

SECTOR BRIEFING

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Oil Prices

Where Will We
Go From Here?



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Introduction

If only we could forecast oil prices with a simple demand-supply equation. Alas, it is far more complicated nowadays. While we believe that gradually improving demand-supply fundamentals will lead to some recovery in oil prices, it is extremely difficult to determine how fast or how far that recovery will be. There are many economic structural issues to consider as well as a maze of global geopolitical shifts, conspiracy theories, and potential acts of one-upmanship. That said, if history is any indicator, it seems unlikely that oil prices will reach pre-crash levels, at least in the near term.

Structural Issues Make Forecasting More Difficult

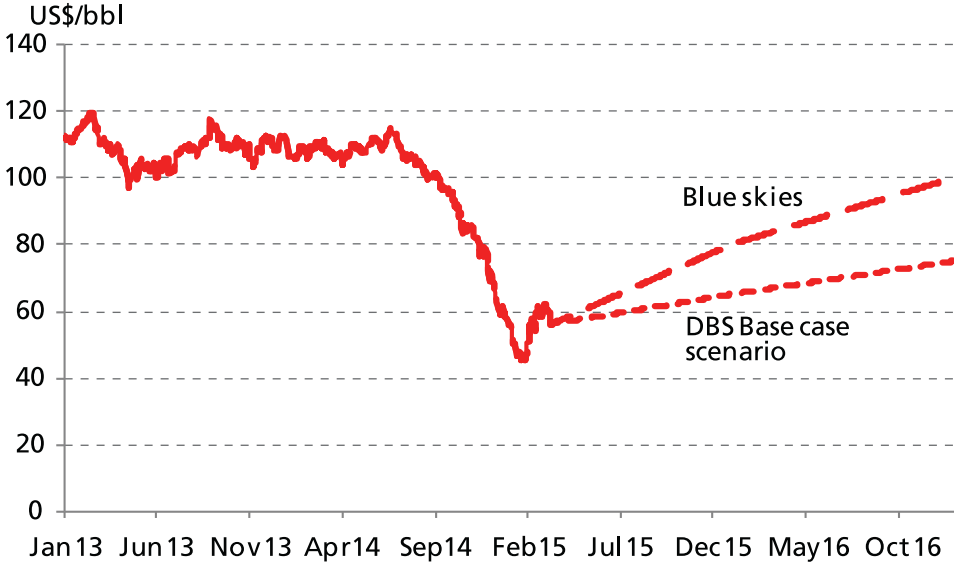
During the last few years, global oil markets have been changing, making them harder to forecast. In this report we will highlight some of the big issues, including OPEC's refusal to cut production, the resiliency of US shale oil production, China's slowing demand, and the geopolitical risks ahead. We also look at others factors such as a massive inventory buildup around the world, the strong US dollar, structural changes in the global economy, and how oil companies are responding.

We believe volatility will prevail in the near term, though there could be some eventual rebound in the medium to long term. Unfavourable trends on both the supply and demand fronts in the near term, as well as the strong US dollar will keep oil prices from breaking out at least before the second half of 2015. There could be high volatility in the market from spillover fears as the storage capacity in the US and OECD countries nears peak levels and until we see production cuts. We are tempted to call a market bottom for oil prices at US\$45 per barrel (/bbl) that we saw in January 2015, but we are also not ruling out the odd wobble here and there over the course of the next few months.

We are reasonably confident at this point that oil prices will not tank and sustain at lower levels for long. This is because we do not expect OPEC to maintain production levels consistently at prices below US\$40-50/bbl. That would be asking too much from some of the weaker OPEC member nations. From the second half of 2015 onwards, we expect some production cuts to kick in and support oil prices. But, in the absence of a strong demand push, the recovery in prices could be tepid at best. **Thus, our base case scenario forecast for oil prices for the rest of 2015 is around US\$55-65/bbl. For 2016, we project oil prices could be in the range of US\$65-75/bbl.**

However, there is always the possibility that oil prices might recover to near pre-crash levels under a "blue skies" scenario. But that would have to mean global oil demand picking up significantly over the next two years – driven by stronger economic growth in non-OECD countries spurred by low oil prices. It would also require OPEC as well as non-OPEC states (like the US and Russia) ironing out their differences on output levels. At this point, however, we are reserving our bets on this happening.

Diagram 1: Oil price forecast scenario



Source: Bloomberg Finance L.P., DBS Bank forecasts

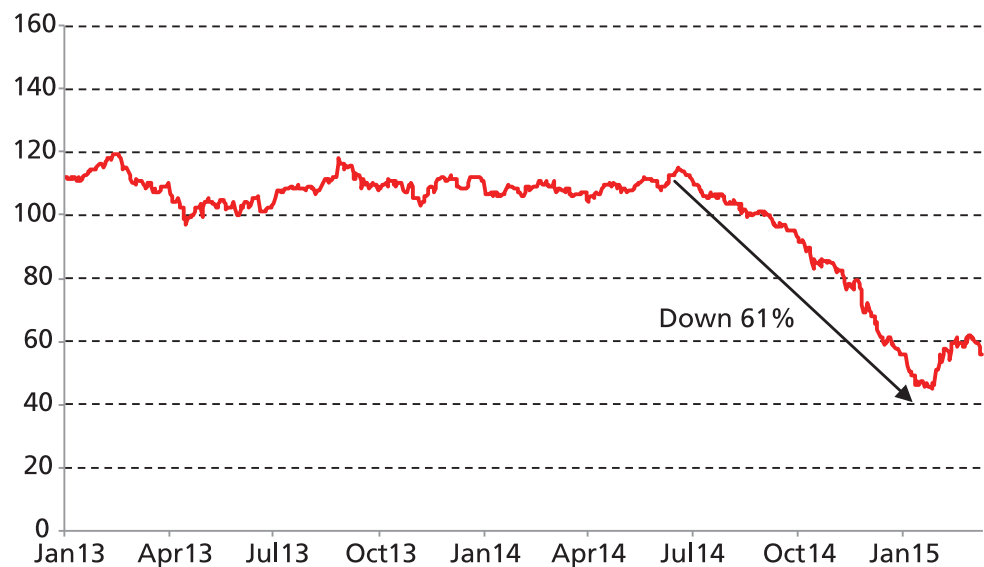
...volatility will prevail in the near term...



What Has Happened

Global crude oil prices have fallen almost 50% since last June. Of course, they fell more than 60% at one point during January 2015, and recovered modestly by March before flattening out. The major factors have been a surge in production in non-OPEC countries during the past year or so, especially the US. There has also been an unwillingness by OPEC countries, led by Saudi Arabia, to cut their existing production levels. This has been compounded by slower-than-expected growth in global demand, thanks to falling demand in many of the developed economies, including the Eurozone and Japan. How big of an impact each of these factors have had individually on the oil price slide is hard to measure. But suffice to say, the gap between demand and supply needs to be bridged before we can see a meaningful recovery in oil prices.

