



Temporary outages helping balance oil markets

Summary

- Brent oil prices surged to an average of \$45 per barrel (pb) in Q2 2016, up 35 percent quarter-on-quarter, due to a combination of developments. Firstly, oil outages from Canada and Nigeria resulted in at least 1.5 mbpd being temporarily unavailable to global oil markets. Secondly, slowing US shale oil output resulted in year-on-year growth in US crude oil imports being consistently positive for the first time in six years.
- 'Brexit' had a relatively modest immediate impact on oil markets, with Brent slipping back slightly below \$50pb immediately following the UK's decision to leave the European Union. The effects over the longer term are less clear, with a worse-case scenario being a global contagion effect resulting in increased volatility in global oil and financial markets.
- Besides these developments, in the background, the overall picture remains relatively unchanged since the start of the year. Oil demand growth is still slightly below the average of the previous five years, but this is before the potential longer term impact of any 'Brexit' effect has been absorbed, whilst supply from Russia and OPEC remains close to record highs seen at the turn of this year.
- Despite Brent oil prices currently trading around \$50 pb, year-to-date prices still only average \$39 pb. Although oil prices seemed to have bottomed out since the beginning of the year, we remain wary that they have perhaps moved too fast, too soon. As a result, we have kept our recently revised full year 2016 & 2017 Brent forecast at \$44 pb and \$55 pb.

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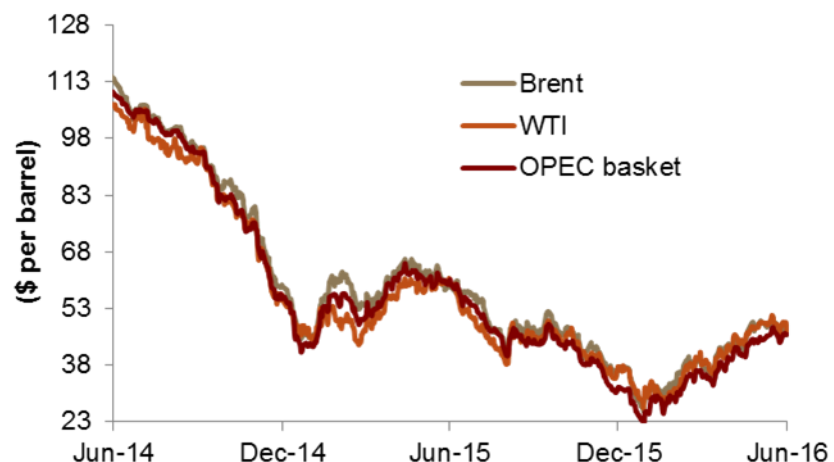
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Figure 1: Oil prices trading around \$50 per barrel





Brent oil prices surged to average of \$45 pb during Q2 2016 due to...

...oil outages from Canada and Nigeria...

...and slowing US shale oil output.

US will see a surge in oil imports during Q3 2016 as seasonal rise in gasoline consumption.

The vote for the UK to leave the European Union adds downward risk to demand from Europe.

The effects of 'Brexit' over the longer term are less clear.

Overview

Brent oil prices surged to an average of \$45 per barrel (pb) in Q2 2016 (Figure 1), up 35 percent quarter-on-quarter, due to a combination of developments. Firstly, oil outages from Canada and Nigeria resulted in at least 1.5 mbpd being temporarily unavailable to global oil markets. Secondly, slowing US shale oil output resulted in year-on-year growth in US crude oil imports being consistently positive for the first time in six years. Despite this, we continue to see competition between major oil producers keeping oil markets well supplied in Q3 & Q4 2016. Meanwhile, whilst global demand is solid, it remains below recent historical levels. Latest OPEC data points to oil demand growing by 1.2 mbpd in 2016, slightly below the average of 1.4 mbpd in the five years between 2010-15 (Figure 2).

Some bright spots amongst modest demand

In the **US** (21 percent of global oil demand) slowing US shale oil output has resulted in year-on-year growth in US crude imports being consistently positive for the first time in six years. There is likely to be a surge in imports during Q3 2016 as a seasonal rise in gasoline consumption during the summer driving season is helped along by the lowest pump prices in seven-years (Figure 3).

Oil demand in **Europe** (14 percent of global oil demand) was subdued in Q2 2016 and is expected to remain so during the rest of 2016 due to structural factors. The vote for the UK to leave the European Union (Brexit) adds downward risk to demand from Europe (see Box 1).

