



# *Investment in unconventional and conventional, oil and gas production*

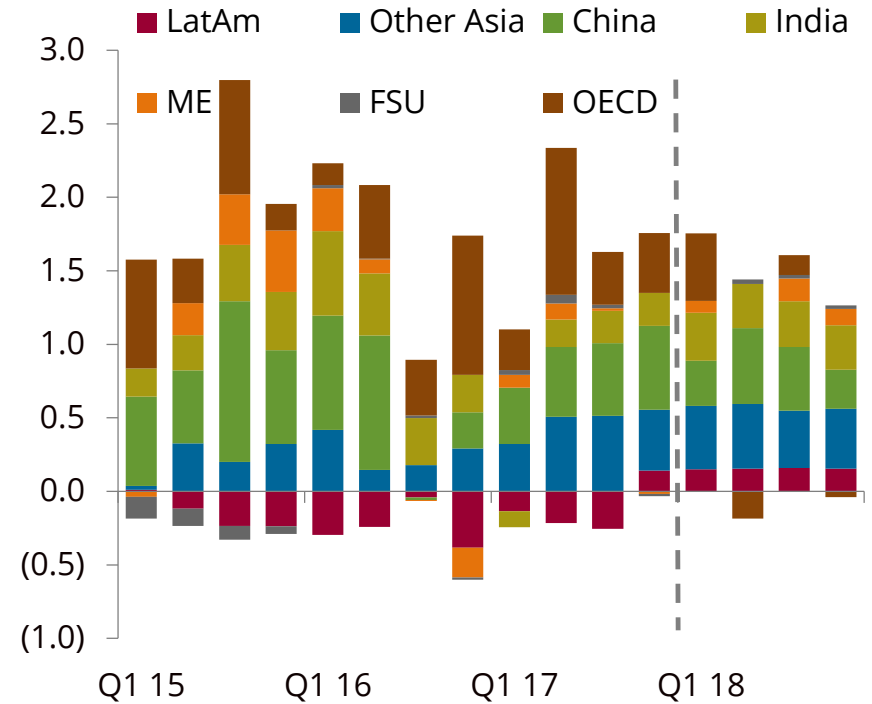
February 2018

# For all the talks of EVs, oil demand is soaring

Global PMI Index



Global oil demand growth by region, y/y change Mb/d



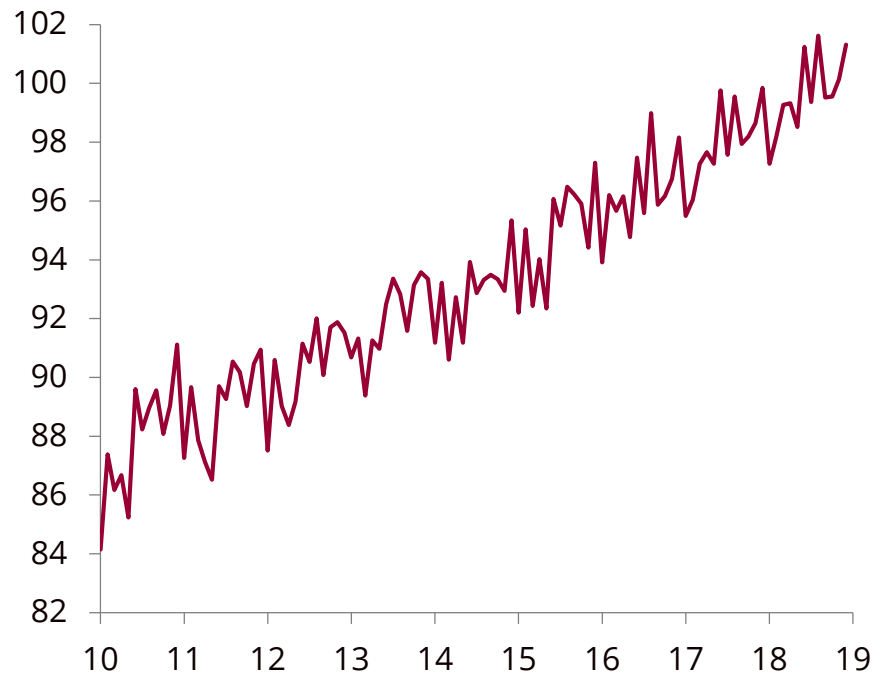
*The global macroeconomic backdrop remains extremely supportive and should be able to absorb higher oil prices*

