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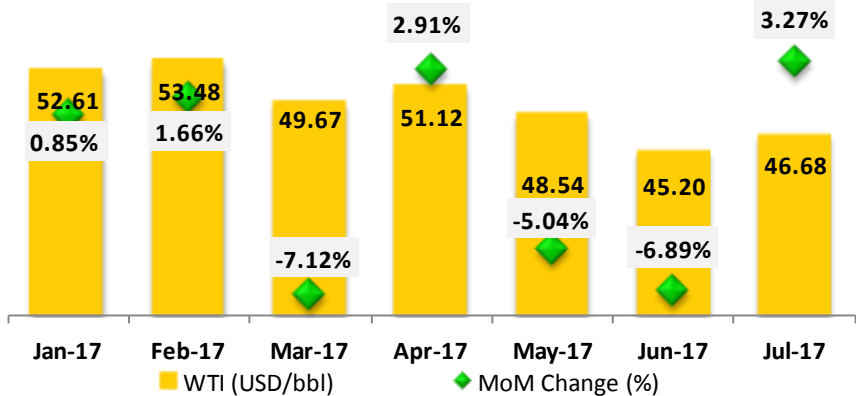
Medium term Outlook on Crude oil

July 2017

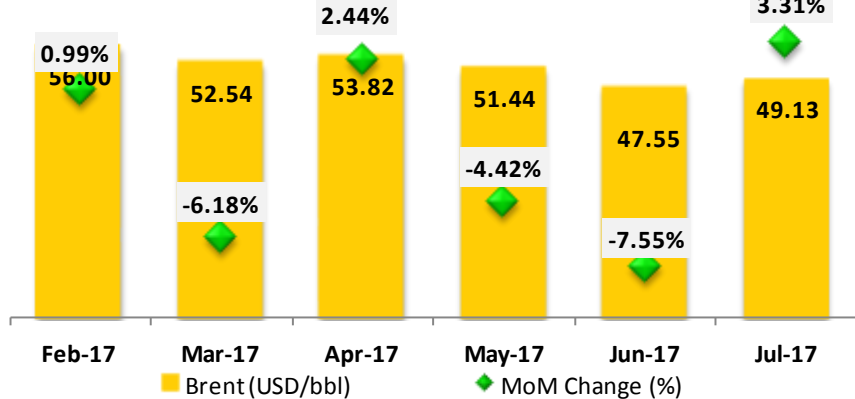


Market recap

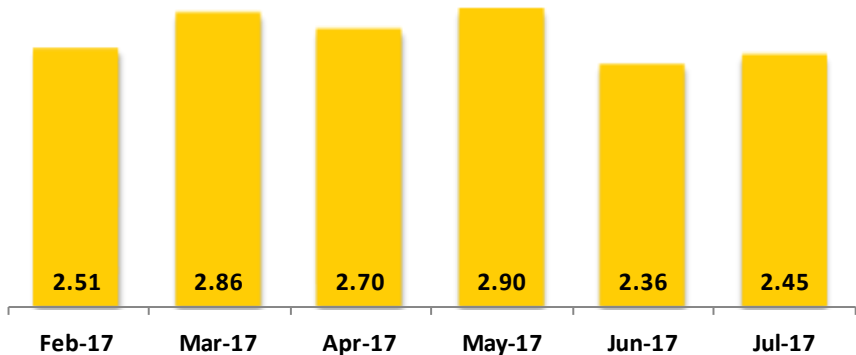
WTI Crude oil price trend



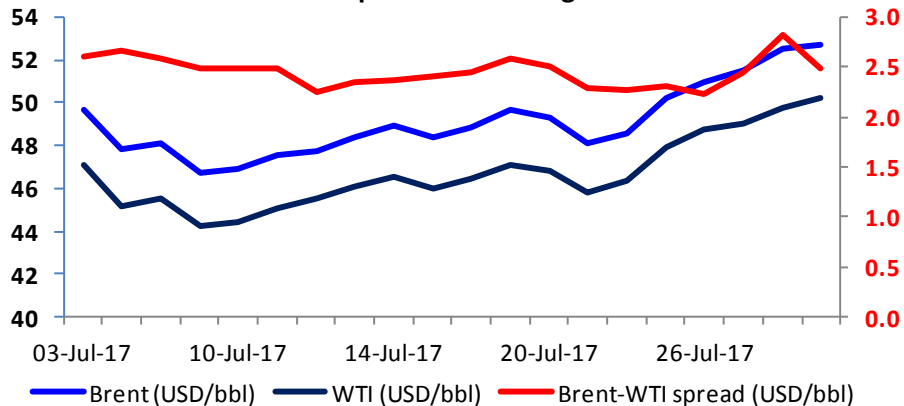
Brent Crude oil price trend



Brent-WTI spread (USD/bbl)



Crude oil price trend during Jul'17



Market recap and developments

- ❖ Crude oil prices rebounded in the past month supported by easing US crude oil inventory glut and weakness in Dollar index. Further, expectations of lower exports from OPEC countries due to higher domestic demand also provided support to prices. However, sluggish growth in US gasoline demand kept the prices gains limited in the past month.
- ❖ Joint Ministerial Monitoring Committee meeting held yesterday announced that Nigeria has agreed to cap its production at 1.8 MBpd once the production stabilizes allaying some of the concerns about production growth as it had been earlier exempted from cuts. However, cap on Libya's output has been mentioned in the announcement.
- ❖ OPEC, in its latest monthly report showed that OPEC crude oil production increased by 0.68 MBpd to 32.6 MBpd in June from 32.1 MBpd in May due to rise in Libya and Nigeria production by 16.7% and 3.1% respectively compared to earlier months. Libya's production rose by 26% to 0.85 MBpd and Nigeria's production increased by 10% to 1.73 MBpd respectively from the start of the year.
- ❖ At the economic front, US Dollar remained under pressure against basket of currencies owing to waning expectations over aggressiveness of FED's interest rate hikes. While the greenback has slumped to fifteen month lows against the basket of currencies, it fell to two and half year lows against the Euro.
- ❖ US crude oil inventories declined to 481.89 million barrels by the end of July from 502.91 million barrels a month earlier amid strong refinery activity. Since April US crude oil inventories have declined by 53.66 million barrels and currently at the since Jan 2017.

Critical Price Drivers

Price driver	1 month		2-3 months	
	Weight %	Score (1-5)	Weight %	Score (1-5)
US Crude oil stocks	15%	5	15%	5
US Crude oil production	15%	2	15%	3
US gasoline demand	15%	4	15%	3
OPEC production compliance	10%	2	10%	2
Libya and Nigeria crude oil production	10%	2	10%	2
Russia production and exports	10%	2	10%	3
Chinese demand growth	10%	2	10%	4
Supply – demand balance	15%	3	15%	3
Total indexed score:	2.90		3.20	
Index score (1-5, 3:Neutral, 1&2:bearish, 4&5:bullish)				

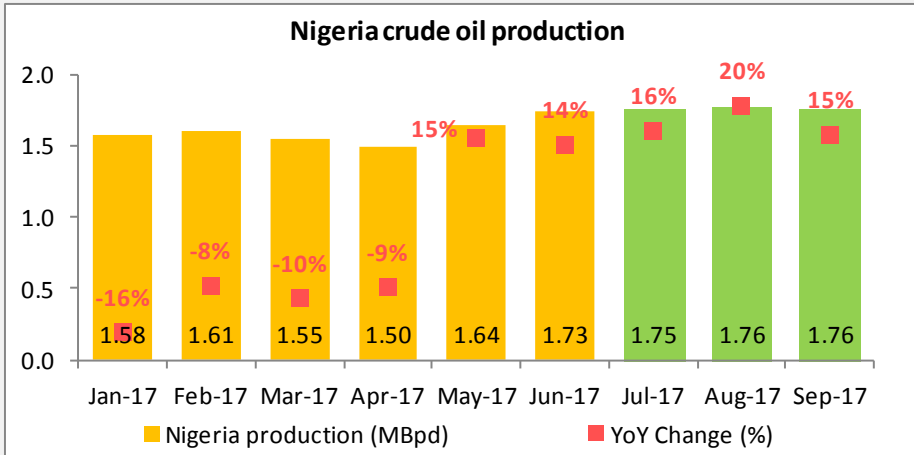
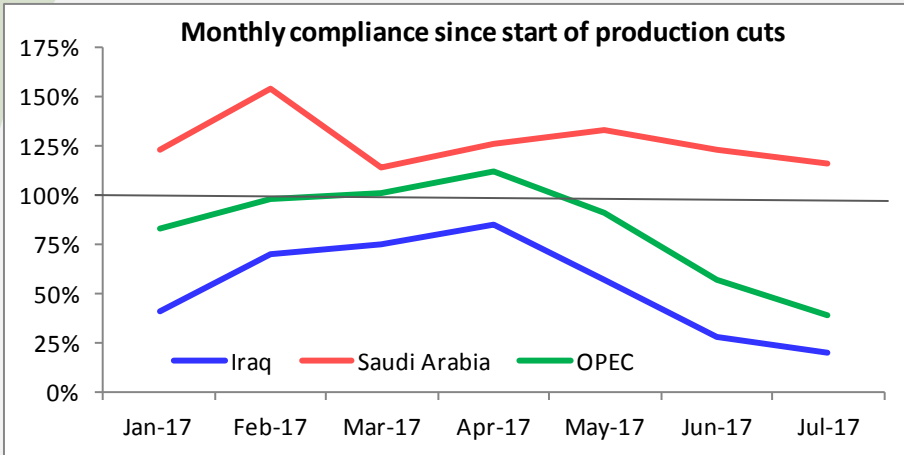
High compliance among most OPEC members; Iraq production yet to align with target