Diagram 2: Magnitude of oil price decline this time around



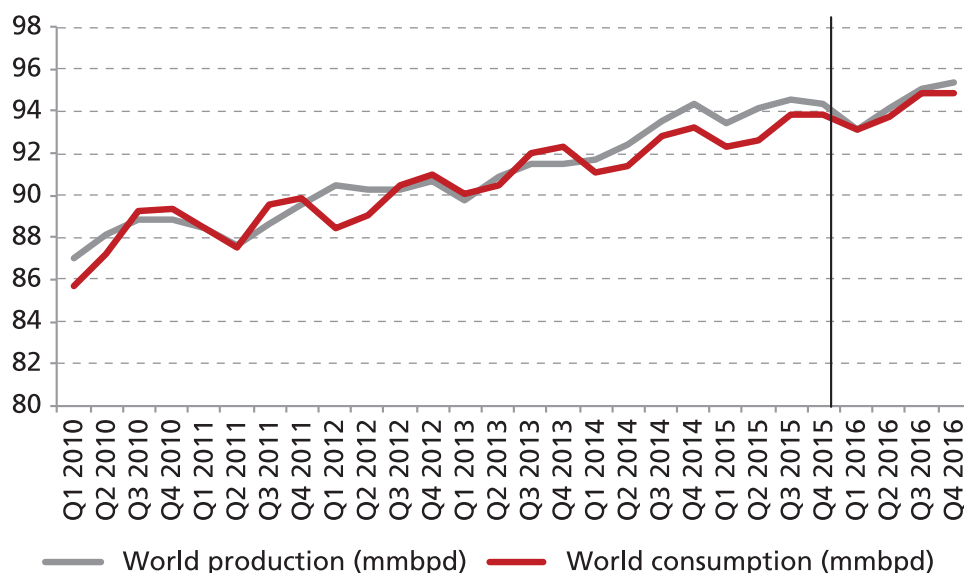
Source: Bloomberg Finance L.P.

...the gap between demand and supply needs to be bridged before we can see a meaningful recovery

The Demand-Supply Game

How big is the gap between demand and supply? In 2014, the US Energy Information Administration (EIA) estimated that oil production grew by about 2.2 million barrels per day (mmbpd), whereas oil demand growth was just around 0.9 mmbpd, much below initial projections. Almost all of the growth in supply came from non-OPEC sources, led by the US, as OPEC production remained flat at about 30 mmbpd. Thus, the gap in demand-supply was around 1.3 mmbpd on average in 2014, widening in the second half of 2014. This is less than 2% of global oil consumption of about 92.2 mmbpd in 2014, hence the magnitude of decline in oil prices has been a bit surprising for market watchers in general.

Diagram 3: Global oil production and consumption – trends and forecasts (EIA)



Source: US EIA

OPEC Maintains Production Despite Calls to Cut

OPEC's production of 30.1 mmbpd in 2014 was largely unchanged from a year before, as increases in Libya, Angola, Algeria and Kuwait offset declines in Iraq and Iran. Despite the fall in oil price since June 2014 and pressure from some members to cut production targets, OPEC, in its last meeting on November 27, 2014, maintained its production target at 30 mmbpd. This was a slight departure from its usual stance of trying to balance global supply to maintain a reasonable level for oil prices. Saudi Arabia, the key OPEC member nation, has actually been raising supplies in recent months, as has Iraq, the second largest producer in OPEC. Only Libya has seen declines, largely owing to political instability, but that has not affected overall OPEC output.

Diagram 4: OPEC Crude Output ('000 bpd) since June 2014

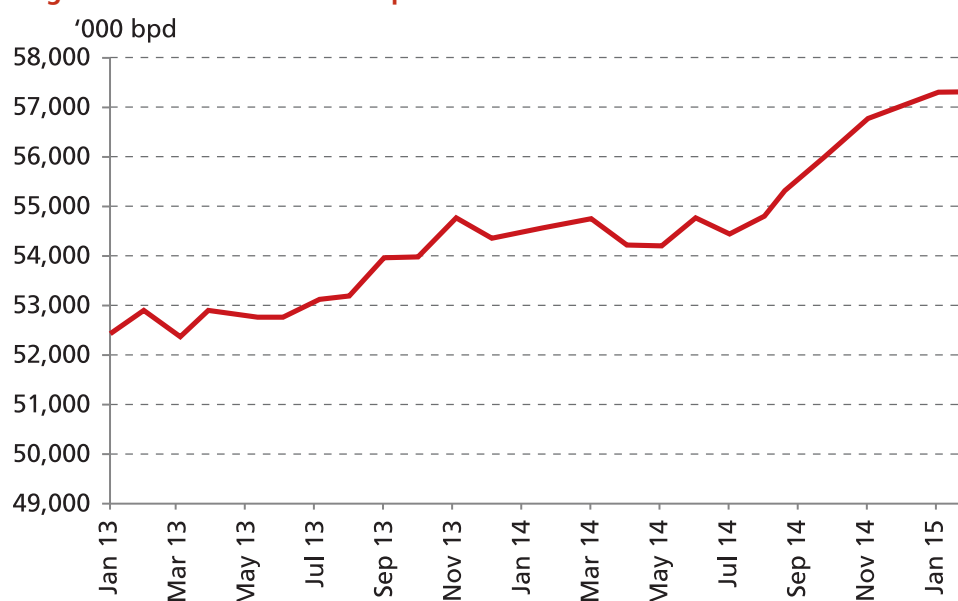
	Jun-14	Jul-14	Aug-14	Sep-14	Oct-14	Nov-14	Dec-14	Jan-15	Feb-15
Saudi Arabia	9800	9820	9600	9650	9750	9650	9500	9720	9850
Libya	300	400	500	780	850	580	450	300	220
Iraq	3100	3000	3100	3150	3300	3370	3700	3400	3450
Iran	2840	2830	2800	2780	2780	2780	2770	2780	2780
Kuwait	2800	2880	2890	2900	2850	2790	2790	2850	2850
UAE	2800	2800	2800	2850	2850	2800	2700	2700	2800
Qatar	725	725	727	690	690	650	680	680	675
Algeria	1125	1125	1125	1100	1100	1100	1100	1100	1100
Angola	1660	1610	1750	1870	1700	1640	1620	1810	1830
Nigeria	2150	1920	2200	2130	2090	1970	2080	2040	1990
Ecuador	556	557	559	550	555	561	564	557	554
Venezuela	2470	2475	2471	2471	2469	2470	2468	2468	2469
Total	30326	30142	30522	30921	30984	30361	30422	30405	30568