*We forecast 2018 global oil demand growth at 1.7 mb/d y/y, coming on top of 1.7 mb/d in 2017 and 1.8 mb/d y/y in 2016*

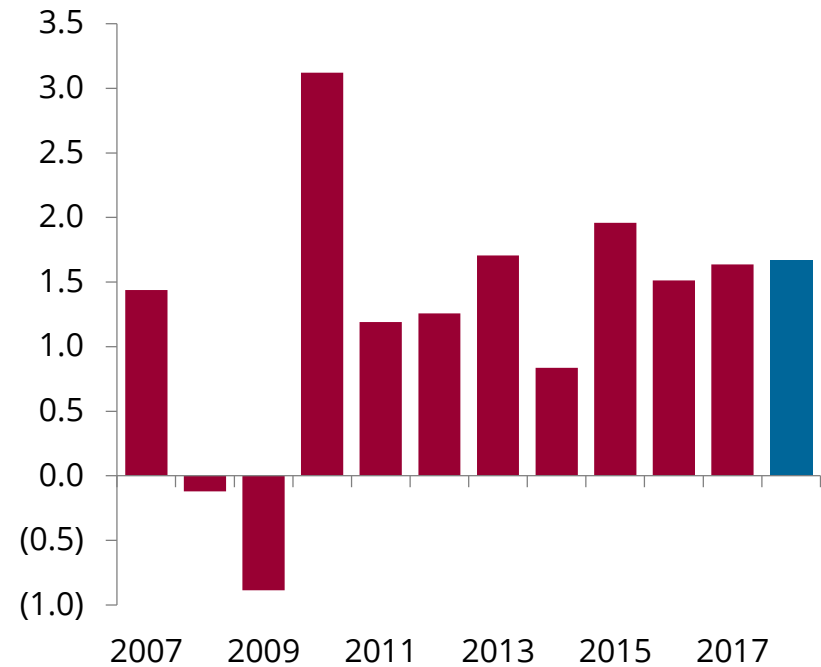
Source: Government agencies, JODI, Bloomberg, Energy Aspects analysis

# We have fast forwarded oil demand by 7-8 years

Global oil demand  
Mb/d



Global oil demand growth by region, y/y change  
Mb/d



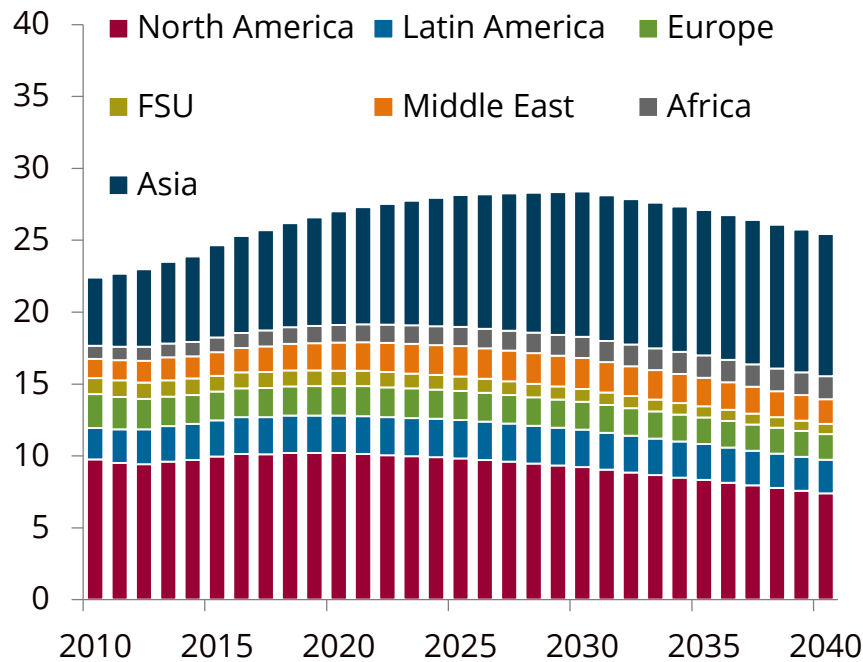
*Consensus expectations were for oil demand to hit 100 mb/d in 2025-2027, yet we hit 100 mb/d end of 2017*

