

Global Oil: Monthly Agency Data Snapshot

First look at 2017: a significant tightening in prospect

Equities

Global
Oil Companies, Major

Jon Rigby, CFA

Analyst

jon.rigby@ubs.com

+44-20-7568 4168

William A. Featherston

Analyst

william.featherston@ubs.com

+1-212-713 9701

Joseph Head

Associate Analyst

joseph.head@ubs.com

+44-20-7568 5568

2Q16 inventory build narrows to 0.5Mb/d on supply-side outages

A dramatic demand response in 2015 coupled with declining US unconventional production and a series of supply-side outages (Nigeria, Canada, Italy, Iraq) has served to push the market close to the rebalancing point: we estimate a 2Q16 oversupply of just 0.5Mb/d, down from the peak of 2.3Mbd in 2Q15. The IEA again revised up 1Q16 demand to 1.6Mb/d (vs its April estimate of 1.2Mb/d) and lifted FY16 demand growth to 1.3Mb/d (EIA +1.5Mb/d; OPEC +1.2Mb/d; UBSe increased to +1.4Mb/d from +1.3Mb/d previously). The IEA's 1Q16 upgrades were driven by the OECD (US gasoline demand continues to impress) and in fact China 1Q saw a 75kb/d downgrade, bringing the IEA's 0.23Mb/d y/y growth estimate closer to our own 0.16Mb/d apparent demand growth figure for the quarter (calculated from NBS/customs data).

2017 to see sustained drawdowns begin: setting up a tighter 2018-20?

This week saw the IEA publish its first detailed quarter-by-quarter forecasts for 2017 and in this note we are publishing our own updated S/D balances for 2017E (the EIA has provided 2017 forecasts since January, we expect OPEC to do so next month). While the inventory overhang remains significant, we believe that 2017 will begin to see this being worked off: we forecast a 0.3Mb/d stock draw in 2H17 as demand grows by 1.2Mb/d, non-OPEC output declines for the second consecutive year (UBSe: -80kb/d vs EIA -240kb/d and IEA +240kb/d), and the pace of OPEC production growth halves to 0.47Mb/d. The IEA by contrast projects a marginally larger stock draw in 2H17 (but similarly sees a balanced 3Q16 then small stock builds over 1H17) while the EIA places the point of rebalancing a little later in 4Q17.

OECD stocks build by 14Mb m/m to 3,065Mb, 357Mb above the 5-year average

OECD inventory data indicates that stocks (crude + products) built in April following draws in February and March, although the surplus vs the seasonal average narrowed by 6Mb. In forward demand terms inventories now stand at 66.6 days (flat m/m and vs 5-year average of 59.3Mb), and refined product demand cover at 32.8 days (down 0.2 days m/m). Initial data suggest only a 3.7Mb build in May vs the seasonal average 26.5Mb build, reflecting the destocking impact of the Canadian wildfire outages.

OPEC production falls by 110kb/d in May

OPEC production declined to 32.61Mb/d in May driven by a 250kb/d impact from the ongoing Nigerian disruptions (likely persists through June) and a 90kb/d loss due to power outages in southern Iraq. This was offset by gains in Iran, Kuwait (reversal of April's strike impact), Saudi (summer ramp) and the UAE (end of maintenance). Spare capacity is currently running at ~2.2Mb/d (mainly Saudi), well below the historic average of 3-5Mb/d and concerning as the market move towards a tighter period post-2017. Our balances currently imply the market grows progressively more undersupplied over 2H17-2020: we forecast a 0.5Mb/d inventory draw in 2020 even with US liquids output back above the 2015 peak and OPEC capacity growing by 1Mb/d over 2016-20. After the collapse in conventional project sanctioning activity in 2015/16 this is a 'hole' in supply that cannot easily be met – arguing for oil prices to continue to grind higher towards the \$70-80/bbl range we believe is required to incentivise investment in the marginal non-OPEC, non-US barrel.

Global Oil Markets

Market outlook

In the absence of any intervention by OPEC, we expect that the laws of economics will slowly correct the oil market along its pathway of readjustment. 2015 saw an impressive year for demand growth at +1.6Mb/d as price and wealth impacts worked their way through and preliminary 1Q16 demand data indicates y/y growth of 1.5Mb/d despite macroeconomic headwinds. While 2Q16 and 3Q16 face a tough y/y comp, 4Q likely benefits from some normalisation of weather, driving FY demand growth of ~1.4Mb/d. 2017 likely sees something closer to trend at 1.2Mb/d as the price continues to rise. On the supply-side, non-OPEC output is now reflecting the impact of a swathe of capex cuts – initially in the US (crude output down 330kb/d in 1Q16 vs peak y/y growth of 1.4Mb/d in 4Q14). 2017 likely sees US crude bottom around mid-year as WTI >\$50/bbl incentivises a recovery in onshore drilling activity but then longer-cycle output elsewhere begins to pick up the burden of rebalancing. 2015 saw just 6 major upstream projects totalling ~0.6Mb/d plateau liquids production reach FID vs the ~3-4Mb/d average and 2016 looks similar – creating a potential 4Mb/d 'hole' in 2020+ supply. In the absence of a clear price anchor we believe that while oversupply persists crude will likely trade in a wide range between cash costs of current supply at \$30/bbl and lower and the long-run marginal cost at \$60-80/bbl (likely in the upper half of that range, set by conventional supply rather than US shale). Reflecting the prolonged over-supply, OECD inventories are at record highs although we anticipate that the market is now close to balance (after a 2Q16 plagued by production outages) and that sustained inventory drawdowns will begin in 2H17. With spare capacity ~1.5Mb/d below historic norms we contend that higher-than-normal inventory levels are warranted. In the longer term the market needs to incentivise sufficient new supply which will require a pick-up in activity in non-US/non-OPEC where we believe the marginal barrel lies. Cost reductions continue to work through the upstream, and while some of this is cyclical, there is growing evidence that operators are implementing overdue structural change which will be more persistent. This will not be easy however – sustaining historic rates of return at our long-term forecast of \$75/bbl will require reductions of ~40% in unit development capex vs 2014 levels.

Upside scenario

Our base case scenario assumes no intervention from OPEC – we are sceptical about the group's capacity to reduce output in the absence of unanimity. We expect Saudi to wait to see its initiative play out and we don't believe the group will function as a cohesive cartel. If the group were to step in however it would likely target >\$70/bbl where the fiscal breakevens lie for the Gulf producers. Geopolitics and interruption to a medium-sized OPEC producer could add \$5-10/bbl per 0.5Mb/d disruption. If physical markets begin to focus on shortage of spare capacity over high inventory levels as the market balances then 2017 could see prices >\$60/bbl and closer to the investment incentive level of \$70/bbl earlier than we project.

Downside scenario

While we believe fears of a 'tank-top' scenario have now reduced a filling of physical storage could create distressed pricing-benchmarks would likely fall below \$30/bbl. Global GDP growth slipping by 100bps (cf 2014) could impact demand by ~500kb/d and defer market rebalancing by ~1 year (note there hasn't been a global recession since 2009). Chinese GDP growth at 4% in 2016 not 6.6% as UBS forecasts would have a limited first-order impact (150-175kb/d) but the second-order global GDP effects (0.3-0.4Mb/d) would likely depress prices by \$10-15/bbl. Iran returning more quickly than we forecast (we project a slow build-out to ~4Mb/d through to 2020) would prolong oversupply. A ramp-up from Saudi spare capacity could defer rebalancing until 2018 when non-US, non-OPEC output begins to roll over.

Upcoming catalysts

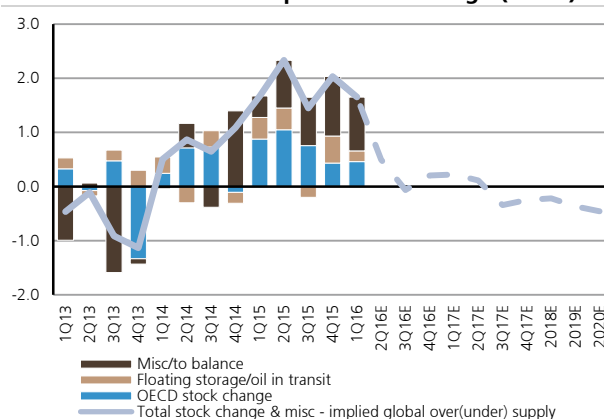
12/12/13 July 2016	EIA/IEA/OPEC short-term outlooks
	Continued slowdown in project FID activity

UBS oil price forecasts (\$/bbl, front-month)

Brent (\$/bbl)	2015A	2016E	2017E	2018E	2019E
UBSe	53.57	42.47	55.00	70.00	75.00
Strip		46.23	52.88	54.56	56.24
Consensus		44.00	55.25	62.00	65.00
WTI (\$/bbl)					
UBSe	48.81	39.62	52.00	67.00	72.00
Strip		45.08	51.58	52.34	53.19
Consensus		42.00	54.00	60.00	63.00

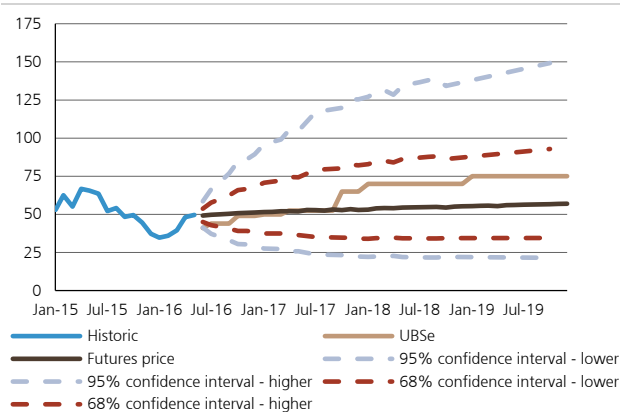
Source: UBS estimates, Bloomberg

UBSe S/D balance and implied stock change (Mb/d)