Source: Bloomberg

Supply Glut Mainly Driven by US Shale Oil Revolution

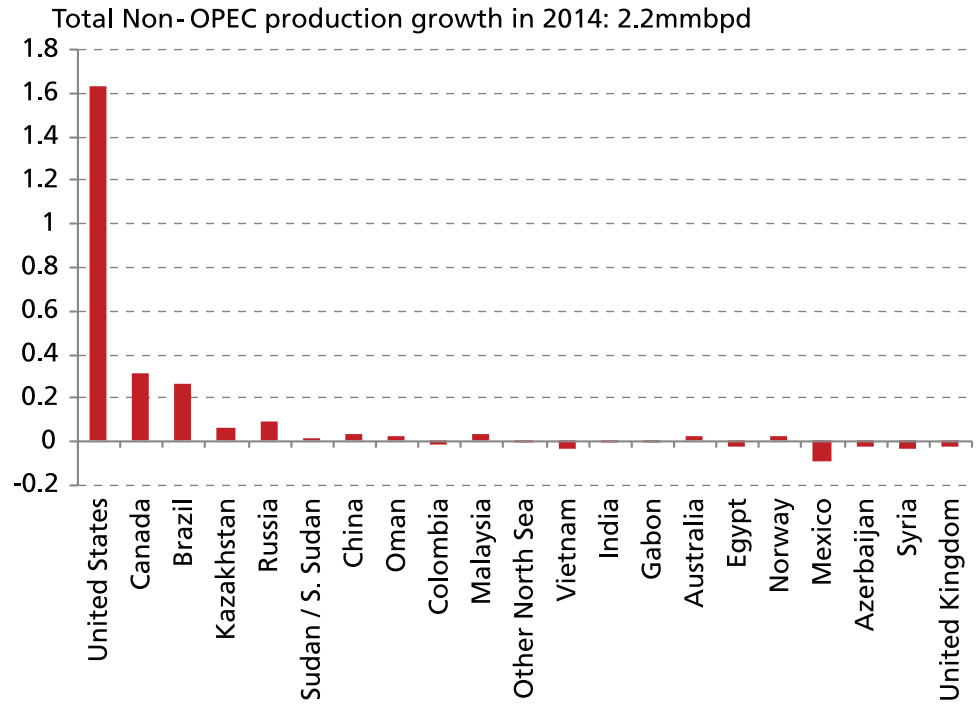
Whereas OPEC production remains steady, non-OPEC production has been growing relatively fast, thanks to the US. US production grew by 1.6 thousand barrels per day (mbpd) in 2014, frequently outpacing earlier production growth estimates owing to the shale oil revolution, characterised by technological advances and short lead times to production. This has made the US the leading contributor of non-OPEC crude oil production growth in 2014, as can be seen below. Canada and Brazil are the next biggest contributors to supply growth.

Diagram 5: Non-OPEC crude oil production trends



Source: EIA

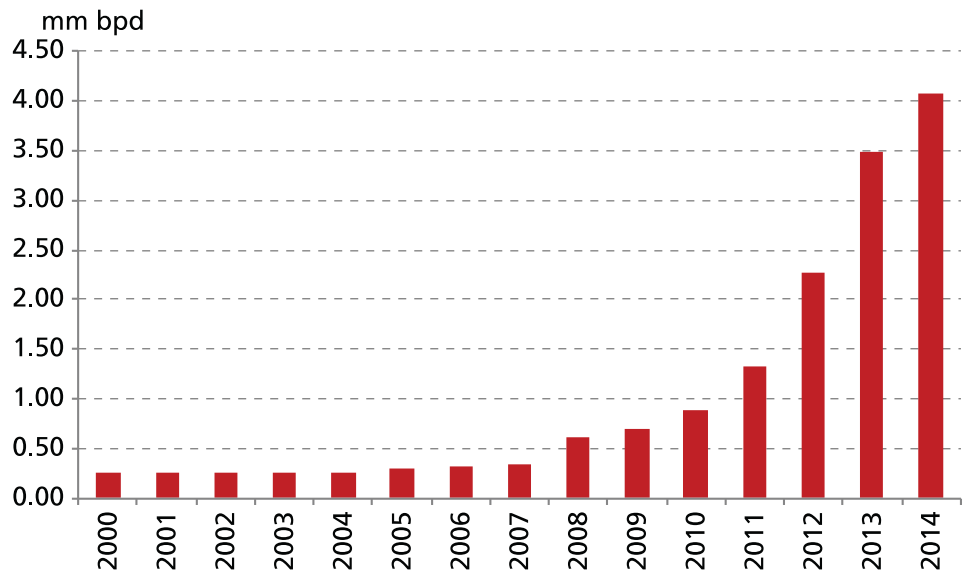
Diagram 6: Non-OPEC production growth by country (2014)



Source: EIA

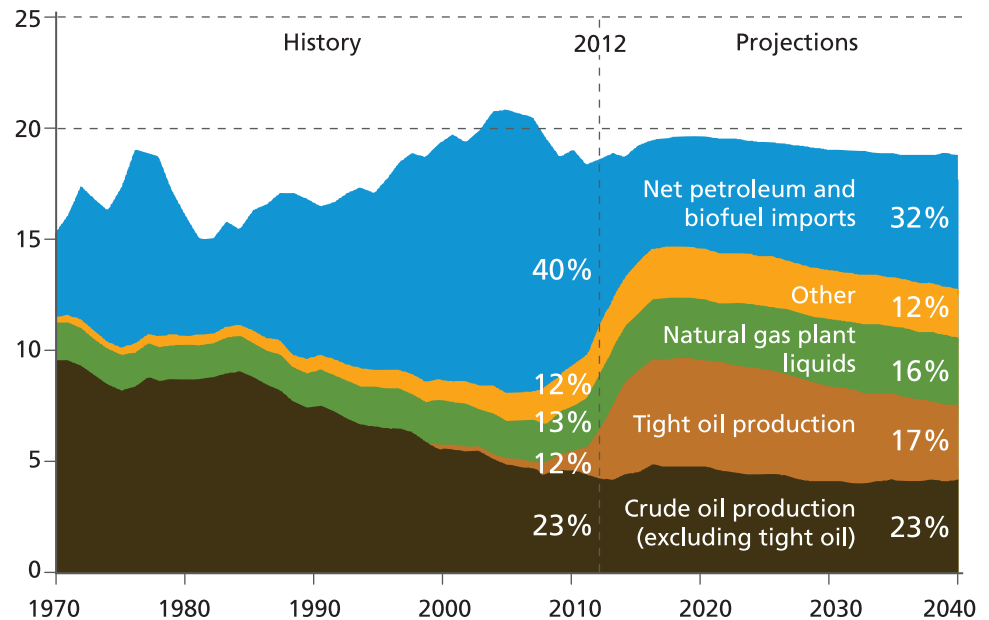
The boom in US production has been mainly due to growing output of shale oil or ‘tight oil’, which represented close to one-third of total crude production in the US in 2014 (20% of total petroleum supply including imports). Production of shale oil has grown at a compound annual growth rate (CAGR) of almost 50% over the past four years.

Diagram 7: Increase in tight oil (shale oil) production in the US



Source: EIA

Diagram 8: US petroleum supply by source



Source: US EIA, Annual Energy Outlook 2014

Demand Decline Largely Led by OECD Nations

Consumption outside the OECD region grew by around 1.2 mmbpd in 2014, but this was offset by 0.3 mmbpd decline in consumption in OECD countries, driven by slow economic growth as well as efficiency gains. Japan and Europe led the decline among OECD countries, and we can expect the declines to continue, though maybe at a slower pace, in the near future.