*Since 2015, global oil demand growth has been soaring backed by low prices and a buoyant economy*

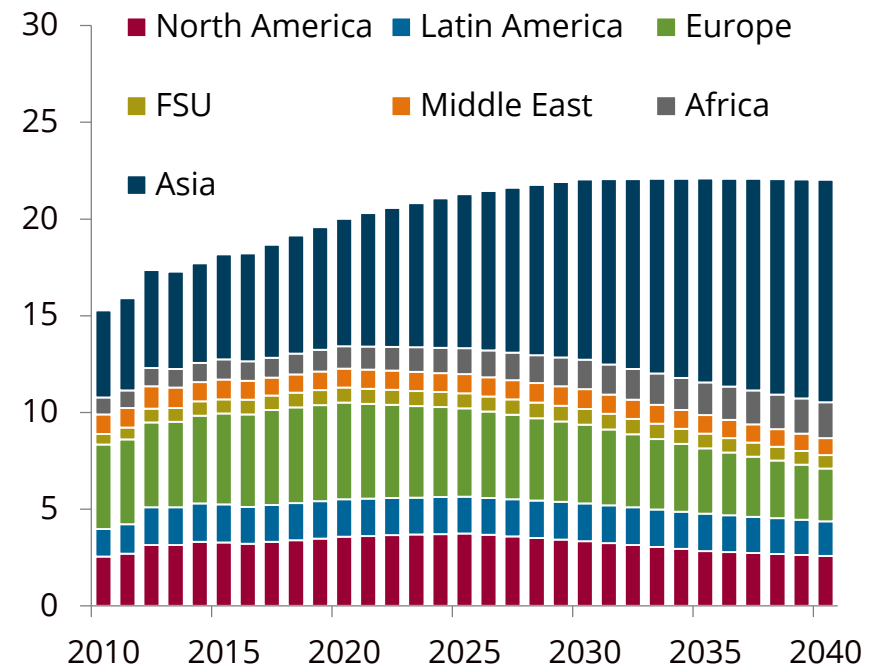
Source: Government agencies, JODI, Bloomberg, Energy Aspects analysis

# But the focus remains on electric cars and long term demand

Global gasoline demand  
Mb/d



Global road diesel demand  
Mb/d



*EV demand displacement amounts to 1.4 mb/d by 2030—the majority (1.0 mb/d) affecting gasoline*

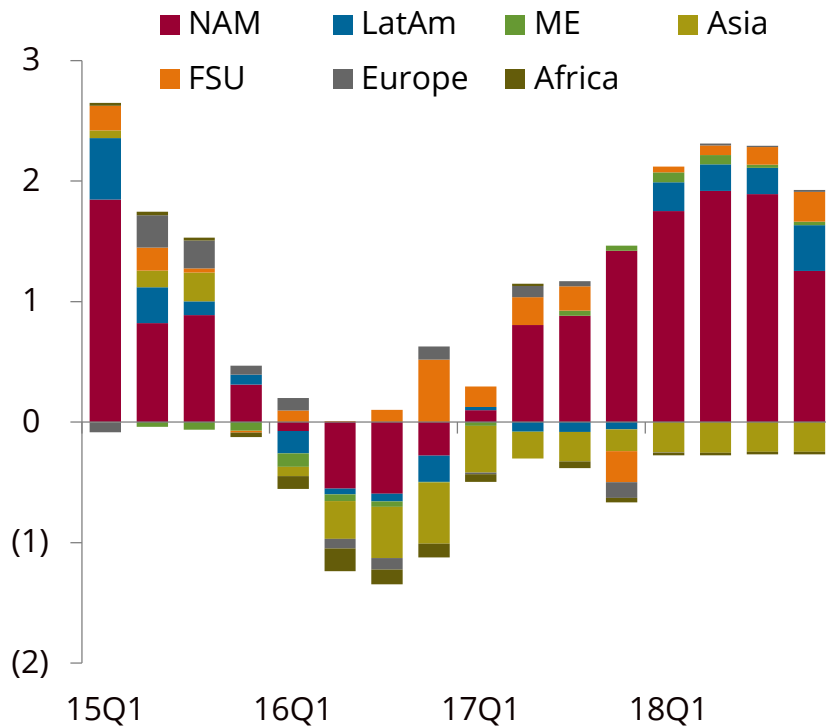
*Relatively robust freight markets continue to support road-diesel demand, which sees a more modest 0.4 mb/d hit*