Source: UBS, IEA. Note: see page 13 for detailed UBSe S/D balances

Brent (\$/bbl), UBSe, futures strip and options market-implied confidence intervals



Source: UBS, Bloomberg. Strip as of 15 June 2016

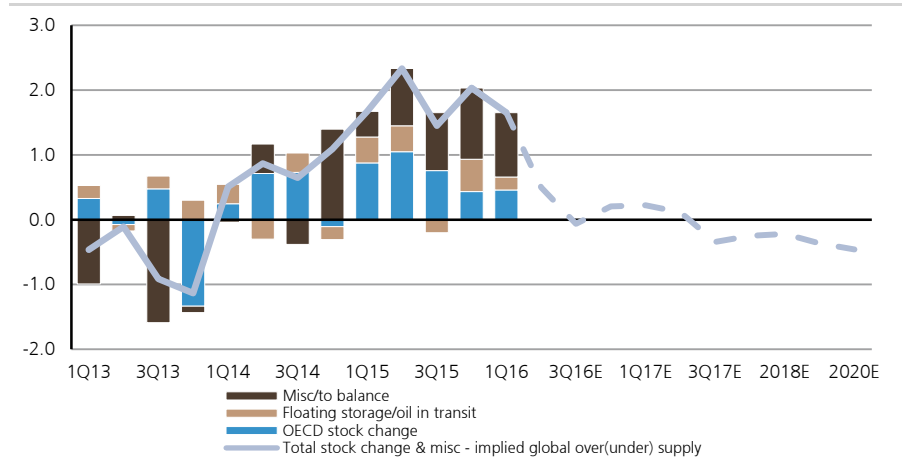
Previous editions

October 2015	Spotlight on Chinese demand
November 2015	LT demand – the 2015 WEO and other outlooks
December 2015	Does the futures curve forecast the spot price?
January 2016	Tallying up OPEC subsidy cuts
February 2016	An inflection point for US supply
March 2016	When does the market rebalance?
April 2016	Global economic growth & demand
May 2016	Supply outages at an all-time high

What does 2017 hold for the oil market?

This week saw the IEA publish its first detailed projections for 2017 and in this note we are updating our own 2017E balances. A consensus is emerging that 2017 represents the year in which the global inventory overhang finally begins to be worked off: below we summarise our own projections and present detailed balances on page 13 (summary balances vs the agencies are on page 5).

Figure 1: UBSe S/D balance and implied stock change (Mb/d)



Source: UBS, IEA. Note: see page xx for detailed UBSe S/D balances

We expect the market to be close to balanced in 3Q16 before showing minor inventory builds in 1H17 (seasonally lower demand). From 2H17 we project sustained inventory drawdowns – and with OPEC spare capacity at an historic low, we believe this argues for prices moving towards a level sufficient to incentivise investment in longer-cycle non-OPEC, non-US capacity from 2018.

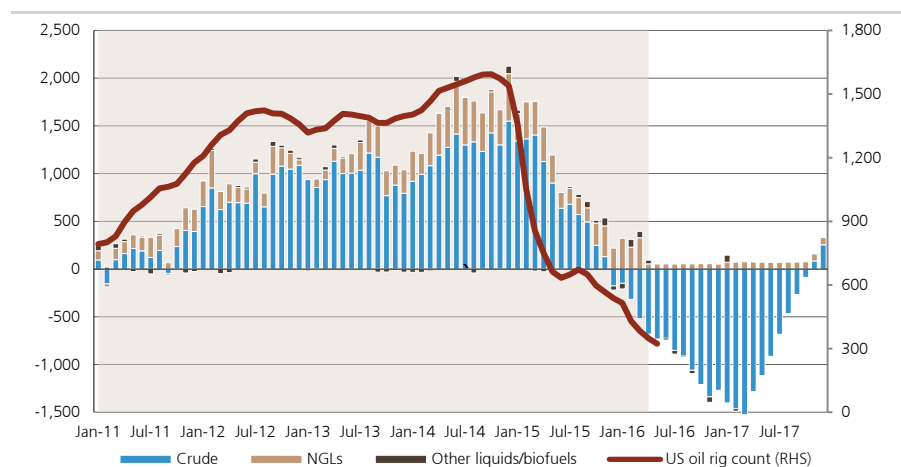
- **Demand:** After an exceptional 2015 (+1.6Mb/d y/y) and a surprisingly strong start to 2016 (+1.5Mb/d y/y in 1Q; we now forecast +1.4MB/d in FY16) we anticipate that the pace of demand growth will slow to 1.2Mb/d in 2017, significantly closer to trend growth of 1.0-1.1Mb/d. This deceleration is driven by a combination of gradual price recovery, the ongoing decline in oil intensity of economic activity (particularly in the OECD) and [slowing Chinese demand growth](#) (UBSe: 2.4% vs 5.0% in 2015).
- **Supply:** We anticipate that 2017 will mark the year in which the burden of supply-side adjustment begins to shift from shorter-cycle US shale to conventional activity elsewhere within non-OPEC.

We forecast US crude production to decline by 730kb/d on average in 2017 (after an 825 kb/d y/y decline in 2016 and vs the IEA at -250kb/d and the EIA at -410kb/d) as the impact of the collapse in drilling activity in 2016 continues to be felt. With WTI prices close to \$50/bbl, [the level at which the majority of operators would consider incremental drilling activity](#), the rig count likely stabilises at around current levels (328 oil rigs) and begins recovering through 2H16 and 2017.

Based on our assumption that the US oil rig count exits 2016 at ~400 rigs and reaches ~710 rigs by end-2017, we forecast US crude production bottoming at 7.6Mb/d in March 2017 and then recovering to exit 2017 at 8.2Mb/d, up 255kb/d y/y vs December 2016. As a reminder of the lag between activity and output response, US crude output peaked in April 2015 vs the rig count peak in October 2014. The outlook for US production in 2017 remains extremely uncertain however given the sensitivity of drilling activity to prices, and will hinge on the extent to which operators can preserve the efficiency gains captured over 2014-16. The 80% collapse in the rig count since 2014 has seen a significant high-grading effect as operators drill only the 'core of the core'

acreage with the highest-spec rigs, and some of this will reverse out as the rig count begins to rise again.

Figure 2: US liquids output y/y growth (kb/d)

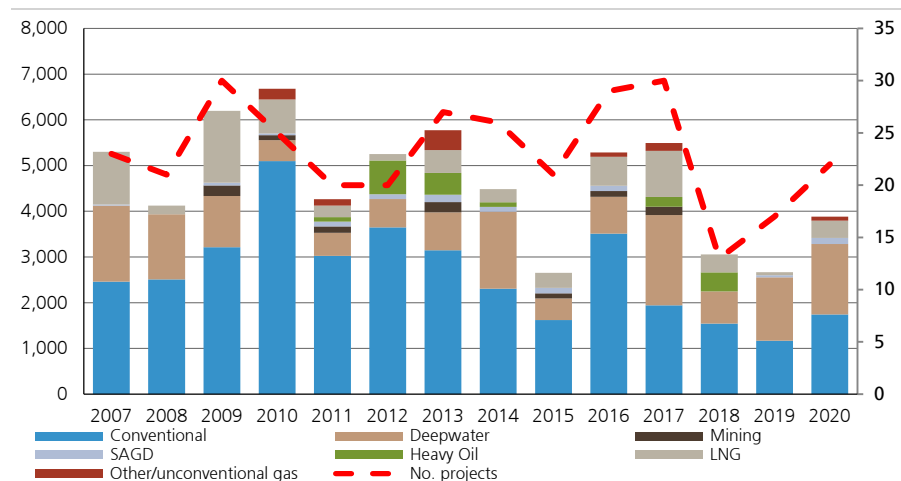


Source: EIA, Baker Hughes, UBS.

Outside of the US we expect non-OPEC production to grow by 0.6Mb/d (EIA: -0.1Mb/d, IEA: +0.3Mb/d) benefitting from a large number of conventional startups set in train in a >\$100/bbl world. In reality gains will be concentrated in a few specific geographies: Brazil (4 Santos FPSOs due onstream and 3 from 2016 ramping up, y/y comp also benefits from some heavy maintenance in 1H16), Kazakhstan (ramp-up of the 370kb/d Kashagan Phase 1 due online in late 2016), Canada (reversal of 2016 wildfire impacts) and sub-Saharan Africa (Congo and Ghana). Elsewhere mature field decline rates are accelerating as a consequence of lower investment, but it is 2018 in which the impact of the collapse in project sanctioning activity since 2014 will really begin to be felt.

We expect US crude production to bottom in early 2017 and then recover with the rig count as prices rise to exit 2017 up 255kb/d y/y. On a FY average basis however this still represents a 730kb/d decline vs 2016. US unconventional activity will remain sensitive to prices: we believe WTI sustainably above \$50/bbl is required for the majority of operators outside the Permian to begin ramping up activity.

Figure 3: Major upstream startups by year (kboe/d plateau production LHS, no. projects RHS)



Source: UBS, WoodMackenzie, Company Data. Note: UBS' upstream database tracks major projects at around the 80kboe/d level or larger. Liquids volumes for 2017 are ~3.3Mb/d.

2017 is likely the last good year for major upstream project startups (a legacy of investment decisions taken before the oil price began to fall). Notable liquids projects include 5 Brazil FPSOs (4 Santos, 1 Campos), 2 North Sea redevelopments and associated liquids from 3 Australian LNG projects. 2017 also benefits from the ramp-up of 3 2016 Santos FPSOs and Kashagan (first oil late 2016).