Diagram 9: Demand growth in key OECD nations

Country/ region	Consumption (mmbpd)		% chg y-o-y
	9M-2013 average	9M-2014 average	
Canada	2,434	2,408	-1.1%
France	1,787	1,714	-4.0%
Germany	2,415	2,381	-1.4%
Italy	1,312	1,231	-6.2%
Japan	4,472	4,258	-4.8%
Korea, South	2,301	2,338	1.6%
United Kingdom	1,518	1,501	-1.1%
United States	18,858	18,895	0.2%

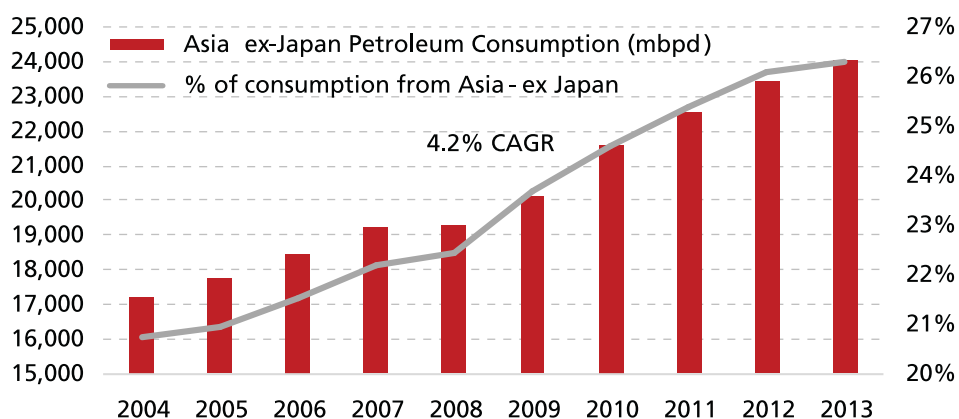
Source: EIA

Demand-Supply Can Be Bridged With Time and Effort

As mentioned earlier, divergence between supply and demand is not that big in an overall context. However, the key question is who will drive additional demand? China will still be growing, and so will the rest of Asia, which will still be a significant source of oil demand for the next two years. But the rate of growth could be slower than it has been in the recent past, owing to changes in China's economic policies. Asia's demand for crude oil will probably grow by around 0.7 mmbpd per year, and total global demand by around 1.0 mmbpd, subject to risks.

On the other hand, the growth in production, especially from the US, will likely slow down over the next two years, after peak growth in 2014, as low oil prices bite to an extent. Thus, there should be a gradual convergence in oil demand and supply trends, especially if some of the higher-cost producers are squeezed out of the market over time. How long that will take and whether oil price recovers to previous highs is difficult to predict at this point.

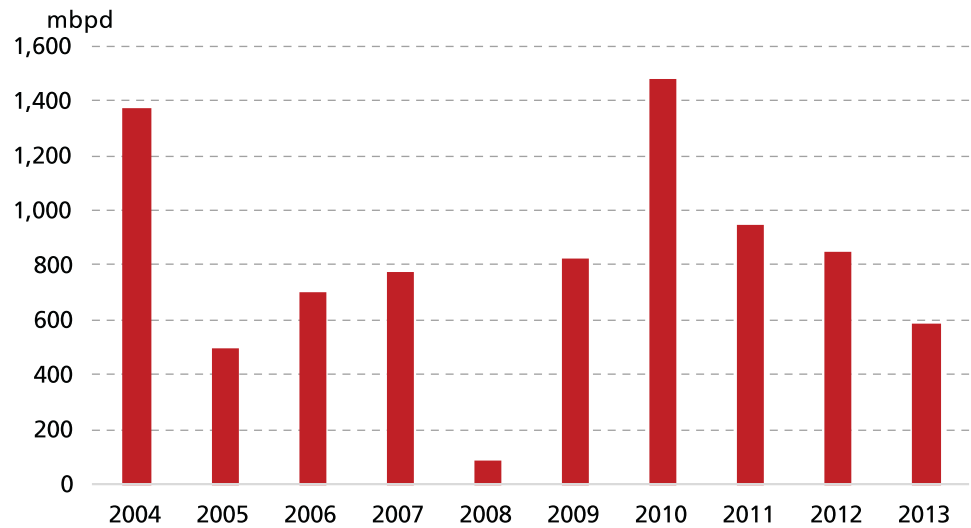
Diagram 10: Asia has been the key driver for oil demand in the last decade – 10 year CAGR of 4.2% compared to global oil demand CAGR of just 1.3% over the same period



Source: EIA

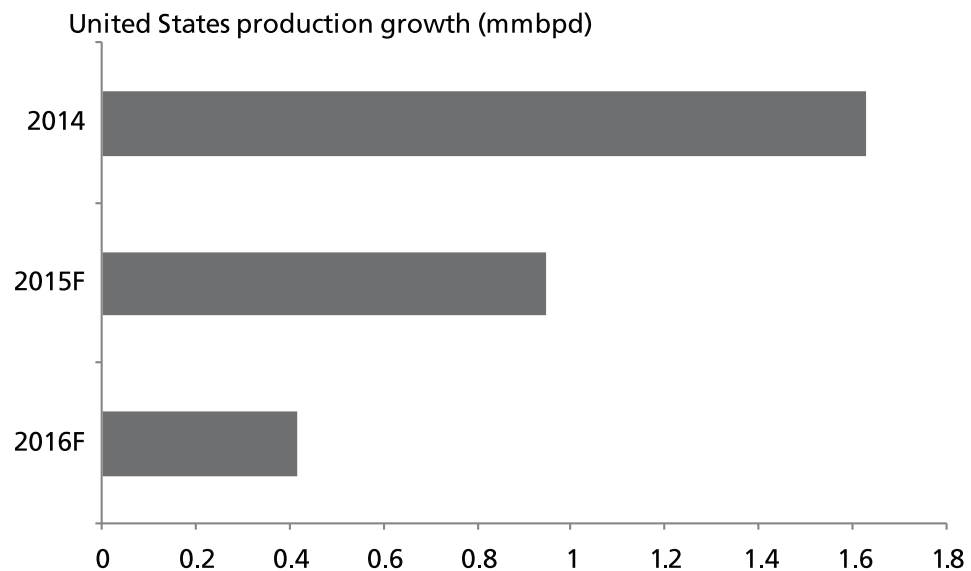
Who will drive additional demand?

Diagram 11: Annual change in Asia ex-Japan oil consumption – Asia continued to grow even during 2008-09, when oil consumption in rest of the world declined



Source: EIA

Diagram 12: US production growth expected to slow down – will growing demand from Asia be able to offset this growth and reverse oil price trend over time?



Source: EIA

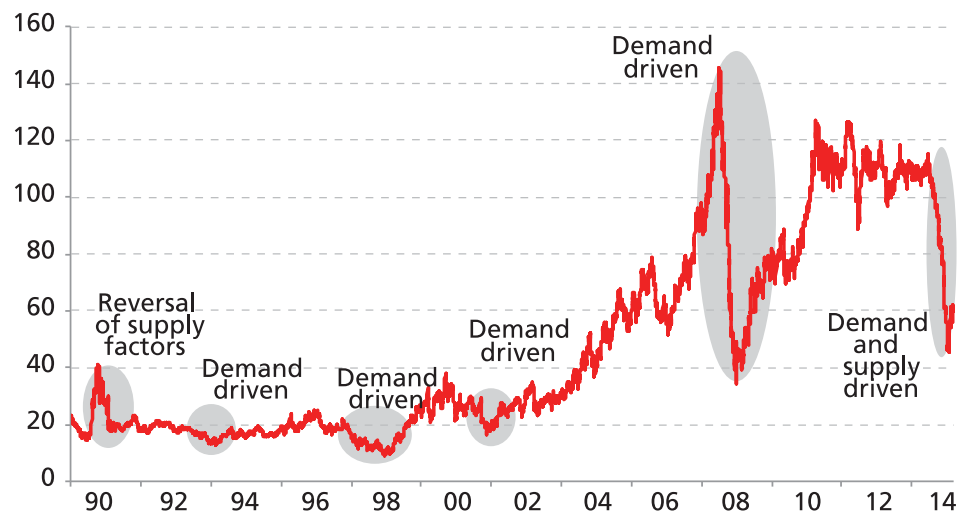
What Does History Tell Us?