Source: Energy Aspects

# Non-OPEC supplies are increasingly biased towards North America

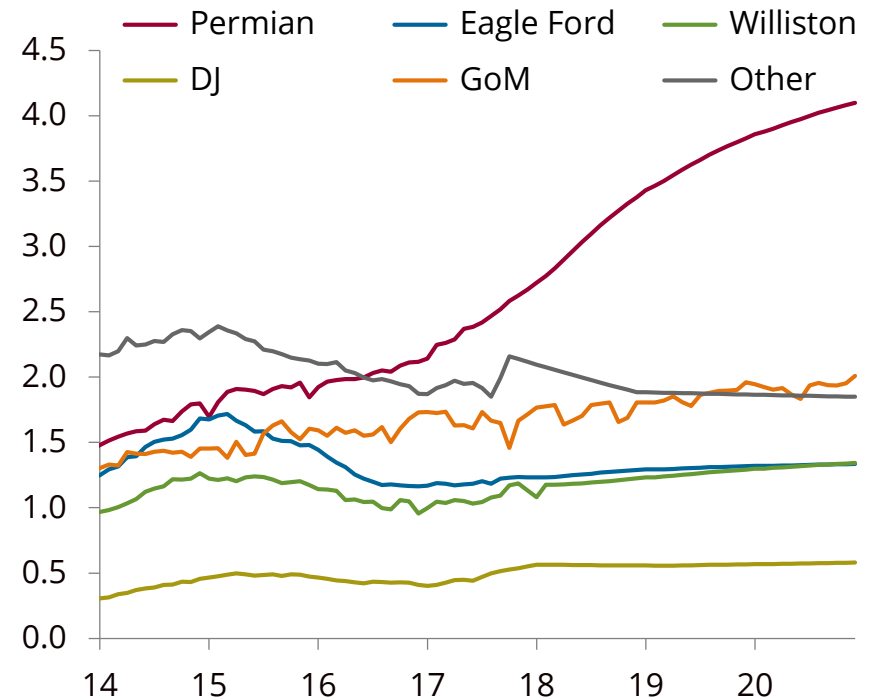
Non-OPEC supply, y/y change

Mb/d



US crude production by basin and forecasts

Mb/d



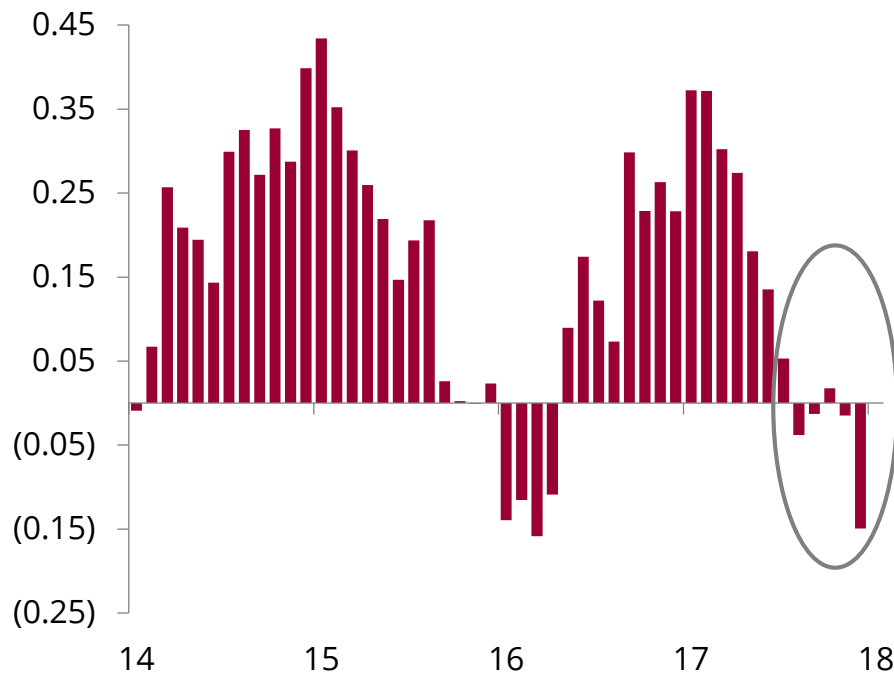
*2018 non-OPEC supply set to grow strongly, led by the US, Canada and Brazil*

*US production has picked up markedly since September 2017 and we expect the momentum to continue in 2018*