Country	Production target	May'17 production	Jun'17 production (e)	Jan-Jul'17 average production	Pledged cut	Average actual change in production	Compliance (%)
Algeria	1.040	1.060	1.060	1.056	-0.05	-0.03	67.6%
Angola	1.670	1.668	1.660	1.643	-0.08	-0.11	133.0%
Ecuador	0.520	0.527	0.525	0.527	-0.03	-0.02	76.5%
Gabon	0.190	0.197	0.200	0.200	-0.01	0.00	19.0%
Iran	3.780	3.790	3.805	3.791	0.09	0.10	
Iraq	4.350	4.502	4.520	4.448	-0.21	-0.11	53.6%
Kuwait	2.710	2.709	2.705	2.708	-0.13	-0.13	101.5%
Libya	0.530	0.852	0.944	0.720	--	0.19	
Nigeria	1.630	1.733	1.750	1.621	--	-0.01	
Qatar	0.620	0.618	0.620	0.617	-0.03	-0.03	109.2%
Saudi Arabia	10.060	9.950	9.980	9.928	-0.48	-0.62	127.2%
UAE	2.870	2.898	2.908	2.909	-0.14	-0.10	72.8%
Venezuela	1.970	1.938	1.976	1.971	-0.10	-0.10	99.3%
Total	31.940	32.442	32.653	32.139	-1.17	-0.97	83.0%

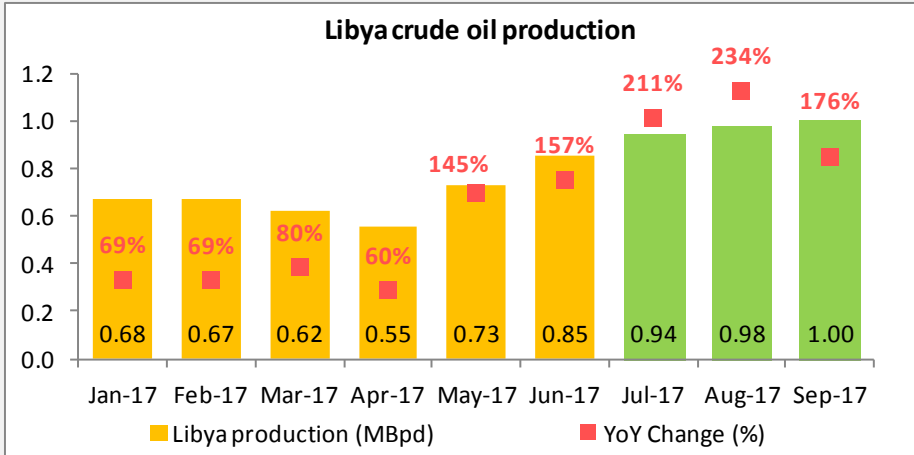
*Libya and Nigeria exempted from production cuts , Indonesia has suspended its membership
Quota is for OPEC-14, All units in MBpd

OPEC group monthly compliance seen declining over the past two months while Libya and Nigeria's production seen improving

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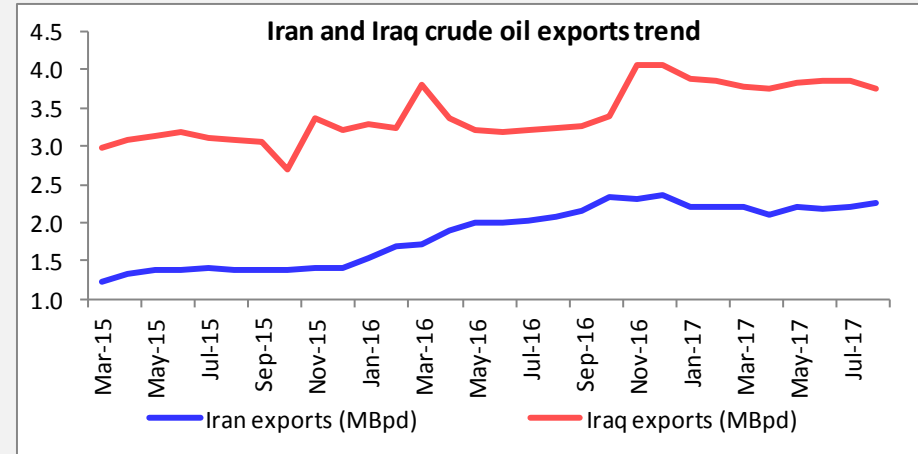
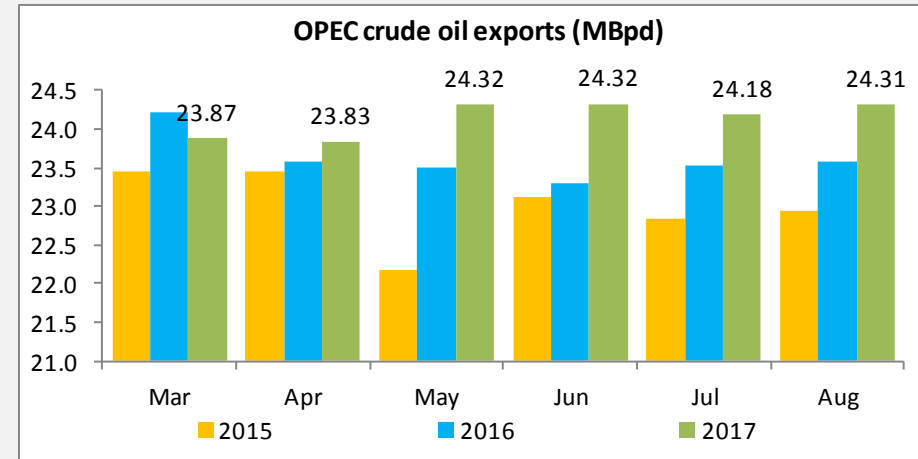
- ❖ Saudi Arabia has maintained the compliance higher than 100% (i.e. lowering output to less than production cut levels) aiding in group keeping the compliance higher despite the lower cuts by Iraq and supply growth from Libya and Nigeria
- ❖ Declining monthly compliance is likely to result in offsetting the positive impact of production cuts in the medium term.



OPEC exports remained high despite the production cut measures

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- ❖ Despite the reduction in production due to output cuts deal, crude oil exports from OPEC have continued to increase during the first four months compared to same time last year due to rise in Iran and Iraq exports.
- ❖ Further, rise in Libya and Nigeria's exports have also added to the supply pressure in the past four months.
- ❖ Total exports during H1 2017 are expected to stand at 24.30 MBpd, about 2.6% higher compared to 23.69 MBpd during same period last year.
- ❖ Higher export volumes in the market has kept the supplies ample in the market offsetting the impact of production cuts.



Low compliance among most non-OPEC members

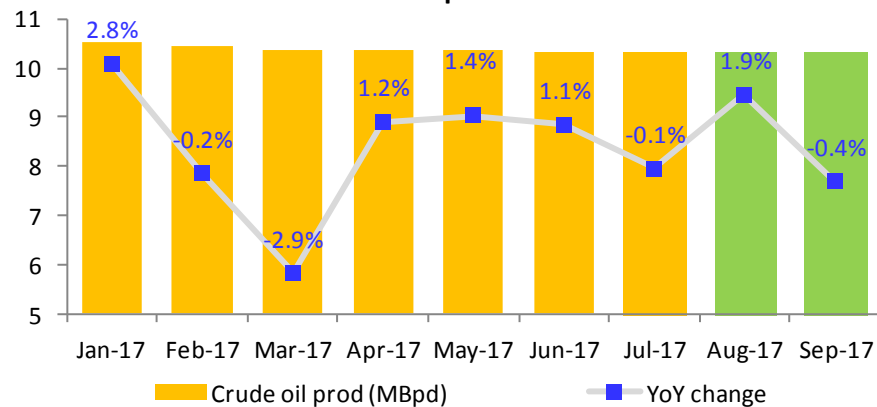
Country	Production target	Jun'17 production	Jul'17 production	Pledged cut	Average Jan-Jul production vs. target	Compliance (%)
Russia	10.210	10.340	10.340	-0.300	-0.121	40.2%
Azerbaijan	0.695	0.698	0.718	-0.035	-0.013	38.1%
Bahrain	0.048	0.050	0.050	-0.002	0.000	0.0%
Brunei	0.098	0.100	0.100	-0.002	0.000	0.0%
Guinea	0.242	0.250	0.250	-0.008	0.000	0.0%
Kazakhstan	1.419	1.464	1.460	-0.020	0.017	-82.6%
Malaysia	0.646	0.670	0.670	-0.034	-0.010	29.4%
Mexico	1.942	2.025	2.023	-0.100	-0.018	17.7%
Oman	0.970	1.000	1.000	-0.045	-0.015	33.2%
Sudan	0.252	0.260	0.258	-0.008	-0.001	18.4%
South Sudan	0.156	0.160	0.162	-0.004	0.001	-36.9%
Total	16.677	17.017	17.031	-0.558	-0.160	28.7%

Output cuts of Bahrain, Brunei, Guinea, Malaysia, Sudan and South Sudan are estimated numbers