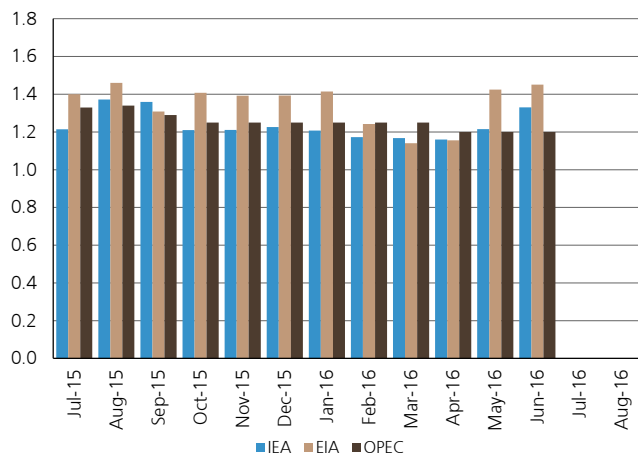
Figure 4: Supply/demand balances compared (Mb/d)

		2015	1Q16	2Q16E	3Q16E	4Q16E	2016E	1Q17E	2Q17E	3Q17E	4Q17E	2017E	2016E	2017E
													y/y	y/y
Demand														
IEA	OECD	46.2	46.6	45.8	46.5	46.3	46.3	46.6	45.9	46.7	46.4	46.4	0.15	0.06
	Non-OECD	48.6	48.6	49.7	50.2	50.5	49.7	49.9	51.0	51.4	51.6	51.0	1.18	1.23
	Total Demand	94.7	95.2	95.5	96.7	96.9	96.1	96.5	96.8	98.0	98.0	97.4	1.33	1.30
EIA	OECD	46.2	46.6	45.9	46.4	46.8	46.4	46.7	45.7	46.5	47.0	46.5	0.17	0.05
	Non-OECD	47.6	47.6	49.2	49.5	49.0	48.9	49.0	50.7	51.0	50.4	50.3	1.28	1.41
	Total Demand	93.8	94.2	95.1	95.9	95.8	95.3	95.7	96.4	97.5	97.4	96.7	1.45	1.47
OPEC	OECD	46.2	46.5	45.6	46.8	46.5	46.4						0.18	
	Non-OECD	46.8	46.6	47.6	48.4	48.7	47.8						1.02	
	Total Demand	93.0	93.1	93.3	95.2	95.2	94.2						1.20	
UBS	OECD	46.2	46.6	45.8	46.8	46.5	46.5	46.9	46.2	47.0	46.8	46.7	0.28	0.27
	Non-OECD	48.2	48.1	49.3	49.8	50.0	49.3	49.2	50.3	50.7	50.9	50.3	1.13	0.96
	Total Demand	94.4	94.7	95.2	96.7	96.5	95.8	96.1	96.5	97.7	97.7	97.0	1.41	1.23
Supply														
IEA	Non-OPEC	57.6	57.2	56.2	56.7	56.9	56.8	56.6	56.9	57.2	57.2	57.0	-0.90	0.24
	OPEC non-crude	6.7	6.8	6.8	6.9	6.9	6.9	6.8	6.9	6.9	7.0	6.9	0.18	0.05
	Call on OPEC crude	30.4	31.2	32.4	33.1	33.0	32.5	33.0	33.1	33.9	33.8	33.5	2.04	1.01
	OPEC crude	32.1	32.6											
	Total Supply	96.4	96.5											
EIA	Non-OPEC	57.6	57.3	56.8	57.0	56.9	57.0	56.3	56.9	57.0	57.1	56.8	-0.58	-0.24
	OPEC non-crude	6.6	6.7	6.9	6.9	7.0	6.8	7.1	7.1	7.2	7.3	7.2	0.27	0.33
	Call on OPEC crude	29.6	30.2	31.4	31.9	32.0	31.4	32.3	32.4	33.3	33.0	32.8	1.76	1.37
	OPEC Crude	31.5	31.6	32.2	32.8	32.8	32.3	32.8	33.1	33.1	33.1	33.0	0.81	0.69
	Total Supply	95.7	95.6	95.8	96.8	96.7	96.2	96.2	97.1	97.3	97.5	97.0	0.50	0.78
OPEC	Non-OPEC	56.4	57.1	55.8	56.0	56.7	56.4						0.00	
	OPEC non-crude	6.3	6.2	6.3	6.3	6.3	6.3						0.00	
	Call on OPEC crude	30.3	29.7	31.2	32.9	32.2	31.5						1.20	
	OPEC Crude	31.8	32.3											
	Total Supply	94.5	95.7											
UBS	Non-OPEC	57.5	57.1	56.1	56.6	56.5	56.6	56.2	56.2	56.9	56.9	56.5	-0.98	-0.08
	OPEC non-crude	6.6	6.7	6.8	6.9	6.9	6.8	6.9	6.9	7.0	7.0	7.0	0.18	0.14
	Call on OPEC crude	30.2	30.9	32.3	33.2	33.1	32.4	33.0	33.4	33.9	33.7	33.6	2.21	1.17
	OPEC Crude	32.1	32.6	32.8	33.2	33.3	33.0	33.2	33.5	33.6	33.5	33.4	0.92	0.47
	Total Supply	96.2	96.4	95.7	96.6	96.7	96.3	96.3	96.6	97.4	97.4	96.9	0.12	0.53

Source: IEA, EIA, OPEC, UBS. All three agencies and UBS now include Indonesia in OPEC production – 2015 restated on this basis. Gabon is expected to re-join OPEC with effect from July 2016; we do not include Gabon with our OPEC forecasts at present, nor do the agencies. OPEC has not yet published detailed 2017 forecasts, and neither the IEA nor OPEC forecast OPEC crude production explicitly.

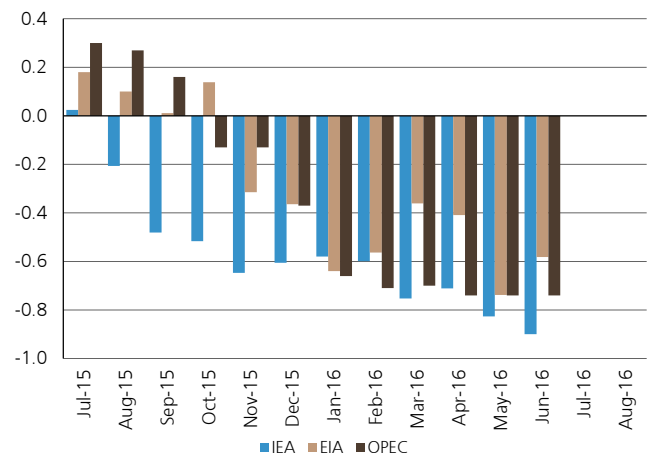
Evolving 2016 forecasts

Figure 5: Demand growth y/y (Mb/d)



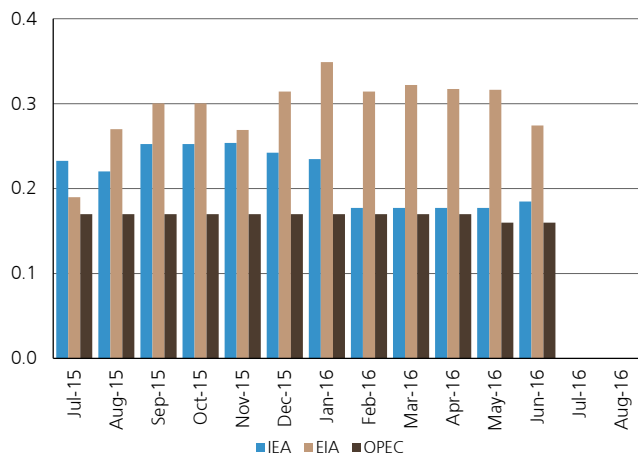
Source: IEA, EIA, OPEC, UBS

Figure 6: Non-OPEC supply growth y/y (Mb/d)



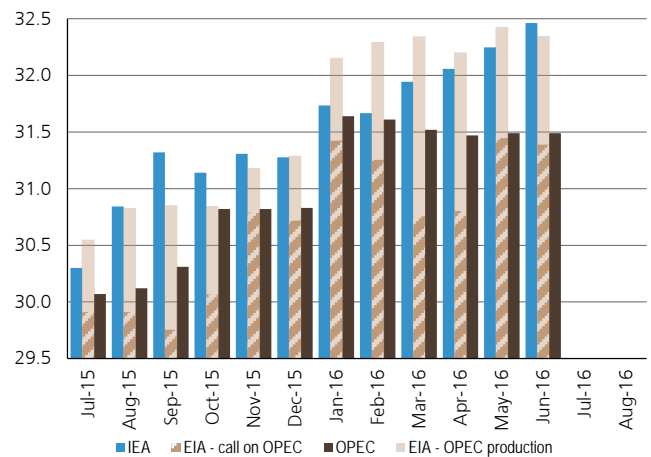
Source: IEA, EIA, OPEC, UBS

Figure 7: OPEC NGL supply growth y/y (Mb/d)



Source: IEA, EIA, OPEC, UBS

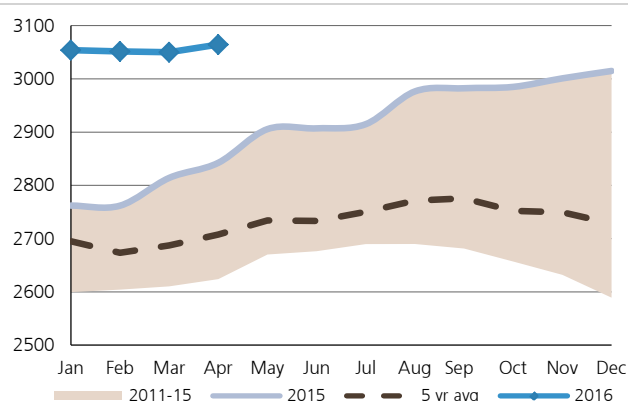
Figure 8: Call on OPEC (Mb/d)



Source: IEA, EIA, OPEC, UBS. 2016 call estimates include Indonesia within OPEC as of January 2016.

