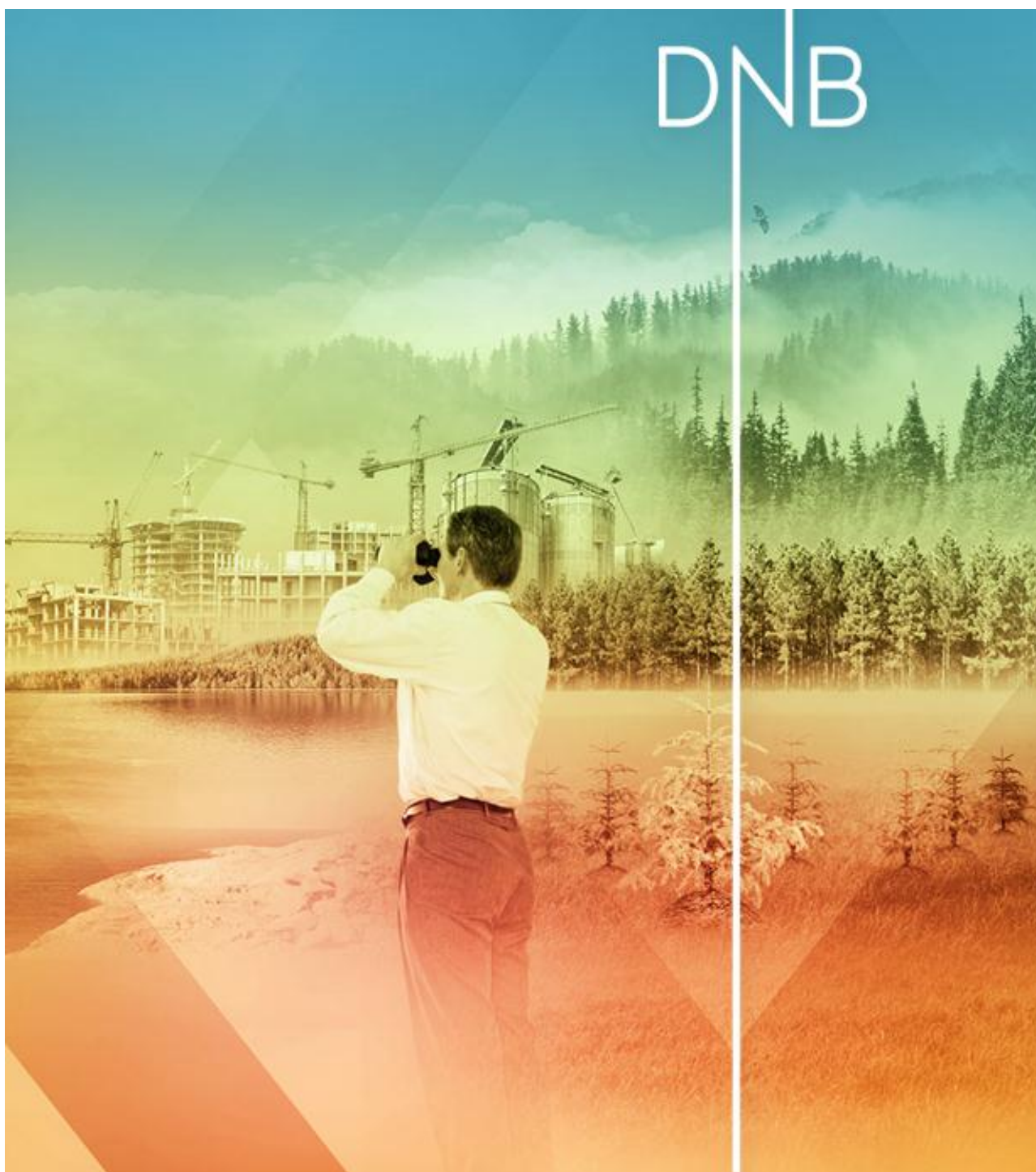


Oil Market Outlook

- The fat lady has stopped singing – the oil price party is over
- Now the hangover starts
 - Revising down the next three years significantly – keeping the longer term



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1 We have been bearish but not bearish enough

It felt quite bearish to launch a 100 \$/b Brent forecast for 2015 in the summer of 2012 after having seen Brent prices climb higher almost constantly since the millennium change and even reach above 125 \$/b during the spring that year. The average price for 2012 became 112 \$/b (the highest ever recorded) and as such to predict an average price drop of 12 \$/b for the next three years was seen as many as aggressively bearish. It now looks as if that forecast was far from being bearish enough.

As we have said time and time again in our presentations, we do not expect to hit correctly on the levels for oil prices. There are too many moving parts to be able to achieve that, our goal is to be correct on the direction of prices between the years and between the months. History has proven time and time again that when the changes in the market really kicks in, the price changes become more violent than one dare to put into the official forecast. A short term oil market forecast should be measured vs what happened to average prices in the month or two after the forecast was published and a forecast for the coming year should be measured vs what was predicted before the year started. During the year there will be adjustments to the forecast, as the realized oil price will never match exactly the price level one predicted for each quarter as we move along.

When the Brent price was 115 \$/b in June we maintained our bearish directional forecast for the second half of the year at 107 \$/b for Q3 and 105 \$/b for Q4. It turned out that prices have come in much weaker than that for Q3 (103.5 \$/b), and for Q4 we believe the average price will now be as weak as 85 \$/b. If that Brent price materialize for Q4 the average price for 2014 as a whole will be quite close to our original forecast for 2014 of 102 \$/b which we published December 10th last year. Our price deck for 2014 was too low for the first half of the year but too high for the second half of the year, but the average looks to be hitting quite well. We would however not be proud if we hit close to our predicted average oil price level for 2014. It would just be pure luck if we come close to the realized price level for a year. Anyone can shoot out a number for that and have a lucky strike.

The target must be to hit correctly on the direction of the market and that the price change materializes for the right reasons. If you for example are bullish to oil prices because you believe supply growth will falter in US/Canada/Brazil, and that demand growth will be much stronger in China/India/US than others believe, and instead the price increases because Venezuela falls apart, it is not much to be proud of to hit correctly on the price movement. The story behind the forecast is often more important than the price deck that is the end result. It is fair to be bullish to oil prices if one believe Venezuela will break apart, Iran will not succeed in the nuclear negotiations, IS will capture oil fields in southern Iraq and Libya will fall back out of the market. But if those incidents have not been your base case and if the oil price is rising due to such events, where is the glory in that? We prefer to discuss geopolitical events on the side and emphasize that there is always geopolitical event risk in the oil market that can bring prices much higher than the base case.

We have said for the past two years that the direction of oil prices will be down also in 2015, but now we believe the price drop will be more severe than what we have predicted before. We are revising down our average Brent price forecast for the years 2015 and 2016 to 80 \$/b and 85 \$/b

respectively. This implies a large downward revision of 20 \$/b for 2015 and 13 \$/b for 2016. We are not sure if those numbers are low enough to unleash the much lower growth in US oil production that will be required to balance the oil market for the next two years, but for now we stick with those numbers. Our arguments for those price levels can be found later in the report. A key premise for this price scenario to play out is however that OPEC (Saudi Arabia) is unwilling to remove more than at most 0.5 million b/d from the market. If that assumption changes we will be forced to adjust our price forecast higher, but so far we see no signs that Saudi Arabia will aggressively cut production to defend oil prices. Our take on OPEC and Saudi is discussed under point 5 in the report, named “OPEC – To cut or not to cut, that is the question”.

After 2016 we believe the Brent price will rise back up to 95 \$/b for 2020 as the supply growth will weaken and demand growth will pick up with lower prices. Lower expected investments in the oil industry the next couple of years will also set the stage for higher prices further down the price curve in our opinion. Hence we are not revising down our longer term price forecast for 2020.

We apologize to our readers for not having been bearish enough. A memory comes to mind from just after we published our bearish “Fat lady-report” in the summer of 2012. Olav Refvik (the king of the New York harbor) contacted us and stated that our report was very good. There was only one problem with it; it was not bearish enough... He was right. We have however been bearish and not bullish to the oil market for the past two years, and we believe also for the right reasons. Below are some quotes from our earlier reports, which shows some of the key themes we have focused on. We have for example been confident that the resource base for US shale is enormous and would be a game changer. And in our yearly update from August 2013 we discussed that we do not believe it is a sure thing that it is in Saudi Arabia’s interest to cut production to protect 100 \$/b oil prices.

Some quotes from our oil market updates the past two years:

April 18 – 2012. Brent was trading at 119 \$/b. Published Report “Enough is Enough”:

“What we are seeing now for the oil market in the US reminds of the situation we saw before 2007 on natural gas in the US. In 2007 one of the Wall Street banks had US natural gas as one of its top picks to buy. Most analysts agreed. Then US natural gas (Henry Hub) was pricing at about 8 \$/MMBTU. Today US natural gas (Henry Hub) is pricing close to 2 \$/MMBTU. The point is that very few saw the huge US domestic growth in natural gas production coming. We have a growing suspicion that something similar is about to happen to the US oil market. Horizontal oil rigs in use in the US have in less than three years grown from 50 to above 500”.

August 22 – 2012. Brent was trading at 116 \$/b. Published Report “The Fat Lady Has Started to Sing”:

“From 2013 we believe oil prices will start to trend lower and continue to trend lower as we move towards 2020. The new marginal barrels are set to become shale crude in the US and after 2020 this could even become a global industry. We think the cost to produce shale liquids will rather trend lower than higher during the current decade, hence oil prices should also rather trend lower than higher”.

“The single largest effect on the global supply-demand balance for oil in the current decade is set to come from the immense growth in US shale oil production. Many commentators and analysts are still in denial when it comes to classify this new source of oil production growth as a revolution or not. We believe it is not a matter of asking whether this will be a revolution for oil production. It is already a revolution. It seems many analysts would like to see if the shale oil phenomenon can become a global issue before stating that this is a game changer. We on the other hand would already classify the shale oil revolution as a game changer, even if it should not become a global phenomenon until after 2020”.

August 21 – 2013. Brent was trading at 110 \$/b. Published Report “Cheaper Oil But Not Cheap”:

“What kind of strategy will Saudi Arabia pursue if indeed the growth in shale oil output becomes higher than the growth in unplanned outages in the coming 5 years? Several analysts claim that Saudi Arabia soon will need oil prices of 100 \$/b to balance their state budget because of rising social costs. And since the kingdom needs that price; that is the price we are going to get. Is it as easy as that? If the current trends in global oil supply and demand continue in coming years, core-OPEC will have to cut production if they want to balance the market and maintain 100-dollar oil.

But does that mean Saudi Arabia will choose to cut to protect prices this time? We are not sure. The fact is that Saudi Arabia does not really need a certain oil price to balance their budget, the kingdom needs revenues. The revenues from oil sales are a function of both price and volume. It is of course not a factor of price alone”

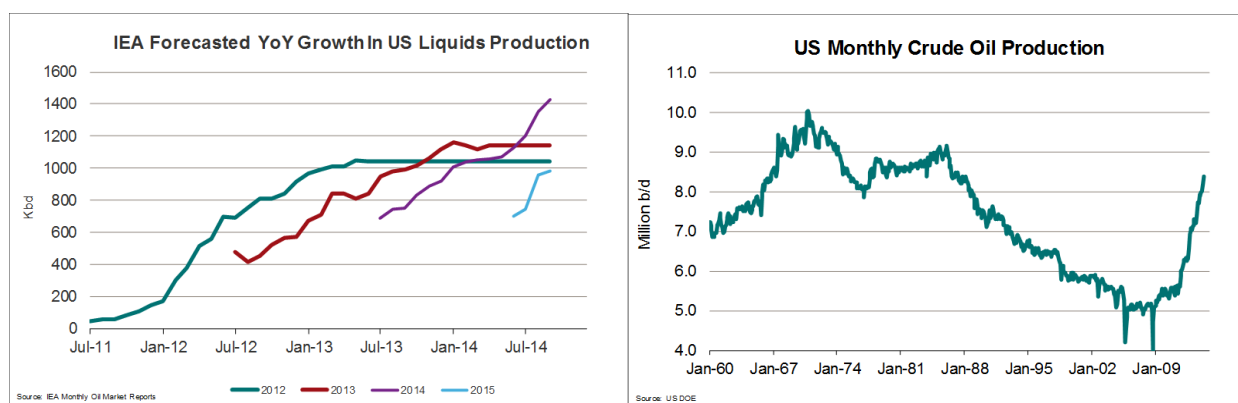
“What the kingdom will choose to do is not “written in stone”. During the 1980’s the Saudis cut massively to protect the oil price but changed that tactic after losing too much market share and then targeted volume instead. This time it might be a better strategy to let prices slide towards 85 \$/b instead. The Saudis are fully aware of the cost curves for the shale oil industry and they know that many sellers would disappear if the oil price drifted lower than 80 \$/b. Why not let the market take care of this adjustment and just let oil prices slide 15-20%? As already described if the price falls more than that, then non-OPEC will come to the rescue instead and start cutting output (drilling less shale wells)”.