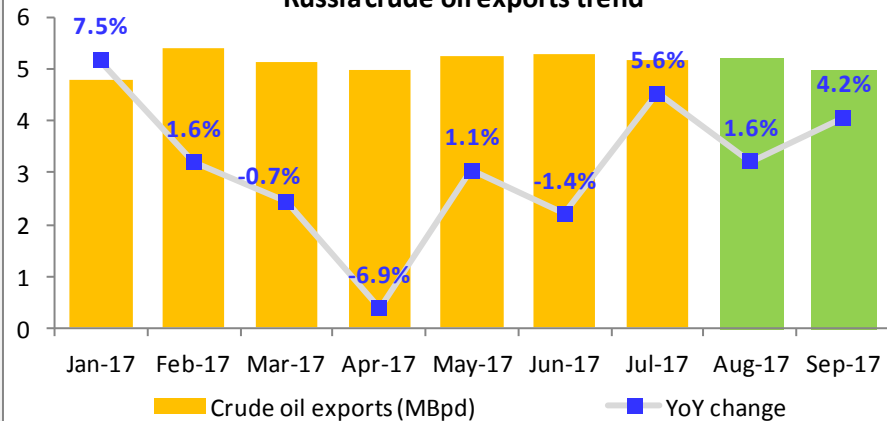
All units in MBpd

Russia production and exports

Russia crude oil production trend



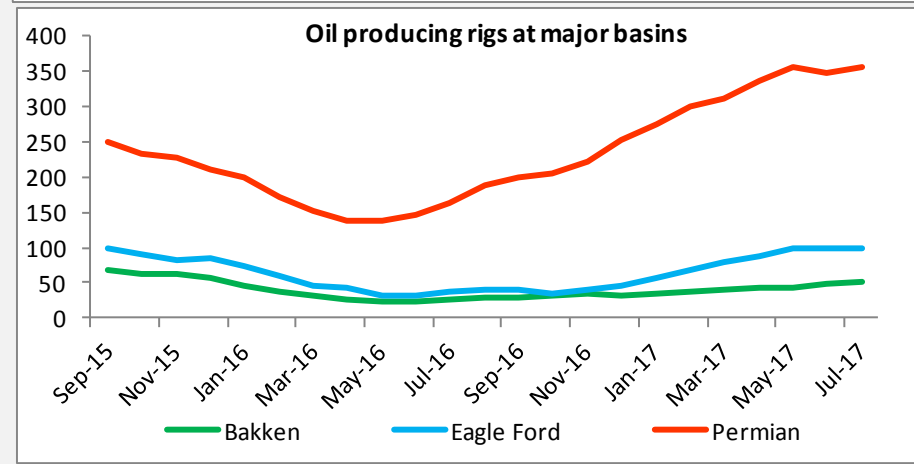
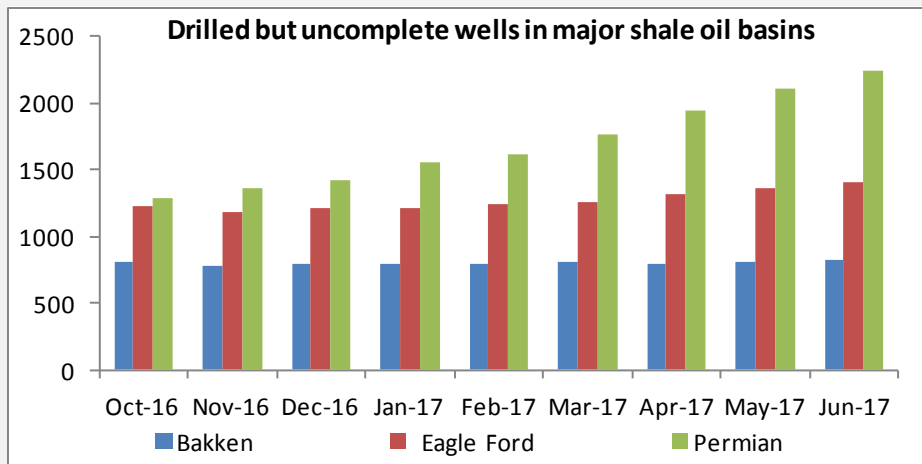
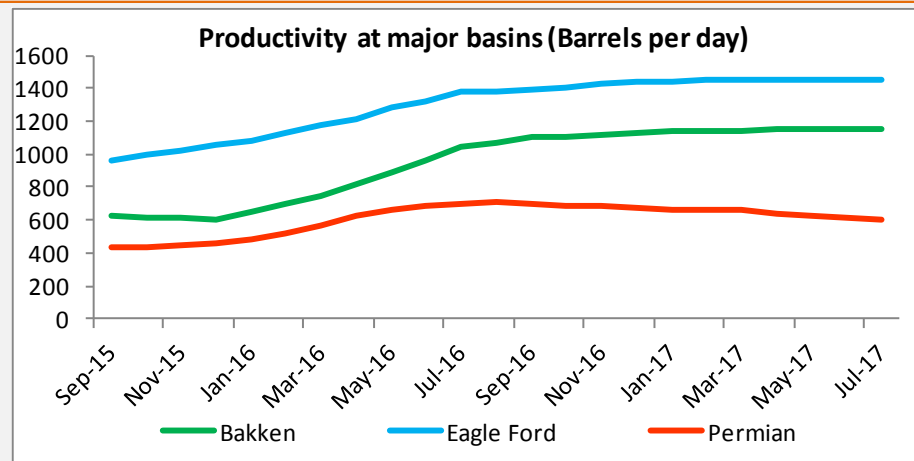
Russia crude oil exports trend



- ❖ Russia's production in 2016 has increased by 5.4% compared to a year earlier and Russia's crude oil exports have increased by 5.3% YoY during 2016 with state owned companies exploring new options in Asia-Oceania, majorly China, Japan and India, has driven the production higher in 2016.
- ❖ Further, Russia's production in Jan-Jun'17 was reduced by an average of 160 KBpd to 10.35 MBpd against pledged cut of 300 KBpd in the output cut agreement with OPEC and other nations.
- ❖ With high revenue dependency on crude oil exports, and brokering of new deals with China teapot refineries and India, crude oil production in Russia unlikely to witness significant drawdown in the medium term.

Shale oil production growth expected to slowdown due to lower productivity

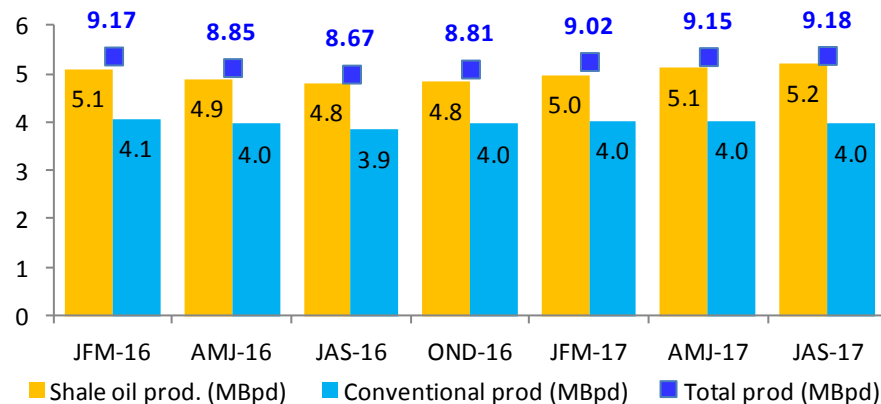
- ❖ Productivity in the major shale oil production regions is seen stalling over the past few months owing to incompleteness of wells despite drilling being finished as the profitability has not increased with prices being range bound.
- ❖ Going ahead, lower productivity is expected to keep halt the shale oil growth rate in coming months.



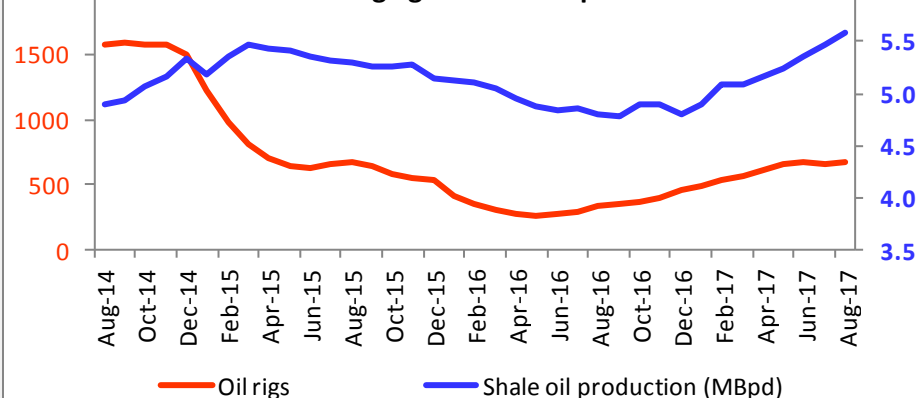
US crude oil production growth likely to be moderate in the medium term

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US crude oil production overview

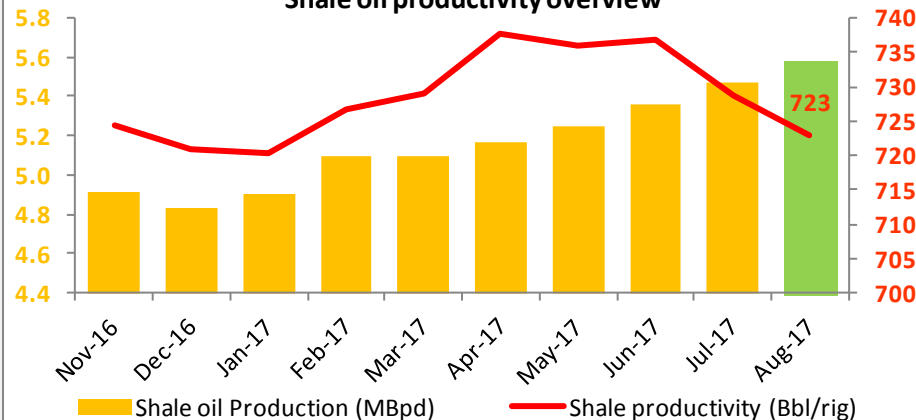


Oil drilling rigs vs Shale oil production



- ❖ Oil drilling rigs in US are seen consistently increasing in the past four months amid firm trend in prices, reaching up to highest levels since Nov 2015, when prices started to fall sharply.
- ❖ Further, with the decline productivity crude oil output is expected to increase marginally by 0.3% in JAS quarter compared to past quarter.

