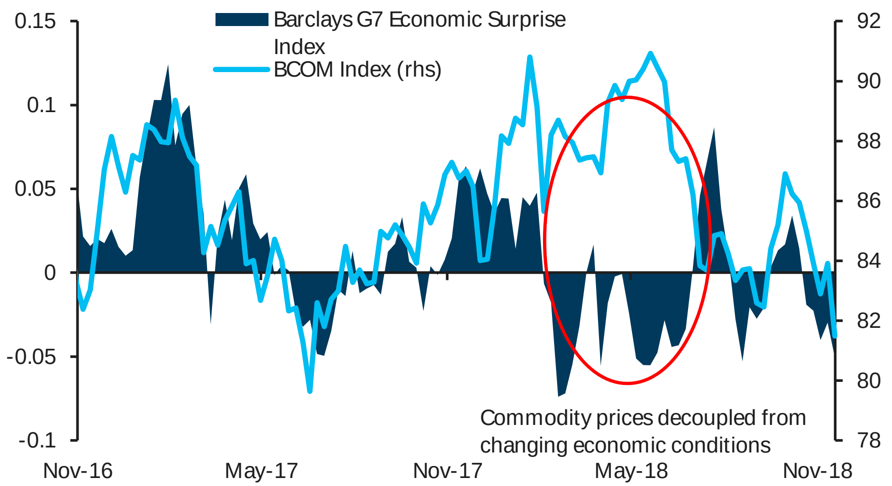


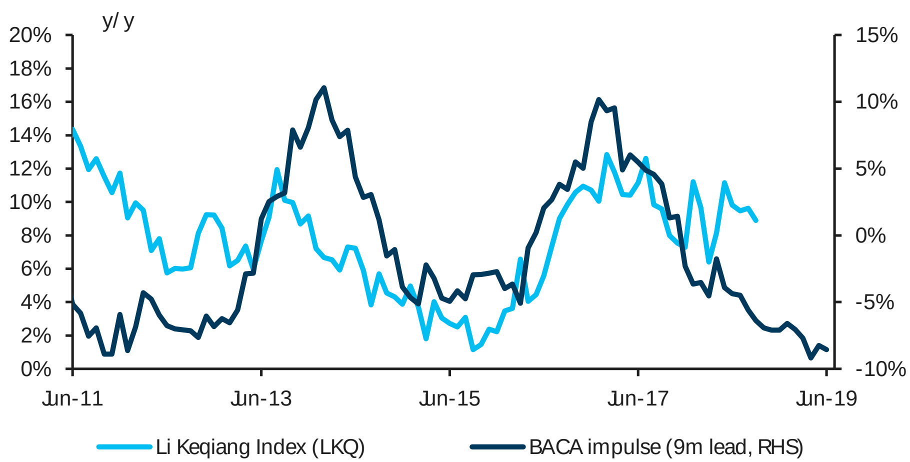
Source: IEA, ACEA, InsideEVs, Barclays Research

APPENDIX

Weaker commodity prices shouldn't have come as a surprise

Commodity prices usually track economic surprises…





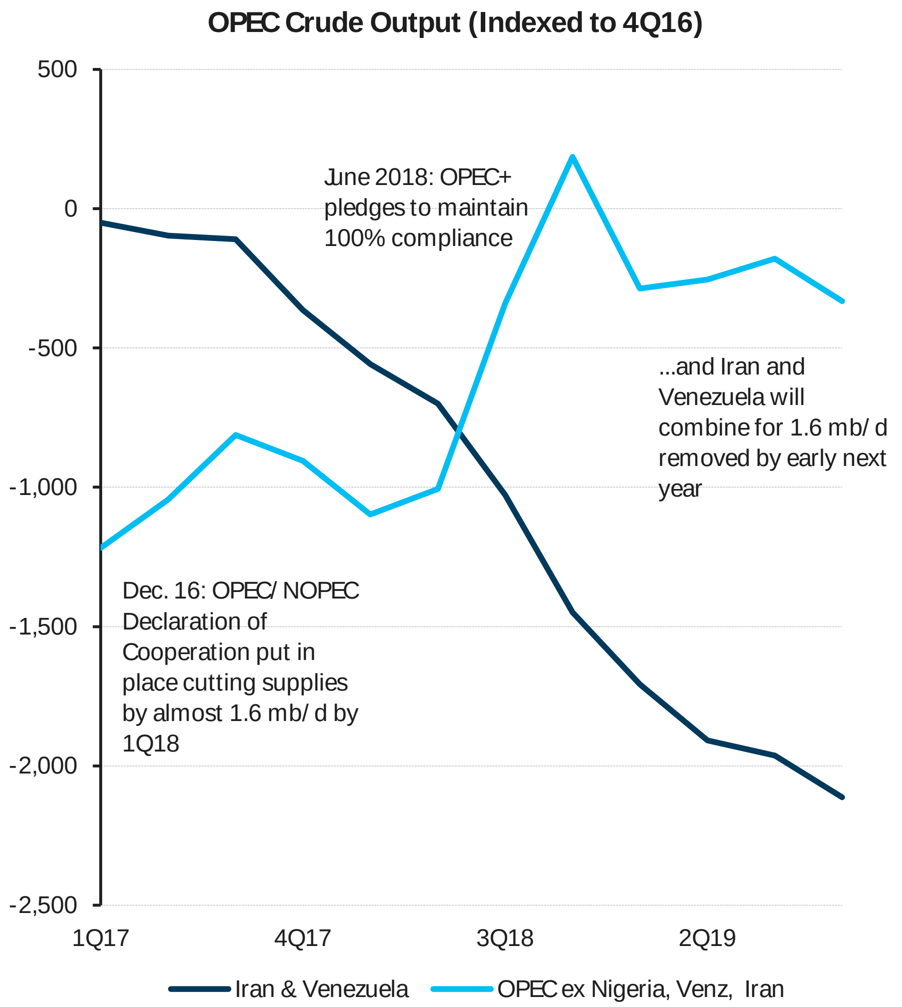
…but commodities shrugged off slowing economic conditions in H1

- The recent downward move in commodities has been consistent with the constant flow of economic misses and negative economic news since mid-summer.
- With hindsight, the outperformance in H1 shown at left stands in stark contrast to economic growth expectations.
- Most of that outperformance in commodities was due to idiosyncratic increases in oil and base metals markets, such as supply disruptions or expectations of them, while performance of precious metals and livestock languished.
- Now that prices for base metals and oil prices have 'rebased' consistent with these economic indicators, the question is whether commodities performance will converge with each other or diverge?
- Some of the answer depends on China. The Barclays BACA Impulse measure of Chinese credit growth has weakened sharply this year. It is a good leading indicator of Chinese economic activity as measured by the Li Keqiang Index and points to weakness ahead.

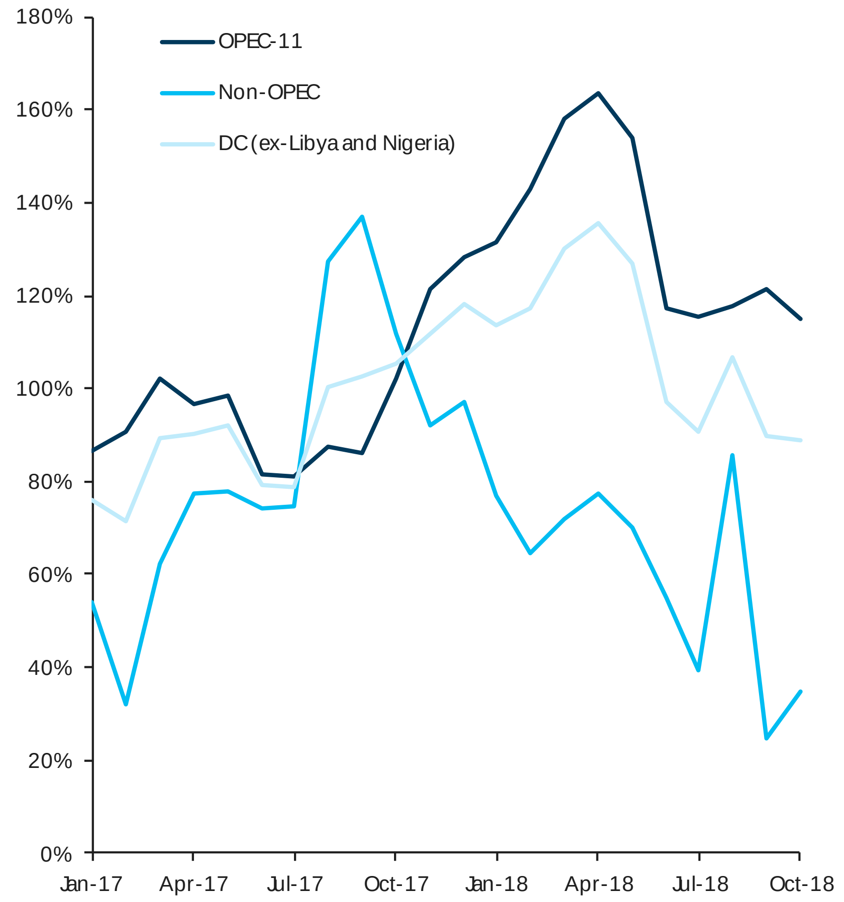
Credit (BACA) impulse is calculated as the difference between the change in credit (BACA) stock between month t and month t-12 (scaled by nominal GDP over period t-12 to t), and the change in credit stock between month t-12 and month t-24 (scaled by nominal GDP over period t-24 to t-12).
The Li Keqiang Index combines credit growth, electricity production and rail freight to measure economic activity.

OPEC supply offset the decline from Iran/Venez.