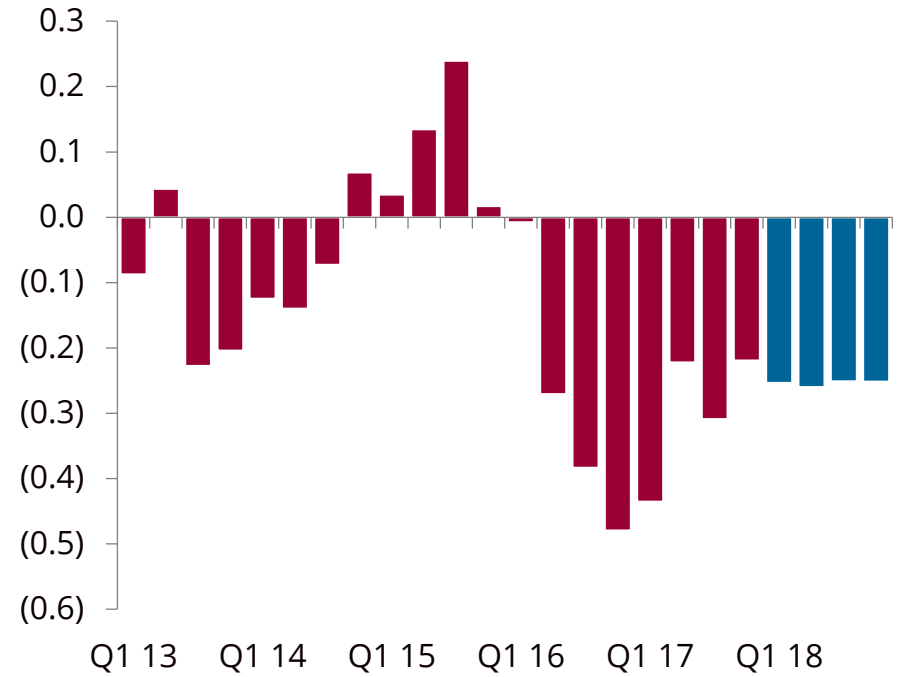
Source: Company reports, EIA, Energy Aspects analysis

# Supplies elsewhere are underperforming

Brazilian crude and NGLs production, y/y change  
Mb/d



Asian crude output, y/y change  
Mb/d



*Brazilian crude production has underperformed relative to expectations amid high declines in the Campos basin*

*Asian crude production continues to fall sharply as oil majors divert money towards short cycle projects*