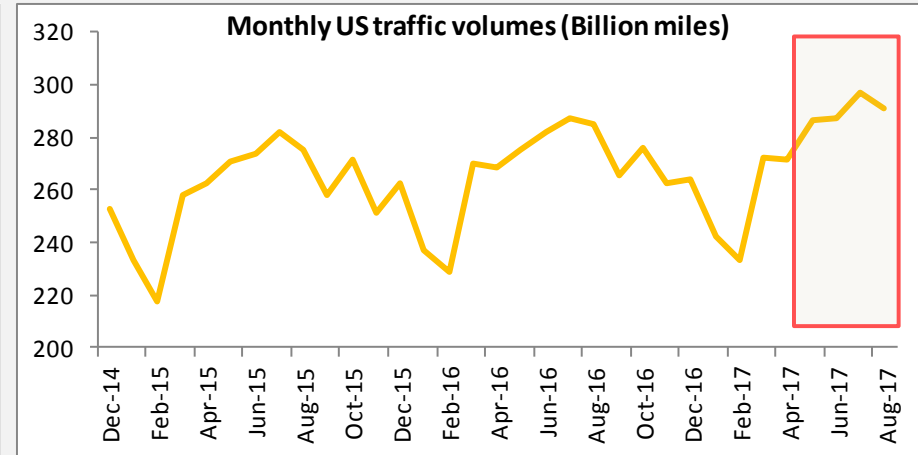
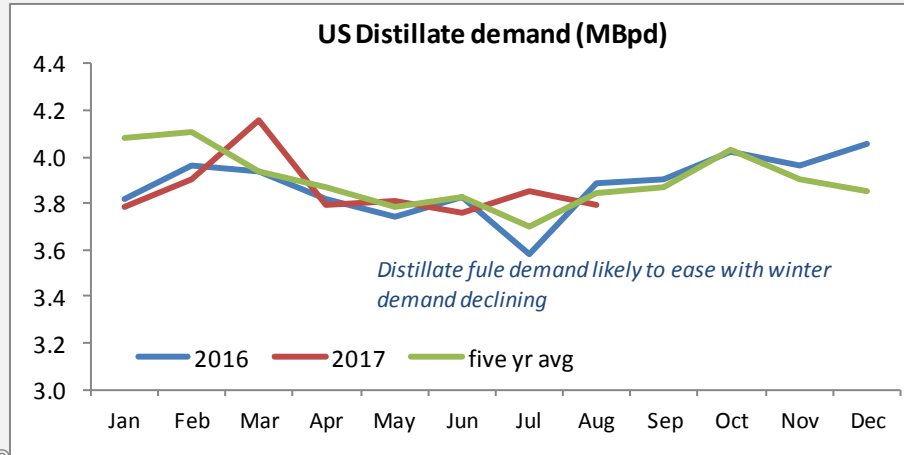
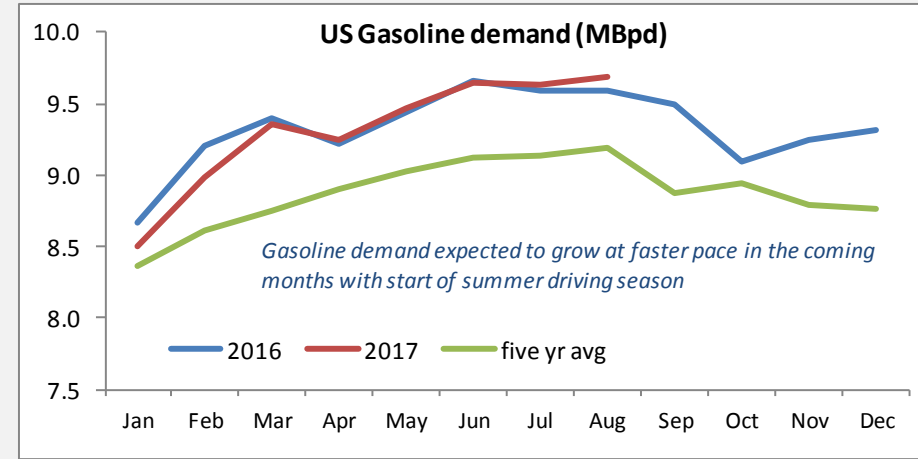
Shale oil productivity overview



US gasoline demand growth seen to be sluggish during first month of driving season; expected to improve in the coming months

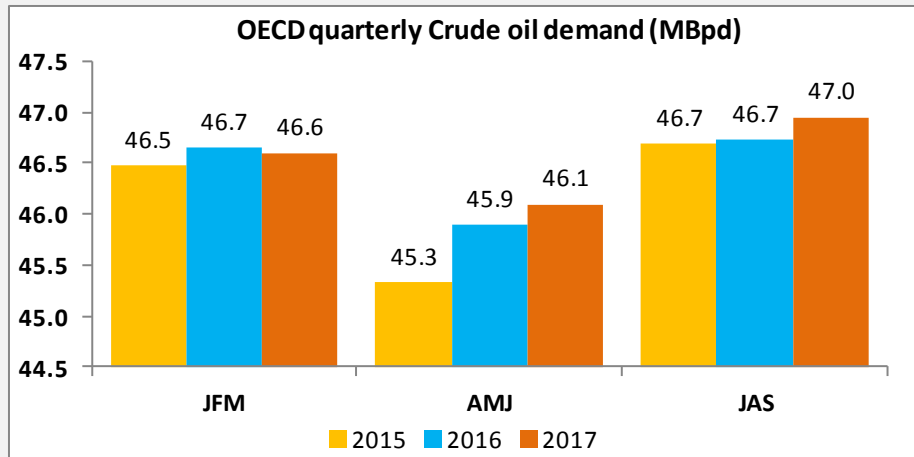
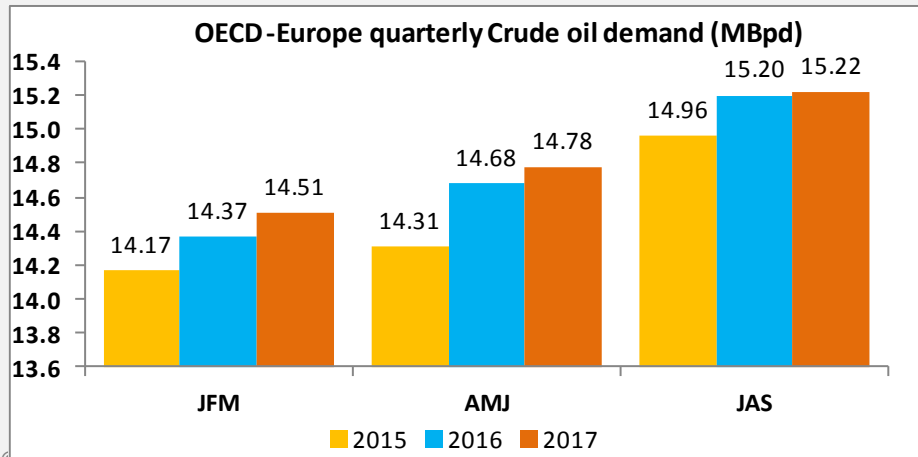
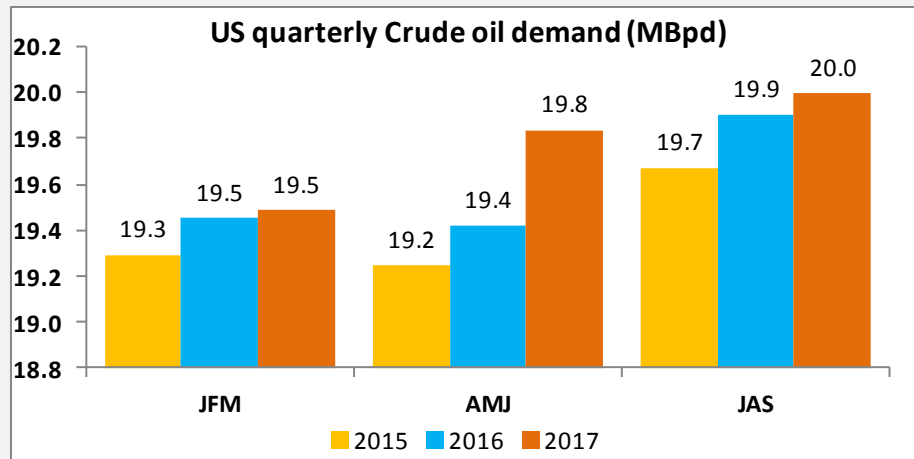
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- ❖ US crude oil demand in the first five months is estimated to have increased by 1.2% driven by strong distillate demand growth despite slowdown in gasoline growth rate in gasoline consumption.
- ❖ Gasoline demand is estimated to have increased by 0.8% since the start of Summer i.e June to July supported by rising traffic volumes.