Declines from Iran and Venezuela have been offset by other supply



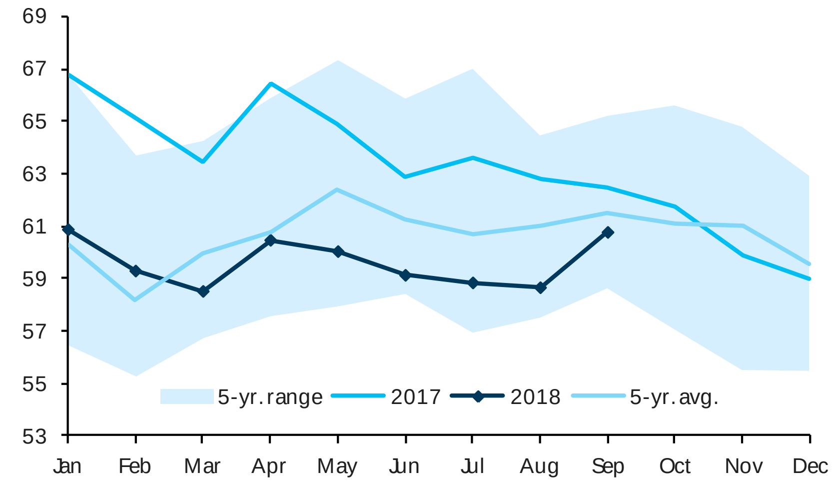
Non-OPEC's compliance levels have languished while OPEC-11 outperforms



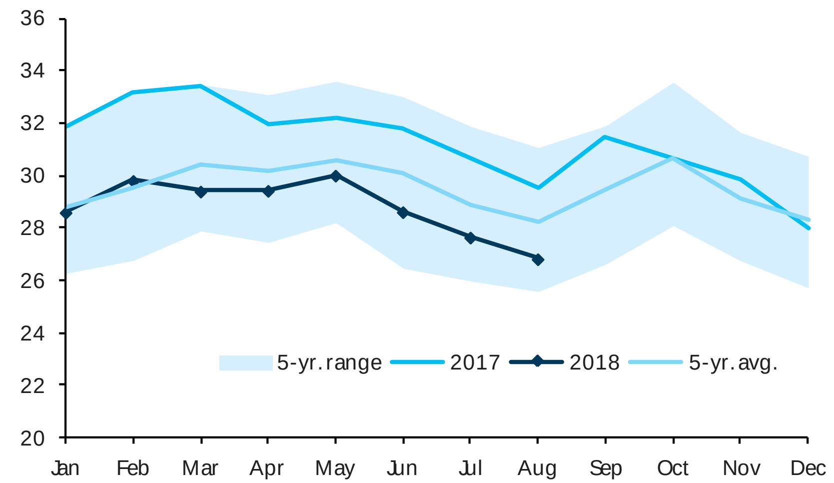
Source:: MEES, IEA, Barclays Research

But stocks and spare capacity levels pointing to a slightly looser market, not an impending glut…

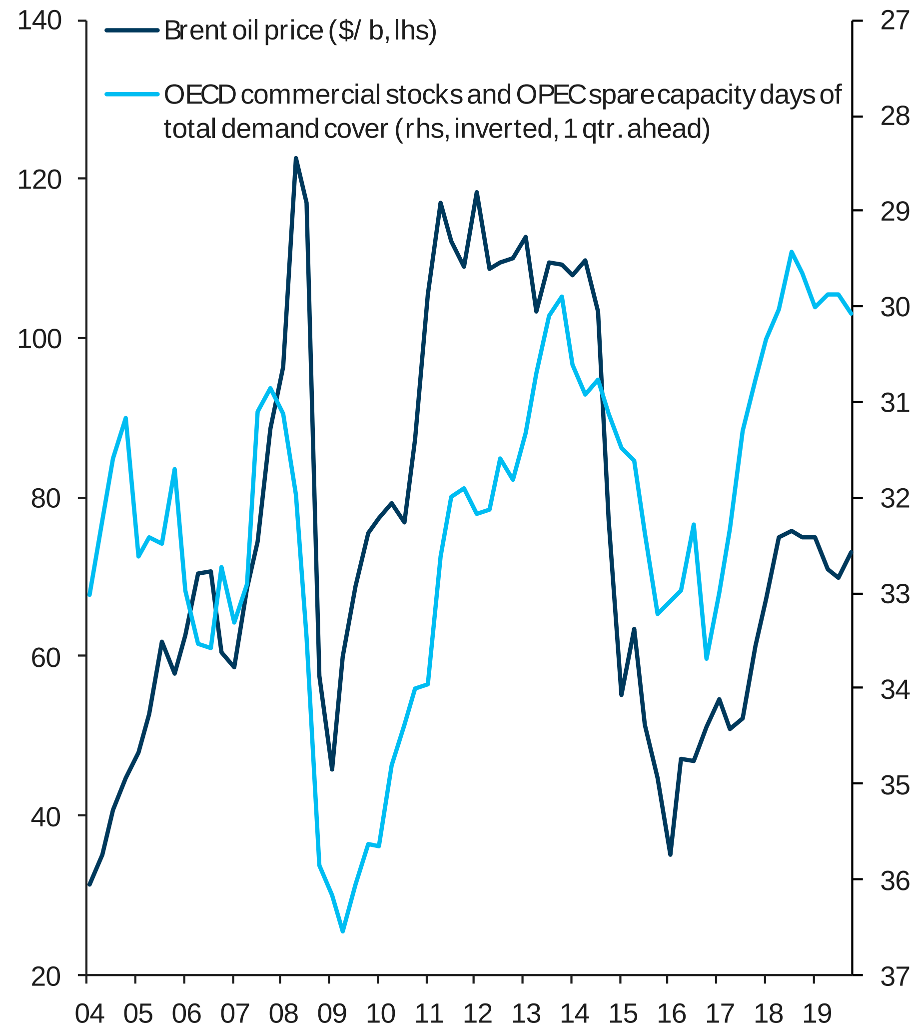
OECD total oil stocks (days demand cover) stood below the 5-yr. avg. in September



OECD crude oil stock in terms of days of run cover stood below the 5-yr. avg. in August



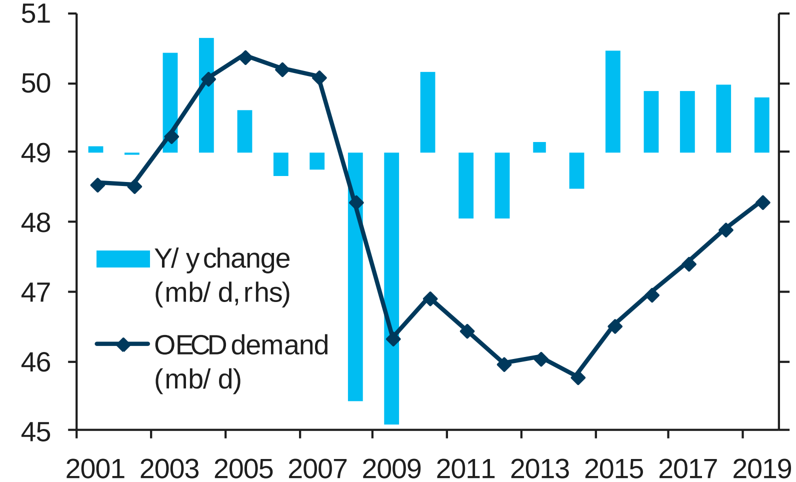
Our critical price indicator is expected to buck the recent trend; not free-fall like in 2014



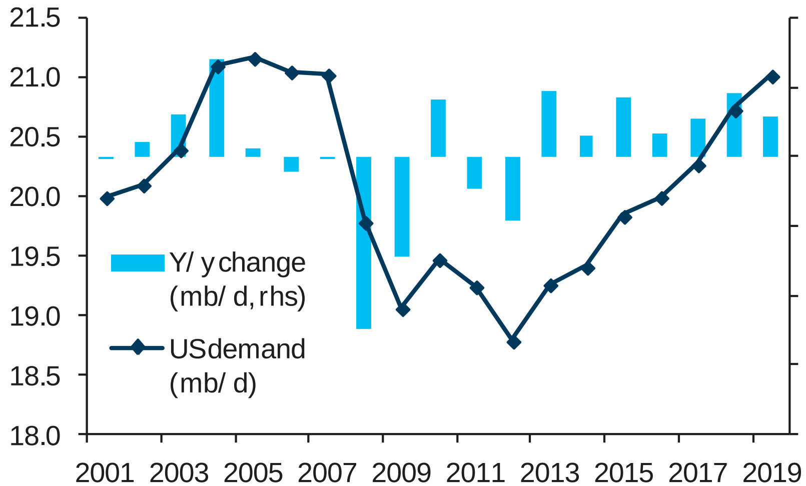
Source for all charts: IEA, EIA, Barclays Research

…Additionally, demand growth is slowing not plummeting, and flat prices will support consumption growth

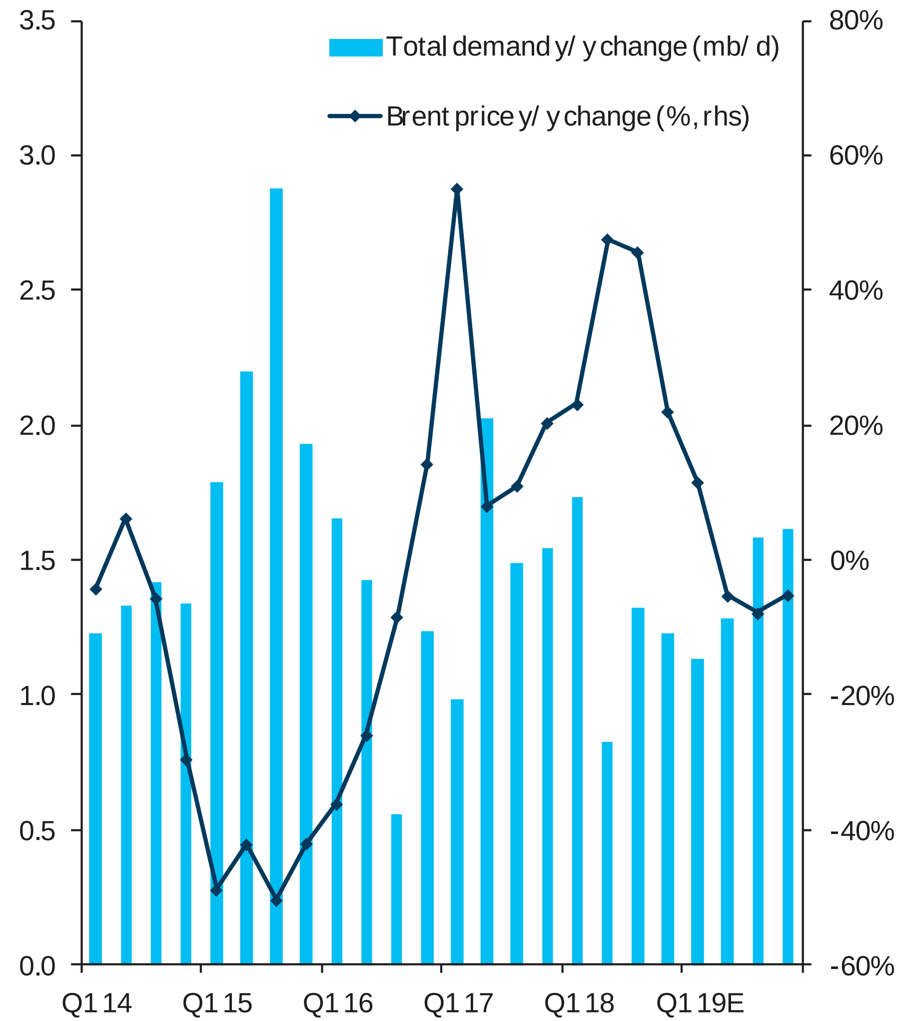
OECD demand growth to slow down but still remain robust at around 0.4 mb/d next year