Box 1: 'Brexit' and implications for oil demand

The 'Brexit' had a relatively modest immediate impact on oil markets, with Brent slipping back slightly below \$50pb. The effects over the longer term are less clear. Whilst a recession in the UK is a distinct possibility, the impact on crude oil demand should not be huge since the UK only consumes around 1.6 mbpd, 0.7 mbpd of which is imported, with demand growth being flat for more than a decade. The major threat of 'Brexit' is through two avenues, firstly, the

Figure 2: Global oil demand growth in 2016 robust but lower than 2010-15 average

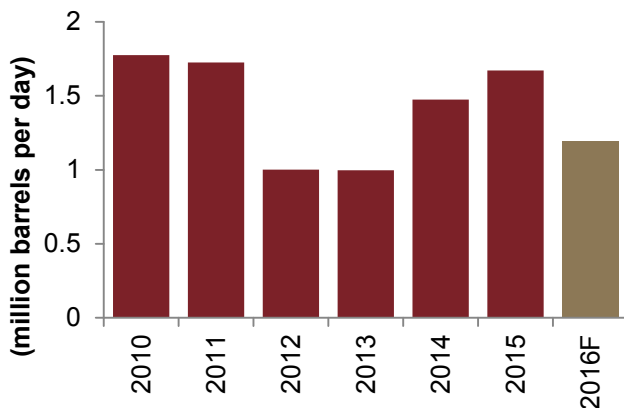
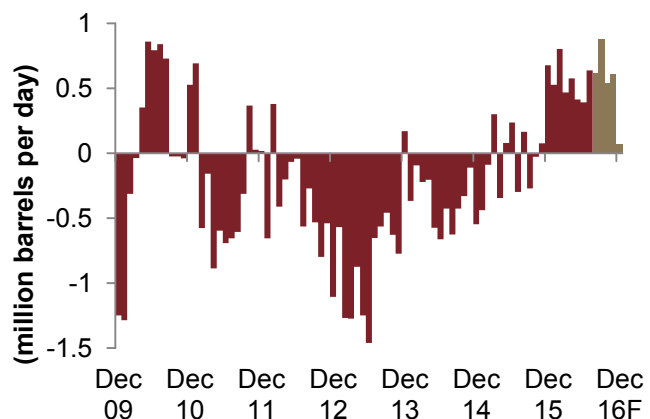


Figure 3: US crude oil imports consistently positive for the first time in 6 years (year-on-year)





The major threat of 'Brexit' is through a global contagion effect...

...resulting in increased volatility in financial markets and widespread sell-off in global assets.

Preliminary data for Q2 2016 shows that Chinese oil imports grew by a sizable 17 percent year-on-year.

Oil imports boosted by independent (teapot) refineries...

...but also by falling production from Chinese national oil companies.

Chinese oil production was down 7 percent year-on-year in Q2 2016.

potential impact on the rest of the Europe and, secondly, a global contagion effect. Whilst Europe is a large consumer of crude oil at 12 mbpd, it has seen demand falling slowly for a long time, so anything less than a severe recession would not be too detrimental on overall European demand. The more significant risk of 'Brexit', or indeed a European recession, is the global contagion effect which could see increased volatility in oil and financial markets and result in widespread sell-off in global assets, potentially leading to a global economic slowdown, similar to what we saw in August 2015, with a Chinese currency devaluation. Ultimately, the impact on regional and global oil demand for 'Brexit' is not easy to calculate and this will only be determined once the consequences of 'Brexit' have been fully realized in the weeks or months ahead.

Although questions have been raised about the **Chinese** economy (12 percent of global oil demand), this does not seem to be translating into lower oil demand in 2016. Preliminary data for Q2 2016 shows that oil imports grew by a sizable 17 percent year-on-year. China's crude imports have been supported by a number of factors on the demand side. Aside from lower retail pump prices, rising vehicle sales and ongoing efforts to boost commercial crude stocks, imports have also been boosted by small, independent (teapot) refineries. The Chinese government granted crude import quotas to teapot refineries at the end of 2015 in a bid to reform the refining industry, boost competition and attract private investment. Teapot refineries have quotas to import 800 thousand barrels per day (tbpd) of crude oil but this could double during the second half of 2016 as more refineries seek approvals for quotas. Lastly, China is also a major producer of crude oil and the drop in oil prices since mid-2014 has hit Chinese national oil companies (NOC's) and affected oil production (see Box 2).