2 The shale revolution has continued to surprise to the upside

One of the truly remarkable developments in the US shale oil industry is that it has continued to surprise to the upside even three years into the revolution. After having seen its second peak at 9 million b/d in the early 1980's we saw US crude oil production decline for decades but then the past three years it has shoot up to the upside like a hockey stick. The latest reported monthly data is from August, when US crude production was reported at 8.5 million b/d. In the weekly oil stats posted by EIA the reported number has reached 9 million b/d.

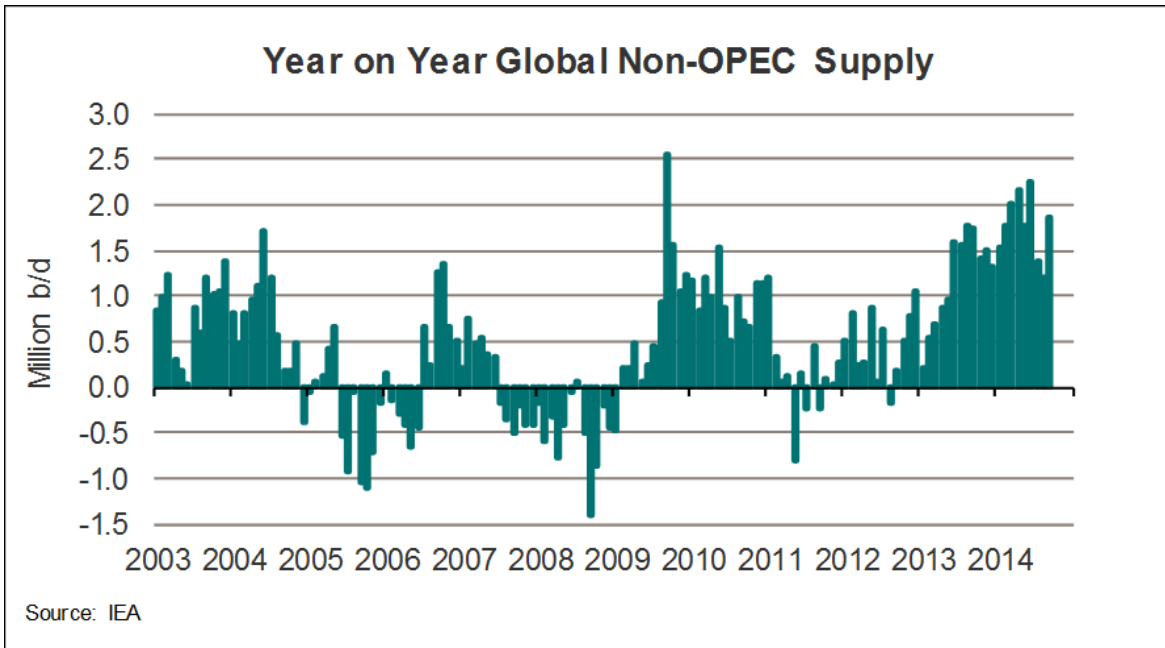
Since the start of 2012 we have been reading analysis on the US shale oil story that has claimed decline rates are so high that the growth rate can never continue because one needs to "run faster and faster just to stand still". The treadmill effect is so large that it requires so many new wells to be drilled in order to continue to grow production and it would be impossible to drill so many new wells. The same analysts still use the same arguments but now production from shale has more than doubled since they started using these arguments more than two years ago. We were for example reading in the spring of 2012 when the Bakken produced about 0.5 million b/d that peak production from that field would never surpass 600-700 kbd because of the treadmill effect and because operators would be running out of "sweet spots". Well, now the Bakken is producing 1.1 million b/d and the only thing that seems to be able to stop future production growth seems to be a low oil price.

To us the key issue that will stop oil prices from declining is not that the growth rate in US shale starts to drop. We are sure that the shale sceptics will claim that they were correct the minute the production growth rate drops. But that cannot be the issue. The growth rate has to drop not only 10% to balance the market. The growth rate has to drop more than 50%. If the growth rate drops because the price has fallen so much that drilling activity is reduced, then it was correct to be bearish to oil prices and not bullish like many of the shale sceptics have been. Several of the shale sceptics have been bullish to oil prices because they have argued that the growth in shale production will drop and then the oil price will increase from prices already well above 100 \$/b. Yes the oil price will increase again if shale growth becomes low enough but the price increase will then come from a much lower starting point. We will not rise from 110 \$/b to 120-130 \$/b like some analysis have suggested, we will instead rise from 80 \$/b to 95 \$/b. That is a different story is 'n it?



We have been tracking IEA's monthly oil reports for the past 38 months to see how they have forecasted the growth in US oil production. The graph above to the left represents 38 monthly oil market reports from the IEA. When these lines are rising it means upward revisions to production growth. During the past 38 months we have seen 35 upwards revisions. This means that in almost every monthly oil market report issued by the IEA during the past three years the agency has revised its estimated growth in US oil production higher. That is quite remarkable. Something like that has probably never happened before. The forecasted growth for 2014, which was issued last summer (in other words several years into the shale revolution) started at 700 kbd. Now the last IEA estimate is that US oil production will grow 1.4 million b/d in 2014. This is in other words a forecasting error of 100% and at the time of the initial forecast, the agency had already witnessed growth of oil production of about 1 million b/d for both 2012 and 2013. This is not to criticise the IEA. They have not been alone in being too conservative to the US shale oil industry.

The large growth in US oil production has meant that non-OPEC production has been growing faster than 1.5 million b/d for more than a year now. The key growth is as mentioned coming from the US, but also Canada and Brazil are growing their output quickly. In Canada the growth is coming from oil sands production, mainly in-situ projects, but we also see growth in shale oil output from Canada. According to PIRA Energy, Canadian shale oil production has reached about 0.5 million b/d. We expect continued start up of new projects in Canada in 2015. These will be projects that are not sensitive to today's oil prices, as the investments have been taken several years ago. Going forward however, the investments in Canadian oil sands are set to suffer on a lower oil price but that will only lead to lower production growth as we approach 2020. Also in Brazil there will be no negative impact on production in the next couple of years due to lower prices. The country continues to ramp up its production from the pre-salt fields in the Santos and Campos basin. Pre-salt production reached a record 532 kbd in September which is 62% higher than the year before. We do however expect larger production growth from Brazil in 2016 than in 2015 as 900 kbd of platform capacity is then set to come on line. This could of course slip into 2017 but it will be coming to the market no matter what happens to oil prices in the coming two years.

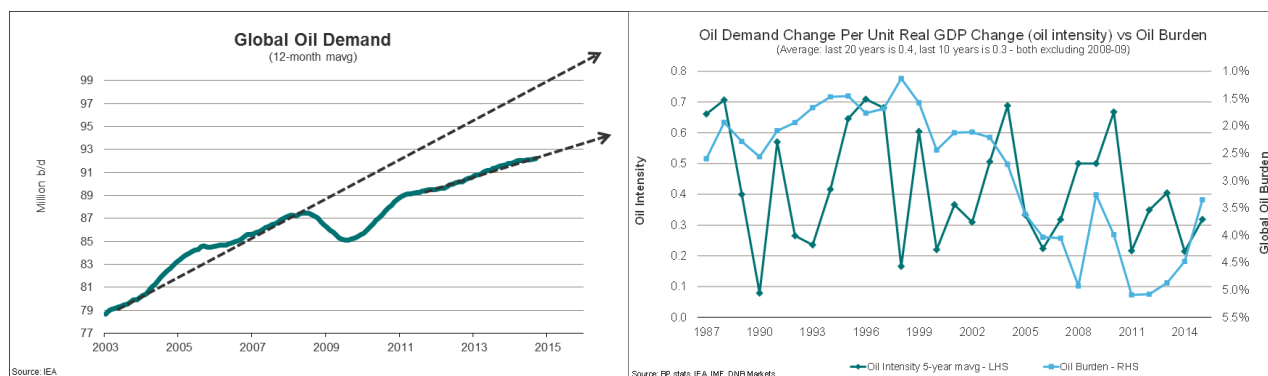


3 Global oil demand growth – 100+ \$/b seems too high

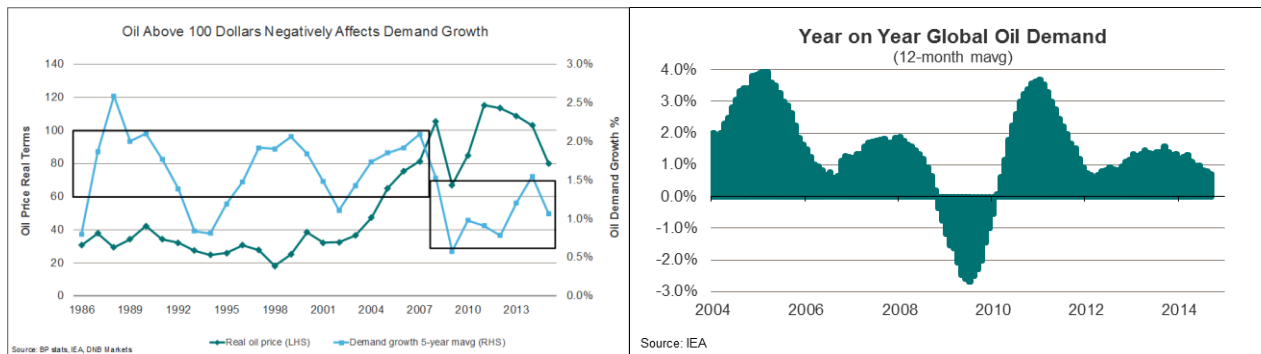
We have for a while argued that the lower oil demand growth we have seen after 2011 probably has some structural elements to it and not all cyclical. The trend line demand growth we have seen at about 1.7% since 1983 is broken and now demand growth has fallen to about 1%. In fact, demand growth in 2014 is on track to come in well below 1%. We estimate that oil demand growth in 2014 will be only around 0.7 million b/d. Note that oil demand growth last year was almost 40% stronger than in 2014 at 1.2 million b/d, despite seeing global GDP growth about 14% stronger this year than in 2013 (3.3% vs 2.9%).

IMF estimate that global economic growth was 2.9% in 2013 and that it will be 3.3% in 2014 and 3.8% in 2015 (recently revised down from 4%). In 2014 the “bang for the buck” oil demand growth per global GDP-growth unit hence came in at only 0.2. The long-term average is 0.4 for the past 20 years and 0.3 for the past 10 years, but you can see in the graph to the right below that the factor is very erratic. We do however believe that one of the key reasons that the average oil intensity factor has dropped from 0.4 to 0.3 has to do with a rising oil burden for the world economy. Until oil prices started to jump after 2002 the world used to spend only about 1.5-2% of its economic output on oil. As the price of oil started to increase the global oil burden increased as well to reach above 5% in the years 2011 and 2012. When the oil burden is high people are incentivized to use other cheaper energy sources like coal and natural gas, and oil is also being used more efficiently. Hence the oil intensity factor shrinks as the oil burden increases. Our forecasted Bent price of 80 \$/b for next year implies that the global oil burden will decrease from 4.5% to 3.3%. This is quite a large easing of the burden and we assume that this will lift the oil intensity factor from 0.2 to 0.3 next year, so that oil demand will be able to perform significantly better than this year.

A significantly lower oil price could also be seen as a large stimulus to the world economy and would definitely support global economic growth. The difference between 112 \$/b and 80 \$/b with a yearly consumption of about 90 million b/d equals almost thousand billion USD. That can be seen as equal to removing taxes to that same amount and it will provide more money available for the ordinary citizen in countries where prices are allowed to fluctuate and less pain in the state budget in countries who subsidize oil consumption.