We think that the actual base case scenario for oil price trend is not as simple as a demand-supply equation. We reckon forecasting oil prices here on presents a more challenging problem than in previous cases owing to the slightly unique nature of this oil price crash of 2014-15. First, we examine the current oil price crisis relative to previous crises over the last two-and-a-half decades and see if there is a lesson to be learnt, or not. Secondly, we take a look at the structural issues which may lead to more uncertainty and volatility in oil prices than a straightforward outright recovery.

This oil price crash is unlike most we have seen in the past, which have been largely demand driven. A look at the chart below and we find oil price declines of similar or higher magnitude recurring every few years since 1990 – hallmark of a cyclical asset – but there are no real cases of a big supply glut causing oil prices to crash in recent history. Except for 1991 (reaction to Gulf War supply outages and restoration) and 2008-09 (global financial crisis), most of the declines have been pretty long drawn out as well, and not as sharp in terms of duration, as demand rarely falls off very rapidly. In cases where changes in demand is the key driver for oil price drops, the situation has tended to reverse quite quickly as lower oil prices stimulates consumption and GDP growth, thus restoring the demand-supply equilibrium.

In 1998, there was a case where OPEC responded reasonably swiftly to a drop off in demand, which had been triggered by the Asian financial crisis which happened to coincide with increased production by the bloc. OPEC agreed to coordinated production cuts to restore prices to comfortable levels. Unlike then, this time we have not yet seen a similar response by OPEC, or even concerns from key OPEC members regarding the current scenario. This makes the direction of oil prices in the current situation quite difficult to call.

Diagram 13: Oil price crashes since 1990



Source: Bloomberg Finance L.P.

Diagram 14: Comparison of current oil price crash with previous cases since 1990

Timeframe	Reason for oil price crash	Decline start date	Decline stop date	Price before fall	Lowest price	% fall	No of days
1991	Reaction to 1991 Gulf War, reversal of oil price spike	16/01/91	17/06/91	30.20	17.34	-43%	152
1992-94	OECD recessionary stretch	05/06/92	16/02/94	21.56	12.72	-41%	621
1997-98	Asian financial crisis, OPEC excess production	08/01/97	10/12/98	25.00	9.00	-64%	701
2001	Recession in EU and US	07/09/00	15/11/01	37.73	16.62	-56%	434
2008	Global financial crisis	03/07/08	24/12/08	145.66	34.04	-77%	174
Average						-56%	416
2014-15	Supply glut combined with slow demand	19/06/14	26/01/15	115.00	45.25	-61%	221

Source: Bloomberg Finance L.P., DBS Bank estimates

How quickly and how much did prices recover in the past? On average, oil prices have been slow to recover to original levels after a crisis, hovering between 50-80% of the original price in the next 12 months following an oil price bottom. The only outlier is the 1997-98 crisis, when a coordinated response by OPEC producers to cut production had a strong impact on oil prices. Hence, it seems recovery in demand does help to an extent but the supply side of the equation has a bigger bearing on oil price recovery following a steep slide. In the current scenario, the uncertainty regarding OPEC's response does not bode well for a sharp oil price recovery.

Diagram 15: Speed and extent of oil price recovery in past crises

	Reason	Decline start date	Decline stop date	Price after 12 mths	% price rise	% of original
1991	Reaction to 1991 Gulf War, reversal of oil price spike	16/01/91	17/06/91	21.22	22%	70%
1992-94	OECD recessionary stretch	05/06/92	16/02/94	17.15	35%	80%
1997-98	Asian financial crisis, OPEC excess production	08/01/97	10/12/98	25.31	181%	101%
2001	Recession in EU and US	07/09/00	15/11/01	23.13	39%	61%
2008	Global financial crisis	03/07/08	24/12/08	75.37	121%	52%
Average					80%	73%
2014-15	Supply glut	23/03/11	26/01/15	???	???	???

Source: Bloomberg Finance L.P., DBS Bank estimates

The Critical Issues Now

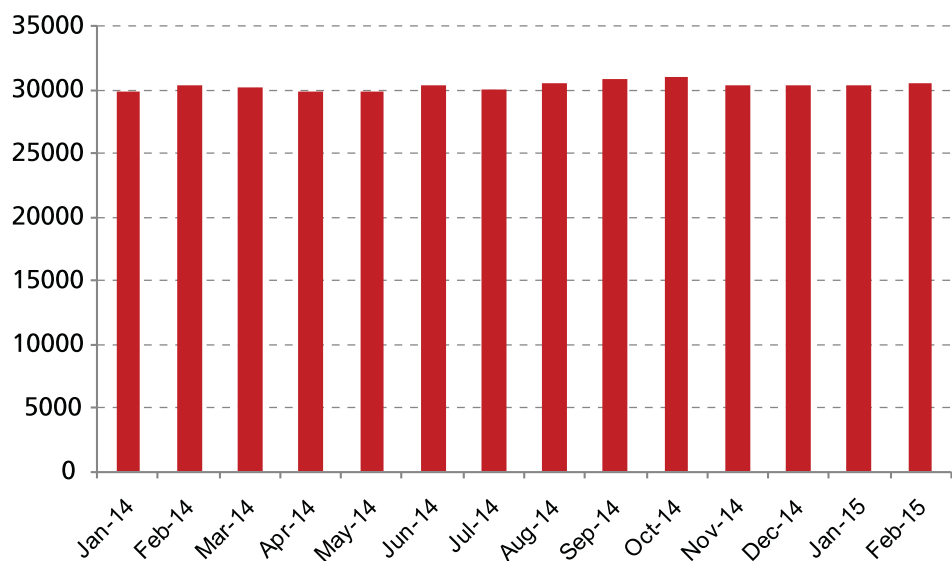
We believe that over the last few years, global oil markets have been changing structurally. This has made them much harder to predict. Technological advances in shale oil drilling, the role of financial markets, and the probability that lower oil prices may not stoke demand as much as before, are some examples. In the following pages, we explore some factors, which we believe will affect oil prices in the near, medium and long terms and will have a direct bearing on our base case oil price scenario.

1. What to expect from OPEC and why.
2. How will the inventory buildup in the US and OECD countries affect prices?
3. How resilient is US shale oil production?
4. Structural changes: Is the global economy less oil-intensive and is demand less elastic to oil prices?
5. What is China's impact on global oil prices?
6. Will the stronger US dollar weigh negatively on oil prices?
7. What are the geopolitical risks ahead?
8. How will the response of international oil companies affect the long term?

1

What to Expect From OPEC and Why

Diagram 16: OPEC has maintained production slightly over 30 mmbpd over the last 8 months since oil price slide started



Source: Bloomberg Finance L.P.