Box 2: Chinese oil output declining, imports rising

One of the reasons for a recent jump in Chinese crude oil imports has been the decline in domestic crude oil production. Preliminary data for Q2 2016 shows that Chinese oil production stood at 3.97 mbpd, down 7 percent year-on-year and falling for the third consecutive quarter in a row (Figure 4). The declines have come about due to China's large state-owned national oil companies

Figure 4: Chinese oil imports continue to rise but domestic production declining

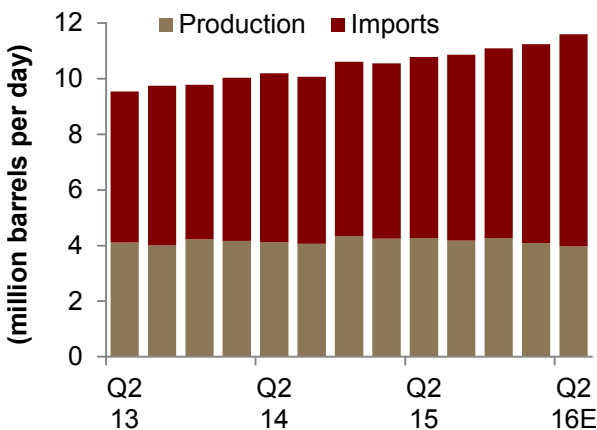
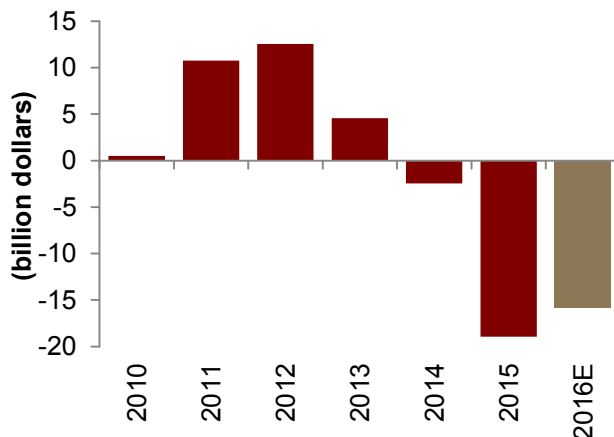


Figure 5: Capex at Chinese NOC's falling (year-on-year change)





Declines have come about due to cut in capex as result of lower prices since mid-2014...

...and a significant portion of this capex goes into maintaining output at mature oilfields.

Despite a rebound in Japanese oil demand in Q2 2016 we see limited prospect of growth in 2016 as a whole.

Gasoline and diesel consumption in India have contributed to rising crude oil imports.

Latest available data shows Saudi Arabia's total crude consumption rose by 12 percent year-to-April.

(NOC's) struggling with low oil prices, putting them under financial pressure and forcing cost cuts. Capital expenditure (capex) from the three largest Chinese NOC's, which together account for more than 95 percent of total oil production, is expected to decline by \$15 billion year-on-year in 2016, having declined by \$19 billion the year before (Figure 5). Whilst a decline in capex for exploration and development (E&P) is acceptable at current prices, since break-even prices on new oil projects in China are around \$50 pb, it is more damaging for existing production. A significant portion of capex goes into maintaining mature oilfields. Whereas larger investments in the past have helped to stem decline rates in output, the more significant capex cuts in recent years has resulted in faster declines.

Japanese (4 percent of global oil demand) crude oil imports have been declining consistently, year-on-year, in the last two years. Despite a rebound in Q2 2016, based on preliminary data, we see limited prospect of positive oil demand growth in 2016 as a whole. The economy is still not showing any improvement and even with two nuclear reactor restarts being postponed, a steady closure of some refinery capacity will keep crude oil demand in the negative territory for the whole of 2016.

Both gasoline and diesel consumption in **India** (4 percent of global oil demand) have been contributing to rising crude oil imports. Rising cars sales, up 9.9 percent year-to-date, and new road construction, at a rate of 20 kilometers per day currently, is boosting gasoline consumption. Concurrently, the government's plan to increase the share of GDP from manufacturing from 16 to 25 percent in six years, is pushing up diesel consumption. As a consequence, preliminary data shows that crude oil imports were up by 10 percent in Q2 2016 year-on-year, with Iraq being the major beneficiary of this large rise (Figure 6). We expect the above factors and further stockpiling of strategic crude oil to keep demand growth elevated in Q3 2016 and the rest of the year.