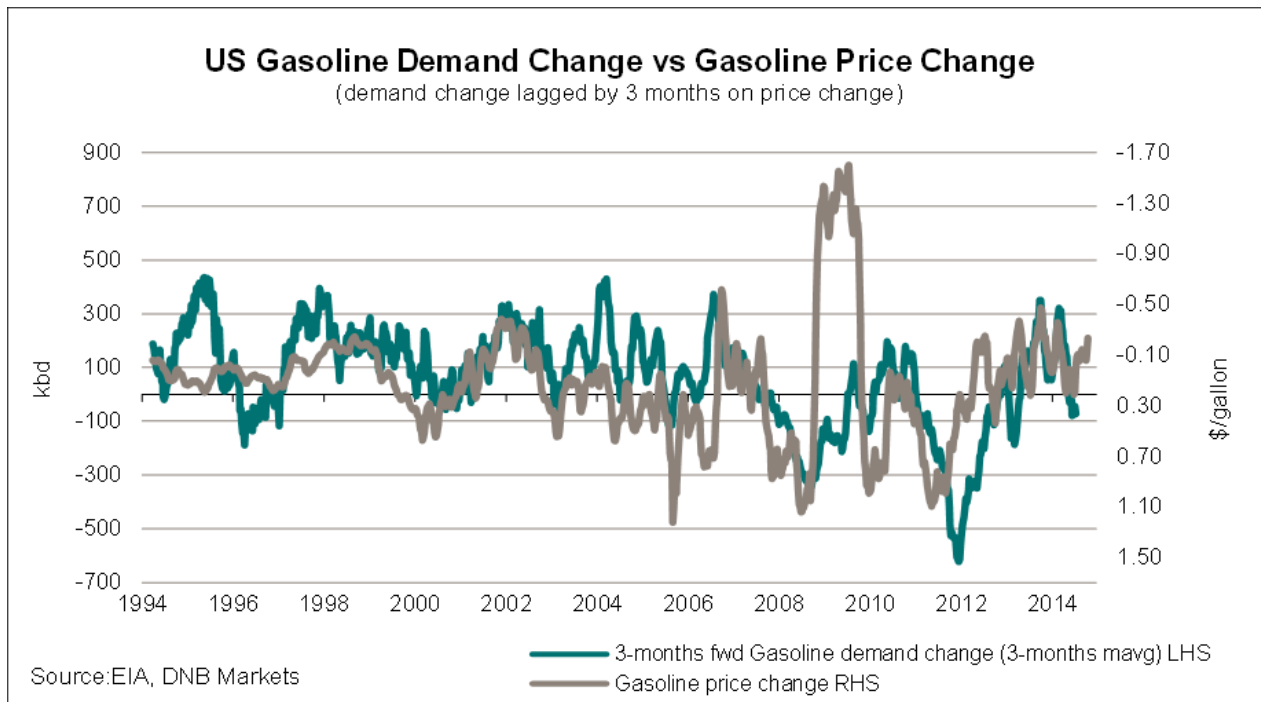


The Brent price has only averaged above 100 \$/b in three years during the whole history of oil. Those three years are the past three years. We will most likely see an average above 100 \$/b also in 2014 but in our opinion this will be the last year during this decade where that happens. We have already said many times during the past two years that 2012 will be standing as the year with the highest average oil price in the current decade and we still stick with that statement.



During the past ten years we have seen long periods with oil demand growth between 2-4%. In 2004-05 we reached as high as 4% at the top. We saw similar numbers also in 2010 but that was just catching up after the large 2008-09 recession. The average oil demand growth from 2004-2008 was above 2%, but after oil prices climbed above 100 \$/b the demand performance has been significantly weaker at about 1%. We do however expect demand to perform better at a significantly lower oil price.

The global oil burden will drop as described above and particularly in the US where there is a very short time lag before global oil price changes reaches the consumers at the pump, demand is set to perform better. Since taxes are so low in the US, there is also a very large effect on the prices consumers pay at the pumps when the global oil price is changing. The average US gasoline price correlate better with the Brent price than the WTI price since the gasoline market is a global market and the WTI market is a regional market. A much lower Brent price will hence lead to much lower US gasoline prices for US consumers and this is set to stimulate gasoline demand growth in the US next year. The inflation effect at the pumps provides a visible stimulus to more gasoline consumption as can be seen in the graph below.



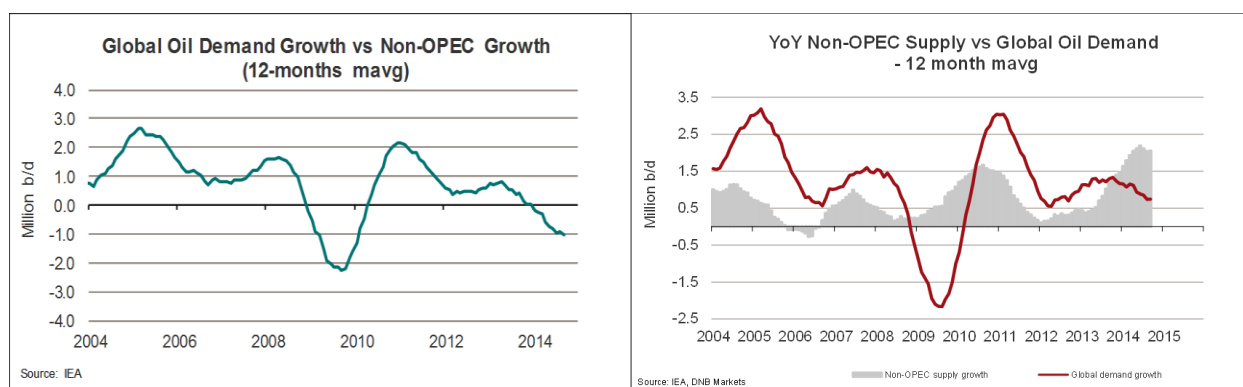
Since most of the emerging markets have subsidies at the pumps the changes in the global oil price is not affecting the prices seen by a large chunk of the global oil consumers. And since the taxes on gasoline and diesel are so large in Europe we do not see the same percentage drop in gasoline and diesel prices for the consumers in Europe as the Americans are seeing. Hence the positive effect of a drop in global oil prices (Brent) is not that large in countries outside the US. We hence believe oil demand will continue to decrease in Europe on both the weak economy, continued efficiency improvements and also some more substitution. Demand will however not drop as much as we have seen this year.

In the world's third largest oil consumer, Japan, we believe demand will continue to drop next year. Not due to weaker energy demand but due to the gradual restart of the country's nuclear reactors, which means oil will again be pushed out of the power-generating sector. We understand that two reactors have now been approved for a restart in Q1 next year and more will probably follow. There are almost 50 nuclear power generators that are shut out of the market in Japan today.

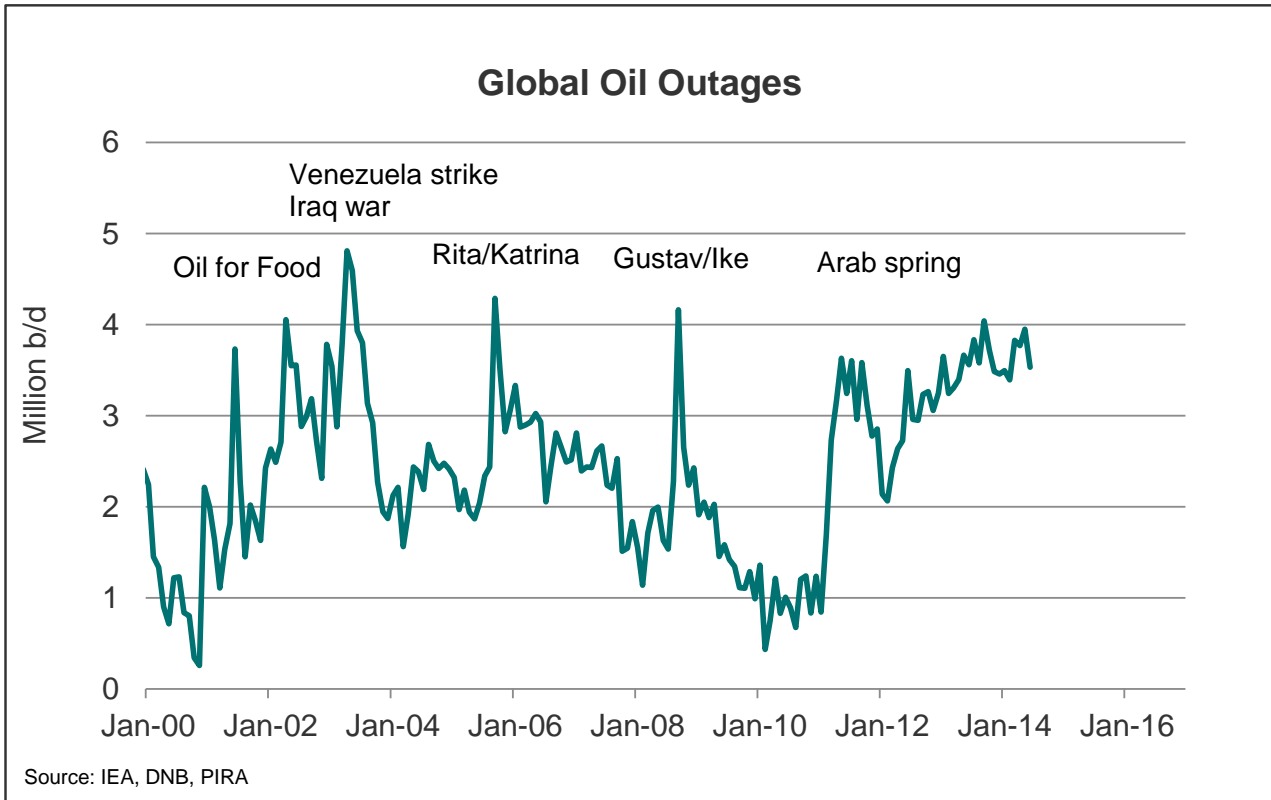
4 Supply is simply growing much quicker than demand

The bottom line when comparing global demand growth with non-OPEC supply growth is that the trend of supply growing faster than demand has been with us for a while. The trend has however been masked by the unplanned outages that have been growing even faster than the US shale oil production during the past three years. This has however changed during 2014. Something has to give into next year. Non-OPEC supply is just growing much quicker than global demand. We need to get a better balance between the two and the price is the adjustment factor that can make this happen.

It was no problem to balance the market as long as unplanned outages in Libya, Iran, Syria, Yemen, Nigeria, South-Sudan, Columbia, etc made up for the unbalance in the market. The unplanned outages have however stopped growing in 2014 and then the unbalance between supply and demand has become visible and led to a very over supplied Atlantic basin.



How the unplanned outages play out going forward is anybody’s guess but the fact is that we were at a historically high level of outages and we thought it would be more logical to expect at least a flattening of that high level rather than to expect further increases. Of course there is a chance that global outages can continue to increase but that would really require that everything goes wrong all over the world at the same time. Unplanned outages increased about 3 million b/d in 2011-2013. If that was to happen again for the next couple of years we would need to see a full blown crisis in Venezuela that cuts the country’s production in more than half, IS has to capture and control large oil fields in southern Iraq which is the Shiite strong hold, the Iran nuclear negotiations needs to fall totally apart and Libya needs to be shut out of the oil market again. Nigeria must remain out of the market with about 400-500 kbd and Syria, Yemen, Sudan and Columbia needs to keep all the current shut out barrels out of the market. Is all of the above really a plausible scenario?



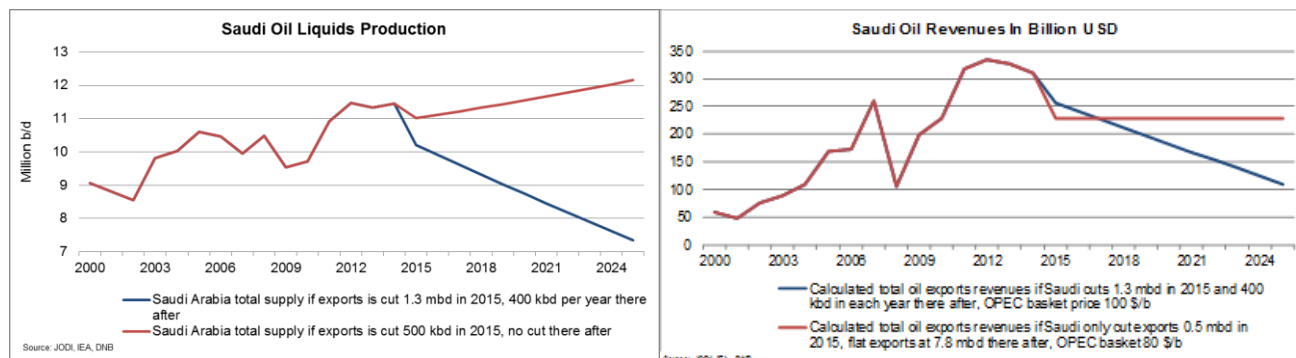
5 OPEC – To cut or not to cut, that is the question

In our global supply-demand balance we have assumed a Brent price at 80\$/b for 2014. This lower oil price will stimulate oil demand growth compared with what we have seen this year and it will lead to lower production growth in the US. We have assumed that global oil demand grows 1 million b/d in 2015 which is significantly stronger than the 0.7 million b/d we are on track to see this year. We have also assumed that US oil production growth slows to 0.7 million b/d in 2015 due to the lower oil price. This compares with a growth that is on track to be 1.4 million b/d in 2014.