Historically, Saudi Arabia, as the leading producer in OPEC, has adjusted its production during periods of instability in the oil markets to restore some balance. However, this time around, there has been a sharp departure from its usual policy. Despite oil prices sliding for almost six months, it decided not to cut output during the last scheduled OPEC meeting on November 27, 2014. The main logic reverberating across decision makers in Saudi seems to be that cutting output will only help its non-OPEC competitors gain more market share, and hence, without reciprocity, OPEC will not take an unilateral stance of cutting production.

Highlights of OPEC's last meeting on Nov 27, 2014

- ❌ OPEC effectively embraces market force mantra, abandoning its long-held role as global swing producer
- ❌ Led by Saudi Arabia, OPEC chooses to maintain its 30 mmbpd production quota, prioritising longer term market share objectives over shorter term price stability
- ❌ Effectively handed control over supply and price cuts to the market, thus forcing high-cost producers to take a call on reducing supply rather than OPEC

What is Saudi trying to achieve?

- ❌ Trying to battle its higher-cost competitors like the US, Russia and Brazil, who have all turned up their taps in recent years
- ❌ Betting that a period of low oil prices will force some of the high-cost producers in non-OPEC countries to blink
- ❌ Maintaining market share in a scenario which has seen non-OPEC output grow by 6 mmbpd since 2008 whereas OPEC output has been capped at 30 mmbpd
- ❌ Saudi believes that if OPEC cuts production targets, it will have to cut again and again as non-OPEC supply will increase and the overall supply situation will not ease

According to Bloomberg, ten out of the 12 OPEC members will run a budget deficit this year, including an expected US\$38.6 billion deficit in Saudi Arabia. But Saudi Arabia has around US\$750 billion in foreign currency reserves to ease the blow, so it's willing to take a long view on oil. Smaller OPEC countries do not have the same luxury. Nigeria could have a budget shortfall of as much as 5% of GDP, which could be a funding gap of \$21 billion over the next four years. That is one reason it is pushing hard for a cut in OPEC production. Venezuela's budget deficit may reach a whopping 19% of GDP in 2014, and

it owes US\$23 billion to partners like oil drillers and airlines, according to Ecoanalitica. With the country's currency spiralling out of control, low oil prices only make Venezuela's calls for an emergency OPEC meeting more urgent.

Oil price hawks in OPEC:

Algeria, Iran, Iraq, Venezuela, Nigeria, Angola, Ecuador, Libya

Oil price doves in OPEC:

Saudi Arabia, Kuwait, United Arab Emirates, Qatar

Many OPEC countries will likely run into budget deficit problems from a low oil price scenario, especially given OPEC countries focus on running social spending programmes to curb civil unrest. But it should not bother them too much as they have built up significant reserves of foreign currency. This will help them weather a short period of low oil prices. Of course, Saudi Arabia leads the pack here with more than US\$700 billion in reserves, but many other countries boast significant reserves as well. Only Ecuador, Nigeria and Venezuela will be under pressure to ensure oil prices move up quickly as their reserves run out.

Diagram 17: Key figures related to OPEC countries

Country	Crude oil production (mmbpd)	Oil price needed to balance 2015 budget (US\$/bbl)	Oil export earnings as % of GDP (2013 figures)	Foreign exchange reserves (as of last available date)
Algeria	1.4	130.5	30%	192.5
Angola	1.7	98.0	57%	37.9
Ecuador	0.5	79.7	28%	2.6
Iran	2.7	130.7	27%	68.1
Iraq	2.9	100.6	39%	71.2
Kuwait	2.9	54.0	63%	34.4
Libya	0.9	184.1	56%	120.9
Nigeria	1.8	122.7	18%	32.4
Qatar	0.7	60.0	68%	41.1
Saudi Arabia	9.6	106.0	51%	732.4
UAE	2.8	77.3	96%	58.0
Venezuela	2.8	117.5	24%	21.2

Source: Wall Street Journal, OPEC, IMF, Central banks

We expect no change when OPEC members meet in mid June to discuss output policies and whether to curb the production output. Between now to the meeting date, we may see volatility in prices due to continuing strong output from OPEC members.

Ecuador, Nigeria and Venezuela will be under pressure

OPEC's decision to keep producing oil has sent a strong message to US shale oil producers in as much as they are willing to absorb low prices to keep US producers at bay. They are unlikely to revise this decision now as investments in new projects in the US are being revised and costs are being squeezed.

While production levels in the US may not be affected much in 2015, owing to extensive hedging, a pullback in drilling should lead to lower shale oil production in the US, especially from 2016 onwards, which is the long term scenario that the OPEC is trying to achieve.

Diagram 18: Some recent voices from OPEC participants imply no change in next meeting

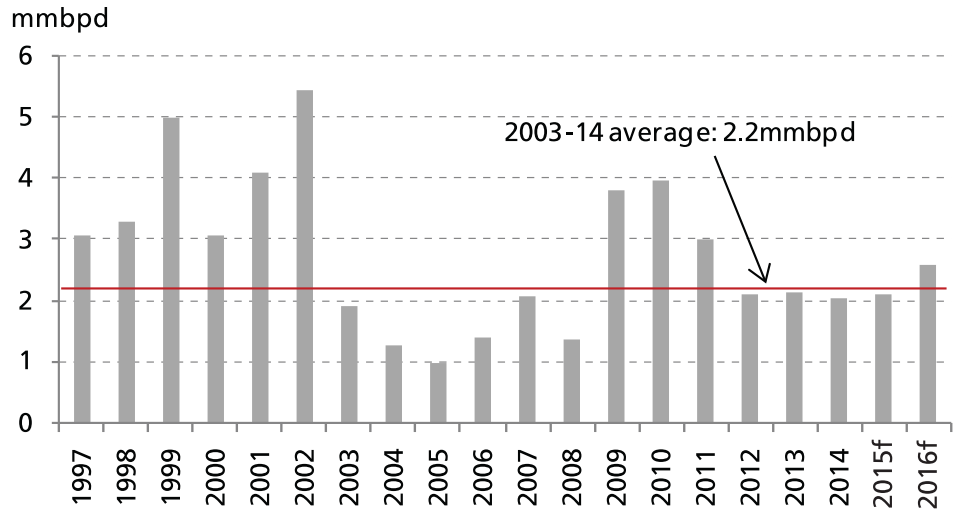
Date	Country	Who	Comments
10 Mar 2015	Kuwait	Nawal Al-Fuzaia OPEC Governor	OPEC is likely to maintain its production policy at a meeting in June.
10 Mar 2015	Qatar	Former energy minister	OPEC won't change policy at its next meeting in June unless non-OPEC producers join in a collective cut.
9 Mar 2015		Abdalla El-Badri OPEC Secretary General	The global crude-oil market will return to balance in the second half of this year from an oversupply of 2 mmbpd.
4 Mar 2015	Saudi Arabia	Ali Al Naimi Oil Minister	Refutes any plans of OPEC emergency meeting. Saudi Arabia will not be cutting down supply as long as customers are there and Saudi will always have customers since it is the most reliable supplier. It is not the role of Saudi Arabia, or certain other OPEC nations, to subsidize higher-cost producers by ceding market share.
23 Feb 2015	Nigerai	Diezani Alison-Madueke Oil Minister	May convene emergency OPEC meeting before scheduled meeting in June.