US is expected to drive most of the OECD demand growth on robust economic outlook



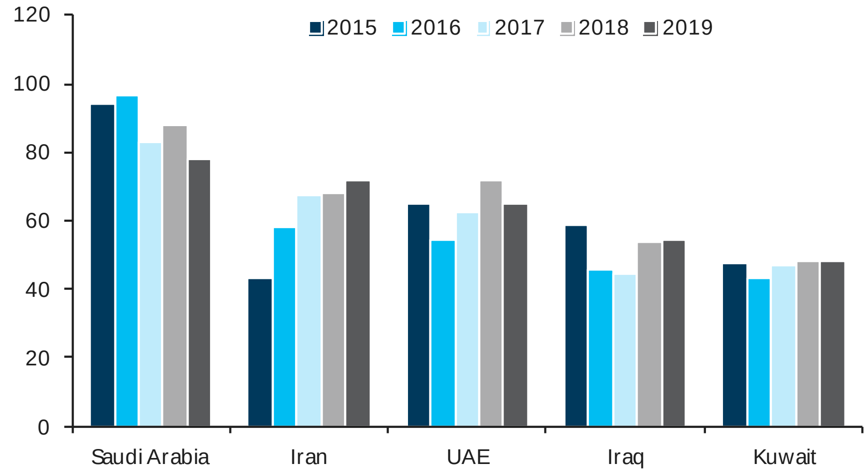
Flat prices will also help boost demand, especially from non-OECD countries



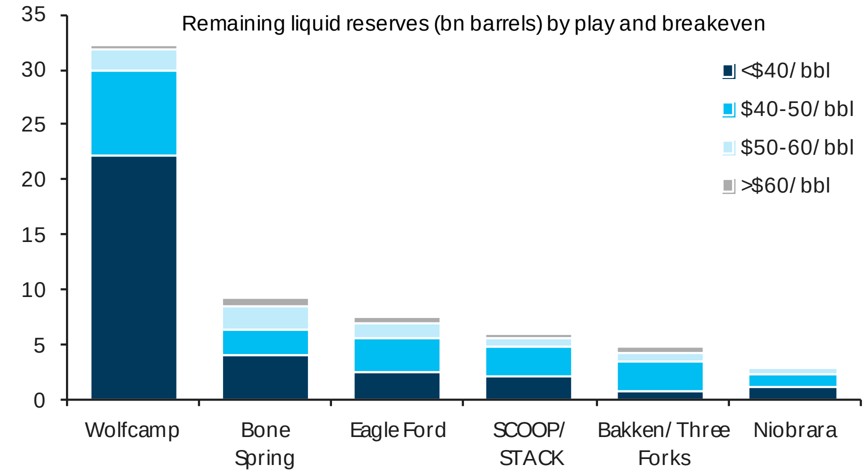
Source for all charts: IEA, EIA, Barclays Research

On the supply side, a severe downturn in prices would likely constrain growth more compared to the previous cycle

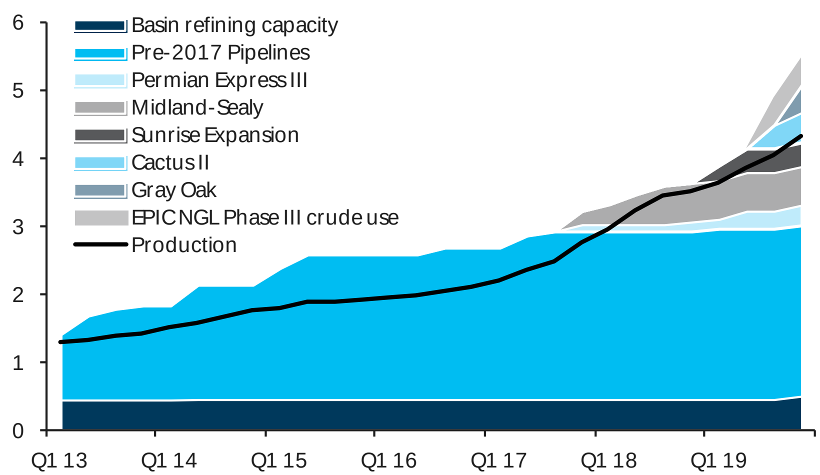
Key OPEC producers' fiscal breakeven is still above $50/b



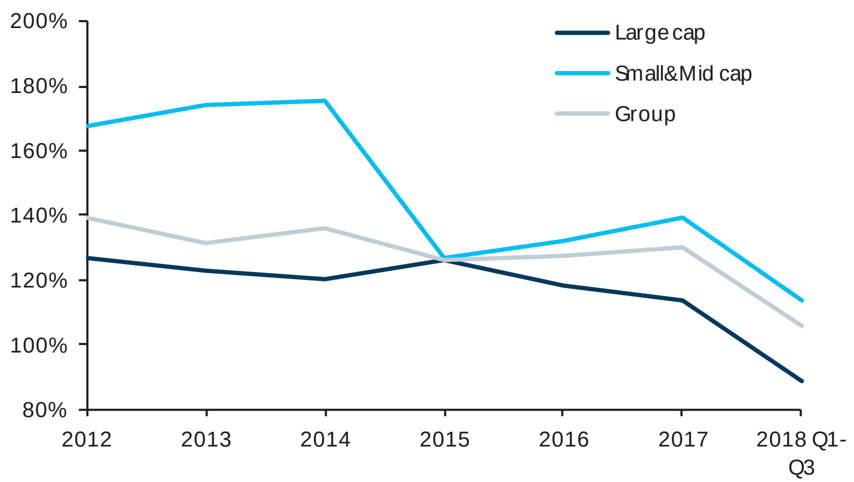
And in the US, most of the "low-cost" acreage lies in the Permian region…



…where takeaway capacity constraints are expected to weigh on growth next year



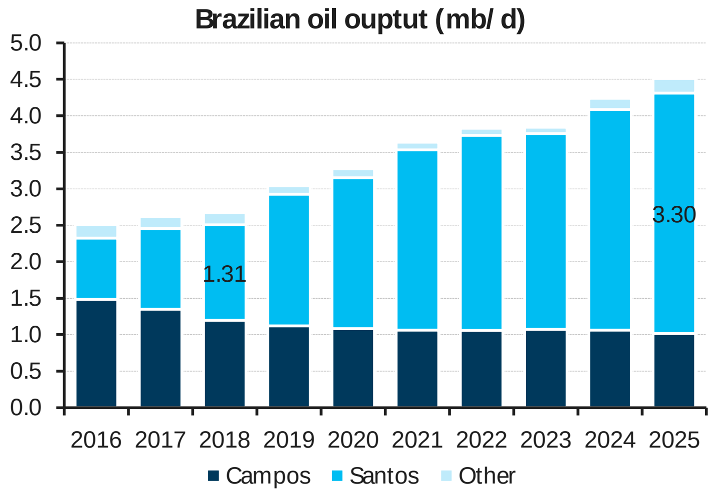
Capital discipline would prevent operators from aggressively pursuing volume growth



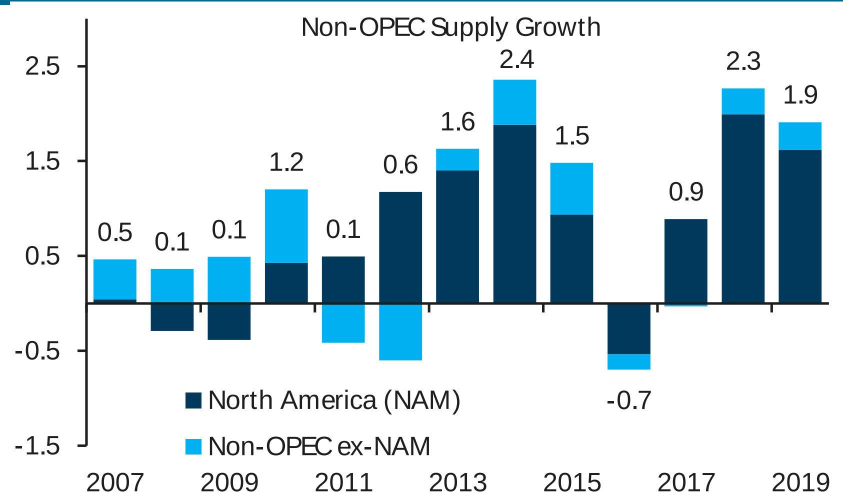
Source for all charts: IMF, Wood Mackenzie, IEA, EIA, Company reports, Barclays Research

Supply growth outside OPEC remains strong

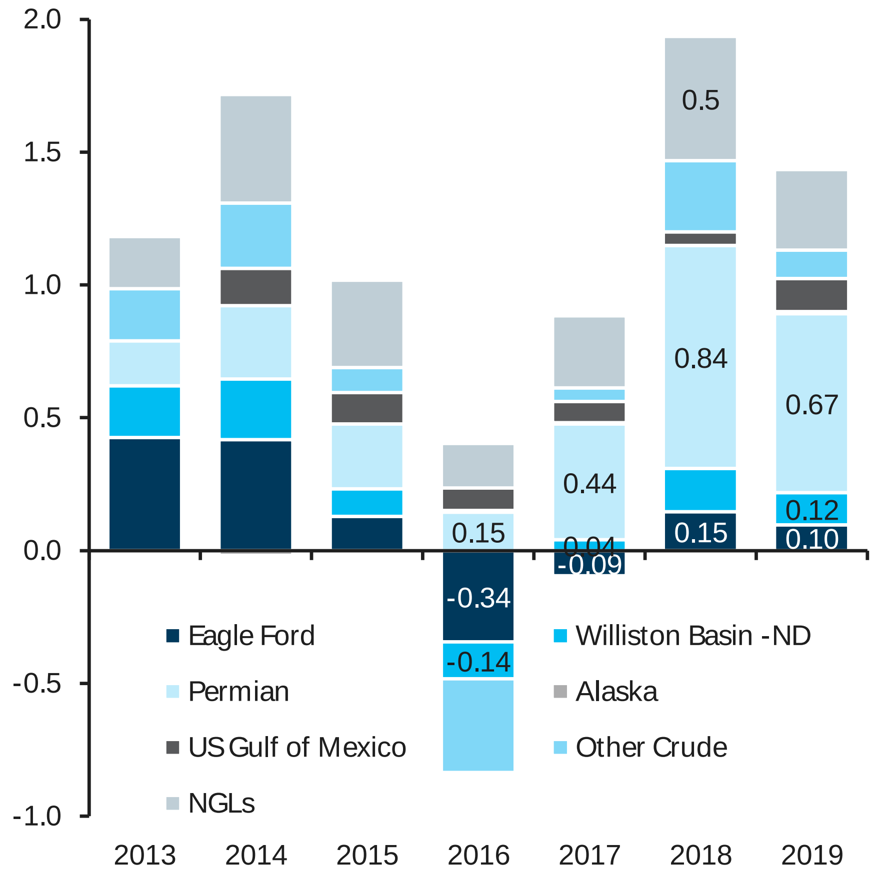
Despite Petrobras's problems and retail price intervention, production still set to grow strongly