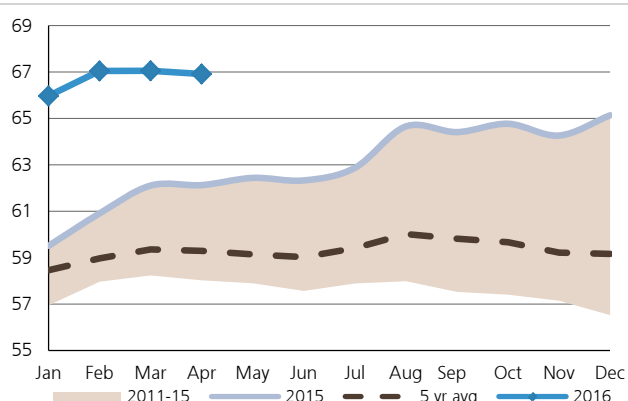
OECD Inventories Held By Industry

Figure 9: OECD Total Industry Stocks (Mb)



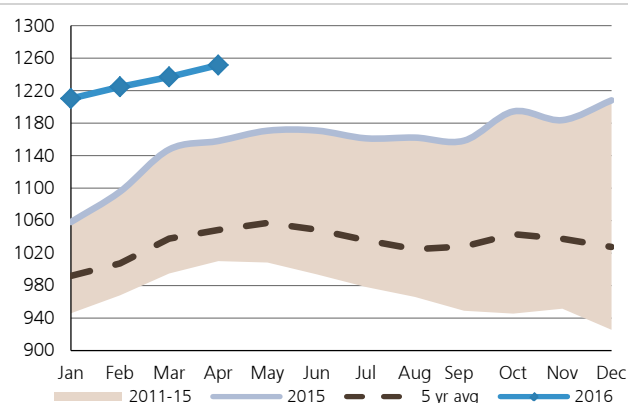
Source: IEA, UBS

Figure 10: OECD Total Industry Stocks (Days Fwd Cover)



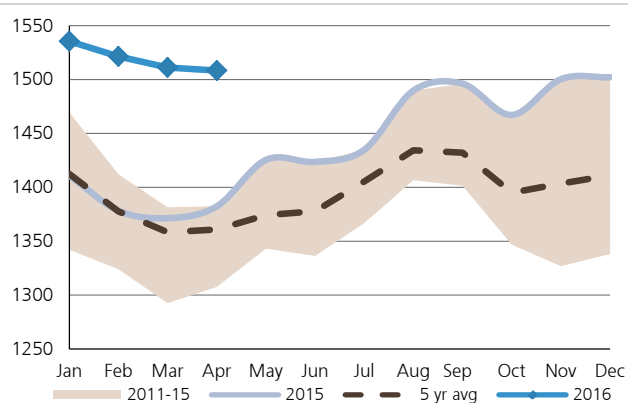
Source: IEA, UBS

Figure 11: OECD Total Industry Crude Stocks (Mb)



Source: IEA, UBS

Figure 12: OECD Total Industry Product Stocks (Mb)



Source: IEA, UBS

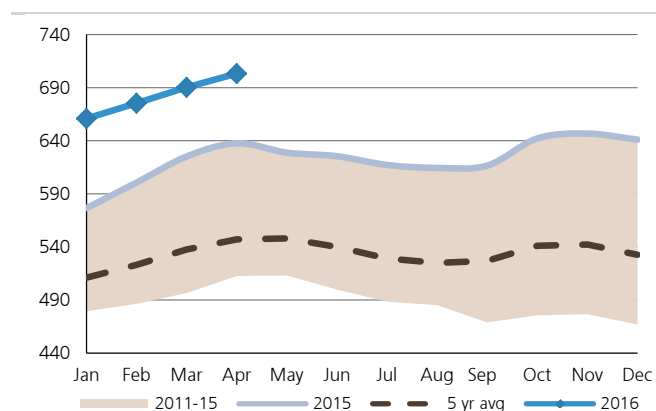
Figure 13: OECD Industry Stocks (Mbbls): End-April data

	Americas	Europe	APAC	Total	Monthly Change	yearly Change	Days of Fwd Demand
Crude Oil	703.4	354.3	193.9	1251.5	14.6	93.4	33.1
Gasoline	273.0	99.9	25.4	398.3	-3.9	17.3	26.7
Middle Distillate	230.5	307.8	62.3	600.7	-7.6	80.2	35.7
Residual Fuel oil	49.9	75.1	19.5	144.6	-3.3	11.5	78.7
Other Products	207.4	98.3	59.1	364.8	11.9	16.9	-
Total Products	760.9	581.1	166.4	1508.4	-2.9	126.0	32.8
Other Oils	173.2	69.3	62.0	304.6	2.7	2.6	-
Total Oil	1637.5	1004.7	422.3	3064.5	14.4	222.0	66.6
Days of Fwd Demand	66.6	72.9	55.1	66.6	-	-	-

Source: IEA, UBS

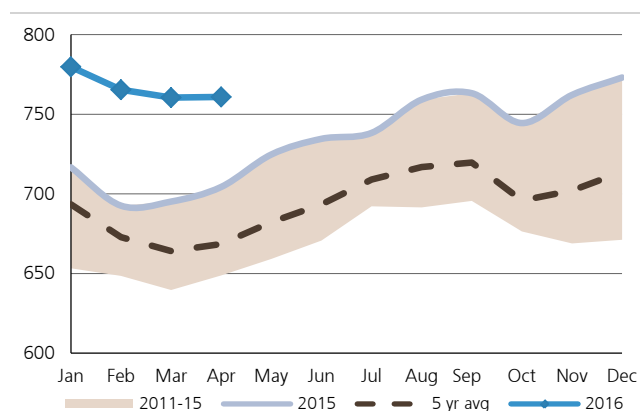
OECD Regional Inventories Held By Industries

Figure 14: OECD North America Crude Stocks (Mb)



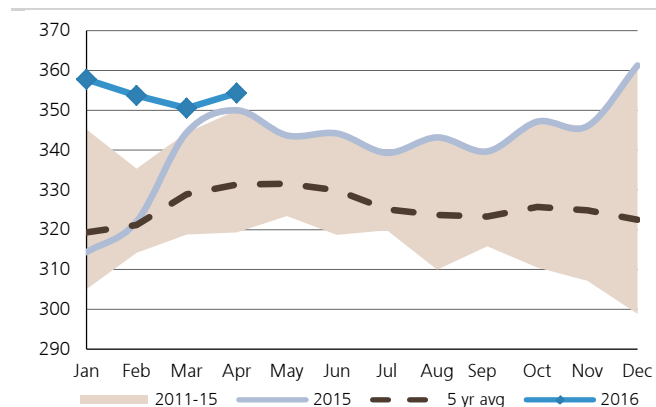
Source: IEA, UBS

Figure 15: OECD North America Refined Product Stocks (Mb)



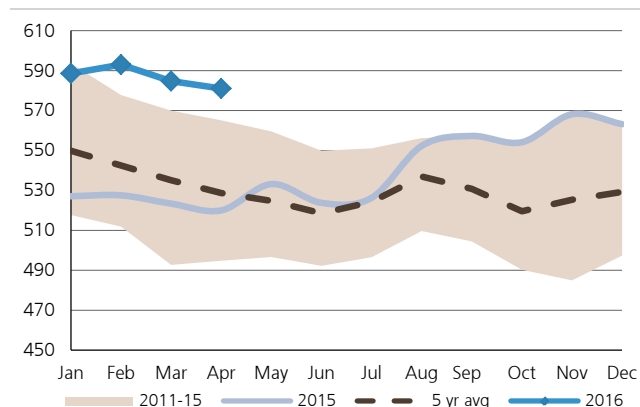
Source: IEA, UBS

Figure 16: OECD Europe Crude Stocks (Mb)



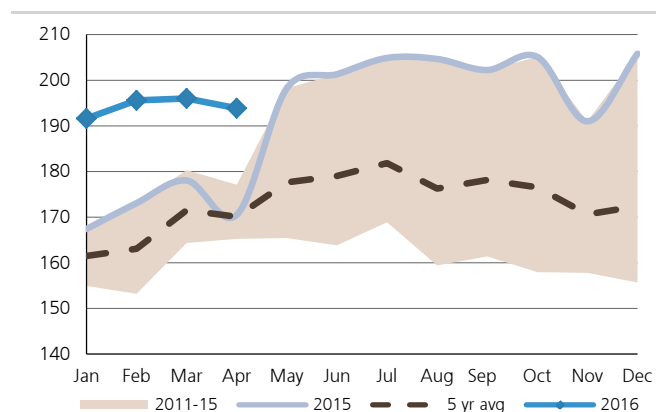
Source: IEA, UBS

Figure 17: OECD Europe Refined Product Stocks (Mb)