Latest available data shows that **Saudi Arabia's** (3 percent of global oil demand) total crude consumption rose by 12 percent year-to-April. This was due to the startup of the 400 tbdp Yasref refinery which hit full capacity in mid-2015. As a result, year-to-April refinery intake was up by a sizable 23 percent, whilst crude burn was up by

Figure 6: Indian crude oil imports from Iraq saw the largest jump in Q2 2016 (year-on-year)

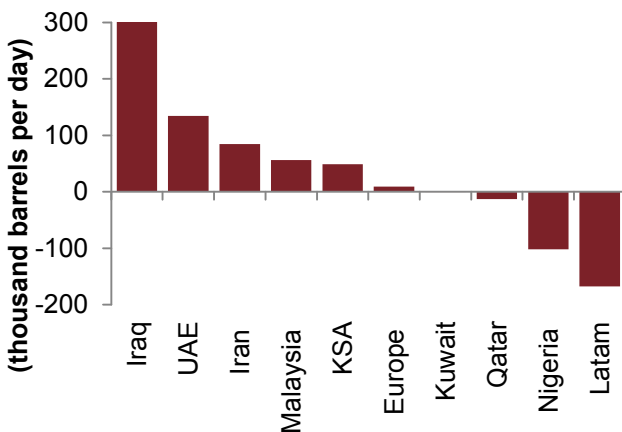
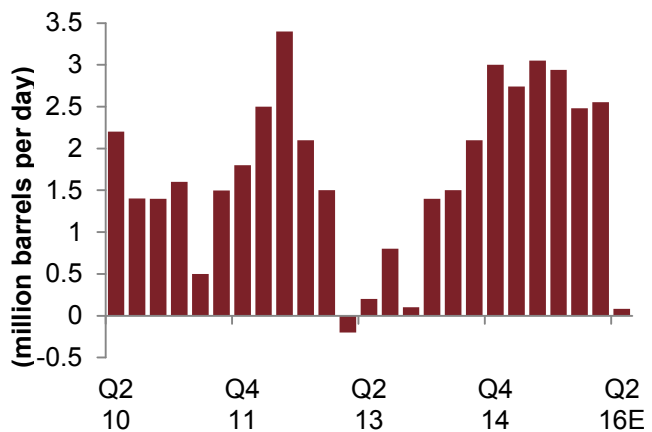


Figure 7: Global oil supply growth dropped significantly in Q2 2016 (year-on-year change)





Gas from the recently commissioned Hasbah-Arabiyah fields will help curb the seasonal surge in crude burn.

Temporary outages and declining non-OPEC output in Q2 2016 led to the slowest year-on-year growth in global oil supply in three years.

Canadian and Nigerian outages have resulted in around 1.5 mbpd of oil being taken off-line.

US oil production saw year-on-year declines in Q1 & Q2 2016...

...with a drop in unconventional oil specifically contributing to this decline.

14 percent. We expect some rises in year-on-year consumption in Q3 2016, an increase in gas output from the recently commissioned Hasbah-Arabiyah gas fields will help curb the seasonal surge in crude burn during the summer, thereby freeing up more crude oil to be used to increase either crude oil exports and/or higher value refined products.

Oil markets remain well-supplied

A combination of temporary outages and declining non-OPEC output in Q2 2016 led to the slowest year-on-year growth in global oil supply in three years. Oil outages from Canada and Nigeria have resulted in at least 1.5 mbpd being temporarily unavailable to global oil markets (See Box 3) whilst US total oil output will show negative year-on-year growth for the second consecutive quarter in a row. Accordingly, global oil supply increased by just under 100 tbd in Q2 2016, significantly lower than in the last two years (Figure 7).

Box 3: Temporary oil outages

As noted earlier, Canadian and Nigerian outages have resulted in around 1.5 mbpd of oil being taken off-line. Recent reports point to Canadian producers slowly bringing crude oil supply back on-line, which should be back to full capacity within a month or two. Nigeria, on the other hand, is more likely to face a longer period of outages with a number of militant attacks on crude oil and gas pipelines being reported. Attacks have so far taken out around 500 tbd of oil since the beginning of May and rising economic pressures and political reforms, which target corruption, suggest that the current disruptions will not be easily overcome.