OPEC's surplus capacity is expected to rise in 2015 and 2016, hence production cuts are unlikely. Excluding 2009-2011 when EU and US economies fell into recession, OPEC's surplus capacity in the near future is estimated to be at the higher end of its usual band seen over the last decade.

The EIA estimates OPEC surplus capacity to remain high at 2.3 mmbpd in 2015 and 2.7 mmbpd in 2016. Although surplus capacity has always been in the market, it can translate into production within weeks.

...a strong message to US shale oil producers...

Diagram 19: OPEC crude oil surplus capacity

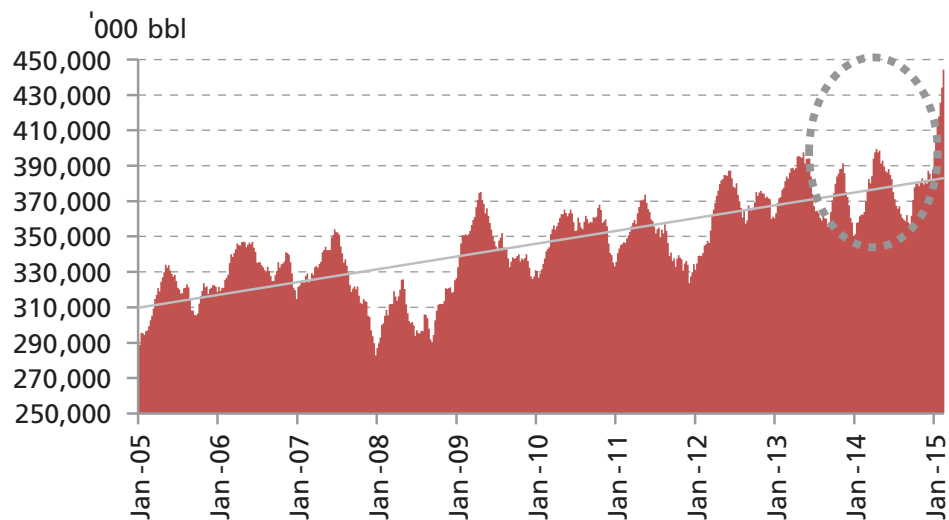


Source: US EIA

2 How Will Inventory Buildup in US and OECD Affect Prices?

US crude oil supplies are at their highest level in more than 80 years while spare storage capacity is dwindling around the globe. This has led to fears that crude prices could fall further in the near term. The crude oil inventory in the US reached 449 million barrels (mmbbl) as of the first week of March, equal to almost 70% of US storage capacity. If this continues, according to the US EIA forecasts, the US storage hub in Cushing is expected to hit maximum capacity this spring. On the other hand, data shows that more storage tanks are being built across the US, and some large tanker ships are being leased to store the oil. But the new tankers will take time to be built and will not be able to serve the growing supplies in the market. Thus, crude oil prices will continue to be under pressure.

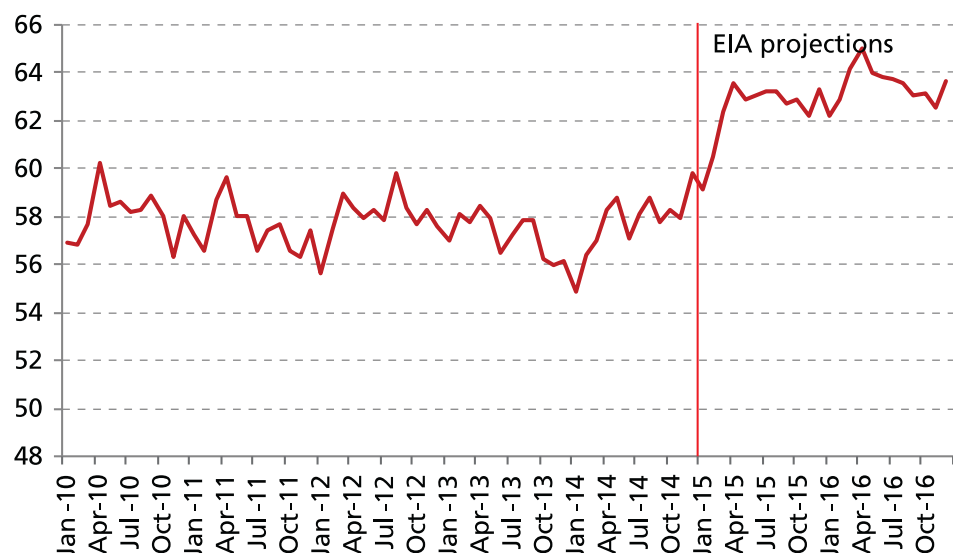
Diagram 20: Crude oil inventory in the US



Source: Bloomberg Finance L.P.

US inventory levels represent a good barometer of excess oil in the system, given the regular data flow and the fact that it consumes about 20% of the world's oil annually. But on top of this, inventory levels in other developed countries have also been rising. Media reports indicate that inventories in countries like South Korea and Japan could be at 80% capacity levels as well. So there is some market concern over where all this excess oil can be stored and, if there is spillover at some stage, how it will affect oil prices. The EIA estimates that OECD commercial oil inventories totalled 2.75 billion barrels at the end of 2014. That is the highest end-of-year level on record and is equivalent to roughly 60 days of consumption. OECD oil inventories are projected to rise to 2.90 billion barrels at the end of 2015 and to 2.92 billion barrels by the end of 2016.

Diagram 21: OECD commercial oil stocks – days of supply



Source: EIA

Global oil inventory builds are projected to average 1.3 mmbpd through the first half of 2015, with the builds moderating during the second half of the year as demand rises and non-OPEC supply growth slows, particularly in the US, because of lower oil prices. The expected inventory builds in 2015 are on top of an estimated average 0.9 mmbpd increase in 2014.

This inventory buildup seems to indicate that demand-supply parity could be restored within the next six to 12 months and could lead to a stabilisation of prices. However, bringing oil prices back to where they were in June 2014 – around US\$115/bbl – may be some way off. The excess inventory is also likely to lead to more volatility in the system as these oil stocks can be released rapidly, if held for trading purposes. Absorbing the excess inventory in the system would require cuts in capital expenditure by oil and gas

majors that would result in lower supply in the coming years. It would also require steady demand growth from Asia and a more gradual restoration of the balance in the market that had been seen from 2012 to mid-2014.