Non-OPEC supply growth exceeding demand



US tight oil production is the main source of growth



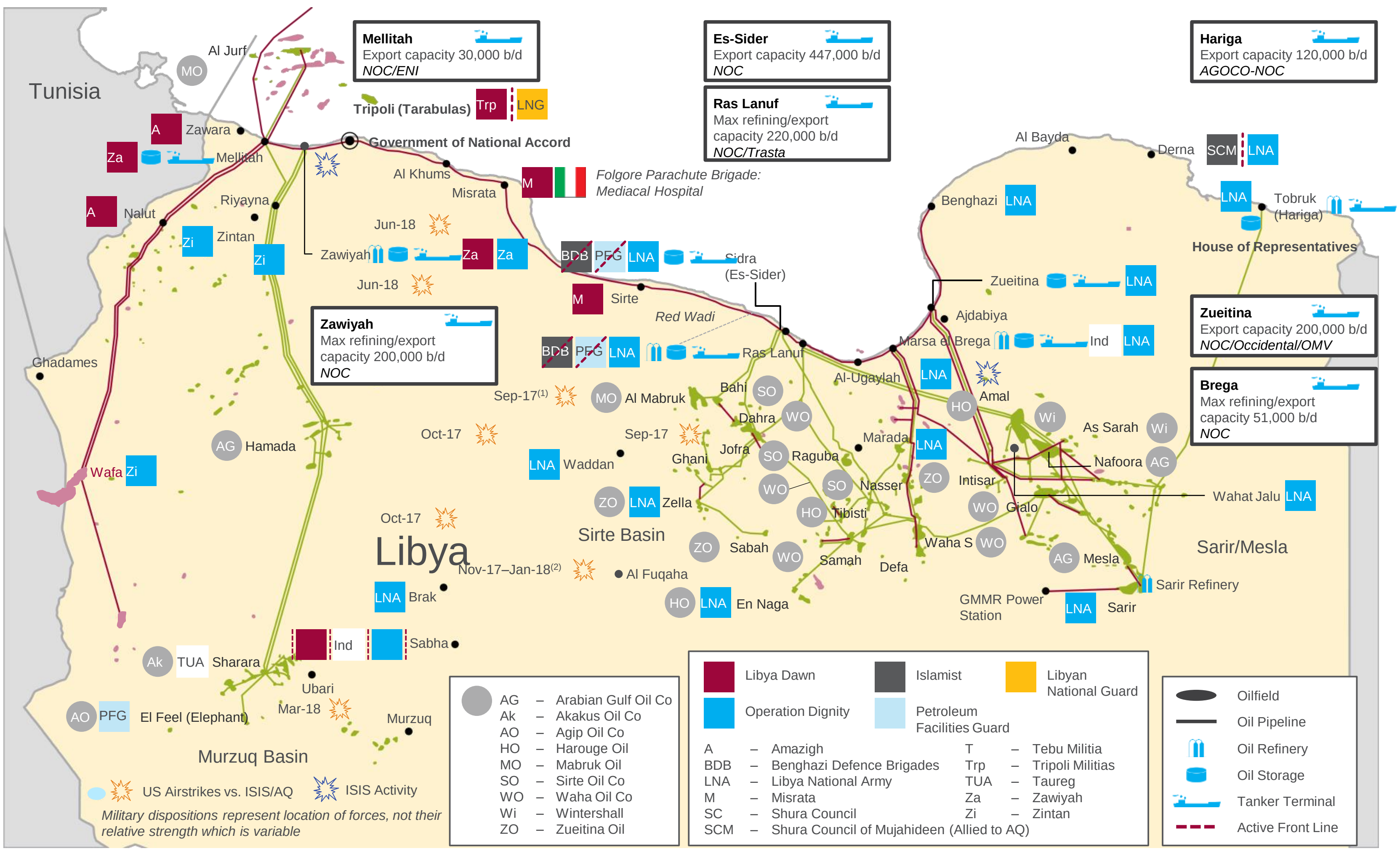
Source for all charts: EIA, IEA Bloomberg, Barclays Research

BARCLAYS

Restricted - External

Libyan oil supply still subject to disruption

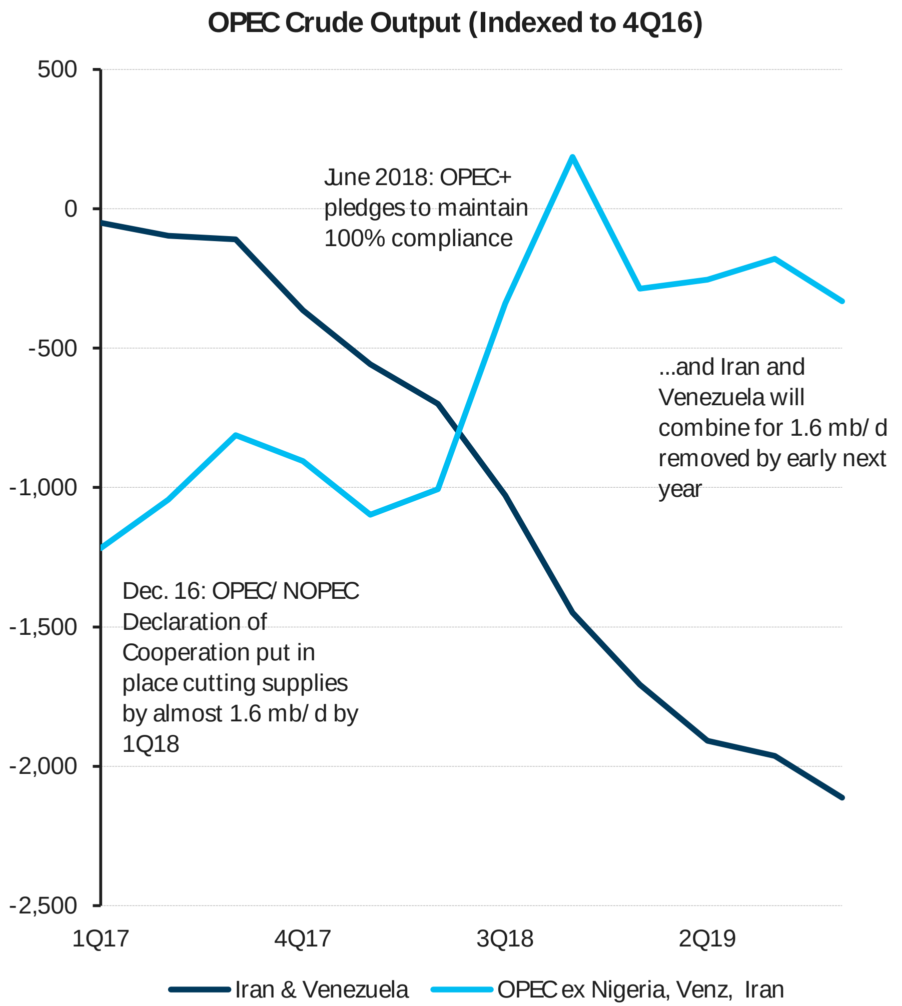
Despite resolution and return of some supplies, Libya's output can swing by at least 500 kb/d



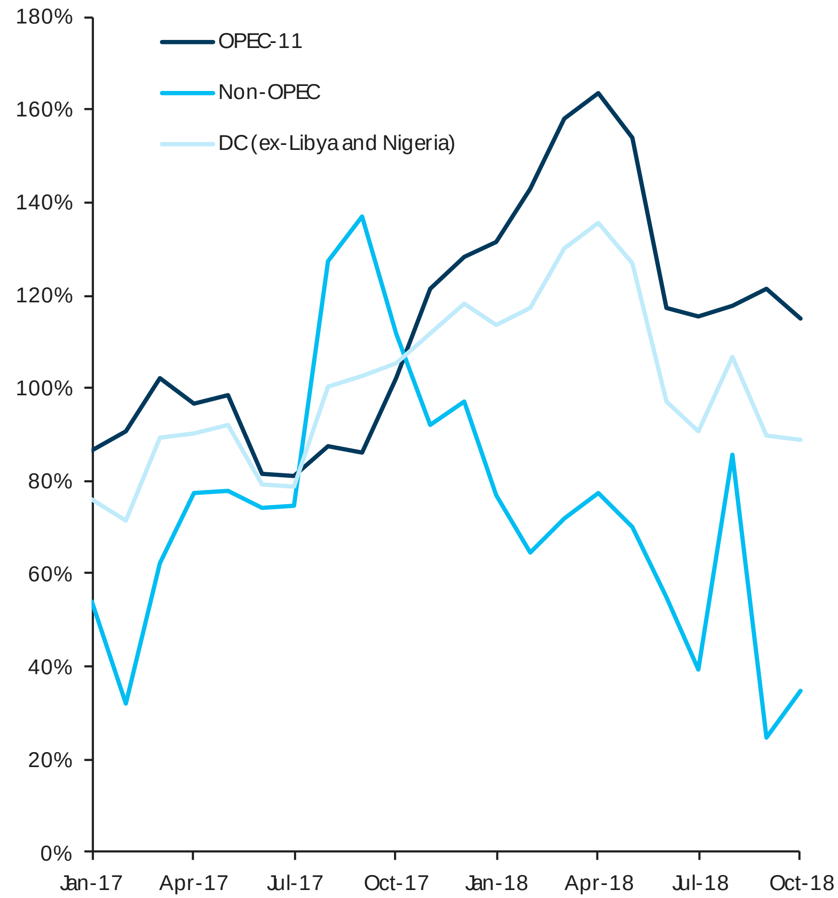
Source: IEA, EIA, Barclays Research

OPEC supply offset the decline from Iran/Venez.