DNB Markets World Oil Supply-Demand Balance:	2008	Change	2009	Change	2010	Change	2011	Change	2012	Change	2013	Change	2014	Change	2015
OECD Demand	48.4	-2.0	46.3	0.6	47.0	-0.5	46.4	-0.5	45.9	0.1	46.1	-0.4	45.7	0.0	45.7
Non-OECD Demand	38.1	1.2	39.3	2.5	41.7	1.3	43.1	1.5	44.6	1.1	45.7	1.0	46.7	1.0	47.7
Total Demand	86.5	-0.9	85.6	3.1	88.7	0.8	89.5	1.0	90.5	1.2	91.7	0.7	92.4	1.0	93.4
Non-OPEC Supply	49.2	0.7	49.9	1.0	50.8	0.1	50.9	0.5	51.4	1.2	52.6	1.7	54.3	1.0	55.2
OPEC NGLs and non-conventional oil	4.5	0.6	5.1	0.4	5.5	0.4	5.9	0.3	6.2	0.1	6.3	0.1	6.4	0.2	6.6
Global Biofuels	1.4	0.2	1.6	0.2	1.8	0.0	1.8	0.0	1.9	0.1	2.0	0.1	2.1	0.1	2.2
Total Non-OPEC supply	55.0	1.5	56.5	1.6	58.1	0.5	58.7	0.8	59.5	1.4	60.9	1.9	62.8	1.3	64.1
Call on OPEC crude (and stocks)	31.4	-2.3	29.1	1.5	30.6	0.3	30.8	0.2	31.1	-0.2	30.9	-1.3	29.6	-0.3	29.3
OPEC Crude Oil Supply (Last known number dragged fwd)	31.6	-2.5	29.1	0.1	29.2	0.7	29.9	1.4	31.3	-0.8	30.5	-0.2	30.3	0.4	30.7
Implied World Oil Stock Change	0.2		0.0		-1.4		-0.9		0.2		-0.4		0.7		1.3
IEA World Oil Supply-Demand Balance (Oct 2014):	2008	Change	2009	Change	2010	Change	2011	Change	2012	Change	2013	Change	2014	Change	2015
OECD Demand	48.4	-2.0	46.3	0.6	47.0	-0.5	46.4	-0.5	45.9	0.1	46.1	-0.4	45.7	-0.1	45.6
Non-OECD Demand	38.1	1.2	39.3	2.5	41.7	1.3	43.1	1.5	44.6	1.1	45.7	1.0	46.7	1.2	47.9
Total Demand	86.5	-0.9	85.6	3.1	88.7	0.8	89.5	1.0	90.5	1.2	91.7	0.7	92.4	1.1	93.5
Non-OPEC Supply	49.2	0.7	49.9	1.0	50.8	0.1	50.9	0.5	51.4	1.2	52.6	1.6	54.2	1.2	55.3
OPEC NGLs and non-conventional oil	4.5	0.6	5.1	0.4	5.5	0.4	5.9	0.3	6.2	0.1	6.3	0.1	6.4	0.3	6.7
Global Biofuels	1.4	0.2	1.6	0.2	1.8	0.0	1.8	0.0	1.9	0.1	2.0	0.1	2.1	0.1	2.2
Total Non-OPEC supply	55.0	1.5	56.5	1.6	58.1	0.5	58.7	0.8	59.5	1.4	60.9	1.8	62.7	1.6	64.2
Call on OPEC crude (and stocks)	31.4	-2.3	29.1	1.5	30.6	0.3	30.8	0.2	31.1	-0.2	30.9	-1.1	29.7	-0.4	29.3
OPEC Crude Oil Supply (Last known number dragged fwd)	31.6	-2.5	29.1	0.1	29.2	0.7	29.9	1.4	31.3	-0.8	30.5	-0.2	30.3	0.4	30.7
Implied World Oil Stock Change	0.2		0.0		-1.4		-0.9		0.2		-0.4		0.6		1.3
OPEC World Oil Supply-Demand Balance (Oct 2014):	2008	Change	2009	Change	2010	Change	2011	Change	2012	Change	2013	Change	2014	Change	2015
OECD Demand	48.4	-2.0	46.3	0.6	47.0	-0.6	46.4	-0.5	45.9	0.0	45.9	-0.2	45.7	0.0	45.7
Non-OECD Demand	37.7	0.7	38.4	1.9	40.3	1.4	41.7	1.4	43.1	1.1	44.2	1.3	45.5	1.2	46.7
Total Demand	86.1	-1.3	84.8	2.5	87.3	0.8	88.1	0.9	89.0	1.1	90.1	1.1	91.2	1.2	92.4
Non-OPEC Supply (Incl all Biofuel)	50.4	0.7	51.1	1.3	52.4	0.0	52.4	0.5	52.9	1.3	54.2	1.7	55.9	1.3	57.2
OPEC NGLs and non-conventional oil	4.1	0.2	4.3	0.7	5.0	0.4	5.4	0.2	5.6	0.0	5.6	0.2	5.8	0.2	6.0
Total Non-OPEC supply	54.5	0.9	55.4	2.0	57.4	0.4	57.8	0.7	58.5	1.3	59.8	1.9	61.7	1.5	63.2
Call on OPEC crude (and stocks)	31.6	-2.2	29.4	0.5	29.9	0.4	30.3	0.2	30.5	-0.2	30.3	-0.8	29.5	-0.3	29.2
OPEC Crude Oil Supply (Last known number dragged fwd)	31.2	-2.5	28.7	0.5	29.2	0.7	29.9	1.4	31.3	-0.8	30.5	-0.2	30.3	0.4	30.7
Implied World Oil Stock Change	-0.4		-0.7		-0.7		-0.4		0.8		0.2		0.8		1.5
EIA World Oil Supply-Demand balance (Oct 2014):	2008	Change	2009	Change	2010	Change	2011	Change	2012	Change	2013	Change	2014	Change	2015
OECD Demand	47.6	-2.2	45.4	0.7	46.1	-0.3	45.8	0.1	45.9	0.1	46.0	-0.2	45.8	0.2	46.0
Non-OECD Demand	38.2	0.7	38.9	2.1	41.0	1.5	42.5	0.8	43.3	1.2	44.4	1.2	45.6	1.1	46.7
Total Demand	85.8	-1.5	84.3	2.7	87.1	1.2	88.3	0.9	89.2	1.3	90.5	1.0	91.5	1.2	92.7
Non-OPEC Supply (Incl all Biofuel)	49.7	0.8	50.5	1.3	51.8	0.2	52.0	0.7	52.7	1.5	54.1	1.9	56.0	1.2	57.2
OPEC NGLs and non-conventional oil	4.5	0.3	4.8	0.8	5.5	-0.3	5.3	0.5	5.8	0.4	6.1	0.0	6.1	0.2	6.3
Total Non-OPEC supply	54.1	1.1	55.2	2.1	57.3	-0.1	57.2	1.2	58.4	1.8	60.2	1.9	62.1	1.3	63.4
Call on OPEC crude (and stocks)	31.7	-2.6	29.1	0.7	29.8	1.3	31.1	-0.3	30.8	-0.5	30.2	-0.8	29.4	-0.1	29.3
OPEC Crude Oil Supply (Last known number dragged fwd)	31.3	-2.2	29.1	0.1	29.2	0.7	29.9	1.4	31.3	-0.8	30.5	-0.2	30.3	0.4	30.7
Implied World Oil Stock Change	-0.4		0.0		-0.6		-1.1		0.6		0.2		0.9		1.4

The above supply-demand balances from DNB Markets, IEA, OPEC and EIA all forecast that the call on OPEC will continue to drop next year. After our adjustments to supply and demand for 2015, which is caused by our downward adjustments to our oil price forecast, we have a quite similar view on the call on OPEC for next year as the IEA, OPEC and EIA. The range between the forecasts is only 0.1 million b/d. DNB Markets, IEA and EIA all forecast the call on OPEC to drop to 29.3 million b/d for 2015, while OPEC's own number is even lower at 29.2 million b/d. If these numbers prove to be correct it implies that OPEC needs to remove 1.3-1.4 million b/d of production from the market compared with the current OPEC output of 30.7 million b/d in order to stop oil stocks from building in 2015. Can we believe that OPEC will remove that many barrels from the market next year? We are sorry; the question needs to be rephrased. Can we believe that Saudi Arabia with some help from the UAE and Kuwait will remove that many barrels from the market next year? We all know that the rest of OPEC of course will not cut production unless "the platform is on fire", and the "platform is not on fire" at oil prices above 80 \$/b.

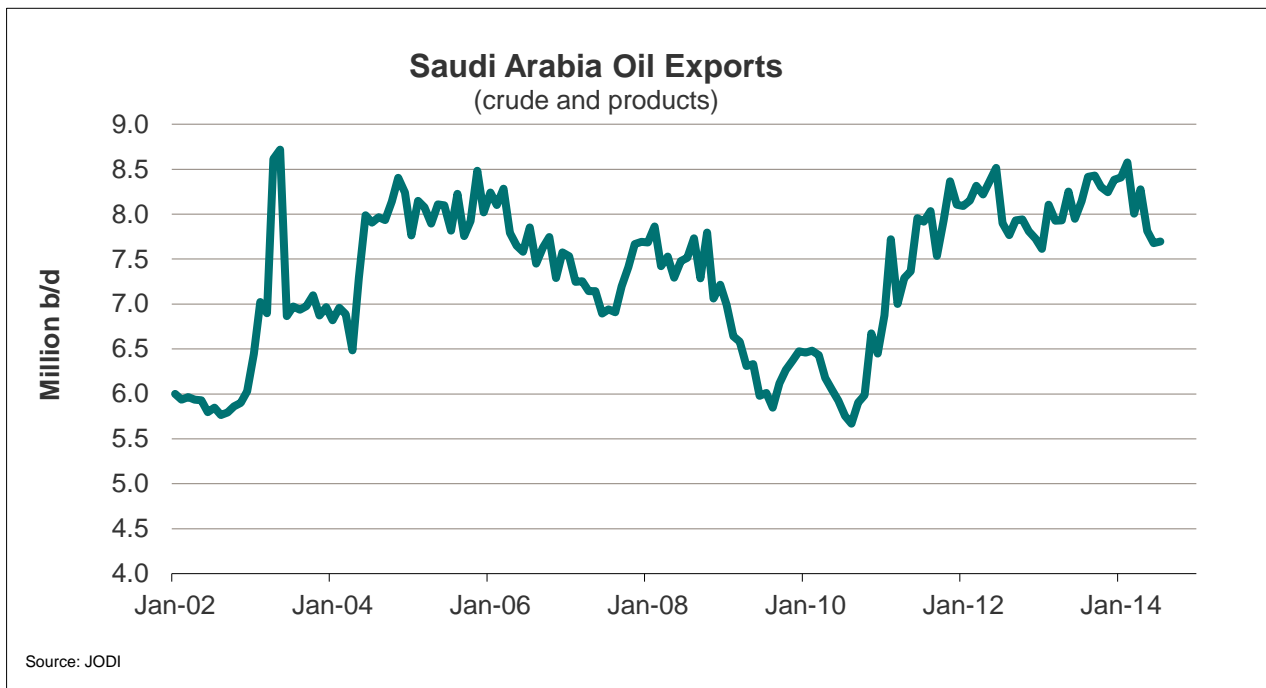
The “platform was however on fire” at Christmas Eve 2008 when Brent closed at 36.6 \$/b. Then into the first quarter of 2009, the whole cartel provided production cuts to prevent oil prices falling low enough to see non-OPEC production starting to shut down. In 2009 that would have required prices in the 20-30 \$/b range, but in 2015 that level has increased two or three times due to the US shale industry which do require much higher prices than 20-30 \$/b in order to maintain the production growth.



What are the benefits for Saudi Arabia of allowing oil prices to drop to let’s say 80 \$/b compared with the about 110 \$/b that we have seen during the past three years? We see many benefits. In fact after the shale revolution has taken hold on the market we think it would be unwise of Saudi Arabia to cut production to defend 100+ \$/b instead of letting the market forces decide where the correct price level is.

First of all, Saudi Arabia does not need a specific oil price, the country need revenues. And revenues are a function of both price and volume. Let us assume that Saudi Arabia removes the whole required 1.3 million b/d of cuts next year to stop global oil inventories from continuing to build. Let us also assume that such a cut would maintain oil prices at 100 \$/b. The 100 \$/b however leads to still very high growth in non-OPEC production, and as discussed above, weaker oil demand growth than what we would have seen at lower oil prices. Hence it would be necessary to continue to cut into 2016, into 2017, into 2018, etc. We have already seen that the call on OPEC has fallen the past two years and that situation is likely to continue at high oil prices. If Saudi cuts 400 kbd per year from 2016 and onwards to keep oil prices above 100 \$/b, it will only last into 2017 before the Kingdom’s oil revenues in real 2014 dollars becomes lower than to instead allowing oil prices to average at 80 \$/b and only do a minor production cut for 2015.

In the graphs above we have assumed that Saudi cut it’s oil exports from 8.3 million b/d in 2014 to 7.8 million b/d in 2015 and maintain that exports level for the coming years. Domestic Saudi oil demand does however continue to increase. The average demand increase for the past two years has been 3.1%. If that demand growth continues in the coming years Saudi Arabia needs to increase it’s total oil production (including NGL’s) to slightly above 12 million b/d by 2025. In 2014 the total oil production in Saudi Arabia will be approximately 11.4 million b/d (Including NGL’s). The choice to maintain oil exports at 7.8 million b/d going forward should hence not require unrealistic production levels for the Kingdom going forward, despite the need to cover growing domestic oil demand.