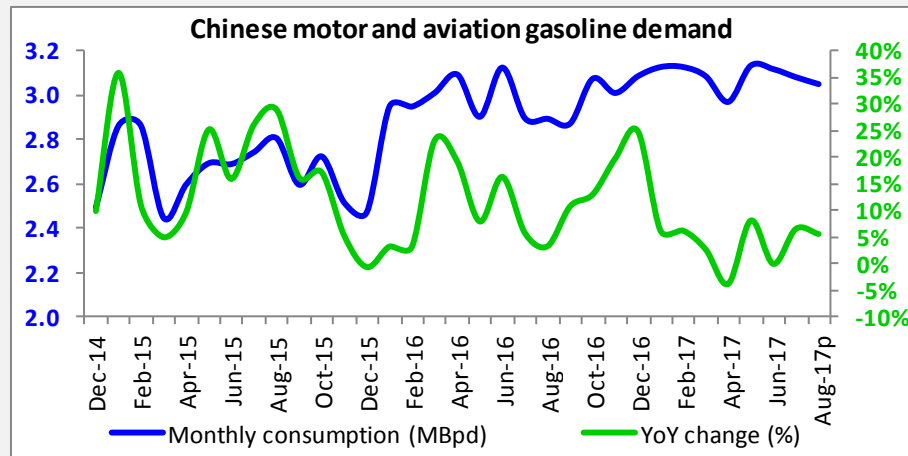
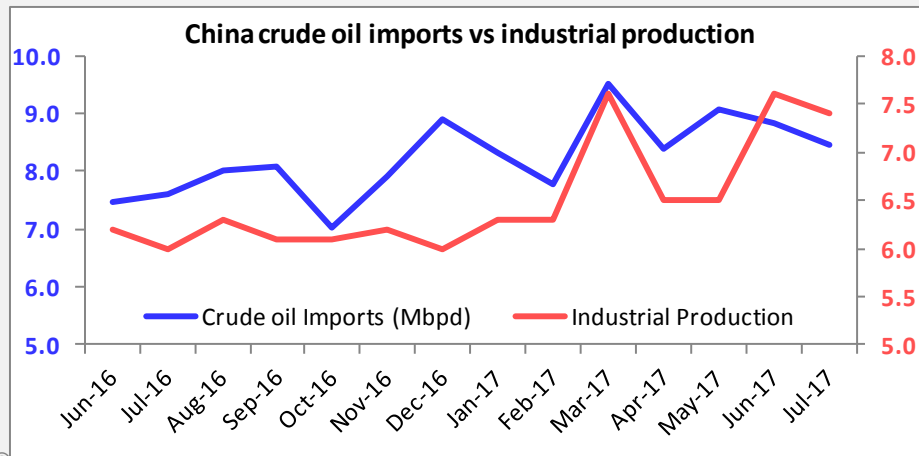
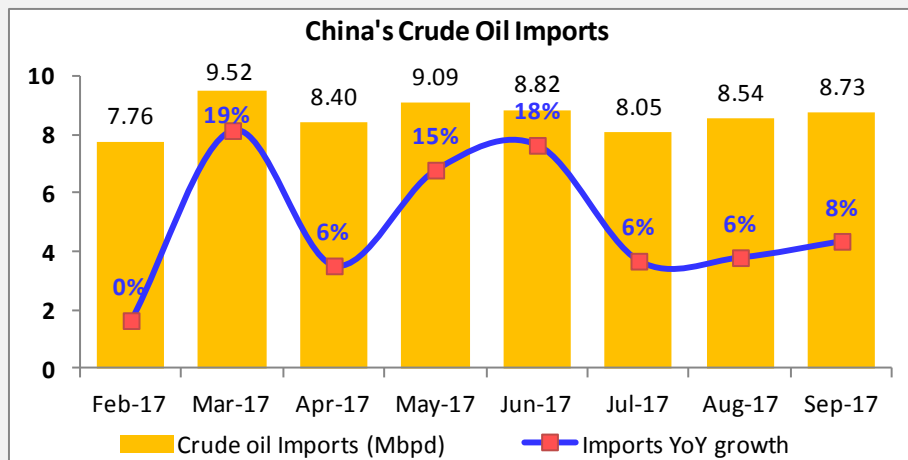
OECD quarterly demand expectations

- ❖ Revival witnessed in OECD Europe demand in 2016 is expected to continue over the next two years owing to fiscal stimulus measures aiding the consumption growth, while sluggish growth at Japanese front is expected to continue
- ❖ Furthermore, in pick up in pace of economic activity during starting from H2 2017, OECD demand growth is expected to grow at a steady pace.



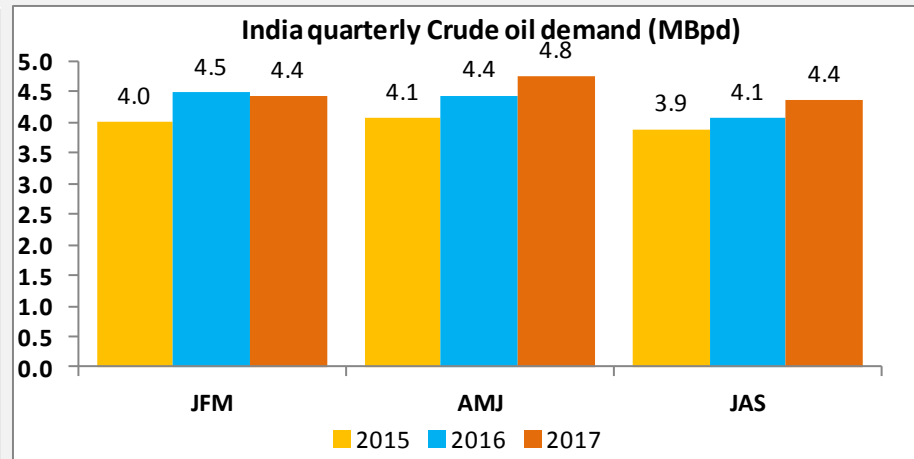
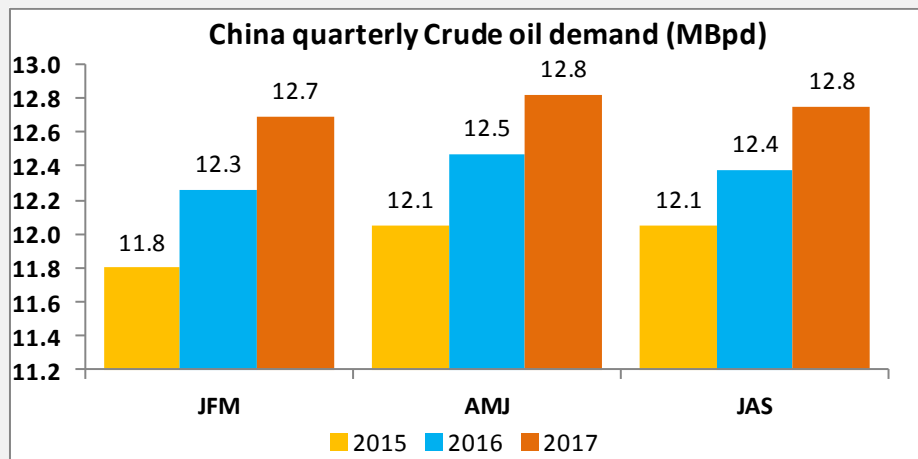
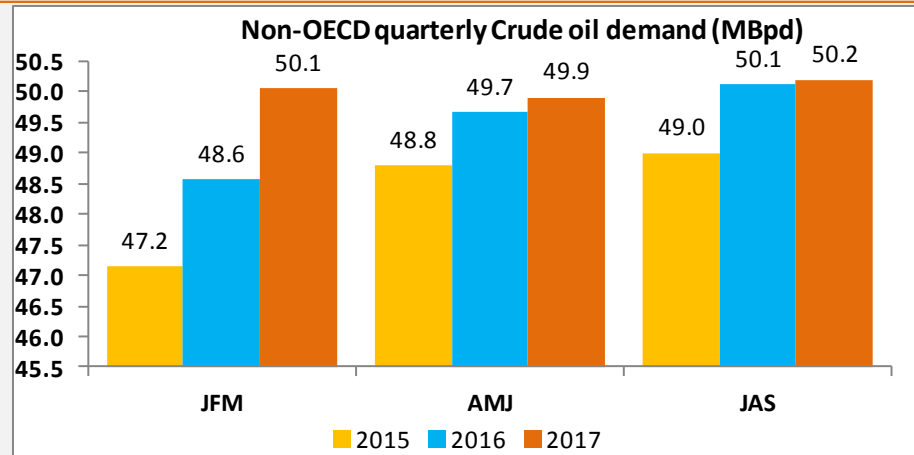
China crude oil imports

- ❖ China's four state run refiners and six independent refiners are expected to take up planned maintenance in the third quarter of 2017 along with Petro China and Sinopec looking to run at lower rates raising doubts over the China's demand sustenance in the medium term.
- ❖ However, despite the refinery maintenance by Chinese refiners, contrary to the seasonal peak activity period, during JAS, new import licenses to independent refiners is likely to keep crude oil imports growth stable in the coming months.