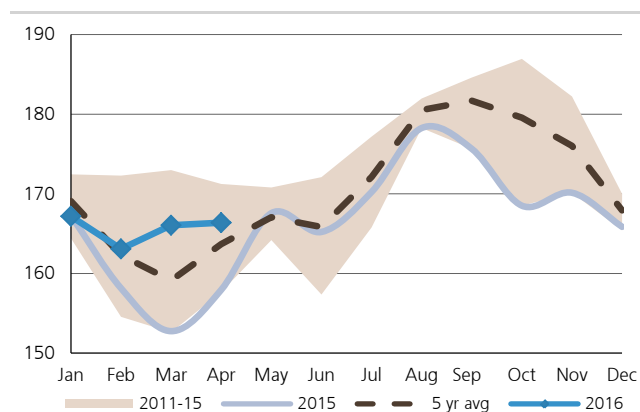
Source: IEA, UBS

Figure 18: OECD APAC Crude Stocks (Mb)



Source: IEA, UBS

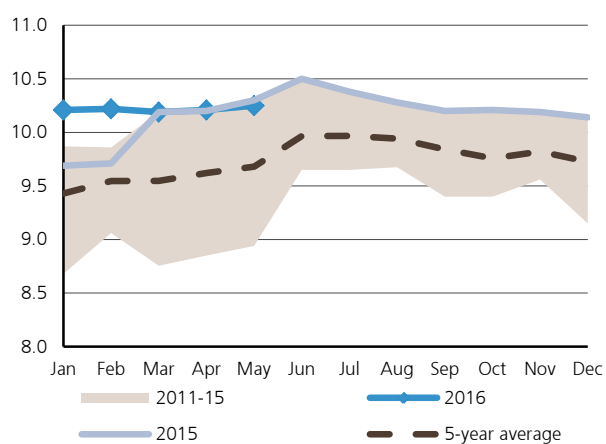
Figure 19: OECD APAC Refined Product Stocks (Mb)



Source: IEA, UBS

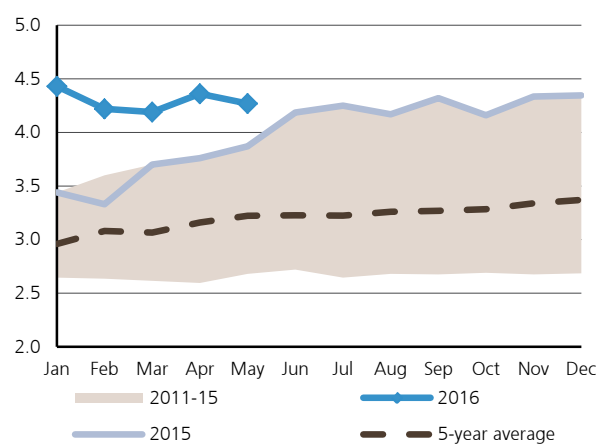
Oil production by major country – OPEC (Middle East)

Figure 20: Saudi crude production (Mb/d)



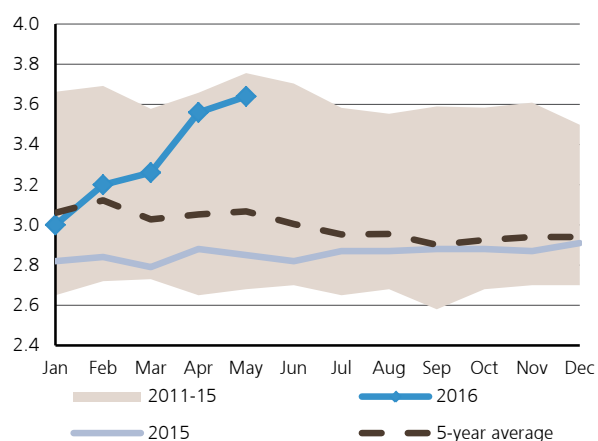
Source: IEA, UBS, JODI. Note: includes 50% of Neutral Zone

Figure 21: Iraq crude production (Mb/d)



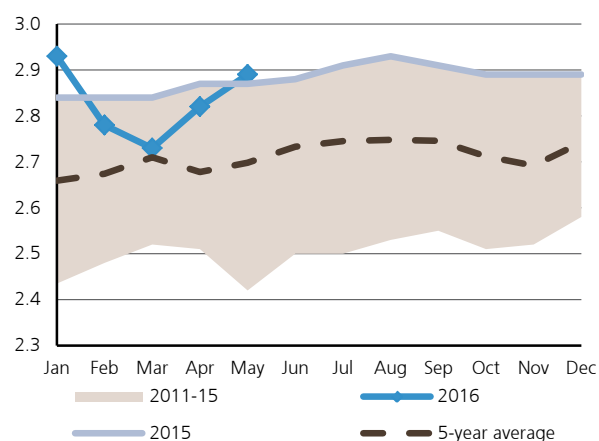
Source: IEA, UBS

Figure 22: Iran crude production (Mb/d)



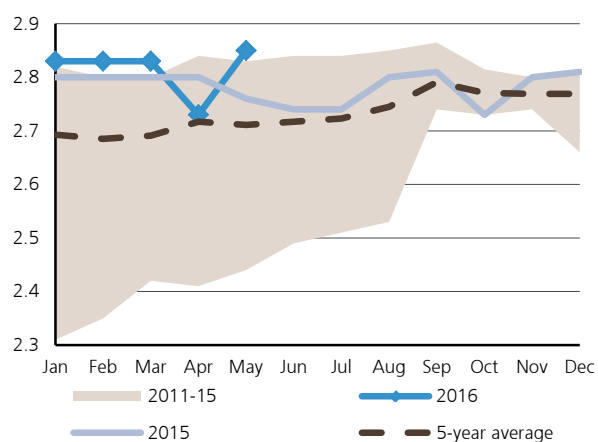
Source: IEA, UBS

Figure 23: UAE crude production (Mb/d)



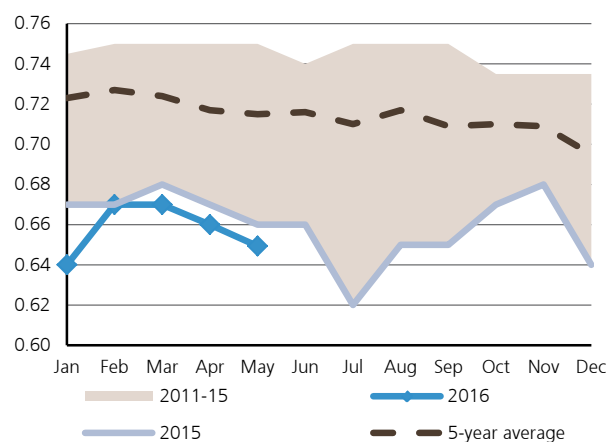
Source: IEA, UBS

Figure 24: Kuwait crude production (Mb/d)



Source: IEA, UBS. Note: includes 50% of Neutral Zone

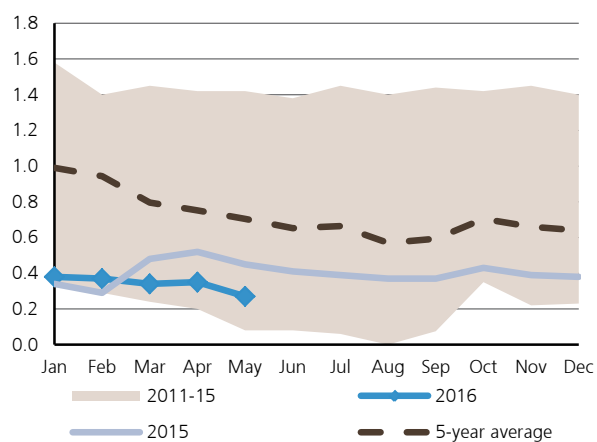
Figure 25: Qatar crude production (Mb/d)



Source: IEA, UBS

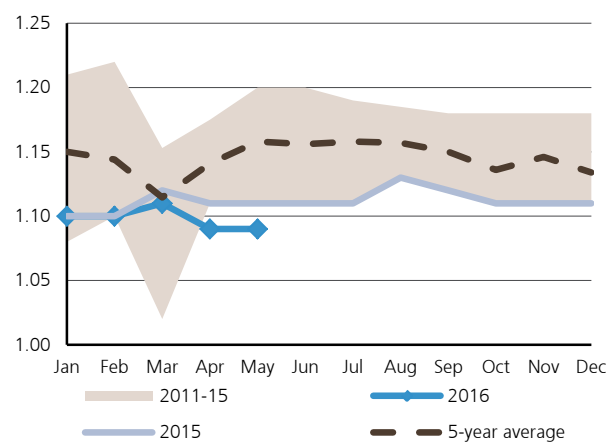
Oil production by major country – OPEC (other ex-Ecuador)

Figure 26: Libya crude production (Mb/d)



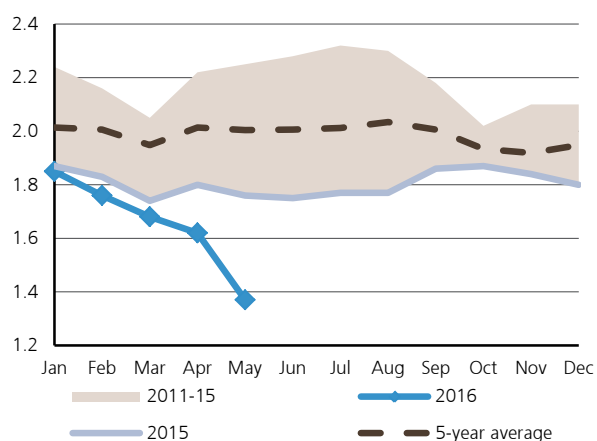
Source: IEA, UBS

Figure 27: Algeria crude production (Mb/d)