Declines from Iran and Venezuela have been offset by other supply



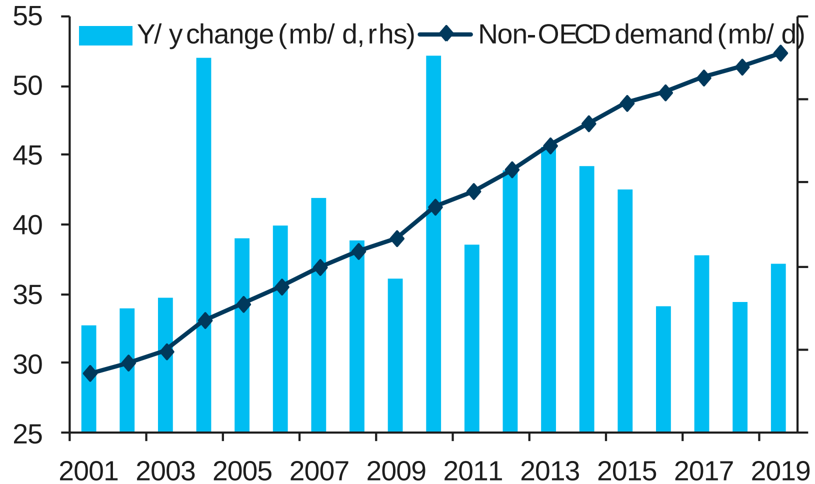
Non-OPEC's compliance levels have languished while OPEC-11 outperforms



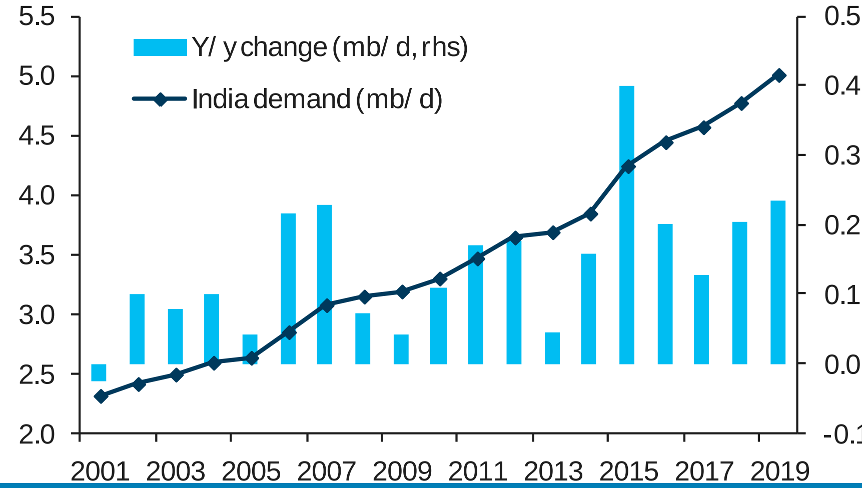
Source:: MEES, IEA, Barclays Research

Non-OECD demand growth to pick up pace despite slower growth from China

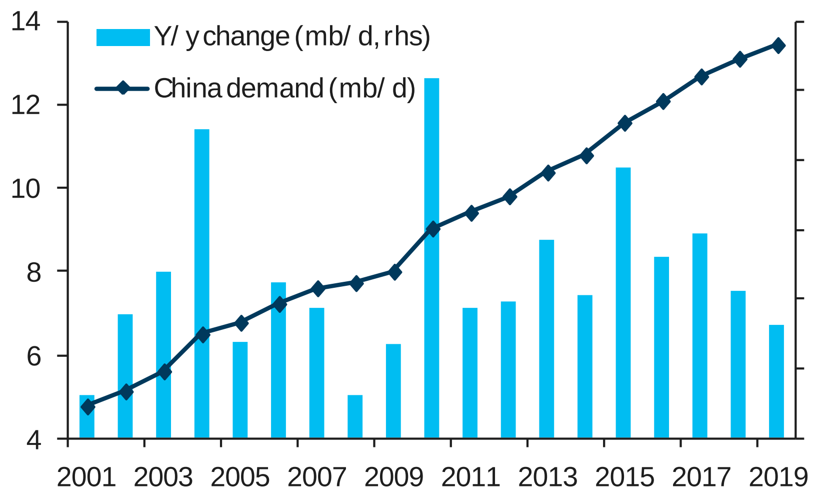
Non-OECD demand to grow by 1 mb/d next year despite slower growth from China



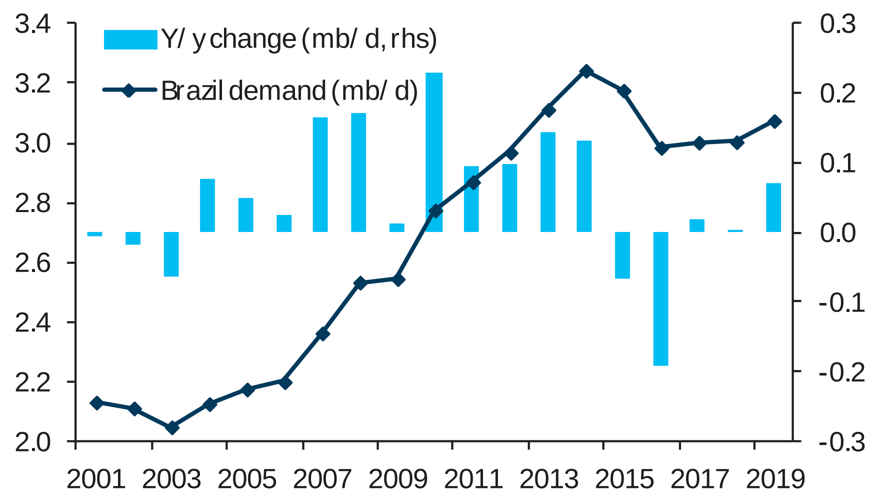
However, Indian demand is expected to grow faster on lower prices and robust economy



China's oil demand is expected to grow by just 0.3 mb/d, the slowest pace since 2009



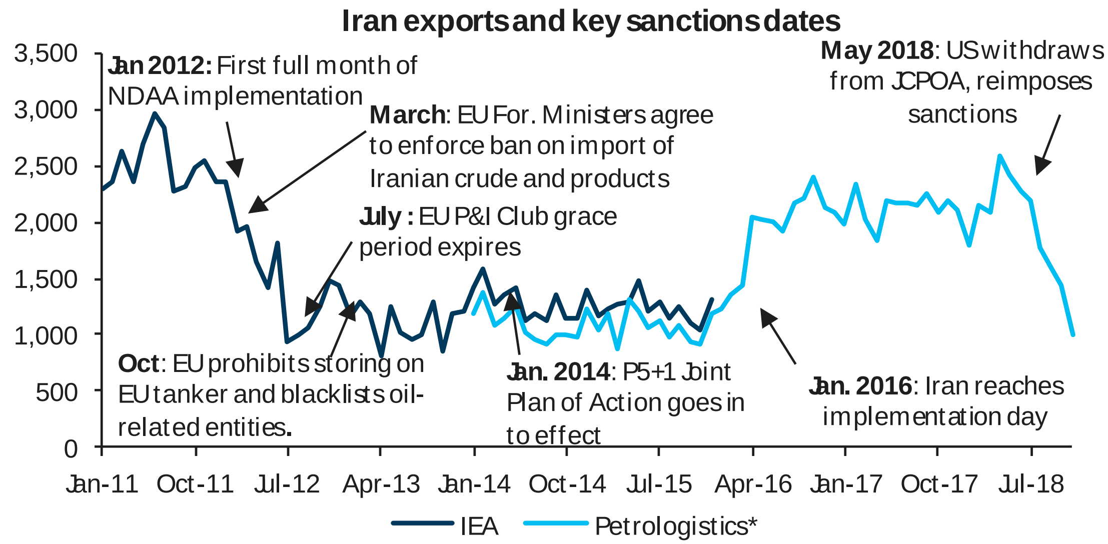
Brazil demand is also expected to grow materially as the economy picks up pace



Source for all charts: IEA, EIA, Barclays Research

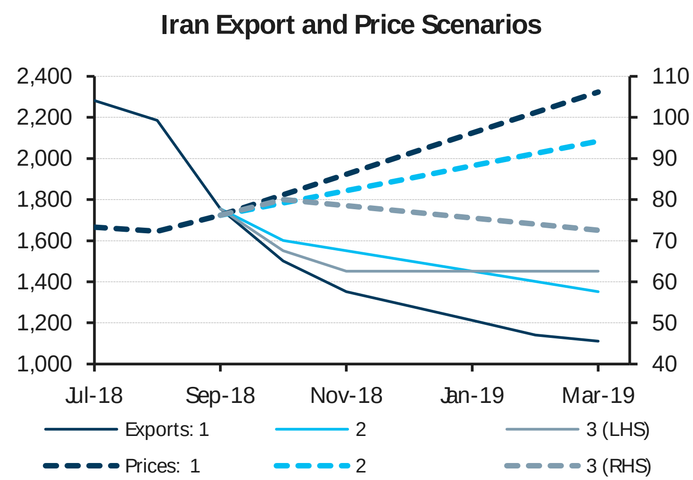
Iran's exports have fallen 1 mb/d; we expect a further decline

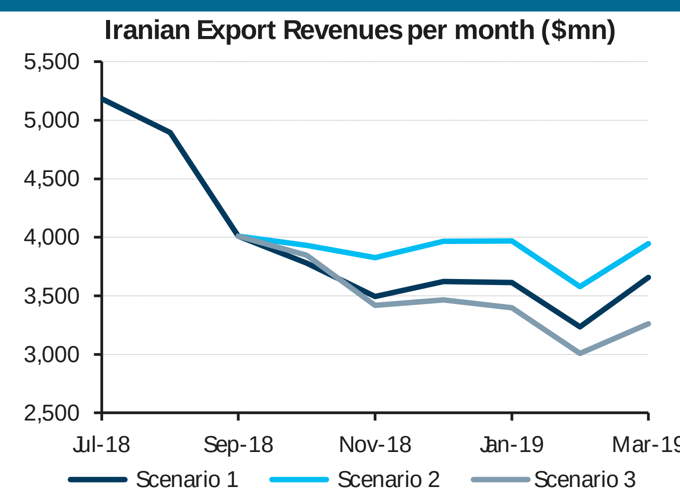
Exports reached a record level of almost 2.6 mb/d in April and have since fallen to 1.0 mb/d



Source: IEA, Petro-logistics (exports), Barclays Research

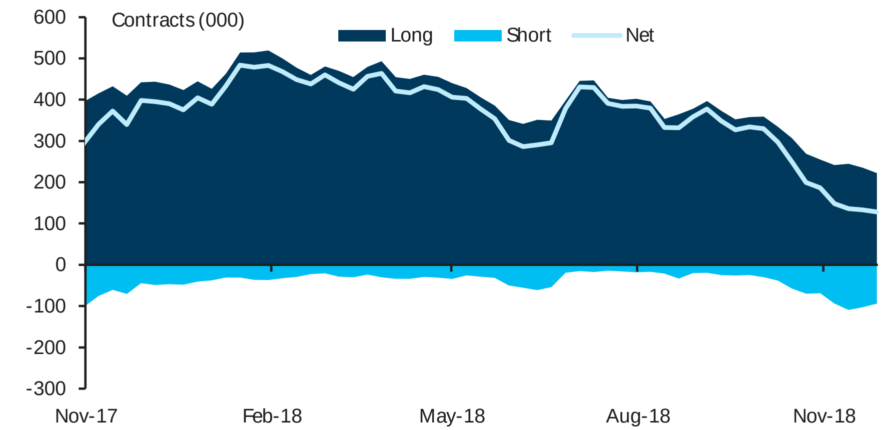
Cumulative revenue loss is the greatest if Iran is able to export 1.4 mb/d and prices fall to $70