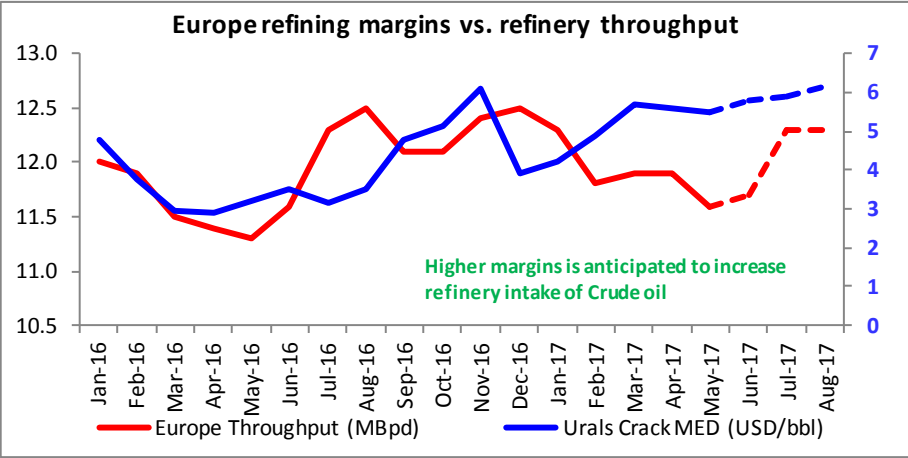
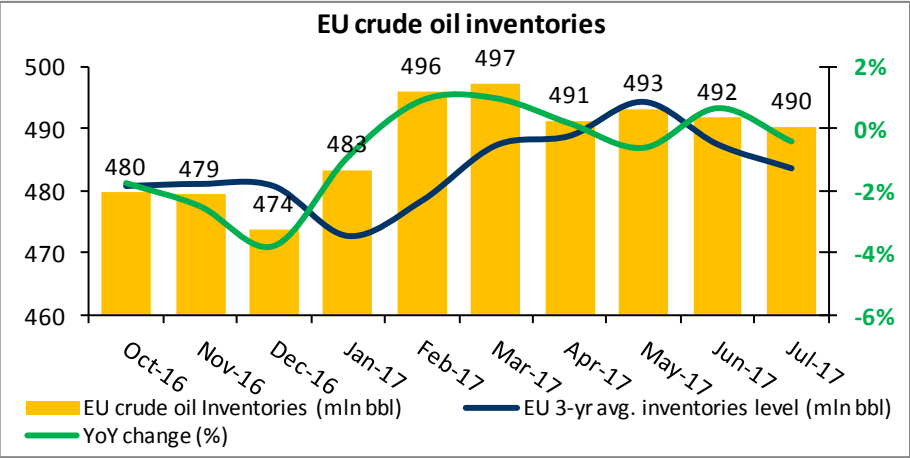
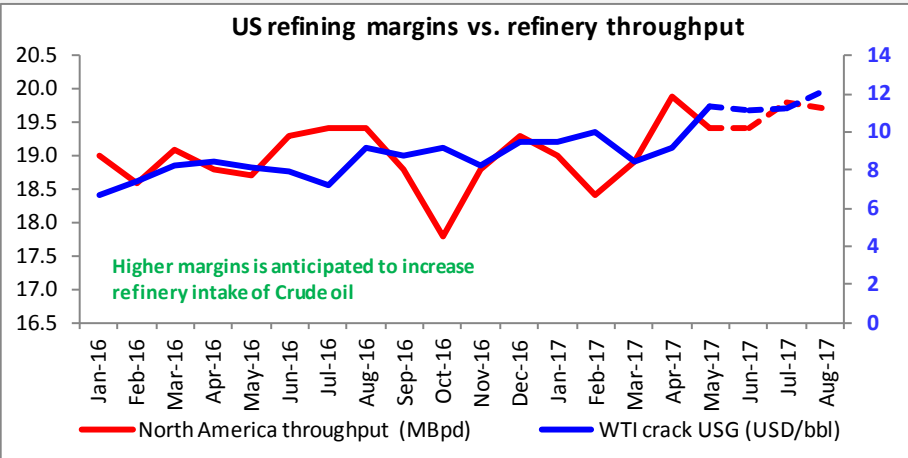
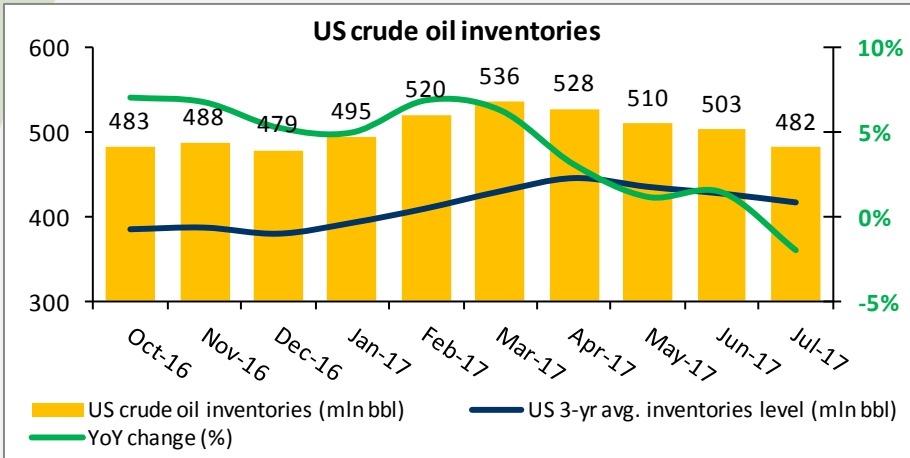
Non – OECD quarterly demand expectations

- ❖ After the strong 3% YoY growth during JFM 2017, demand growth in non-OECD region is estimated to have grown at moderate pace of 0.5% YoY and is expected to grow at 0.2% YoY during JAS 2017.
- ❖ Stagnation in growth due to refinery maintenance in China despite the improvement in manufacturing activity is likely to keep growth rate low.



Refining throughputs likely to improve in coming months due to higher margins aiding in dwindling the stock levels

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US crude oil inventories expected to continue the declining trend

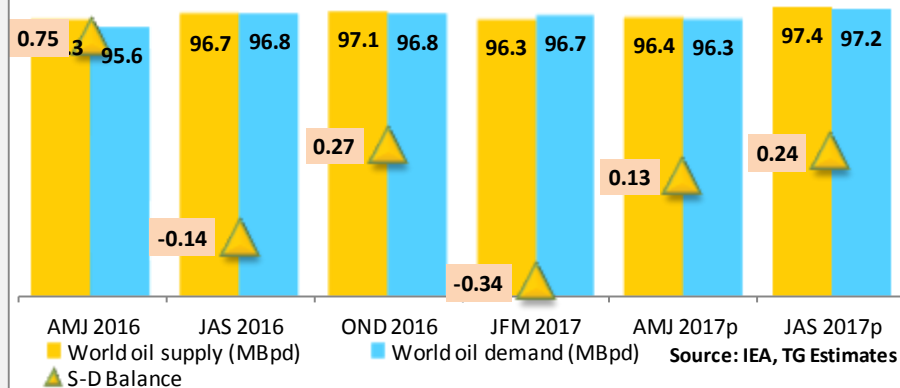
Month	Production (MBpd)	Demand (MBpd)	Imports (MBpd)	Prod-Cons gap (MBpd)	Supply-demand (MBpd)	Refinery Utilization (%)	Refinery inputs (MBpd)	US crude oil inventories (million Barrels)
Jan-17	8.85	19.23	8.44	-10.38	-1.95	90.22%	16392	494.76
Feb-17	9.07	19.19	7.89	-10.12	-2.23	85.84%	15572	520.89
Mar-17	9.13	20.03	8.05	-10.90	-2.85	87.69%	15982	535.54
Apr-17	9.11	19.53	8.13	-10.42	-2.29	92.82%	17024	527.77
May-17	9.17	20.02	8.40	-10.85	-2.46	93.33%	17168	509.91
Jun-17	9.18	19.96	8.14	-10.78	-2.64	93.68%	17444	502.91
Jul-17	9.20	20.01	7.96	-10.81	-2.85	94.55%	17606	481.89
Aug-17P	9.21	20.05	7.84	-10.84	-3.00	93.60%	17459	462.55
Sep-17P	9.22	19.92	8.05	-10.70	-2.65	91.80%	16950	444.34

- ❖ Going ahead, with the refinery activity ramp up expected starting from May amid gasoline inventories broadly remaining lower than last year levels and demand expected to improve in July and August shall aid in lowering crude oil inventory levels in the next two months.

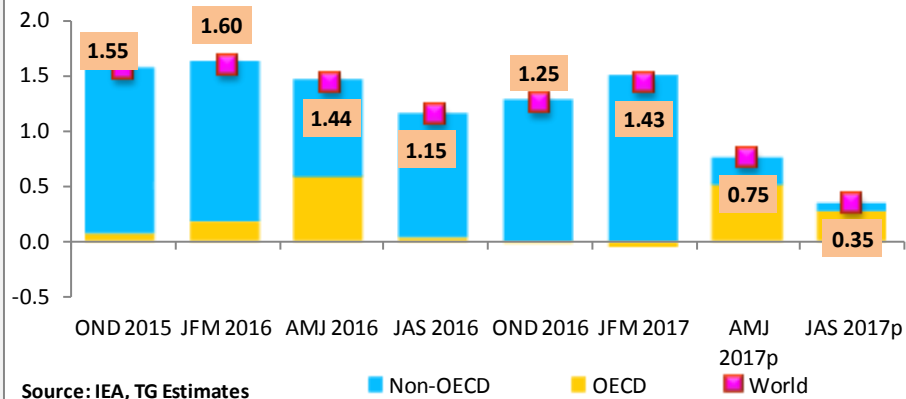
Global supply – demand balance

- ❖ Moving forward, despite the strong demand growth, supply increment is still likely to outpace demand growth in the coming quarters due to
 - ❖ Rising Iran and Libya along with compliance expected reduce in the coming months
 - ❖ Rising oil rigs shall result in gradual recovery of US crude oil production.
- ❖ Surplus supplies in market shall keep prices under pressure in the medium term.