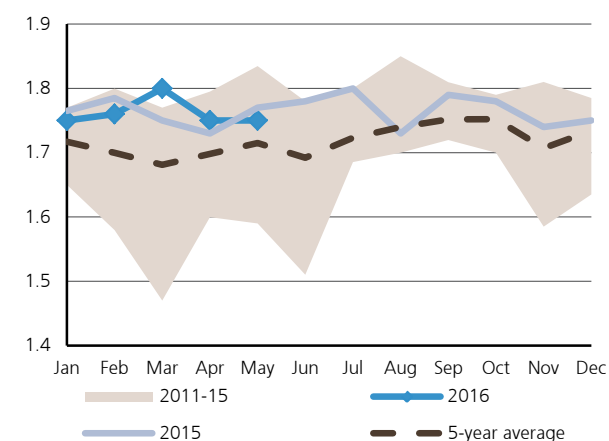
Source: IEA, UBS

Figure 28: Nigeria crude production (Mb/d)



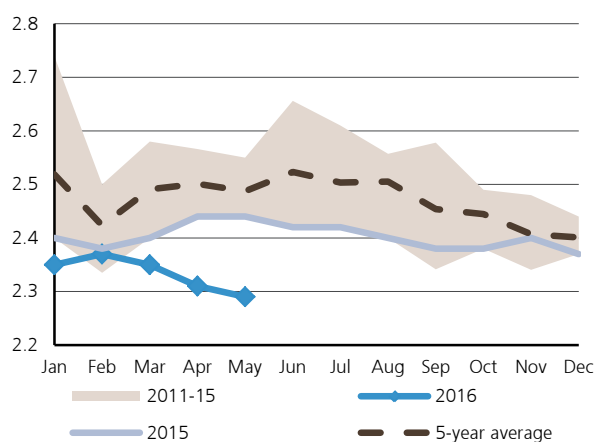
Source: IEA, UBS

Figure 29: Angola crude production (Mb/d)



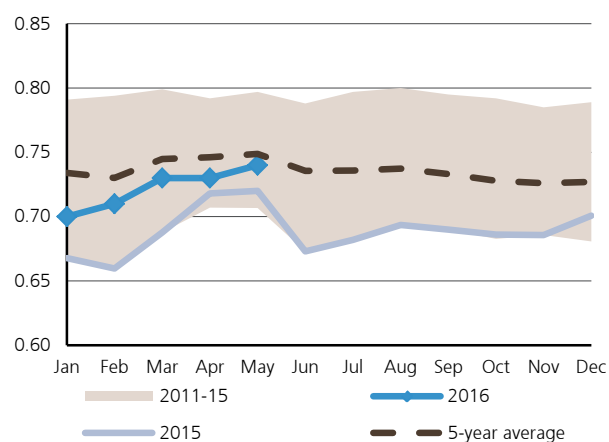
Source: IEA, UBS

Figure 30: Venezuela crude production (Mb/d)



Source: IEA, UBS

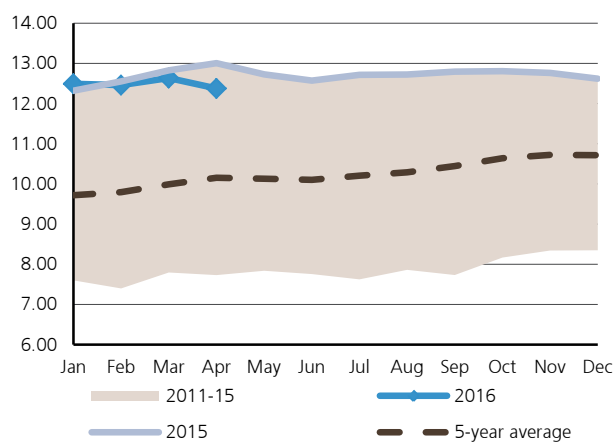
Figure 31: Indonesia crude production (Mb/d)



Source: IEA, UBS

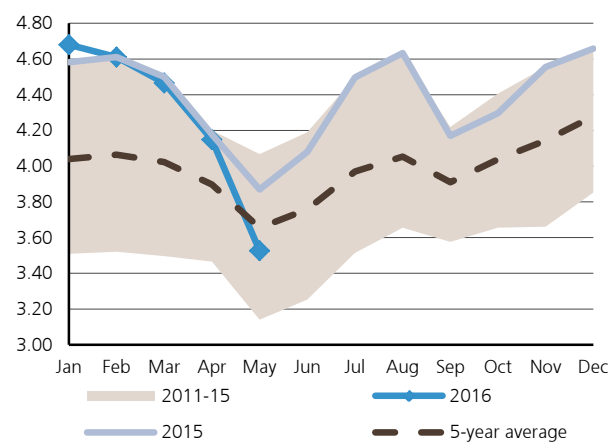
Oil production by major country – Ecuador & Non-OPEC Americas

Figure 32: US liquids production (Mb/d)



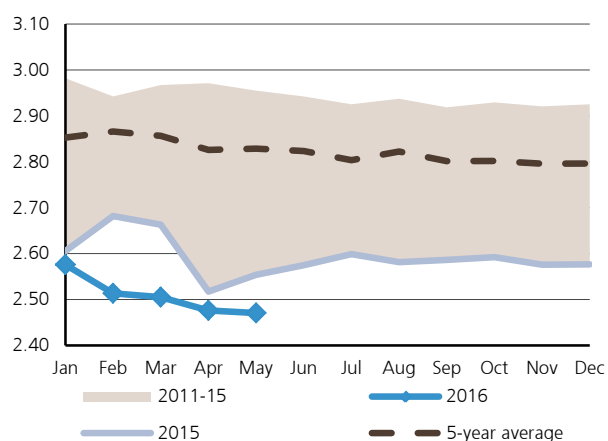
Source: EIA, UBS. Note: latest available EIA data.

Figure 33: Canada liquids production (Mb/d)



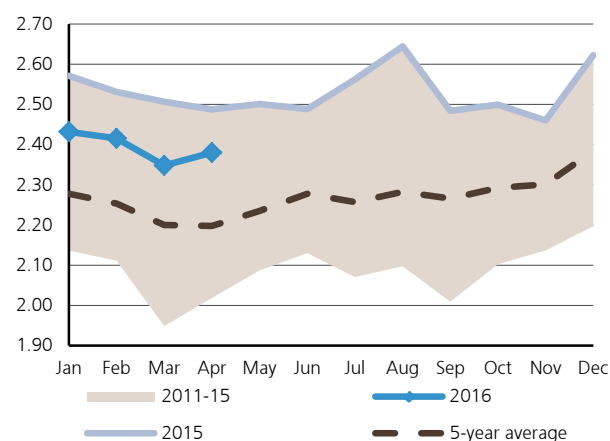
Source: IEA, UBS

Figure 34: Mexico liquids production (Mb/d)



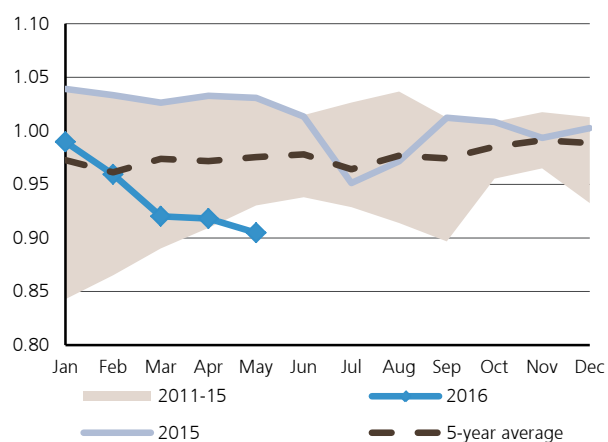
Source: IEA, UBS

Figure 35: Brazil liquids production



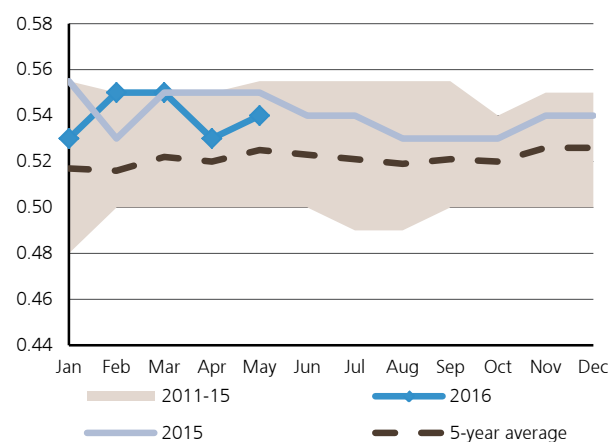
Source: ANP, UBS. Note: latest available ANP data

Figure 36: Colombia liquids production (Mb/d)



Source: IEA, UBS

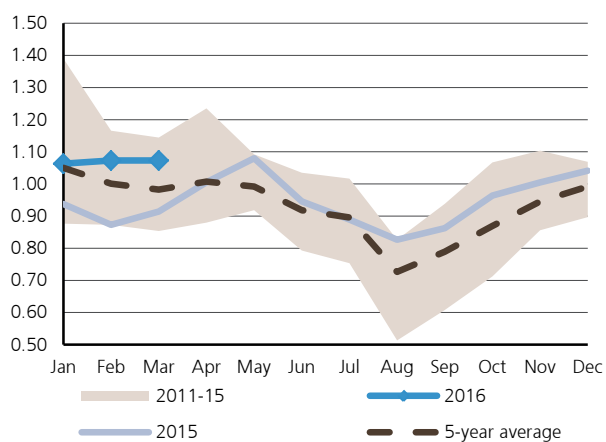
Figure 37: Ecuador crude production (Mb/d)