Whereas heavy cost-cutting measures, technological improvements and hedging allowed US crude oil production to remain positive in 2015, this will not be the case in 2016. US oil production saw year-on-year declines in both Q1 & Q2 2016, with a drop in unconventional oil specifically contributing to this decline. According to Energy Information Administration (EIA) data, US production will continue to decline throughout the remainder of 2016, resulting in total US oil production falling by 9 percent year-on-year in 2016 compared to an average growth of 14 percent between 2012-15. That being said, the recently observed uptick in oil prices gives many

Figure 8: Rising level of DUCs

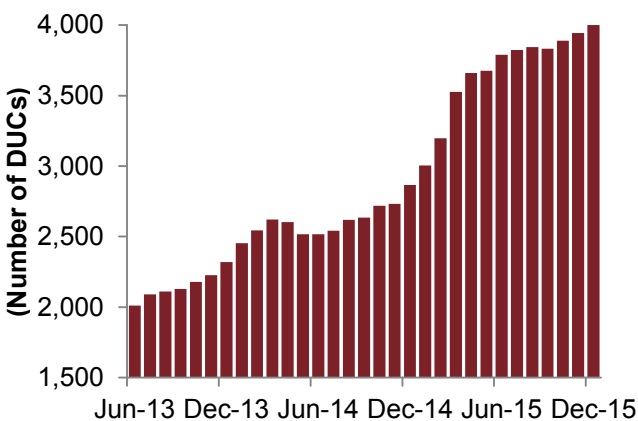


Figure 9: Iranian crude oil production close to pre-sanction levels





US production will continue to decline throughout the remainder of 2016...

... resulting in total US oil production falling by 9 percent year-on-year in 2016 .

Media reports cited some E&P companies moved to bring DUCs back on-line.

Russia has found it difficult to maintain oil output at post-Soviet records....

...but production is nevertheless at elevated levels.

Declining output from a number of members did not prevent OPEC output rising 3 percent year-on-year .

Iranian production is close to its pre-sanctions output so limited rises in OPEC production ahead...

shale oil producers the opportunity to limit, if not to reverse year-on-year production declines, but certainly to make them much less sharper than projected. Prices around \$50 pb raises the possibility of hedges being taken out again, in turn, giving a potential lifeline to many shale oil companies that have restructured under chapter 11 bankruptcies. In addition, the number of drilled uncompleted wells (DUCs) have been rising in recent months. When oil prices started their decline in mid-2014, many shale oil producers kept drilling wells, but did not extract oil from these wells, effectively leaving crude oil in storage in the ground. Latest available data shows that DUCs consistently rose until December 2015 (Figure 8). In the recent past, a number of shale companies' have said that prices around the mid-\$40 pb would move them to bring DUCs on-line. With WTI averaging \$45 pb in Q2 2016, media reports cited some exploration and production (E&P) companies doing exactly that. Whilst bringing DUCs on-line would provide only a short term boost to shale oil production, it would nevertheless result in overall US production not declining as quickly as projected (for more on this topic please refer to our recently published report [Recovery in Oil Prices: Rebound in US Shale Oil?](#))

Russia has found it difficult to maintain oil output at post-Soviet records seen in the previous quarter, but production is nevertheless at elevated levels. Preliminary data shows Q2 2016 oil production at 10.8 mbpd, up 2 percent year-on-year. The combination of natural decline rates at very mature oil fields and a drop in capital expenditure by Russian oil companies will see a gradual reduction in oil production during the remainder of 2016.