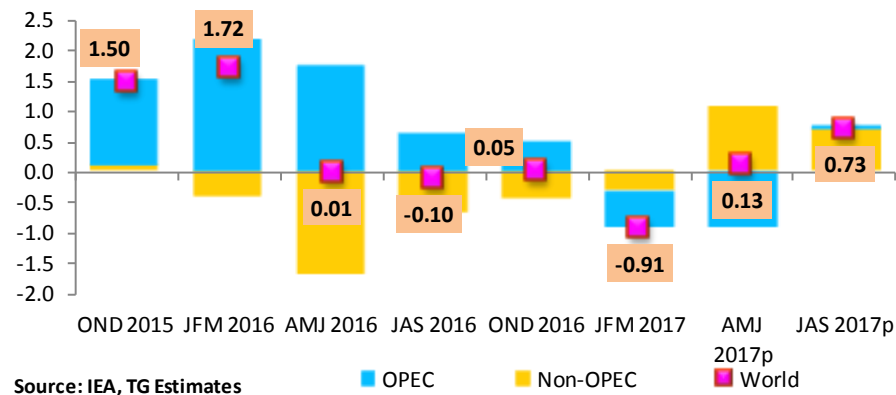
World oil Supply-Demand Balance Quarterly



Quarterly world oil YoY demand growth (Mbpd)



Quarterly world oil YoY Supply growth (Mbpd)

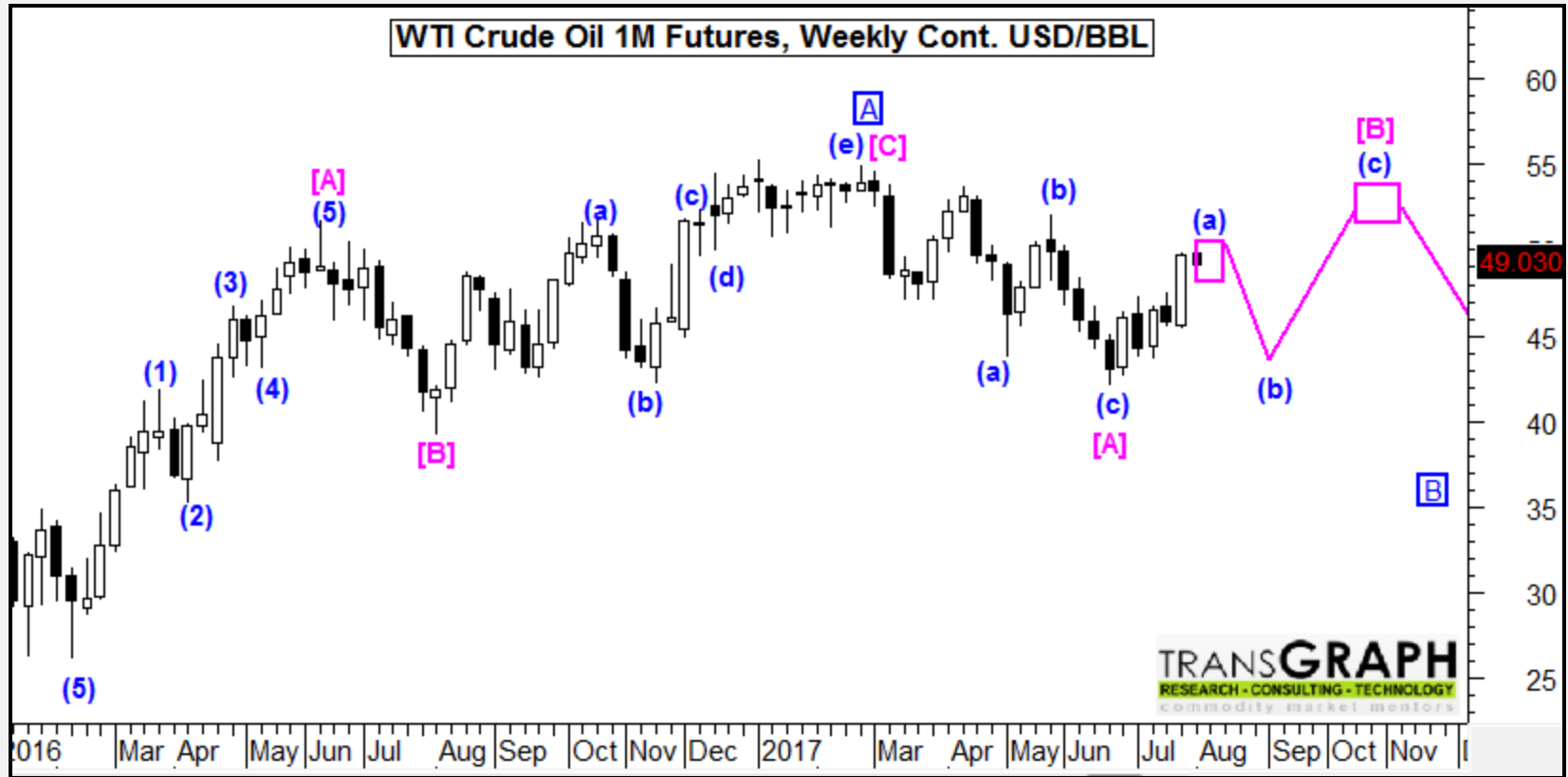


Technical analysis



WTI Crude Oil – Preferred Elliott Wave Analysis

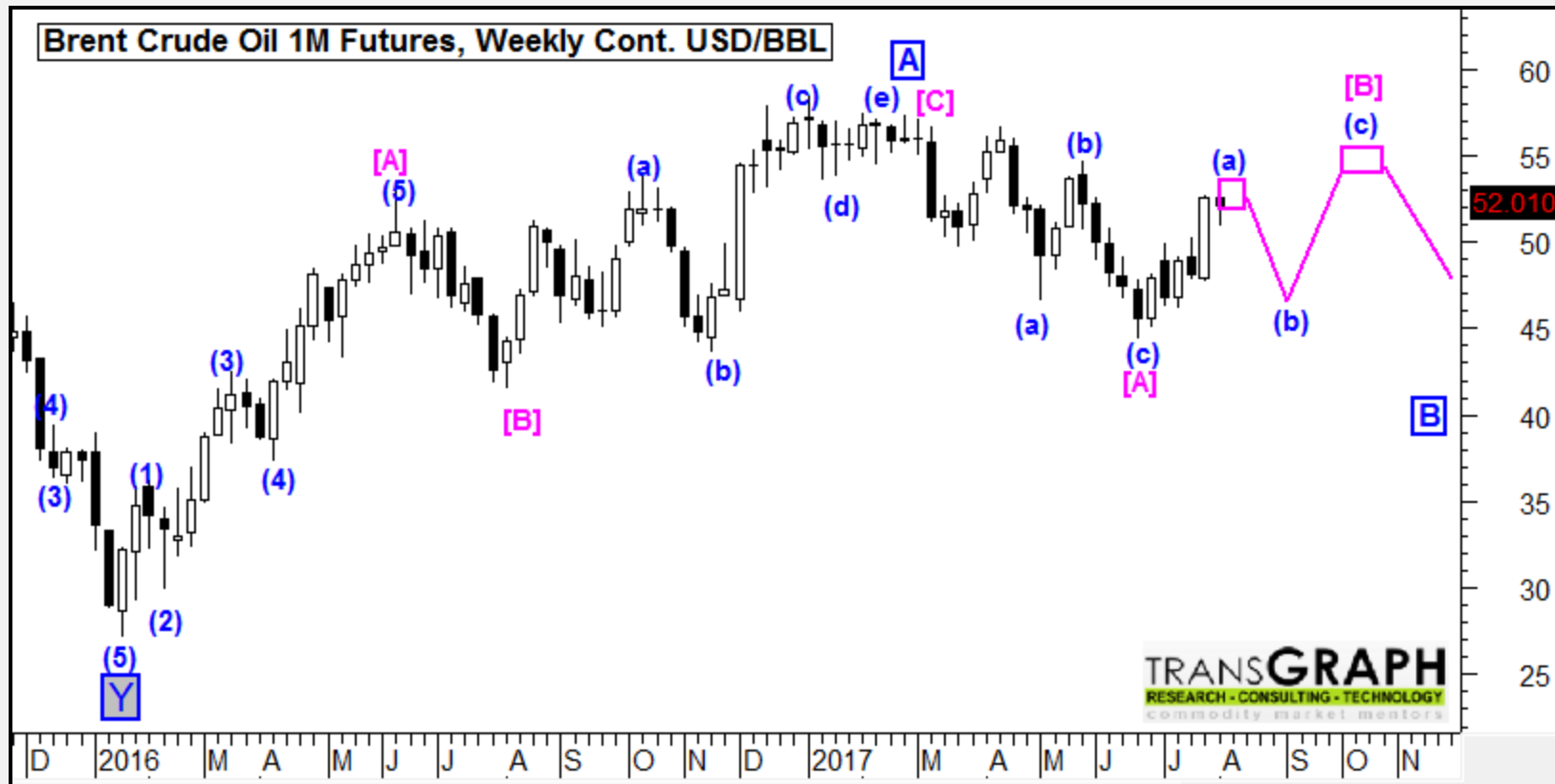
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WTI Crude Oil, prices are likely to hold around USD 52 on any further rise and resume the bearish trend towards USD 44/43 ahead of rebound towards USD 54 in the coming 3 to 4 months.