Source: IEA, UBS

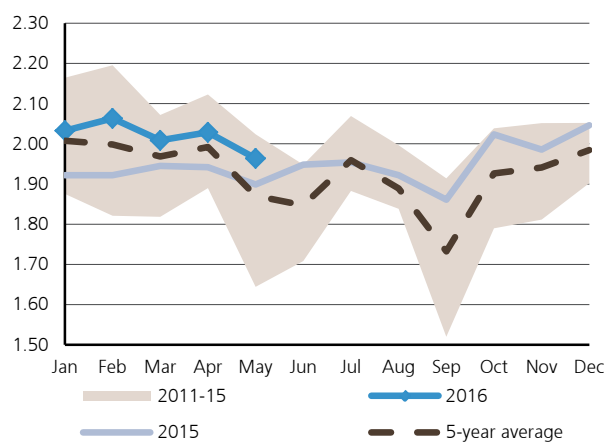
Oil production by major country – Non-OPEC Eurasia

Figure 38: UK liquids production (Mb/d)



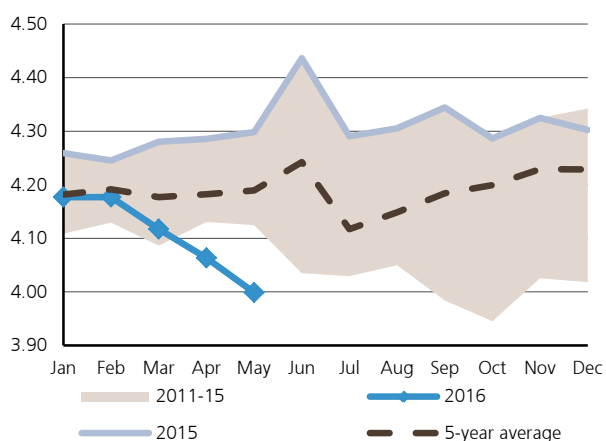
Source: DECC, IEA, UBS. Note: latest available DECC data

Figure 39: Norway liquids production (Mb/d)



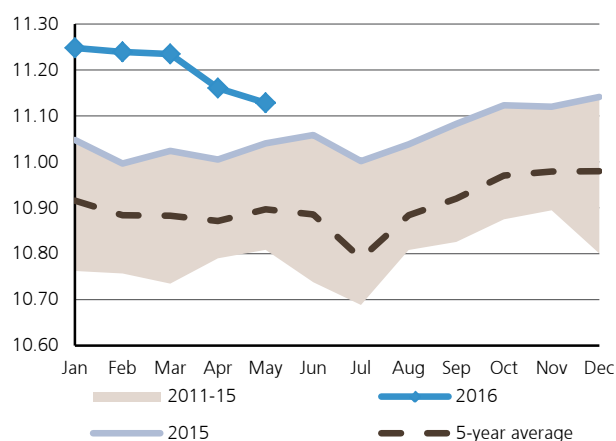
Source: NPD, IEA, UBS

Figure 40: China liquids production (Mb/d)



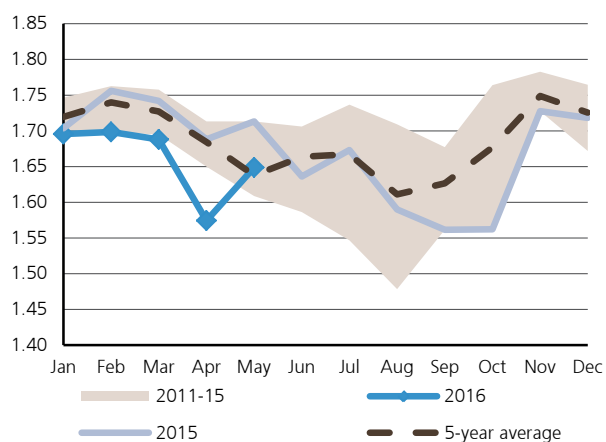
Source: China NBS, IEA, UBS

Figure 41: Russia liquids production (Mb/d)



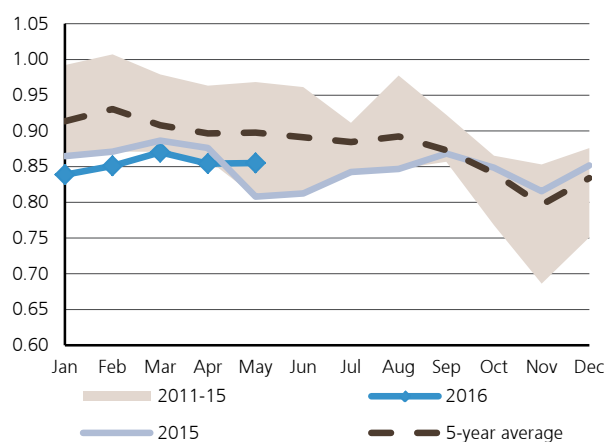
Source: IEA, UBS

Figure 42: Kazakhstan liquids production (Mb/d)



Source: IEA, UBS

Figure 43: Azerbaijan liquids production (Mb/d)



Source: IEA, UBS

Figure 44: UBS supply/demand balances (Mb/d)

Demand	2014	2015	1Q16	2Q16E	3Q16E	4Q16E	2016E	1Q17E	2Q17E	3Q17E	4Q17E	2017E	2018E	2019E	2020E
US	19.4	19.7	19.8	19.8	20.0	19.9	19.9	20.0	19.9	20.0	19.9	20.0	20.0	20.0	20.0
Other OECD Americas	4.7	4.7	4.6	4.6	4.8	4.7	4.7	4.7	4.7	4.8	4.8	4.7	4.8	4.7	4.7
OECD Europe	13.5	13.7	13.6	13.6	14.1	13.7	13.8	13.7	13.8	14.1	13.8	13.9	13.8	13.7	13.6
OECD Asia-Pacific	8.1	8.1	8.6	7.8	8.0	8.2	8.1	8.6	7.8	8.0	8.2	8.2	8.2	8.1	8.1
Total OECD	45.7	46.2	46.6	45.8	46.8	46.5	46.5	46.9	46.2	47.0	46.8	46.7	46.7	46.5	46.3
FSU	4.9	4.9	4.9	4.9	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.1	5.1	5.2
China	10.5	11.0	11.0	11.5	11.7	11.5	11.4	11.2	11.8	12.0	11.8	11.7	11.9	12.2	12.4
Other Asia	12.0	12.5	13.0	13.0	12.7	13.3	13.0	13.5	13.4	13.2	13.7	13.5	13.8	14.2	14.5
Latin America	6.9	6.8	6.5	6.8	6.8	6.9	6.8	6.4	6.6	6.7	6.7	6.6	6.7	6.9	7.0
Middle East	8.0	8.2	7.8	8.2	8.7	8.3	8.2	8.0	8.4	8.8	8.4	8.4	8.6	8.7	8.9
Africa	4.0	4.1	4.2	4.2	4.2	4.3	4.2	4.4	4.4	4.3	4.5	4.4	4.5	4.6	4.7
Total Non-OECD	47.0	48.2	48.1	49.3	49.8	50.0	49.3	49.2	50.3	50.7	50.9	50.3	51.4	52.5	53.6
TOTAL DEMAND	92.8	94.4	94.7	95.2	96.7	96.5	95.8	96.1	96.5	97.7	97.7	97.0	98.0	99.0	99.9
Supply															
US	11.9	12.9	12.8	12.3	12.1	11.7	12.2	11.4	11.3	11.7	11.9	11.6	12.0	12.5	13.0
Other OECD Americas	7.1	7.0	7.1	6.3	6.8	7.0	6.8	7.1	7.0	7.0	7.0	7.0	7.1	7.4	7.5
OECD Europe	3.2	3.4	3.5	3.4	3.3	3.5	3.5	3.5	3.4	3.2	3.4	3.4	3.4	3.3	3.4
OECD Asia-Pacific	0.5	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.5	0.5
Total OECD	22.7	23.8	23.8	22.5	22.6	22.7	23.0	22.4	22.1	22.3	22.7	22.4	23.0	23.6	24.4
Russia	10.9	11.1	11.2	11.1	11.1	11.2	11.2	11.3	11.2	11.2	11.3	11.2	11.3	11.3	11.3
Other FSU	3.0	2.9	3.0	2.9	2.8	3.0	2.9	3.1	3.2	3.1	3.1	3.1	3.2	3.2	3.2
China	4.3	4.3	4.2	4.1	4.2	4.0	4.1	4.0	4.0	4.1	4.0	4.0	3.9	3.8	3.7
Other Asia	2.6	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.6	2.5	2.5
Latin America	4.4	4.6	4.4	4.5	4.6	4.6	4.5	4.8	4.7	4.8	4.8	4.8	4.9	5.1	5.2
Middle East	1.4	1.3	1.3	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.3	1.3
Africa	2.3	2.2	2.2	2.1	2.2	2.2	2.2	2.3	2.3	2.3	2.3	2.3	2.2	2.1	2.1
Total Non-OECD	28.9	29.3	29.1	28.8	29.0	29.2	29.0	29.5	29.4	29.4	29.4	29.3	29.5	29.4	29.3
Biofuels	2.2	2.3	1.9	2.5	2.7	2.4	2.4	2.0	2.5	2.9	2.5	2.5	2.5	2.5	2.5
Processing Gains	2.2	2.2	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.4	2.4	2.4
Total Non-OPEC	56.1	57.5	57.1	56.1	56.6	56.5	56.6	56.2	56.2	56.9	56.9	56.5	57.3	57.9	58.7
OPEC non-Crude	6.5	6.6	6.7	6.8	6.9	6.9	6.8	6.9	6.9	7.0	7.0	7.0	7.0	7.0	7.0
OPEC Crude Production (actual/forecast)	31.0	32.1	32.6	32.8	33.2	33.3	33.0	33.2	33.5	33.6	33.5	33.4	33.5	33.8	33.7
Call on OPEC Crude (to balance market)	30.2	30.2	30.9	32.3	33.2	33.1	32.4	33.0	33.4	33.9	33.7	33.6	33.8	34.1	34.2
TOTAL SUPPLY	93.5	96.2	96.4	95.7	96.6	96.7	96.3	96.3	96.6	97.4	97.4	96.9	97.8	98.6	99.4
Implied global stock change	0.8	1.9	1.7	0.5	-0.1	0.2	0.6	0.2	0.1	-0.3	-0.2	-0.1	-0.2	-0.4	-0.5
OPEC Crude Capacity	34.3	34.7	35.1	35.4	35.5	35.7	35.4	35.8	35.7	35.8	35.9	35.8	36.0	36.2	36.1
OPEC Spare Capacity - at output	3.3	2.6	2.5	2.6	2.4	2.3	2.5	2.5	2.2	2.3	2.4	2.4	2.4	2.4	2.4
OPEC Spare Capacity - at "call"	4.1	4.5	4.2	3.1	2.3	2.6	3.0	2.8	2.4	1.9	2.1	2.3	2.2	2.0	2.0

Source: UBS, IEA, EIA, national statistics agencies inc. ANP and NPD. Note: OPEC includes Indonesia and 2014/15 restated to show Indonesia within OPEC. We assume that Saudi Arabia gradually ramps up proportionally with demand growth to maintain market share, other OPEC producers see output grow/decline in line with capacity changes. More detailed supply/demand forecasts by country available on request.