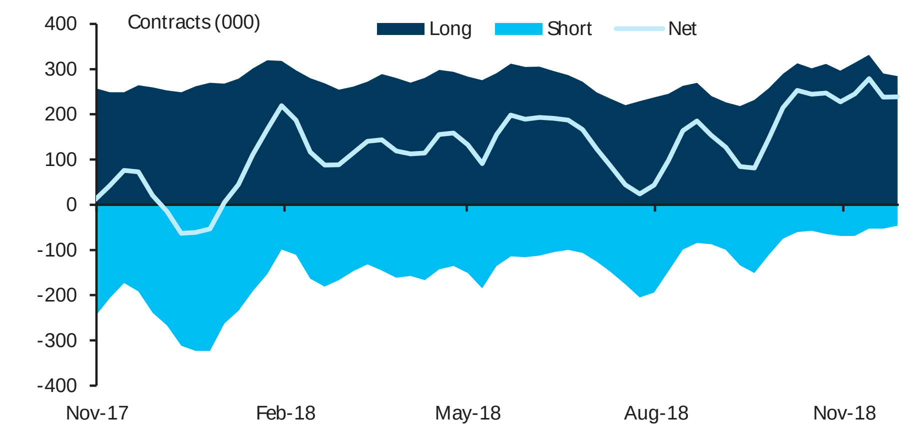
Investor positioning has a significant long bias, with the exception of copper

WTI



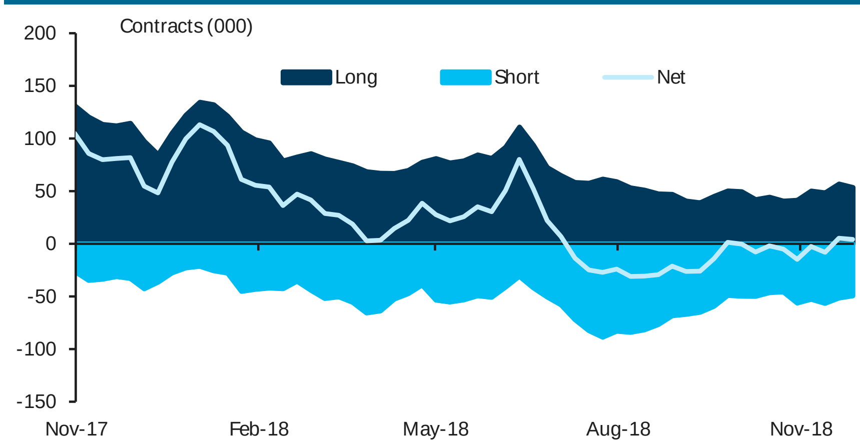
Source: Bloomberg, Barclays Research

Natural Gas



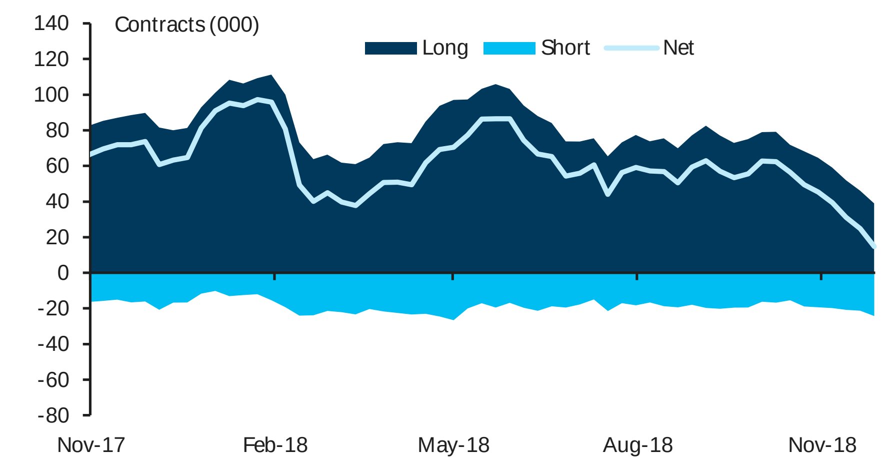
Source: Bloomberg, Barclays Research

Copper



Source: Bloomberg, Barclays Research

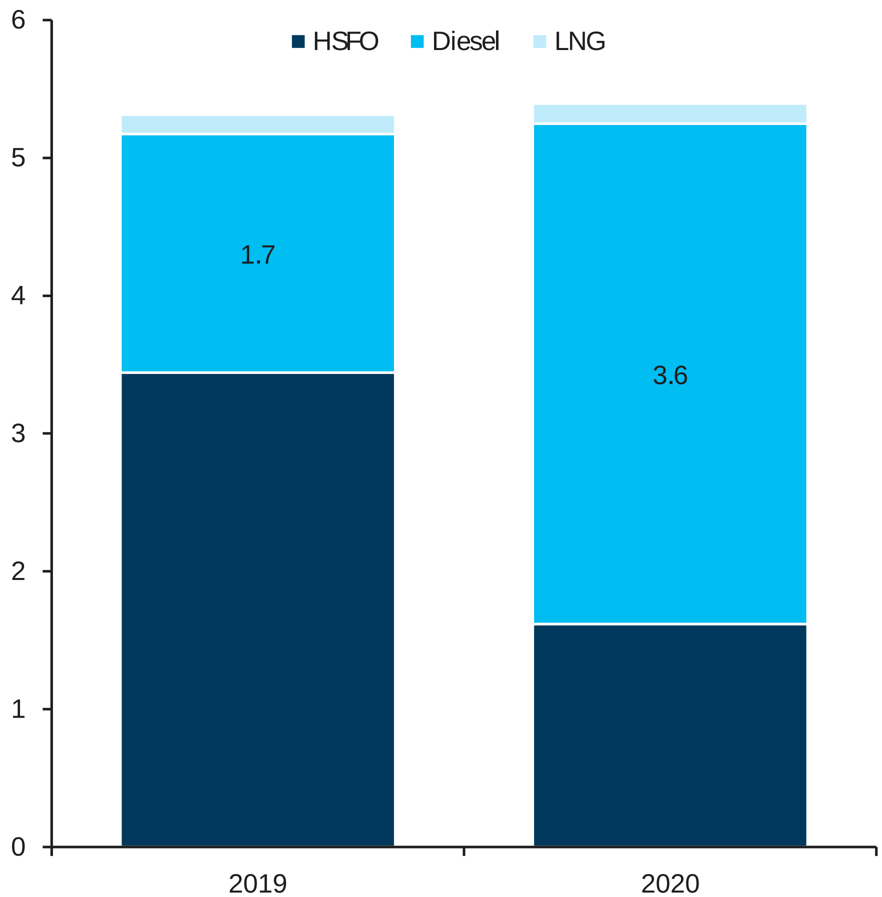
Ultra Low Sulphur Diesel



Source: Bloomberg, Barclays Research

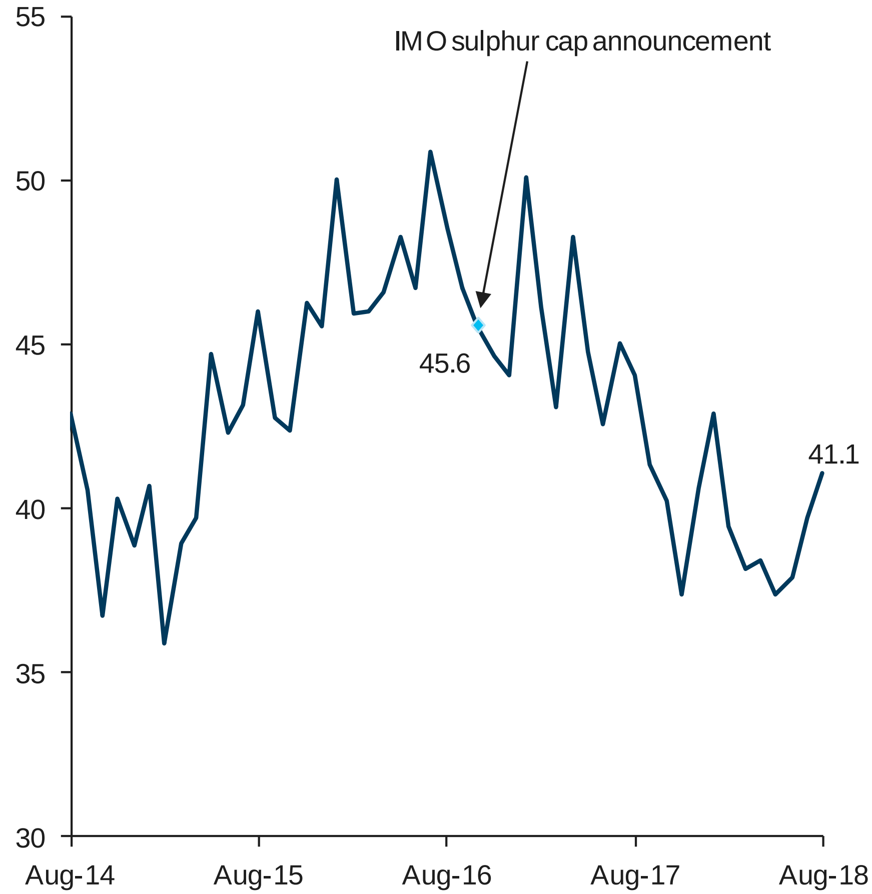
IMO sulphur cap revision to boost diesel demand by almost 2mb/d y/y in 2020

We expect diesel to replace 1.9 mb/d of HSFO used in marine bunkers in 2020



Source: Shell, Barclays Research

This would boost diesel demand but distillates market may be loose



Source: IEA, Barclays Research

The implementation of this regulation would significantly disturb the balance in global petroleum fuel markets in 2020

- Residual fuel oil prices likely to drop significantly. Extent depends on how quickly and at what price levels displaced fuel is absorbed in power generation and industrial heating.
- Assuming that simple hydroskimming refineries in the North-West Europe are just profitable to meet incremental demand, gasoline and diesel prices in the region could move higher by as much as 13% and 20%.
- In addition, the sweet-sour crude oil spread could also blow out by $5 to $15 per barrel.