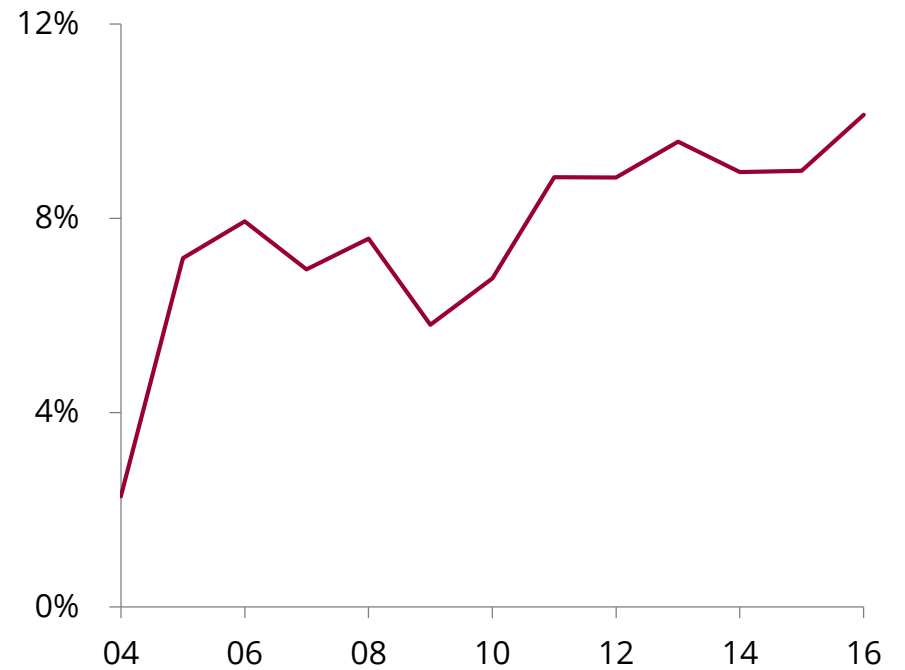
Source: ANP, Government data, Energy Aspects analysis

# Declines stepping up while IOCs move towards short-cycle projects...

IOC liquids production  
Mb/d



Angolan depletion rates  
%



*A significant backlog of projects has allowed IOCs to grow output despite a drop in exploration activity*

*Angolan depletion rates have been rising steadily since 2014 and reached a record high 12% last year*

Source: Company reports, Energy Aspects analysis

## ...and focus on gas

### IOC Q3 17 hydrocarbon production trends

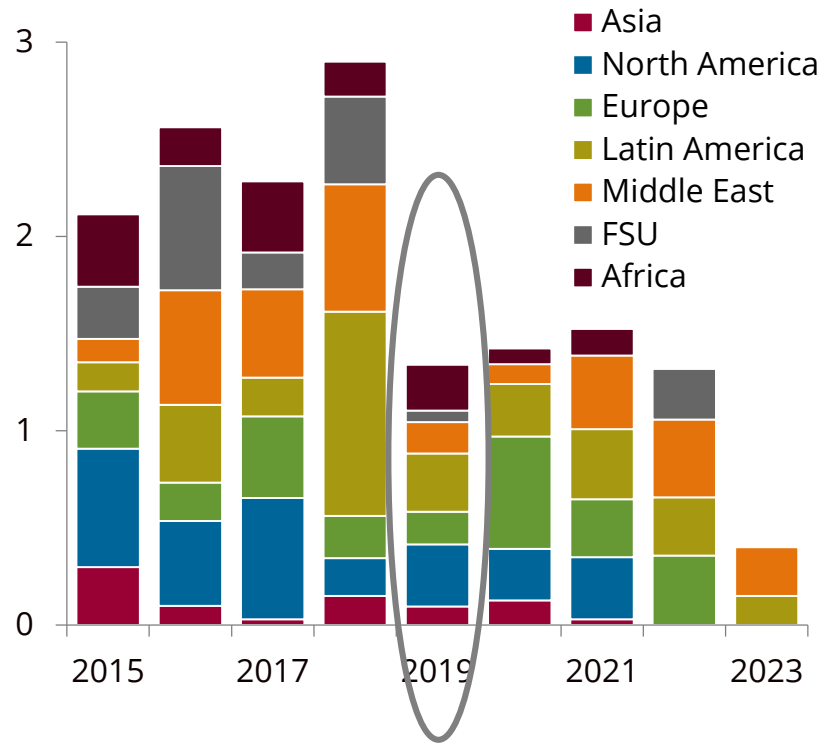
	Liquids production - mb/d			Gas production, mboe/d		
	Q3 17	Q3 16	y/y chg.	Q3 17	Q3 16	y/y chg.
Exxon	2.28	2.21	3.1%	1.60	1.60	(0.1%)
BP	2.24	1.95	14.8%	1.34	1.19	12.2%
Shell	1.85	1.87	(1.0%)	1.81	1.73	4.6%
Chevron	1.72	1.66	3.5%	1.00	0.85	17.1%
Total	1.39	1.29	7.9%	1.19	1.15	3.1%
Statoil	1.13	1.12	0.8%	0.91	0.68	33.9%
Conoco	0.74	0.93	(20.2%)	0.49	0.63	(22.8%)
ENI	0.89	0.94	(5.9%)	0.92	0.77	19.3%
<b>Total</b>	<b>12.24</b>	<b>11.98</b>	<b>2.2%</b>	<b>9.25</b>	<b>8.60</b>	<b>7.5%</b>