We believe it is important to discuss the potential for production cuts from OPEC with a clear separation between core-OPEC (Saudi/UAE/Kuwait) and the rest of OPEC. Why is that? It is because the families that are running the core-OPEC countries also will be running these countries ten years down the road. At least this is what they believe, and that is the important issue when it comes to the decision making process. Ibn Saud’s family has in practice been running Saudi Arabia since the country was formed in 1932. Since then we have seen five kings, all sons of Ibn Saud. If you however are running Venezuela, Iran, Iraq, Nigeria, etc you do not know if you will run the country a few years down the road. If you were running such a country you would want as high an oil price as you could get right now, because you need that money to stay in power.

The Saudi Royal Family (Source Wikipedia)

- Abdul Aziz (Ibn Saud)**
 - King: 1902-1953
 - Founded Saudi Arabia in 1932
 - 22 wives (4 at a time)
 - 45 sons of which 5 have been kings
- King Saud**
 - King: 1953-1964
 - Forced out
- King Faisal**
 - King: 1964-1975
 - Killed
- King Khalid**
 - King: 1975-1982
 - Heart Attack
- King Fahad**
 - King: 1982-2005
 - Stroke
- King Abdullah**
 - King: 2005-
 - Regent since 1995
 - Unifying and popular
 - 6 sons
- Crown Prince Sultan**
 - Died 23.10.2011
- Crown Prince Naif**
 - Ultra conservative
 - Died 16.06.2012
- New Crown Prince Salman**
 - 25th son of Ibn Saud
 - Defence Minister
 - Well regarded
 - Trusted mediator
 - Had a stroke in 2010

If you were running Nigeria or Angola for example you would know that it would make no sense for your state finances to cut output to protect oil prices. If you are running Nigeria and cut output by 150 kbd it will make no change to the oil price unless other members also cut back a meaningful amount and there is no way any one members can sanction other members if the others do not deliver any production cuts. The risk for Nigeria would be that they are just cutting their revenues through exports reductions and they get no payback with respect to price changes. We also know that the cartel members do not trust each other when it comes to their own reported production and exports numbers. That is why the OPEC administration uses an average of third party estimates when assessing the total cartel production. With this kind of back drop, could you expect Nigeria, Angola or anyone else outside of core-OPEC to contribute to production cuts at prices above 80 \$/b. We think not.

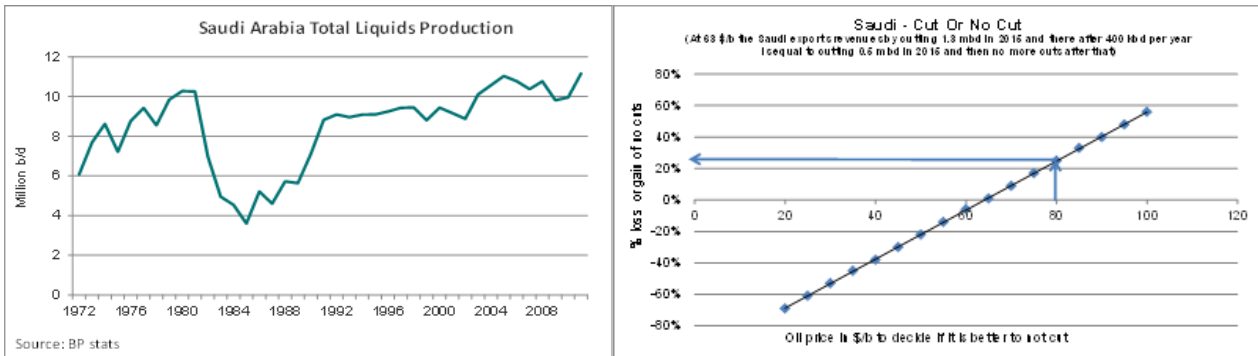
For core-OPEC the situation is different, particularly for Saudi Arabia. Even though Saudi Arabia's state budget was balanced with an oil price of 83-84 \$/b in 2014 and it would require an even higher oil price next year to balance the budget next year if production is cut, that does not mean that Saudi will defend 100 dollar oil at all cost. We think the relationship between oil prices and budget break-even oil prices run the other way. When oil prices are increasing the country spend more oil money in the budget and hence the break-even oil price level increase.

We believe the Saudi's now know that total oil revenues will be lower the next couple of years. They just have to decide if the lower revenue should be taken through lower prices or through lower exports. We think they will accept a lower oil price than 100 \$/b. Remember that the Saudi Arabian state finances are in very good shape and can probably withstand prices below 80 \$/b for at least the next five years. The kingdom's economy is in much better shape than in the 1980's. The country has almost no debt and they have an oil fund of close to 800 billion USD. That means the fund is almost as large as the Norwegian oil fund but without the pension commitments that the Norwegian oil fund is attached with. This means there is much more flexibility in how to spend this money than in for example Norway where the government is only allowed to spend of the funds return.

Also we understand that the Saudi Arabian budget has large flexibility because almost one third of the budget is investments and not operating costs. The Saudi budget also assume that money should be put aside to increase the oil fund further. That does not need to happen every year. The bottom line is that the Saudi Arabian economy is probably in such a good shape that it can withstand much lower oil prices for at least the next five years.

If we assume for the next ten years that Saudi Arabia cut back exports with 0.5 million b/d to 7.8 million b/d next year but no more cuts after that and compare that situation with exports cuts of 1.3 million b/d for next year and 0.4 million b/d per year there after, we calculate that those two scenarios would provide the same total revenues at an oil price of 63 \$/b. If the oil price instead average at 80 \$/b the no-cut scenario provides a 25% higher total revenue in real terms for the period.

The large production cuts from Saudi Arabia that we saw from 1980 to 1985 is not seen as a successful story by the Saudi's. The volume loss became too great for oil prices to make up for the lost revenues and the kingdom changed strategy in 1986 and started flooding the market through netback pricing to recapture the lost market share. After 1991 the market share has fluctuated quite stable at 12-14%.



Even focusing only on the cash flow from oil exports for next year one could argue that it would not make sense for Saudi Arabia to cut exports at all. If you assume that Saudi Arabia cut exports by 1.3 million b/d next year to maintain prices at 100 \$/b then oil revenues for the kingdom would drop from 303 billion USD to 256 billion USD. If the price drops to 85 \$/b and Saudi do not cut exports at all the total revenues will be a couple of billion USD higher than in the cut scenario. Based on this it looks as it would not make sense for Saudi to take the burden of all the cuts by themselves.

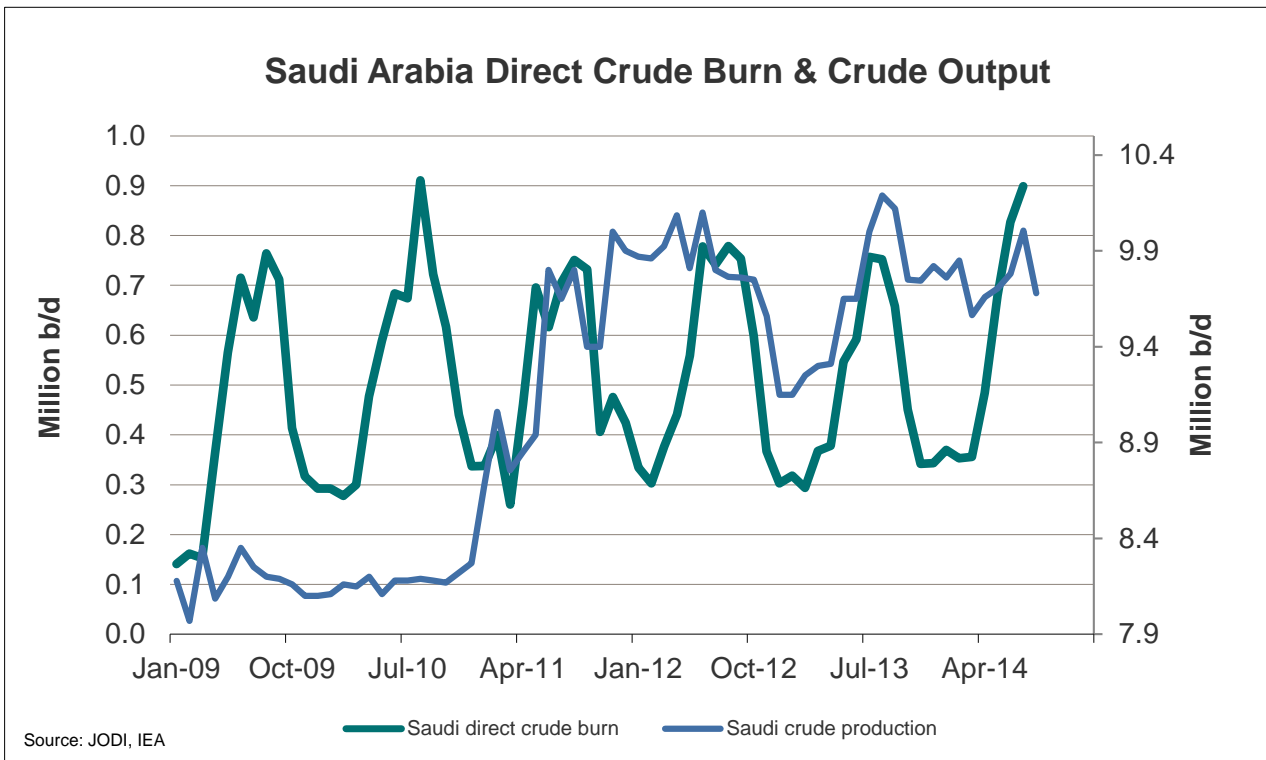
A bullet point list of the key arguments for why it does not make sense for Saudi Arabia to take all the cuts themselves to protect a high oil price would be as follows:

- A lower oil price means better global oil demand
- A lower oil price means lower growth in US shale oil production
- A lower oil price would mean that the shale industry will spread slower to the rest of the world
- Saudi's political enemy Iran will be significantly hurt by lower oil prices (much, much more hurt than Saudi) and this will increase the likelihood for Iran complying better in the nuclear issue, which is a great concern for Saudi Arabia.
- A lower oil price means lower investments also in the offshore industry which will provide lower growth in offshore production 5-10 years down the road. The possible increase in prices after 2020 as a result of this will go into Saudi Arabia's pockets both through a higher price and through higher volume since the offshore industry will then not be there to capture this higher volume requirement.
- A lower oil price is negative for alternative energy sources and hence good for Saudi Arabia
- A lower oil price will discipline the rest of the cartel to contribute in later potential production cuts

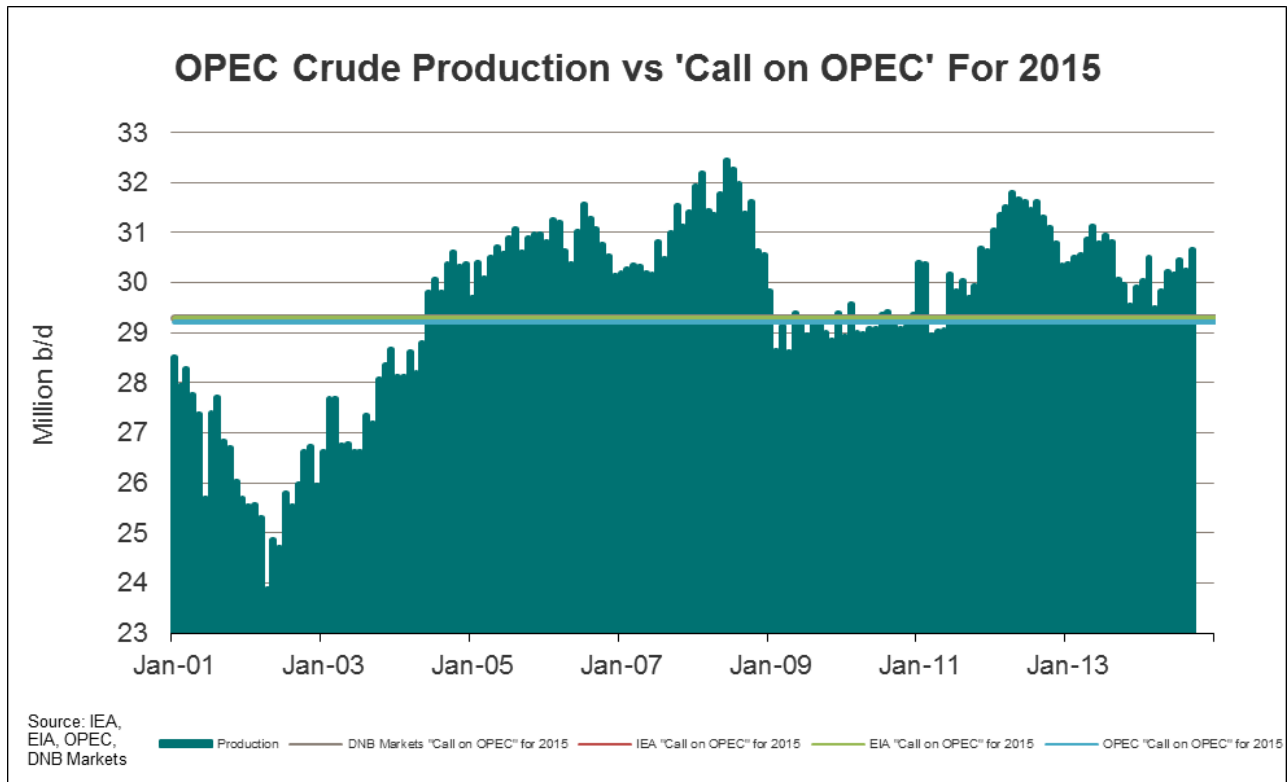
No volume cut:				Volume cut:			
2015	Million b/d	\$/b price	Revenue billion \$	2015	Million b/d	\$/b price	Revenue billion \$
Saudi oil exports 2014:	8.3	100	303	Saudi oil exports 2014:	8.3	100	303
Saudi no exports cut:	0.0			Saudi exports cut 2015:	1.3		
Saudi exports after cut:	8.3	85	258	Saudi production after cut:	7.0	100	256

Most people watch the Saudi crude production number when monitoring the kingdom’s policy behavior because there is more visibility to that number than the exports number which one has to collect from the JODI data with several months time lag. Last week an un-named industry source reportedly said that Saudi production had dropped from about 9.7 million b/d to 9.4 million b/d in September. That does not match the reported IEA number of 9.7 million b/d for September, but it led to a couple of dollars oil price rally on Thursday last week. People do however need to be aware of the difference between exports and production between the seasons.