Declining output from a number of OPEC members, most significantly from Nigeria, saw oil output from the organization pull back from record highs seen in the previous quarter, although total output was still up on a year-on-year basis by 3 percent. Significant yearly increases from Iraq (up 31 percent) and Iran (up 14 percent) pushed the organization's preliminary quarterly average to 32.5 mbpd. Since Iranian production is very close to its pre-sanctions output (Figure 9) we expect to see limited rises, around 100 tbpd, in OPEC production by the end of 2016, although some downside risks to production from other OPEC members still exist. Nigeria's troubles have been highlighted above, but countries such as Libya, Algeria, Iraq and Venezuela still remain most at risk of not being able to

Figure 10: Downward trend in Venezuela's crude oil production

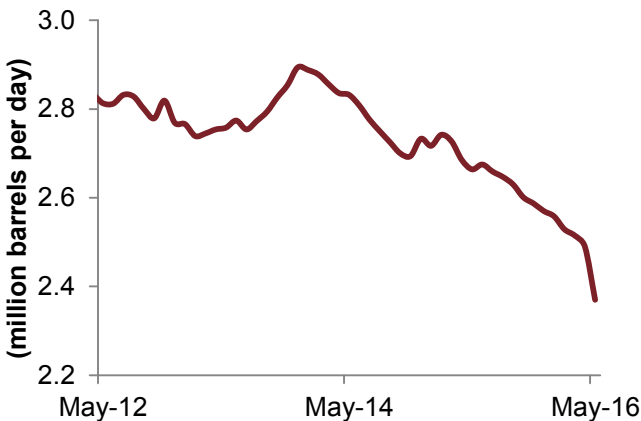
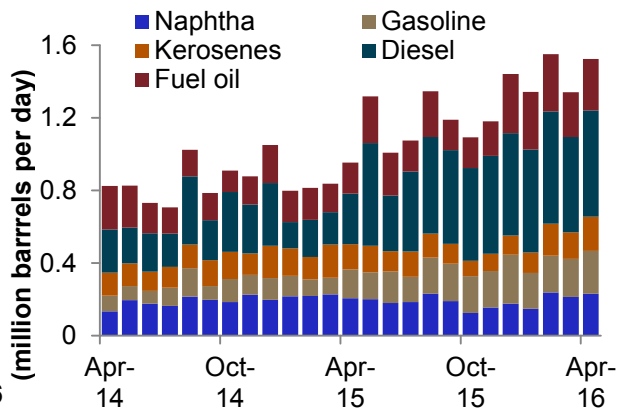


Figure 11: Rising Saudi crude oil refined product exports





...although some downside risks to production from other OPEC members still exist...

...with Venezuela's output the most vulnerable.

Preliminary data shows Saudi Arabian crude oil production down 1 percent in Q2 2016 year-on-year, at 10.26 mbpd.

Despite intense competition Saudi Arabia maintained its global crude oil exports market share...

...and expanded its exports of refined oil products too.

Looking further ahead into 2017, we see an upside risk to Saudi crude oil production.

We remain wary of prices perhaps moving too fast, too soon.

Recent reports point to Canadian producers slowly bringing crude oil supply back on-line.

sustain production at current levels. Venezuela's position seems the most difficult. A majority of the government's oil revenue has been diverted to social spending as the country is in the midst of an economic emergency. This has happened as Petroleos de Venezuela (PDVSA), the national oil company, has been struggling to halt a gradual decline in output which began at the start of 2014. Since oil revenues form a major source of government revenue, very little cash will be left for capital expenditure to reverse PDVSA's decline in output, in the year ahead (Figure 10).

Preliminary data shows that **Saudi Arabian** crude oil production was down 1 percent in Q2 2016 year-on-year, at 10.26 mbpd. We expect small rises in crude production in Q3 2016 but this will not dramatically affect 2016 production as a whole, which we forecast will average 10.2 mbpd. Latest data available shows that year-to-April exports remained unchanged year-on-year at 7.6 mbpd.

Despite intense competition in well supplied markets Saudi Arabia managed to maintain its global market share in crude oil exports and, at the same time, expand exports of refined oil products. Since the startup of the 400 tbpd Yasref refinery in mid-2015 there has been a sizable rise in exports of higher value refined products, which recently saw a record high of 1.6 mbpd in April 2016, up by 59 percent year-on-year (Figure 11). Looking ahead in the remainder of 2016, increases in gas production from Hasbah-Arabiya fields is likely to free up more crude oil to be used to increase either crude oil exports and/or higher value refined products.

Looking further ahead into 2017, we see an upside risk to Saudi crude oil production. Recent comments by the Saudi Energy Minister have suggested the potential return of Saudi Arabia's role in balancing global supply and demand, although this would only happen after a recovery in global markets has taken place. If this is the case, as oil markets become tighter, perhaps even falling into deficit by the second half of 2017, Saudi Arabia's position as the only major oil producer with spare oil capacity and its reputation as a reliable supplier coupled with its expanding global downstream portfolio, could result in rising production in 2017.