*Liquids output for the group rose y/y by 0.27 mb/d (2.2%) in Q3 17, but this was primarily driven by the acquisition of assets. Meanwhile, gas production growth was pegged at 7.5% y/y, reflecting a rapid increase in output from LNG projects.*

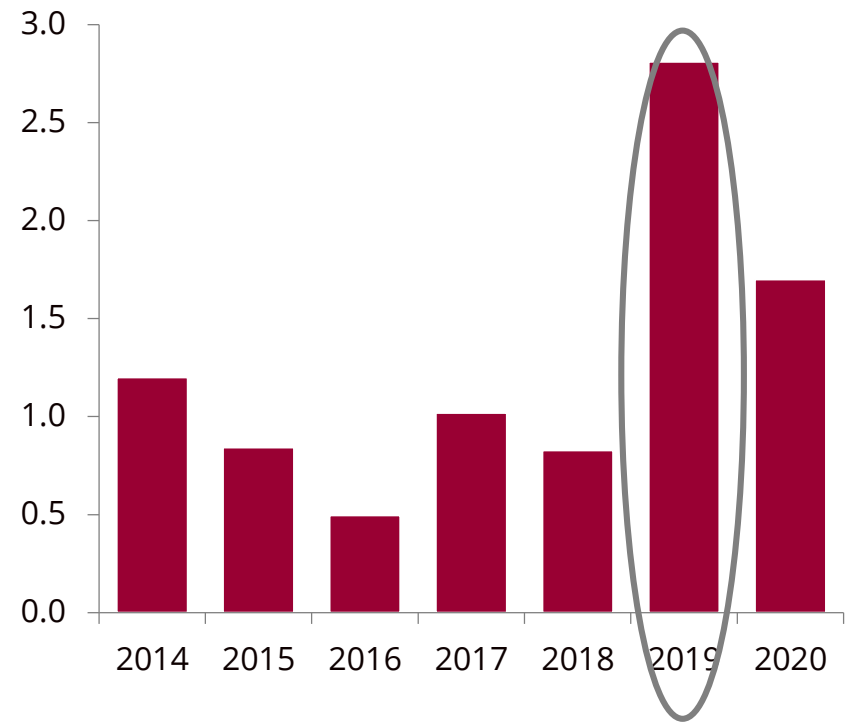


# Drop in investment shows up from 2019 onwards

New upstream capacity additions (OPEC + non-OPEC)  
Mb/d



Refining capacity additions  
Mb/d



*2019 project additions are the lowest this decade, just when underlying declines have doubled*

*2019 sees nearly 3 mb/d of new refinery capacity additions, just when upstream capacity additions dwindle*

Note: Capacity additions excludes US shale  
Source: Company reports, Energy Aspects analysis

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