Every year the past 3-4 years the seasonal swing of domestic oil demand in Saudi Arabia has fluctuated 0.4-0.5 million b/d between August and December. Peak air-conditioning requirements in the kingdom drops significantly from the summer and into the autumn. If Saudi Arabian production hence drops from 9.7 to for example 9.3 million b/d by Christmas it does not necessarily imply that the Saudi’s are cutting output to protect prices. In fact the exports can be totally stable above 8 million b/d even if production is reduced due to lower domestic seasonal demand. We expect that Saudi production could be cut down to about 9.2-9.3 million b/d, but to avoid further price weakness into 2015, we need to see Saudi crude production probably drop down to 8.5 million b/d and we doubt the kingdom is willing to go that low. Note also that according to PIRA Energy, Saudi Arabia has been allowed an informal, un-communicated “quota” of 9.4 million b/d by the rest of the cartel.



The chart below shows the OPEC production vs the call on OPEC for 2015. From the end of 2011 to the beginning of 2014 the cartel reduced production from 32 million b/d down to 29.6 million b/d, due mainly to unplanned losses from Libya and Iran. Now OPEC needs to do a job for next year if the cartel want 100+ \$/b oil prices. This could of course happen through a new round of unplanned outages, but if that does not take place the reduction needs to be voluntary.

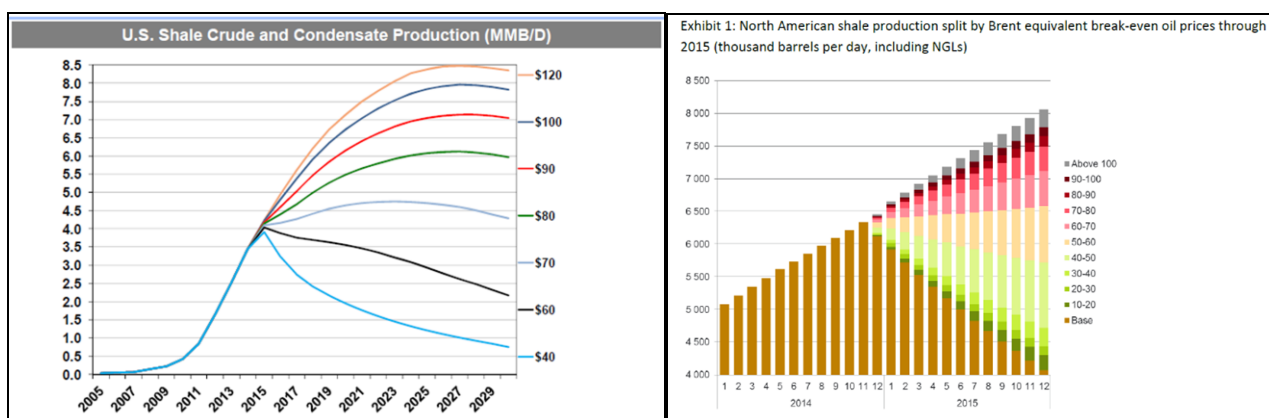


6 Will the US shale industry take the burden to balance?

The headline in our presentation package that we have been bringing out to customer meetings the past two months has been: “Will we see a test of OPEC or on the economy of US shale?”. As it now stands we believe the answer to that question is that we will see a test of the US shale economy. This is the reason why we are reducing our oil price forecast for 2015. Then it becomes important to figure out at what kind of price level we will see a large, meaningful reduction in the production growth from the US. Unfortunately (for Norway, Russia, Canada and OPEC) that price seems to be significantly lower than 90 \$/b.

Based on the data we have collected on this it seems a Brent price lower than 80 \$/b will reduce production growth, both due to weaker well economics but also due to reduced cash flows and consequently lower borrowing capabilities for many operators. The reduced growth in production is however likely to take well into 2015 before a significant volume loss can contribute to stabilize prices. Why is that? First of all the negative cash flow effect on operators will not occur immediately. About 70% of the remaining production for 2014 for these operators is probably price hedged and for 2015 PIRA Energy estimate that 40% of the production is price hedged. Also the weaker cash flow will lead operators to cut the marginal most expensive prospects and focus on the highest return projects. We also know through Rystad Energy that there is a quite large backlog of wells that are already drilled and is just waiting for completion. In the Bakken alone this is estimated to be as large as 600 wells. These wells will come on stream even at much lower prices than today.

There may be a good lesson to learn from the 2008-09 price collapse in this respect. The price drop from almost 150 \$/b to below 40 \$/b led to a 60% drop in rigs in the Bakken and Eagle Ford combined. Production did however decline only 11% in the same period and even long before the rig count had returned to the pre-crash level; production had again set new records.

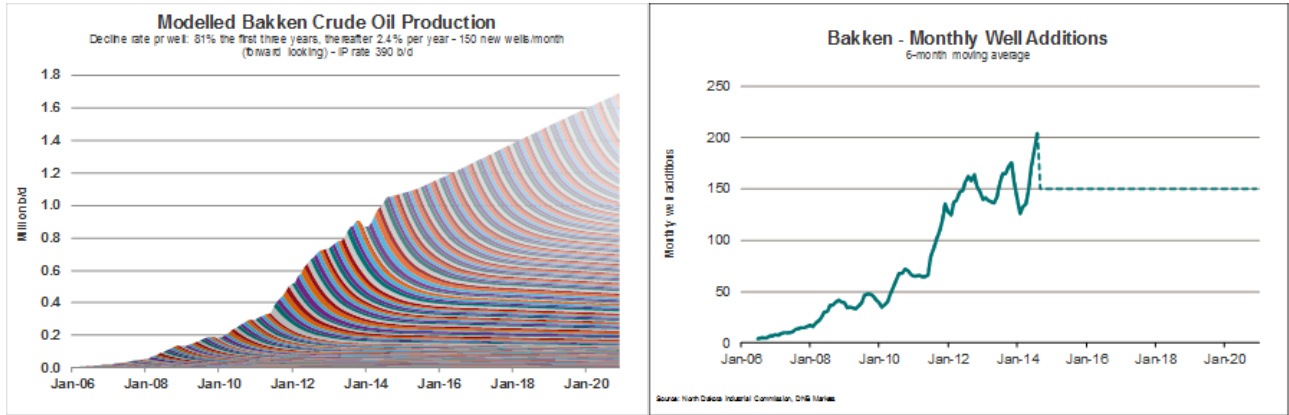


Source: PIRA Energy

Source: Rystad Energy

PIRA Energy estimate that even at 70 \$/b Brent prices US shale oil production will continue to grow, but a lot slower than before of course. Rystad Energy estimates that US shale oil production will continue to grow even in the 60-70 \$/b range as can be seen in the graph above.

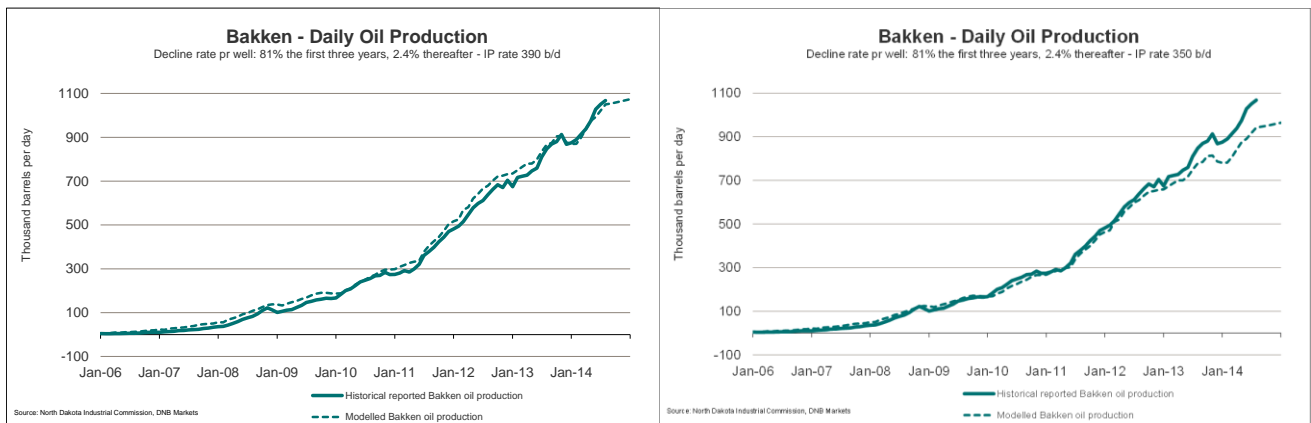
In the Bakken we have seen an average addition of new wells per month at about 200 the past 6 months. Even if we assume that the number of wells drilled every month drops by 25%, our model suggest that Bakken production will grow to 1.7 million b/d by 2020. Based on this it will take more than a 25% reduction in activity to stop the US shale growth.



Figures from our Bakken model

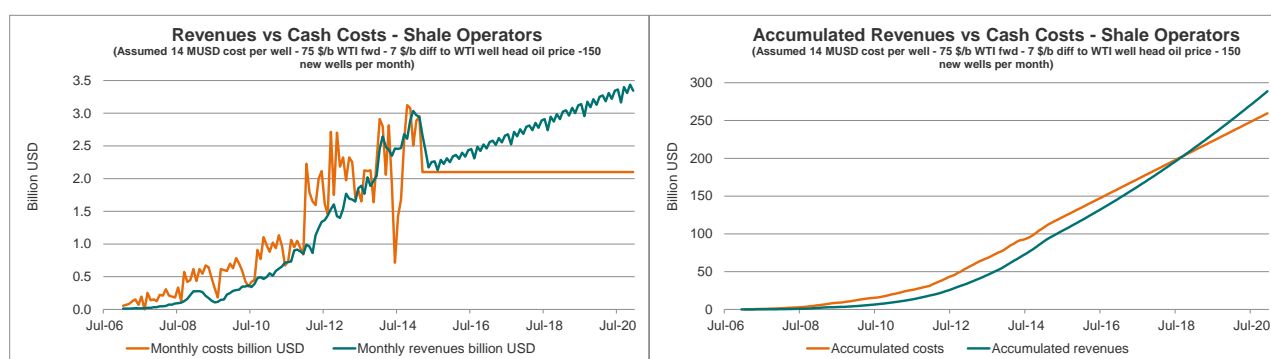
	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Accumulated production start up	29,094	90,324	254,904	435,864	721,344	1,193,634	1,885,104	2,584,764	3,382,314	4,084,314	4,786,314	5,488,314	6,190,314	6,892,314	7,594,314
Net production end of year	9,406	50,743	138,168	187,700	296,462	503,265	732,144	876,721	1,069,120	1,154,493	1,260,856	1,370,825	1,480,144	1,586,868	1,691,059
Accumulated decline	19,688	39,581	116,736	248,164	424,882	690,369	1,152,960	1,708,043	2,313,194	2,929,821	3,525,458	4,117,489	4,710,170	5,305,446	5,903,255
Yearly start up	29,094	61,230	164,580	180,960	285,480	472,290	691,470	699,660	797,550	702,000	702,000	702,000	702,000	702,000	702,000
Total yearly production decline	19,688	19,893	77,155	131,428	176,718	265,487	462,591	555,083	605,151	616,627	595,637	592,031	592,681	595,276	597,809
Decline vs new start up	68%	32%	47%	73%	62%	55%	67%	79%	76%	88%	85%	84%	84%	85%	85%
Yearly net production increase		41,337	87,425	49,532	108,762	206,803	228,879	144,577	192,399	85,373	106,363	109,969	108,319	106,724	104,191

Our Bakken model compares reported production with what the model number suggest production should be. The model consists of the number of wells that are put into production, the initial production (IP-rate) and the decline rate for each of the wells. We have used an 81% decline rate for the first three years of output and tested which average IP-rate that gives us the best model hit. Until 2013 an IP-rate of 350 kbd provided the best model hit. But as can be seen below the model then started providing too weak production numbers after 2013 compared with reported production. This can only mean two things in the model. Either the decline rate is not as high as modelled, and/or the IP-rate is improving. If we improve the IP-rate to 390 kbd as the average then suddenly the model is again giving us the correct numbers (see below).