Depending on how much HSFO prices drop, light product cracks and sulphur spreads could blow out materially.

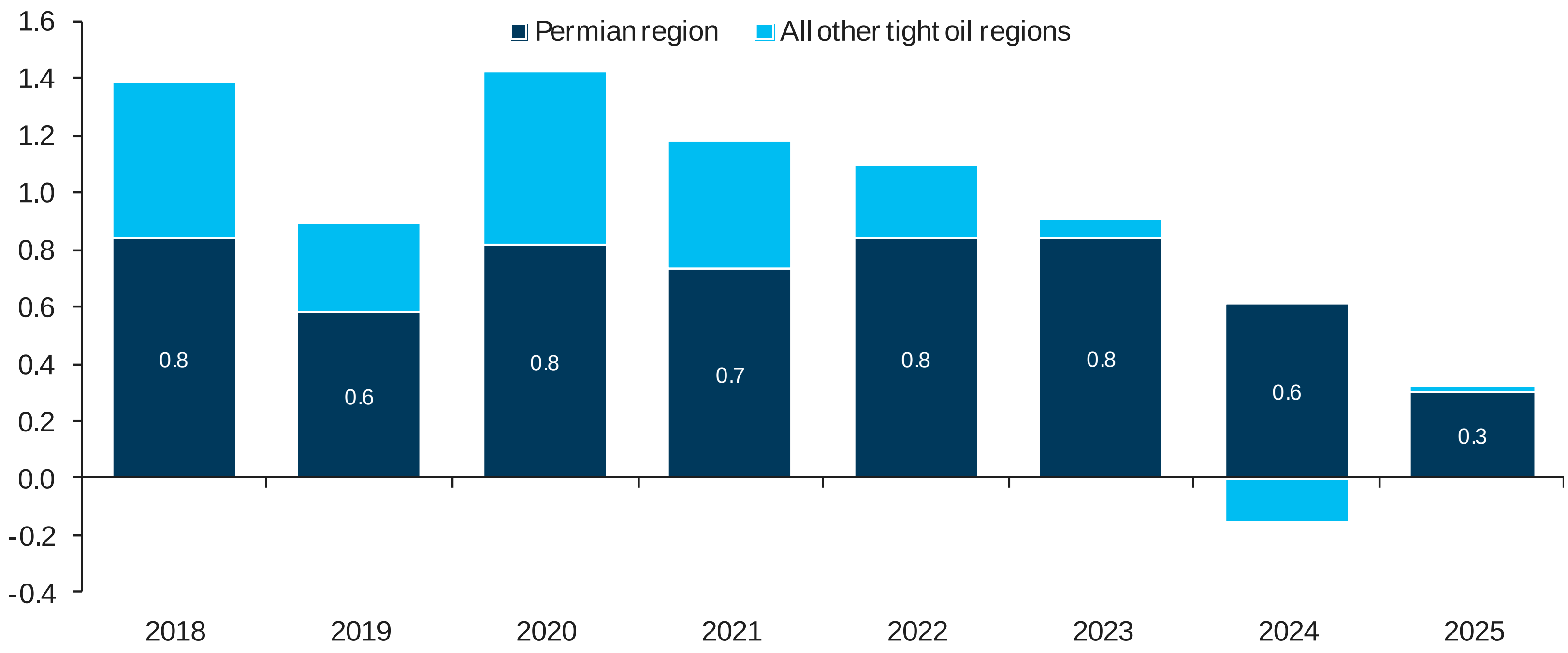
Scenario	HSFO/ Brent ratio	HSFO Price	Diesel Price	Gasoline Price	Diesel-HSFO spread	Sweet-Sour spread
10-year avg.	0.8	60	87	83	27	2.9
10 pp lower HSFO spread	0.7	53	96	88	43	10.6
IMO effect	-0.1	-7	9	5	16	7.8
20 pp lower HSFO spread	0.6	45	100	92	55	14.0
IMO effect	-0.2	-15	13	8	28	11.2
30 pp lower HSFO spread	0.5	38	104	94	67	17.3
IMO effect	-0.3	-23	17	11	40	14.4

Note: Assumes $75/b Brent in 2020. All product prices in $/b for NWE. Sweet-Sour spread in the above example is Bonny light vs Urals. Source: Bloomberg, Barclays Research

We still expect Permian oil output to reach 8 mb/d by 2025

- We expect the share of total horizontal wells brought online in the region by smaller private producers to decline from 31% last year to 20% by 2025 owing primarily to continued acreage consolidation in the region.
- We expect the total plowback ratio in the region to decline from 156% last year to slightly over 90% in 2025.
- We also expect the 12-m cumulative oil output from an average horizontal well in the region to increase to 170kb in 2020-21 and slowly decline to around 130kb by 2025.

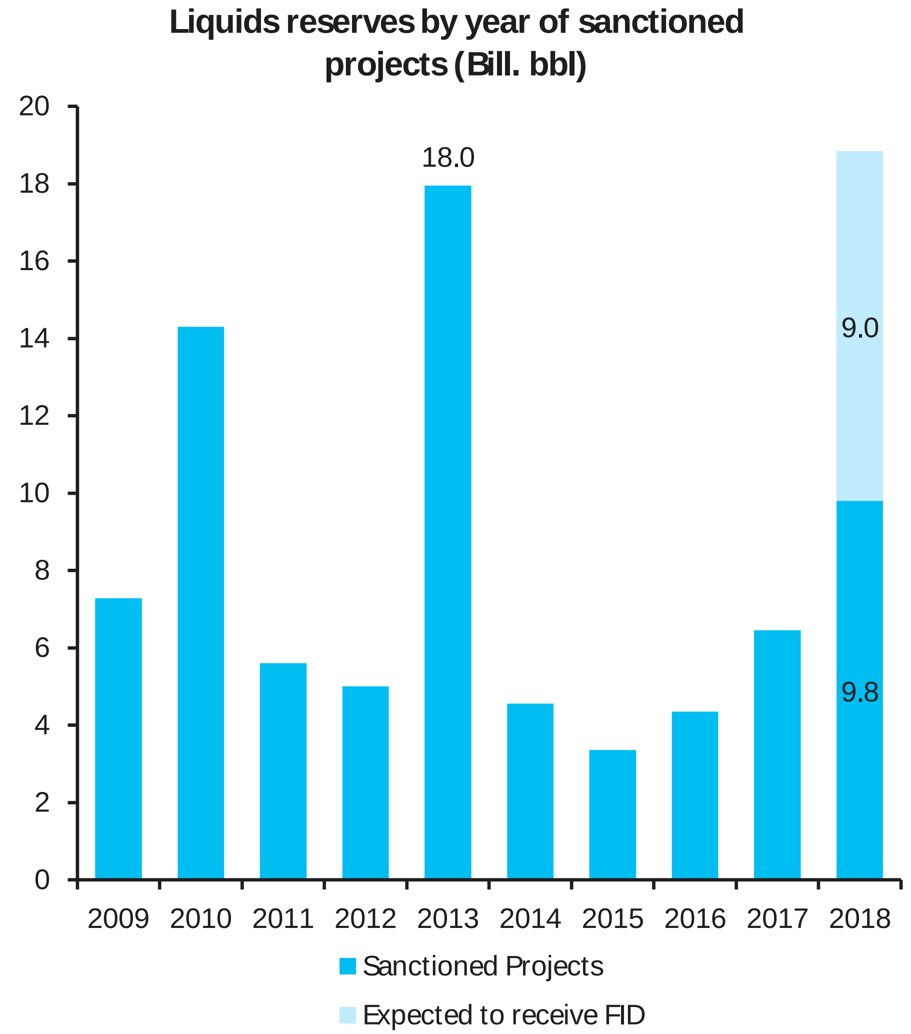
Permian region drives majority of US tight oil output growth over the medium term



Note: Tight oil output growth (y/y) by region (mb/d). Source: Rystad UCube, DrillingInfo, Barclays Research

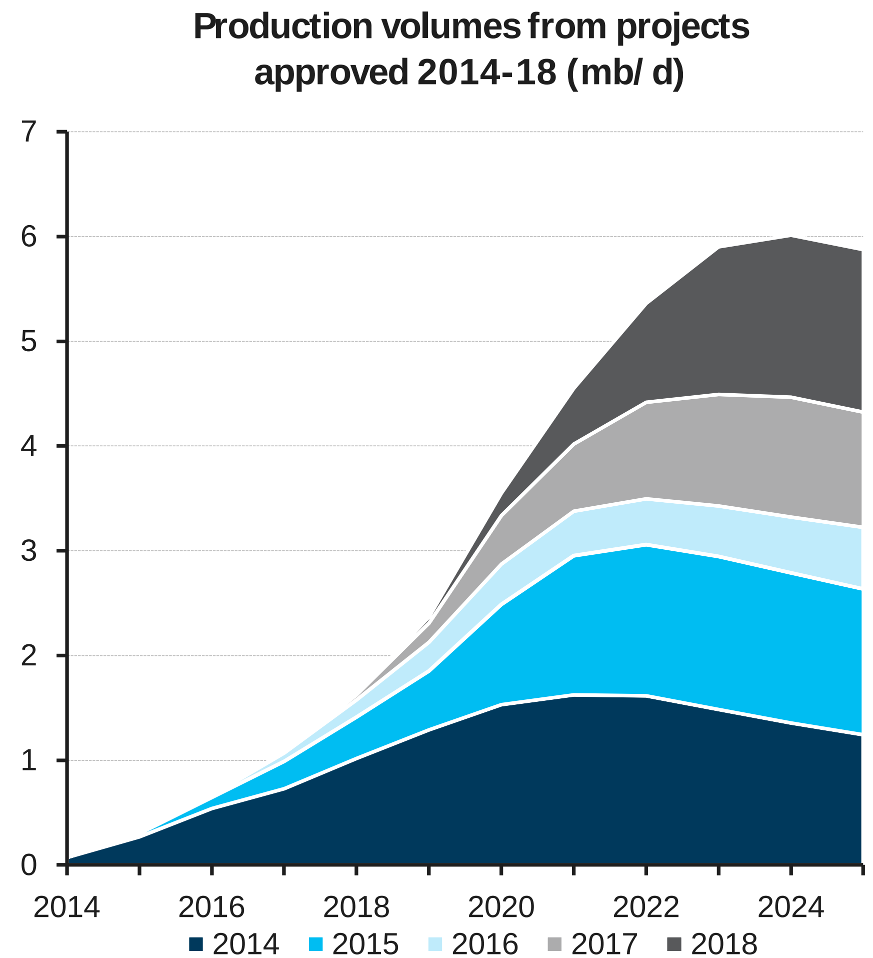
Supply gap thesis is valid but is deferred