Figure 45: UBS supply/demand balances (Mb/d y/y change)

Demand (mb/d change Y-o-Y)	2014	2015	1Q16	2Q16E	3Q16E	4Q16E	2016E	1Q17E	2Q17E	3Q17E	4Q17E	2017E	2018E	2019E	2020E
US	0.1	0.3	0.2	0.3	0.0	0.2	0.2	0.2	0.1	0.0	0.1	0.1	0.0	0.0	0.0
Other OECD Americas	-0.1	-0.1	0.0	0.0	0.1	0.1	0.0	0.1	0.1	0.0	0.1	0.1	0.0	0.0	-0.1
OECD Europe	-0.2	0.3	0.2	0.1	-0.1	0.0	0.1	0.1	0.1	0.1	0.1	0.1	-0.1	-0.1	-0.1
OECD Asia-Pacific	-0.2	0.0	-0.1	0.1	0.2	-0.1	0.0	-0.1	0.1	0.0	0.0	0.0	0.0	-0.1	0.0
Total OECD	-0.3	0.5	0.2	0.5	0.2	0.2	0.3	0.3	0.4	0.2	0.2	0.3	0.0	-0.2	-0.2
FSU	0.2	0.0	0.3	0.0	0.0	0.0	0.1	0.1	0.0	-0.1	0.0	0.0	0.1	0.1	0.1
China	0.3	0.5	0.2	0.4	0.5	0.5	0.4	0.3	0.3	0.3	0.3	0.3	0.2	0.2	0.2
Other Asia	0.3	0.5	0.7	0.4	0.4	0.4	0.5	0.5	0.5	0.5	0.5	0.5	0.4	0.4	0.4
Latin America	0.2	-0.1	-0.1	-0.1	0.0	0.1	0.0	-0.1	-0.1	-0.1	-0.1	-0.1	0.1	0.1	0.1
Middle East	0.1	0.1	0.1	-0.1	0.1	0.2	0.1	0.2	0.1	0.2	0.1	0.2	0.2	0.2	0.2
Africa	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
Total Non-OECD	1.2	1.1	1.3	0.8	1.1	1.3	1.1	1.1	1.0	0.9	0.9	1.0	1.1	1.1	1.1
TOTAL DEMAND	0.9	1.6	1.5	1.3	1.3	1.5	1.4	1.4	1.3	1.1	1.2	1.2	1.0	0.9	0.9
Supply (mb/d change Y-o-Y)	2014	2015	1Q16	2Q16E	3Q16E	4Q16E	2016E	1Q17E	2Q17E	3Q17E	4Q17E	2017E	2018E	2019E	2020E
US	1.7	1.0	0.0	-0.7	-0.9	-1.2	-0.7	-1.4	-1.0	-0.4	0.2	-0.7	0.5	0.5	0.6
Other OECD Americas	0.2	-0.1	-0.1	-0.3	-0.2	-0.1	-0.2	0.0	0.7	0.1	0.0	0.2	0.1	0.2	0.1
OECD Europe	0.0	0.2	0.2	0.0	0.1	0.0	0.1	0.0	-0.1	-0.1	-0.1	-0.1	0.0	-0.1	0.1
OECD Asia-Pacific	0.0	0.0	0.0	0.0	-0.1	-0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total OECD	1.9	1.1	0.1	-1.0	-1.2	-1.3	-0.8	-1.4	-0.4	-0.3	0.0	-0.5	0.6	0.6	0.8
Russia	0.0	0.1	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.0
Other FSU	0.0	0.0	-0.1	-0.1	0.0	0.1	0.0	0.2	0.3	0.3	0.1	0.2	0.1	-0.1	0.0
China	0.0	0.1	-0.1	-0.3	-0.2	-0.3	-0.2	-0.2	-0.1	-0.1	0.0	-0.1	-0.1	-0.1	-0.1
Other Asia	0.0	0.1	0.0	0.0	0.1	0.0	0.0	-0.1	-0.1	0.0	0.0	-0.1	0.0	-0.1	-0.1
Latin America	0.2	0.2	-0.3	-0.1	0.0	0.0	-0.1	0.4	0.2	0.2	0.2	0.3	0.1	0.2	0.2
Middle East	-0.1	-0.1	-0.1	-0.1	0.0	0.0	-0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Africa	0.1	0.0	-0.1	-0.1	0.0	0.0	-0.1	0.1	0.1	0.1	0.0	0.1	-0.1	-0.1	-0.1
Total Non-OECD	0.2	0.3	-0.4	-0.5	-0.2	-0.2	-0.3	0.4	0.5	0.4	0.3	0.4	0.2	-0.1	-0.1
Biofuels	0.2	0.0	0.1	0.2	0.2	0.0	0.1	0.1	0.0	0.1	0.1	0.1	0.0	0.0	0.0
Processing Gains	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	0.0	0.0
Total Non-OPEC	2.4	1.5	-0.1	-1.2	-1.1	-1.5	-1.0	-0.9	0.1	0.3	0.4	-0.1	0.8	0.6	0.8
OPEC non-Crude	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.1	0.1	0.1	0.1	0.0	0.0	0.0
OPEC Crude Production	-0.2	1.1	1.4	0.6	0.7	0.9	0.9	0.7	0.7	0.4	0.1	0.5	0.3	0.3	0.2
Call on OPEC Crude	-1.7	0.0	1.4	2.4	2.2	2.8	2.2	2.1	1.1	0.7	0.6	1.2	0.2	0.4	0.1
TOTAL SUPPLY	2.3	2.7	1.4	-0.5	-0.2	-0.3	0.1	0.0	0.9	0.8	0.7	0.5	0.9	0.8	0.8
OPEC Crude Capacity	-1.2	0.4	0.5	0.7	0.9	1.0	0.8	0.7	0.3	0.3	0.2	0.4	0.1	0.2	0.0
OPEC Spare Capacity - at 'call'	0.4	0.4	-1.0	-1.7	-1.4	-1.8	-1.5	-1.4	-0.7	-0.4	-0.4	-0.8	-0.1	-0.1	-0.1

Source: UBS, IEA, EIA, national statistics agencies inc. ANP and NPD. Note: OPEC includes Indonesia and 2014/15 restated to show Indonesia within OPEC. We assume that Saudi Arabia gradually ramps up proportionally with demand growth to maintain market share, other OPEC producers see output grow/decline in line with capacity changes. More detailed supply/demand forecasts by country available on request.

Figure 46: 2016/17 real GDP growth assumptions (%)

	IEA (IMF)		EIA		OPEC		UBS	
	2016	2017	2016	2017	2016	2017	2016	2017
Global	3.2	3.5	2.1	2.9	3.1	n/a	3.0	3.4
Euro Area	1.5	1.6			1.6	n/a	1.6	1.7
UK	1.9	2.2			n/a	n/a	2.0	2.3
Japan	0.5	-0.1			0.5	n/a	0.5	1.1
Korea	2.7	2.9			n/a	n/a	2.3	2.3
USA	2.4	2.5	1.7	3.0	2.0	n/a	1.7	2.5
Canada	1.5	1.9			n/a	n/a	1.9	2.5
Russia	-1.8	0.8			-1.1	n/a	-0.6	1.5
India	7.5	7.5			7.5	n/a	7.4	7.6
China	6.5	6.2			6.5	n/a	6.6	6.3

Source: UBS, EIA, OPEC, IEA, IMF.

Valuation Method and Risk Statement

In history, oil prices have proved consistently unpredictable because so many political, geological, and economic trends and events affect the supply of and demand for oil

Oil prices are extremely volatile in the short, medium and long term, as they are frequently affected by inherently unpredictable events, including natural disasters

Required Disclosures

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12-Month Rating	Definition	Coverage ¹	IB Services ²
Buy	FSR is > 6% above the MRA.	49%	32%
Neutral	FSR is between -6% and 6% of the MRA.	38%	26%
Sell	FSR is > 6% below the MRA.	14%	19%
Short-Term Rating	Definition	Coverage ³	IB Services ⁴
Buy	Stock price expected to rise within three months from the time the rating was assigned because of a specific catalyst or event.	<1%	<1%
Sell	Stock price expected to fall within three months from the time the rating was assigned because of a specific catalyst or event.	<1%	<1%

Source: UBS. Rating allocations are as of 31 March 2016.

1:Percentage of companies under coverage globally within the 12-month rating category.

2:Percentage of companies within the 12-month rating category for which investment banking (IB) services were provided within the past 12 months.

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