One of the key arguments against the US shale industry has been that the operators are not making positive cash flows and the sceptics hence say the industry is a bubble waiting to burst. But is that not just how it should be when you have projects with the high IRR's that we see for the oil liquids projects in eagle Ford, Bakken and the Permian? Should you not then borrow just as much money as you can and drill a lot of wells? According to Bentek Energy (the analysis house owned by Platts) the internal rates of return is above 20% for Eagle Ford Oil Window, Bakken and Permian Midland even at 60 \$/b well head oil prices.

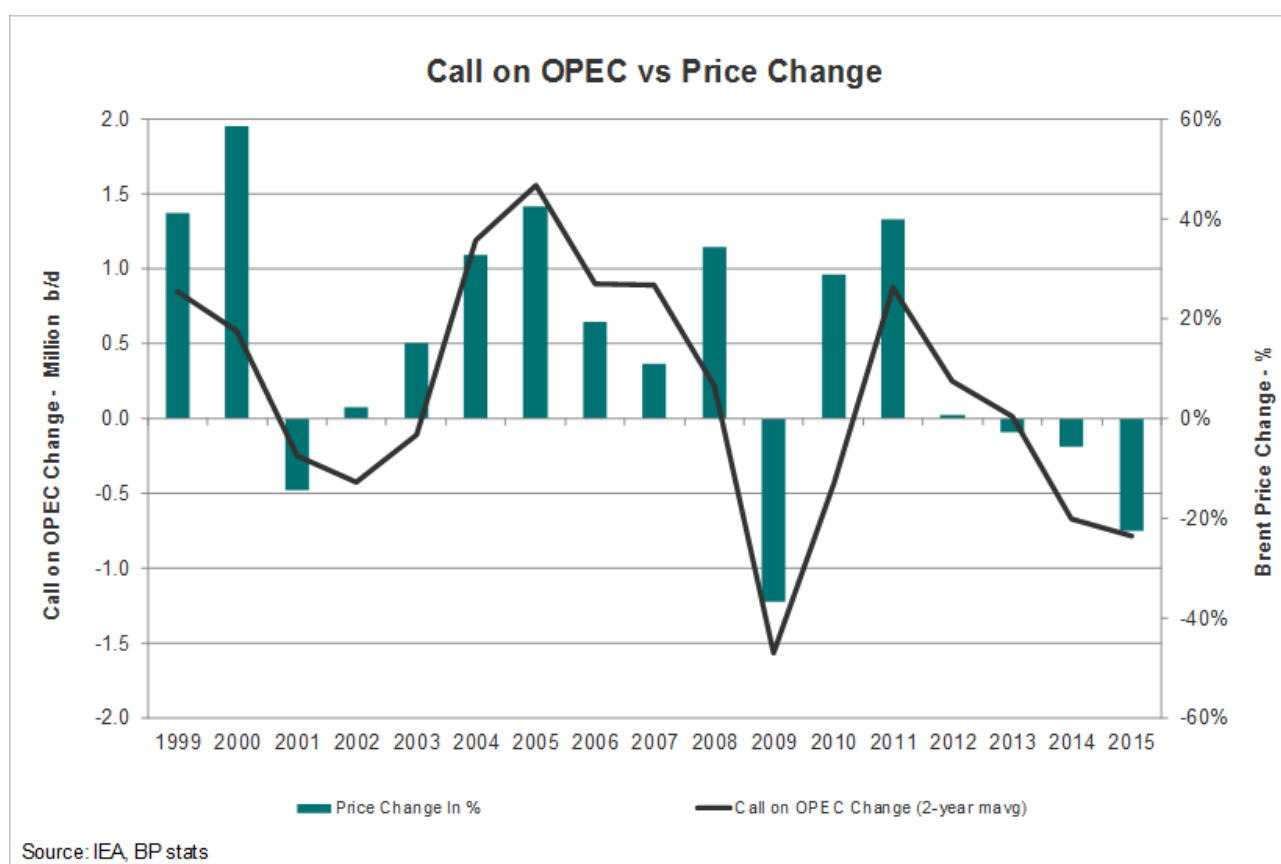
Below we have modelled the monthly and accumulated cash flows of Bakken, assuming that the whole Bakken is run by one single operator and that the cost for each well is 14 million USD flat (including all costs, not only the drilling of the well which we understand can cost from 7.5-9.5 million USD in the Bakken). In order to get to the well head price we have used the historical monthly WTI price and deducted a 7 \$/b diff. Forward looking we have used 75 \$/b WTI and deducted the same 7 \$/b diff to get to the well head price. We have used the historical number of wells drilled and a drop to 150 new monthly wells going forward (down from 200). The numbers are used only for illustrational proposes to illustrate that one should not expect to become cash flow positive immediately in this industry, but within a 5-10 year period of drilling the cash flow will turn positive, even assuming no cost reductions. It is really the tail production that provides the positive cash flow as the tails build up. The production decline in the tails is only 2-3% per year (see Bakken model on the prior page).



Even if the whole industry as such should turn cash flow positive 5-10 years after start up there will probably be players who will struggle to get the refinancing at WTI prices below 80 \$/b. Hence the well-head break even costs may not be the threshold for how low the oil price can fall before significant negative effects appear for the industry. Our forecasted 80 \$/b for Brent next year takes this into account. If we were only looking at the internal rate of return per project the price should drop lower than that if we want to see a reduction of production growth to below 500 kbd the next two years. We have however assumed that the weakest operators may be forced to reduce activity despite having positive IRR's as cash flow restraints kick in that may lower their borrowing capabilities.

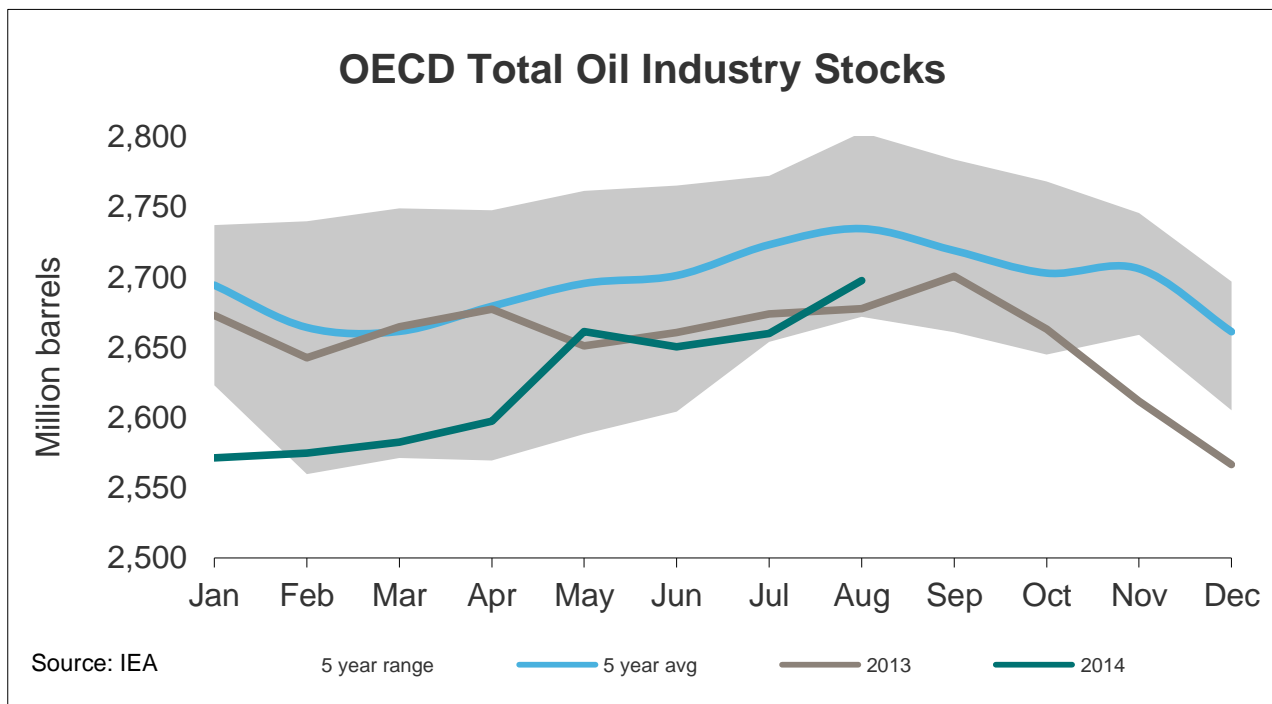
7 When the call on OPEC drops then the oil price drops

We have said before that when we see significant changes in the call on OPEC oil production there has been a tendency for average oil prices between the years to reflect these changes. The graph below shows the two-year rolling average change in the call on OPEC in the black line. The green bars are the average oil price change between the years. We think call on OPEC will decrease a large 1.3 million b/d in 2015 and hence we assume a large drop in the price of oil. The decrease in prices between 2014 and 2015 will happen no matter if Saudi Arabia cuts production to protect prices. This is because a potential large cut in production by Saudi Arabia will translate into higher spare capacity and traders around the world will be aware of this. The negative price development will however be larger if Saudi decide not to cut output and to instead test out the market economy of the US shale oil industry.

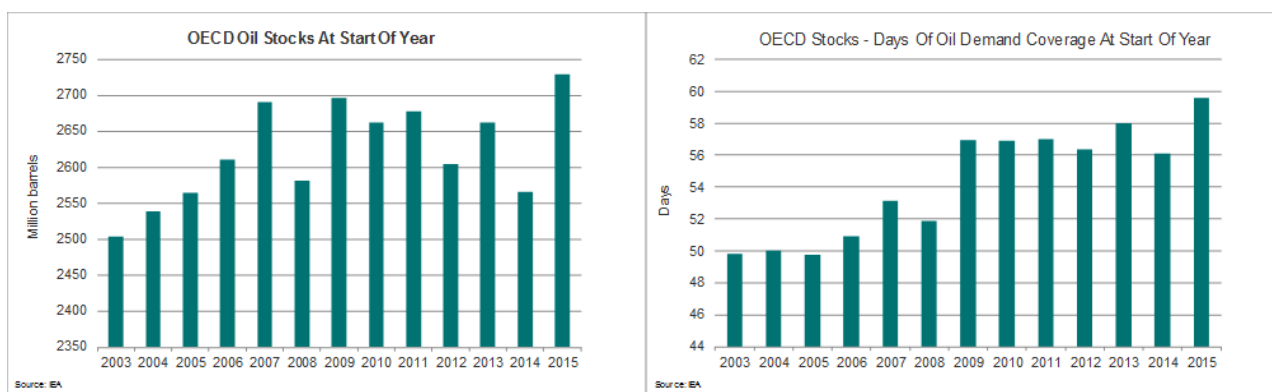


8 Oil stocks have built – high stocks as we enter 2015

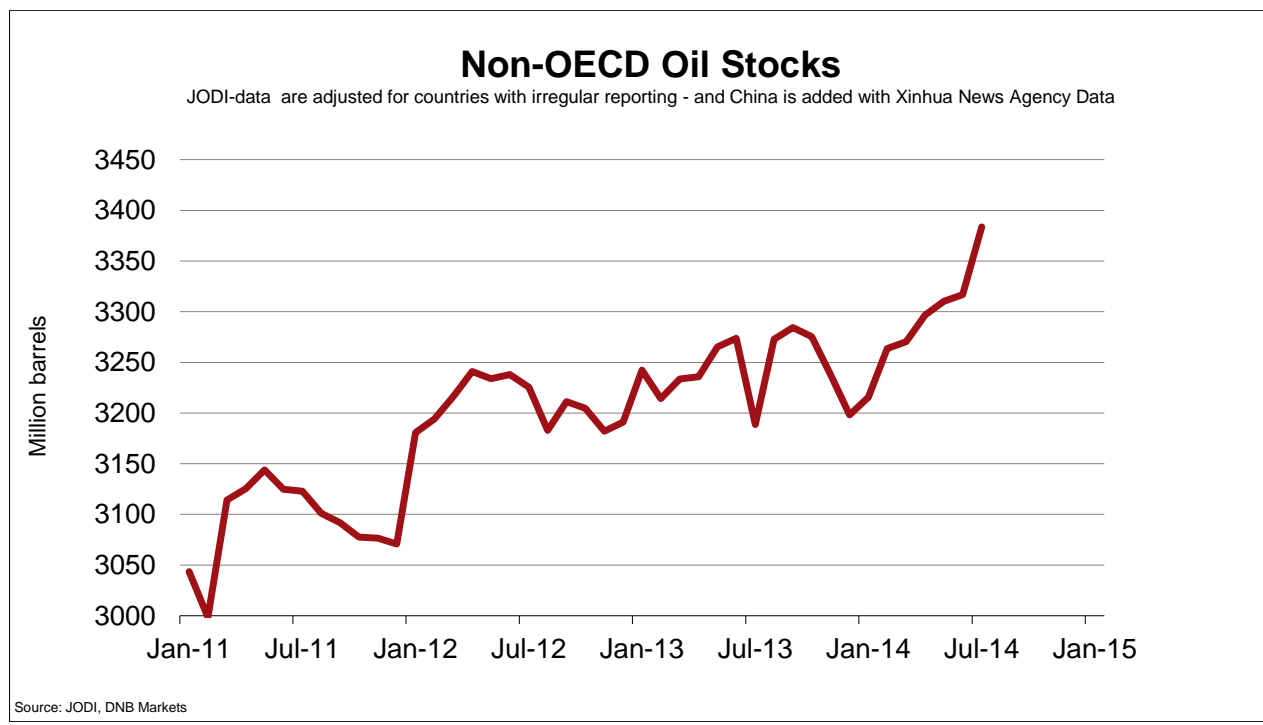
If OPEC (Saudi Arabia) decides to not cut production significantly we will see global oil stocks continue to build. OECD stocks have already from January to August (243 days) built 131 million barrels. This implies about 0.54 million b/d over supply (stock build) so far this year.