ICE Brent Crude Oil – Preferred Elliott Wave Analysis

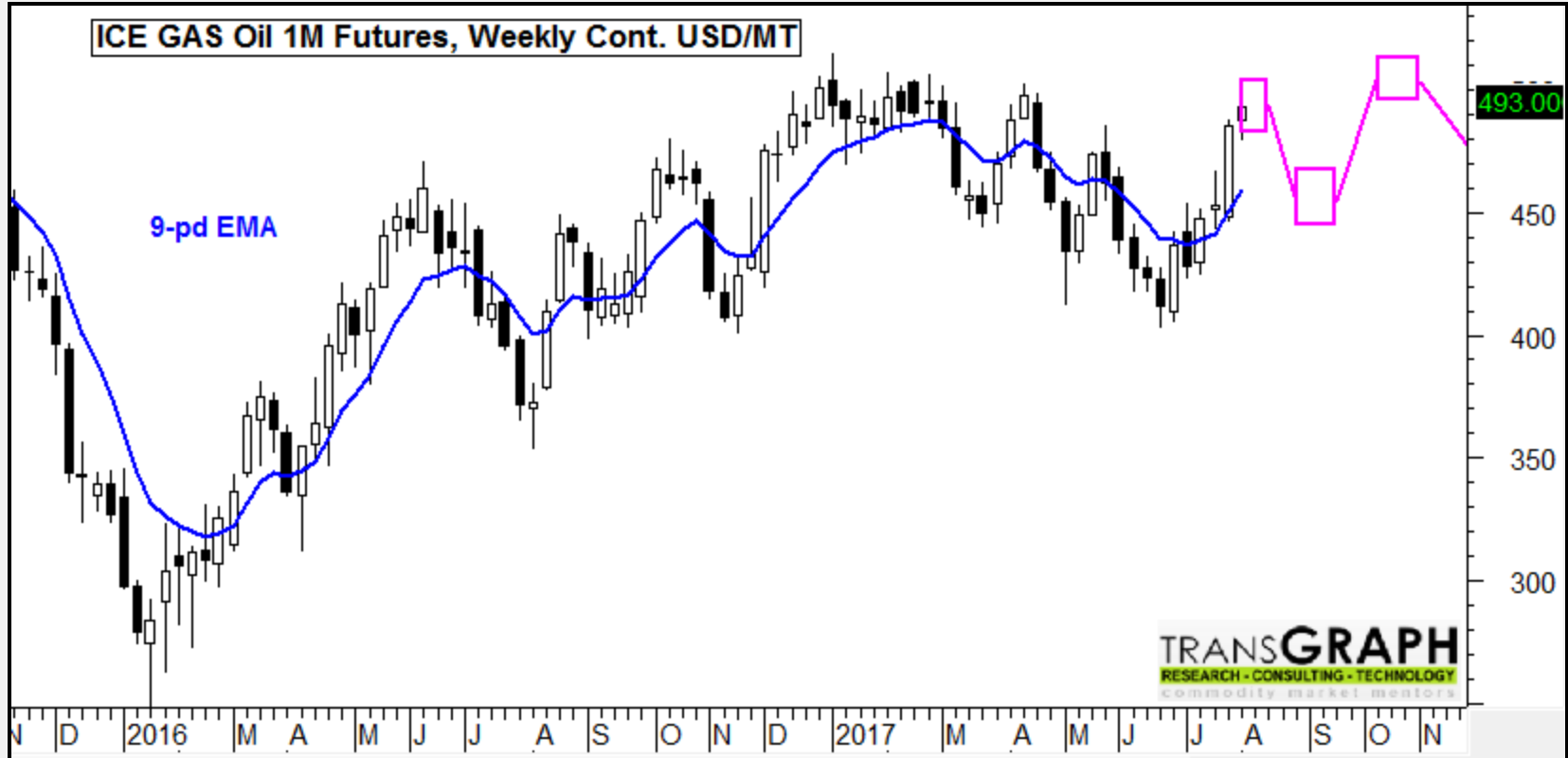
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ICE Brent Crude Oil, prices are likely to hold around USD 54.50 on any further rise and resume the bearish trend towards USD 46/45 ahead of rebound towards USD 55/56 in the coming 3 to 4 months.

ICE Gas Oil Futures

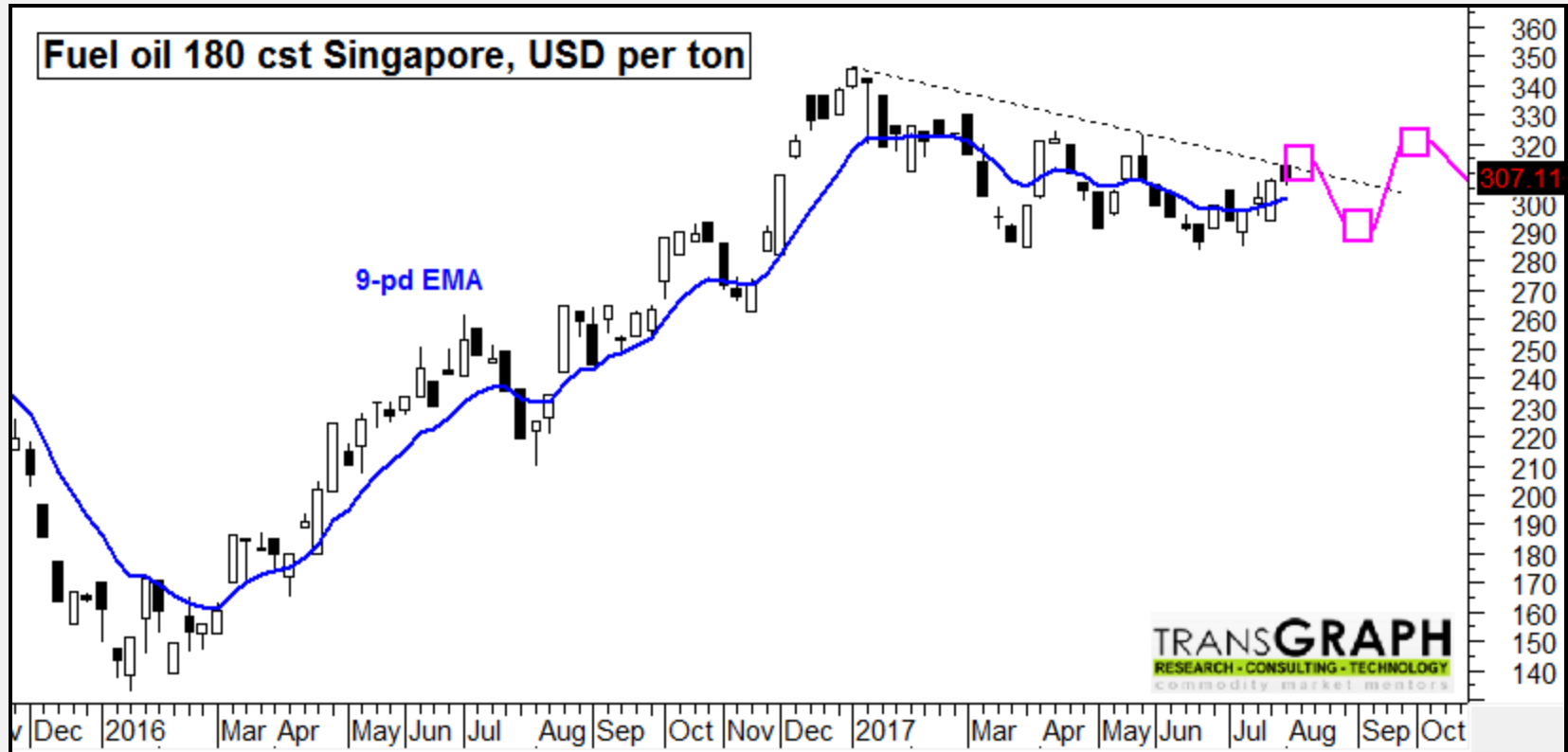
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ICE Gas Oil, prices are likely to hold around USD 505 on any further rise and gradually trade lower towards USD 450 to 445 ahead of rebound towards USD 510 in the coming 1 to 2 months.

Fuel Oil Futures

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Fuel oil futures , prices are likely to hold around USD 320 on any further rise and gradually trade lower towards USD 290 to 285 ahead of rebound towards USD 320 in the coming 1 to 2 months.

Dollar Index Outlook



Dollar Index (.DXY) is likely to test 92.50 and witness a corrective rise towards 96 or higher ahead of turning weak in the coming 2 to 3 months.

Price outlook summary

Commodity	Last Closing (as on 3 rd Aug 2017)	Price outlook summary for next 2-3 months	
		Range	Direction
WTI Crude Oil	49.03	44 – 54	Prices are likely to hold around USD 52 on any further rise and resume the bearish trend towards USD 44 ahead of rebound towards USD 54.
Brent Crude Oil	52.01	47 – 56	Prices are likely to hold around USD 54.50 on any further rise and resume the bearish trend towards USD 47 ahead of a rebound towards USD 55/56.
Fuel oil 180 cst FOB Singapore (USD per Ton)	307.11	320 – 285	Prices are likely to hold around USD 320 on any further rise and gradually trade lower towards USD 290 to 285 ahead of rebound towards USD 320.
ICE Gas Oil (USD/MT)	493	445 – 510	Prices are likely to hold around USD 505 on any further rise and gradually trade lower towards USD 450 to 445 ahead of rebound towards USD 510.



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