2018 oil project FIDs likely to be on par with 2013 when oil was $100/b



Source: Woodmackenzie, Barclays Research

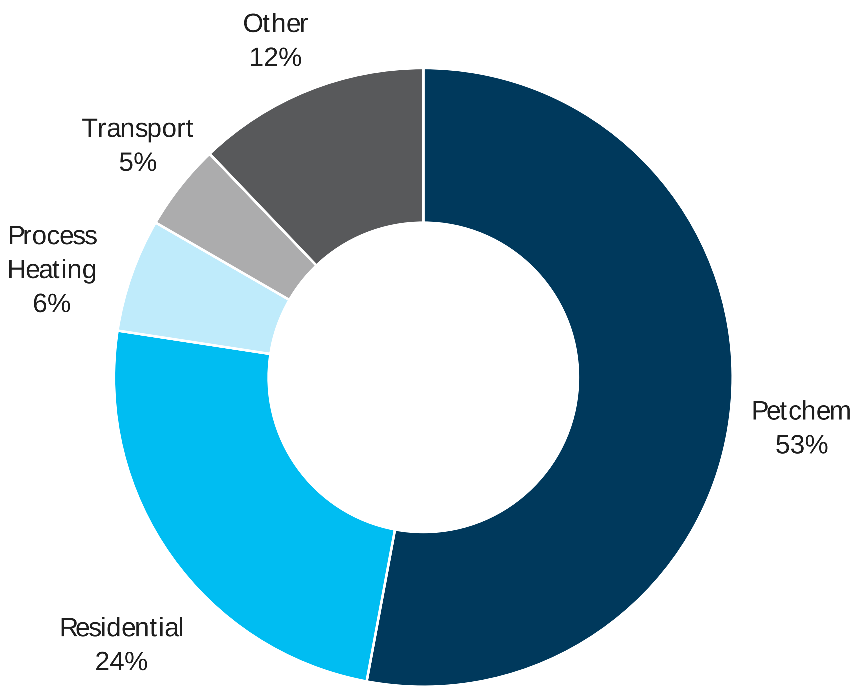
And non-OPEC crude and condensate projects approved over 2014-2018 should add 6 mb/d by 2024



Source: Rystad Energy, Barclays Research

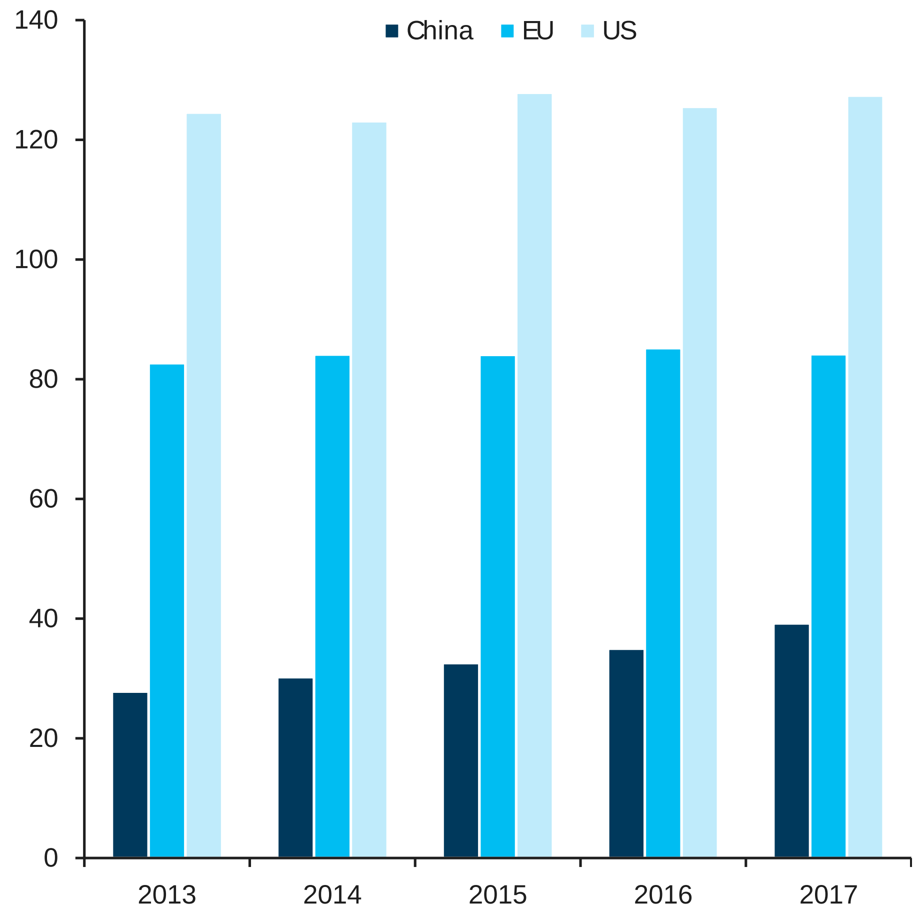
Growing petrochemical demand to drive growth in LPG and naphtha consumption

LPG and naphtha are primarily used as petrochemical feedstock



Source: IEA, Barclays Research

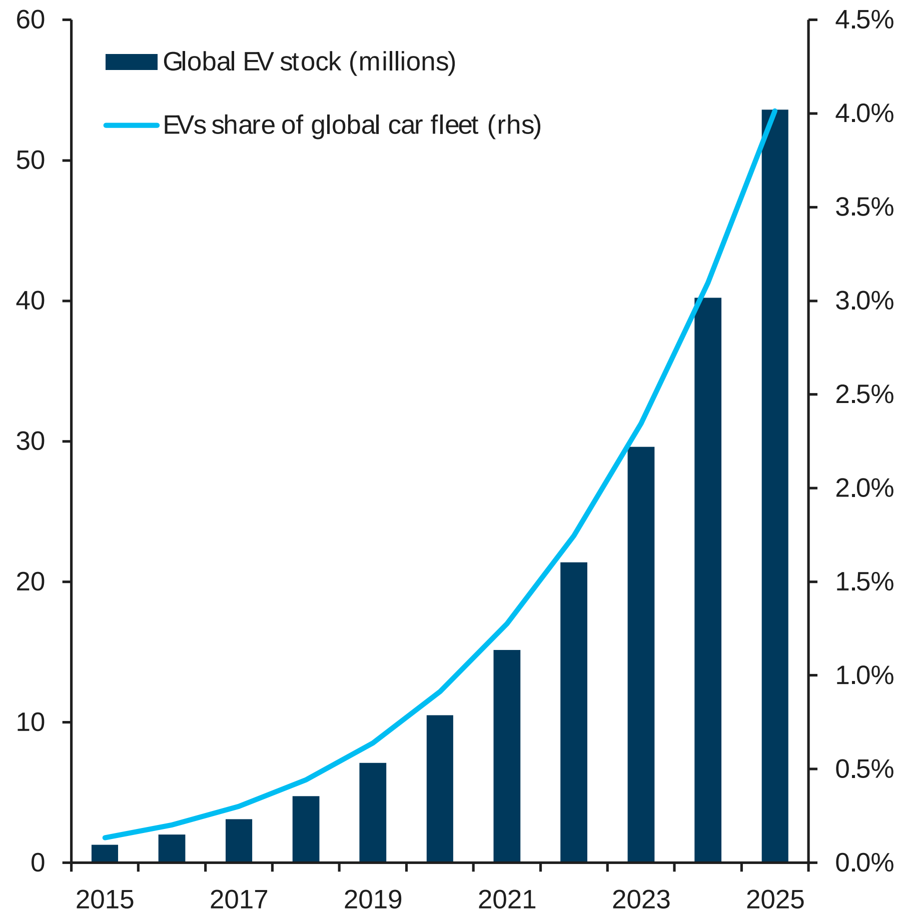
Growing plastics consumption in emerging markets to drive growth in LPG and naphtha



Note: Per-capita ethylene and propylene consumption by country. Source: Nexant, Barclays Research

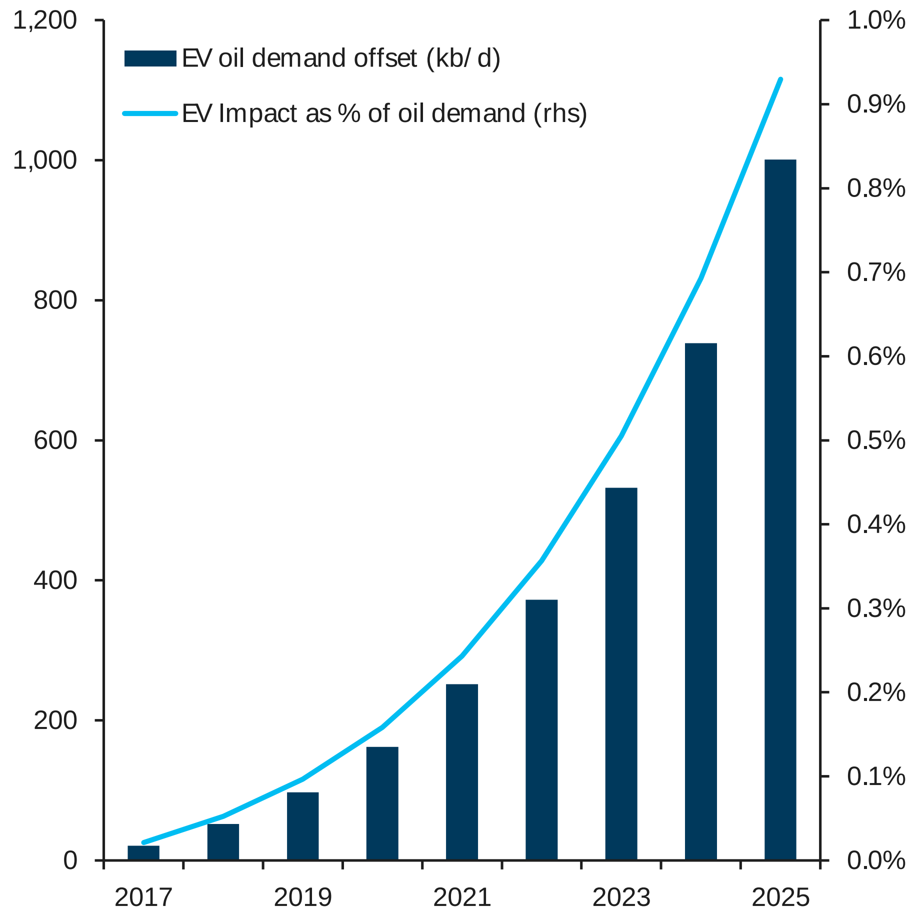
EV adoption rising exponentially

We expect global EV stock to reache 55 mn units by 2025.



Source: IEA, Barclays Research

This offsets more than 1 mb/d of oil demand growth.



Source: Barclays Research

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