If OPEC continue to produce 30.7 million b/d (IEA’s estimate for September) throughout 2014 we estimate that we are going to enter 2015 with very high oil stocks in the OECD. We have then dedicated about 50% of the over supplied balance to the OECD region. OECD stocks are then set to be 162 million barrels higher than at the start of 2014. If we look at the numbers in days of demand coverage we are set to enter 2015 at 59.6 days of coverage instead of 56 days which was the number from the start of 2014.



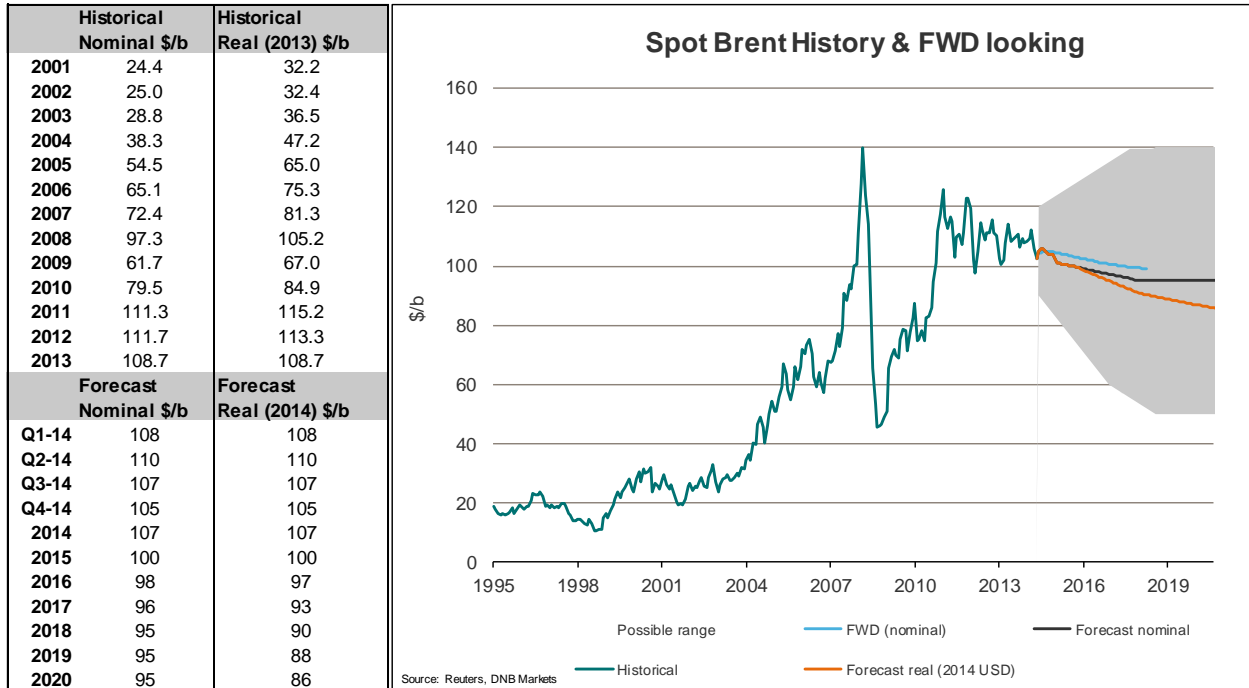
Based on JODI-data we estimate that non-OECD stocks have built 185 million barrels from January to July (212 days). This implies a stock building pace of 0.87 million b/d. If we add together the OECD stock builds (0.54 million b/d January-August) and our calculated non-OECD stock builds (0.87 million b/d January-July), it becomes quite obvious that the market has been severely over supplied in 2014.



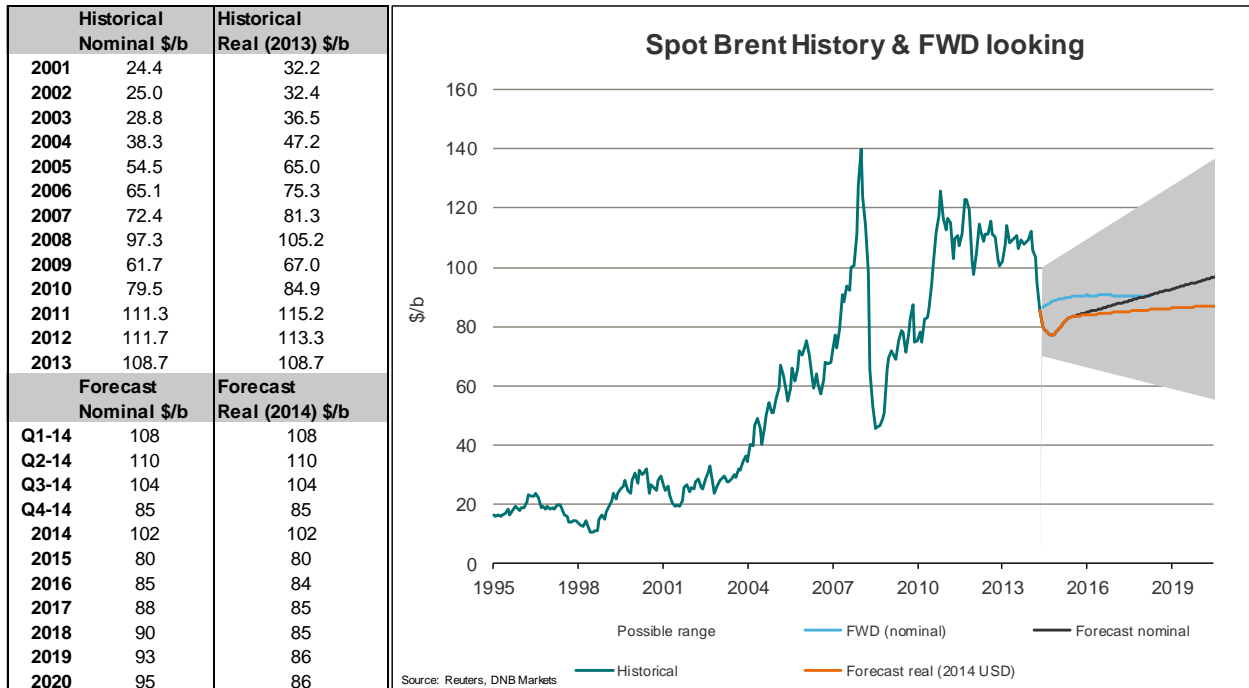
9 The 2015 oil price score card

2015 Oil Price Scorecard	Comments	Oil Price	Weight
Overall Outlook	Non-OPEC supply growth is forecasted to outpace global oil demand growth, creating a need for significantly less oil from OPEC. Geopolitical risk will likely continue to be supportive for oil prices also in 2015, but we believe the physical supply-demand balance will weaken unless OPEC removes a lot of barrels from the market. A significant OPEC cut does however not seem to be in the cards.	Average price 80 \$/b	
Fundamentals			
Global Fundamental Balance	The "Call on core-OPEC" crude oil will decrease in 2015, unless unplanned disruptions in oil producing countries continue to increase. Demand for inventory may increase on geopolitical risk but that is for oil prices similar to "pissing in your pants a cold winter day to stay warm"...	BEARISH	HIGH
Crude vs Product Balance (Margins)	World refinery capacity additions will outpace global demand growth for refined products also in 2015, just like in 2014. This means still a challenging environment for the refining industry, particularly in Europe but also in parts of Asia.	BEARISH	MEDIUM
OECD Stock levels	OECD stocks have built 131 million barrels Jan-Aug. Stock builds are set to continue as long as we have contango in the Brent curve. This means we are set to enter 2015 with high oil stocks in the OECD.	BEARISH	MEDIUM
OPEC Spare Capacity	OPEC spare capacity will increase as Saudi Arabia will trottle back some output, but unplanned outages create a wild card also for 2015.	BEARISH	MEDIUM
US Oil Statistics - Fundamentals	In the US, oil demand is expected to grow 0.1 million b/d on a lower oil price but oil production will continue to grow, creating still lower need for imports.	BEARISH	MEDIUM
Global Demand Growth	We believe global oil demand will grow 1.0 million b/d in 2015. All of this will be in the non-OECD, while OECD will be flattish. China will grow about 0.2 million b/d. India will grow about 0.1 million b/d. IEA forecast much stronger growth for China, but we believe 2015 will be much like 2014.	NEUTRAL	MEDIUM
OPEC Supply	Total OPEC supply is dependant on unplanned disruptions. If disruptions does not increase, core-OPEC will have to cut output. The indications since August have however been that core-OPEC is not there to protect the oil price this time.	BEARISH	HIGH
Non-OPEC Supply	Non-OPEC supply continue to grow more than demand in 2015, mainly du to the shale revolution in the US. But we also see meaningful supply growth in countries like Canada and Brazil.	BEARISH	MEDIUM
Political Risk			
Iraq, Iran, Nigeria, Venezuela, US, Russia, Israel, MENA, etc	Political risk will continue to be elevated in 2015. For the oil market the situation in Iraq, Libya and Iran will be particularly important. The Israel-Palestine conflict also negatively affects the tone for the geopolitical risk in the region. The Ukraine-Russia tensions could end up having effects on the oil balances as it could lead to lower supply but also to lower demand.	BULLISH	MEDIUM
Other Factors			
Financial Money Flow	This is a big wild card for 2015. Financial investors may see owning paper oil as a hedge against the growing geopolitical risk in the MENA region, but if demand growth disappoints in the emerging markets they may still choose other asset classes before oil.	NEUTRAL	MEDIUM

10 The DNB Markets Brent price forecast - Old



11 The DNB Markets Brent price forecast - New



12 The DNB Markets commodity team

Torbjørn Kjus

Oil market analyst - Oslo
torbjorn.kjus@dnb.no
Phone: +47 24 16 91 66

Karl Magnus Maribu

Risk advisory - Oslo
karl.magnus.maribu@dnb.no
Phone: +47 24 16 91 57

Nils Fredrik Hvatum

Head of Commodities – Oslo
nils.fredrik.hvatum@dnb.no
Phone: +47 24 16 91 59

Fredrik Sagen Andersen

Commodity dealer - Oslo
fredrik.sagen.andersen@dnb.no
Phone: +47 24 16 91 48

André Rørheim

Commodity dealer - Oslo
andre.rorheim@dnb.no
Phone: +47 24 16 91 64

Jesper Hatletveit

Commodity dealer – Oslo
jesper.meyer.hatletveit@dnb.no
Phone: +47 24 16 91 53

Nils Wierli Nilsen

Commodity dealer - Oslo
nils.wierli.nilsen@dnb.no
Phone: +47 24 16 91 61

Erik Warren

Commodity trader - Oslo
erik.warren@dnb.no
Phone: +47 24 16 91 46

Kenneth Tveter

Commodity dealer – New York
kenneth.tveter@dnb.no
Phone: +1 202 681 3888

Seng Leong Ong

Commodity dealer - Singapore
seng.leong.ong@dnb.no
Phone: +65 62 24 80 22

Ane Røste Fossen Tobiassen

Commodity dealer - London
ane.roste.fossen.tobiassen@dnb.no
Phone: +44 (0) 20 7621 6082

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