Higher but more volatile oil prices ahead

Despite Brent oil prices breaking through the \$50 pb barrier recently, current year-to-date prices still only average \$39 pb. Although oil prices seemed to have bottomed out since the beginning of the year, we remain wary of prices perhaps moving too fast, too soon. Our caution on oil prices is based on three key areas; a swift return of recent oil outages, a rebound in shale oil production (see above) and continued higher volatility levels in oil prices.

As noted earlier, Canadian and Nigerian outages have resulted in around 1.5 mbpd of oil being taken out of production which has helped bring about tighter oil markets in Q2 2016. We expect some of the outages to be back in the next few months, most likely from Canada, which will result in the oil markets moving back into surplus by more than 1 mbpd by Q4 2016 (Figure 12). In addition, oil prices have been highly volatile since mid-2014, with volatility levels at the end of 2015 close to peak levels seen during the global financial crisis (Figure 13). Although volatility has come down in recent



Nigeria, on the other hand, is more likely to face longer period of outages.

Oil prices have been highly volatile since mid-2014...

...with volatility levels at the end of 2015 close to peak levels seen during the global financial crisis.

Recently revised full year 2016 & 2017 Brent forecast are \$44 pb and \$55 pb.

months, it still is higher than the two year period since mid-2012. This suggests that even as oil prices edge higher, year-on-year, the path that prices take is not expected to be linear but highly unpredictable. Finally, the dollar is likely to remain strong in the short -to-medium term, with any further fallout from 'Brexit' likely push the US currency even higher.

Besides these developments, in the background, the overall picture remains relatively unchanged since the start of the year. Oil demand growth is still slightly below the average of the previous five years, but this is before the impact of any 'Brexit' effect have been absorbed, whilst supply from Russia and OPEC remains close to record highs seen at the turn of this year. Commercial crude stocks are still above their long term average, and are expected to keep rising until mid-2017, whilst continued competition between major oil producers is keeping markets well supplied.

Taking into consideration all the above factors, we have kept our recently revised full year 2016 & 2017 Brent forecast at \$44 pb and \$55 pb (for implications on the Saudi Economy please refer to our recent publication: [National Transformation Plan \(NTP\) 2020: The Kingdom's Path to Sustainable Economic Development](#)).

Figure 12: Oil outages leading to tighter global oil balances in Q2 2016

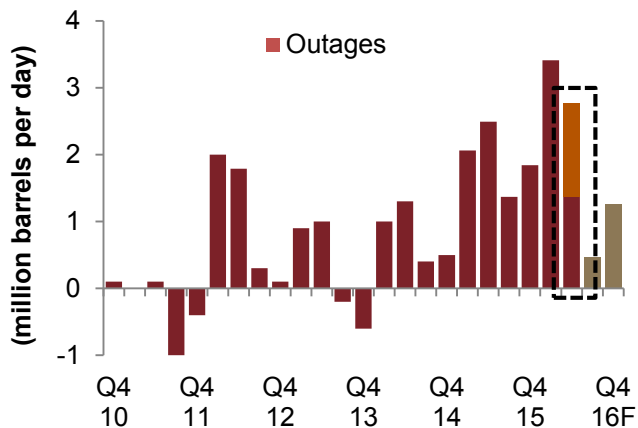
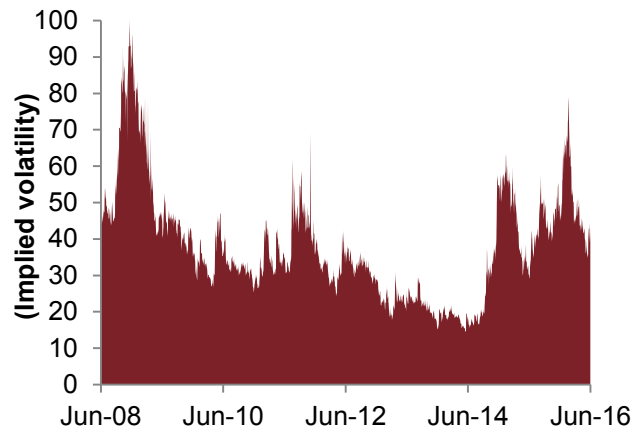


Figure 13: Current implied oil price volatility remains high





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