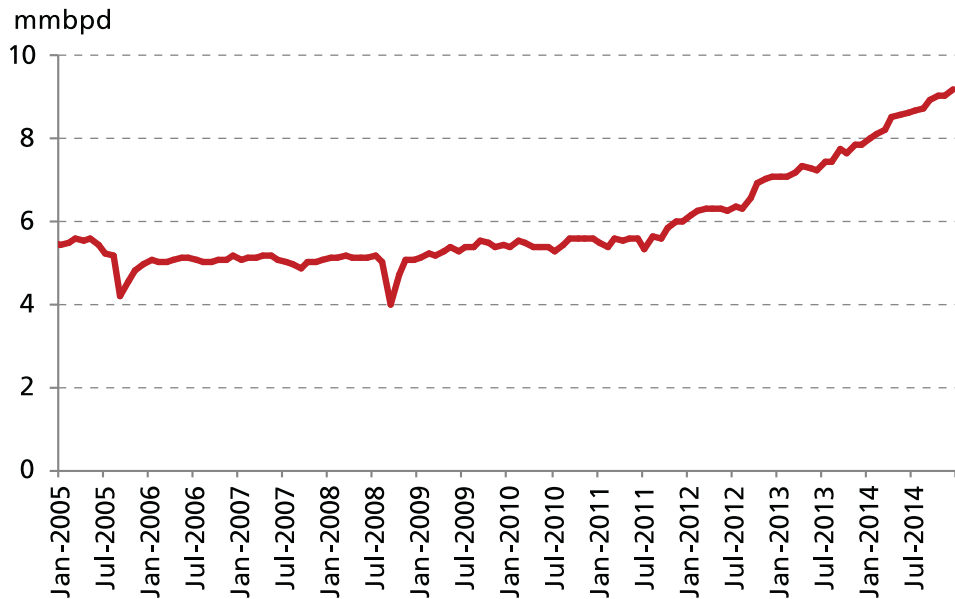
Thus, our base case scenario of oil prices averaging around US\$60/bbl in 2015 and US\$70/bbl in 2016 may be more realistic, with true balance in the system probably being restored gradually beyond 2016.

3

How Resilient is US Shale Oil Production?

While slower-than-expected demand growth is partly to blame, it is widely acknowledged that the recent oil price plunge was more supply-led, particularly outside of OPEC nations, which saw output growing at the fastest rate. According to the EIA, non-OPEC countries produced 2.2 million more barrels per day in 2014 than they did a year ago, with the US leading the way at 1.6 million barrels. The US accounted for 58% of non-OPEC supply growth in 2014. Despite falling oil prices, production of US oil in the first week of March rose to a multi-decade record of 9.37 mmbpd, from 9.32 mmbpd the week earlier. Weekly data show oil production has consistently surpassed 9 mmbpd since November, the longest stretch since the 1970s.

Diagram 22: US crude oil production continues to rise above 9 mbpd, approaching the historical high of 10 mbpd in 1970



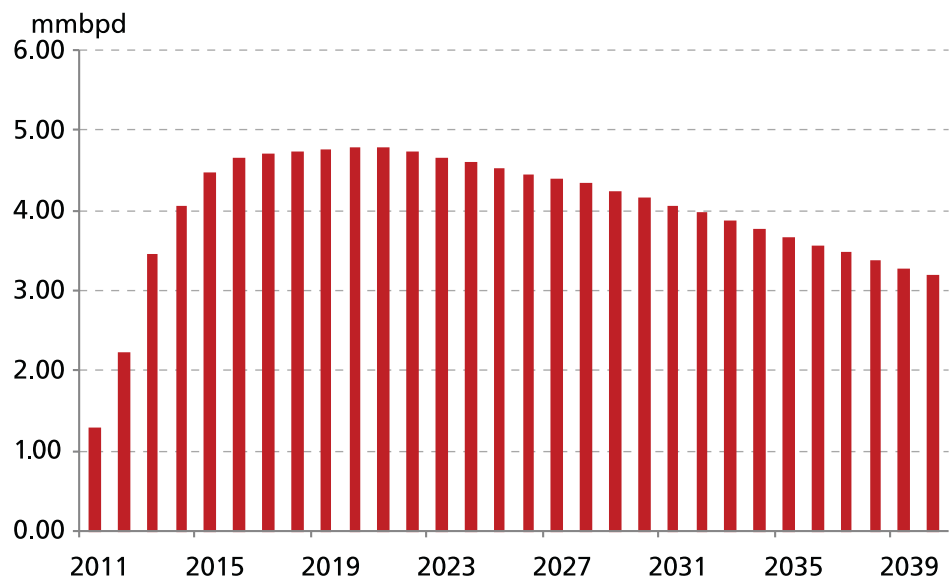
Source: EIA (Last updated 27 Feb 2015)

US oil production has consistently surpassed 9 mmbpd since November 2014

Shale oil to remain a growing part of US supply till 2020 at least

The EIA expects US production to sustain at these levels. It has recently revised its 2015 oil production expectations higher to 9.35 mmbpd, from 9.3 mmbpd. But it has also reduced its 2016 forecast to 9.49 mmbpd from 9.52 mmbpd in anticipation of production declines in North Dakota’s Bakken fields and Eagle Ford in Texas. The EIA expects US shale (tight oil), which currently accounts for almost half of US oil production, to remain a top source of incremental supply in the near to medium term. Growth will be definitely slowing down from 2015 onwards, but shale oil production is likely to keep growing until it peaks out around 2020-21 at just below 5 mbpd, according to EIA estimates.

Diagram 23: US Shale production likely to keep growing and peak out around 2020



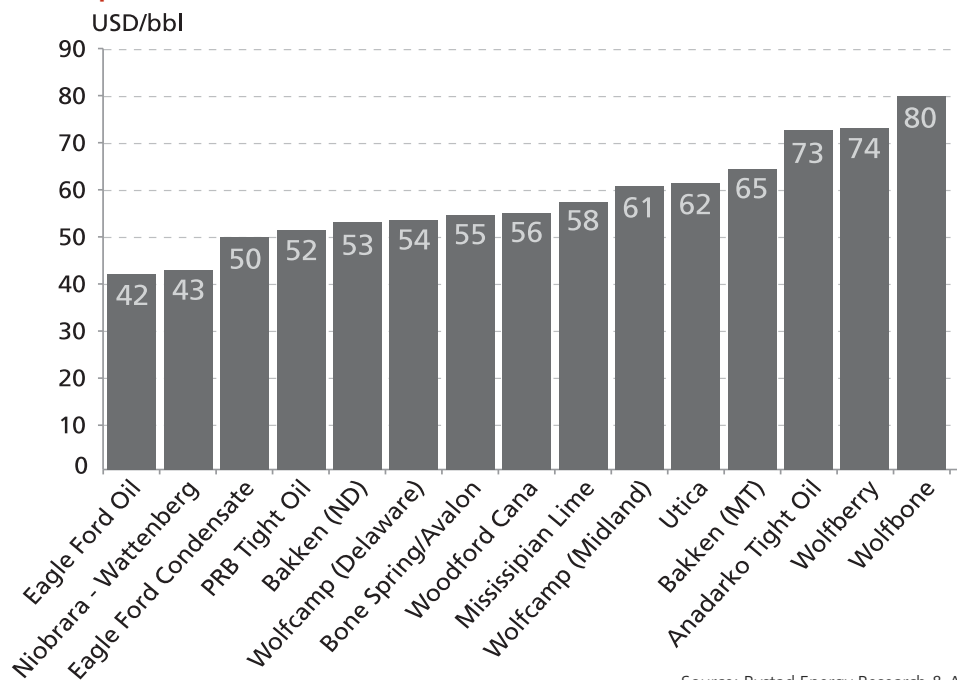
Source: EIA

Shale oil production may be more resilient than you think. Lower oil prices have so far failed to drive US shale producers out of business. The majority of liquid shale (E&P) activities are profitable at current prices. It is estimated that the average West Texas Intermediate (WTI) breakeven oil price for the main shale plays in the US is around US\$58/bbl (against a misperception that majority of shale oil producers require more than US\$80/bbl to survive).

A recent analysis shows breakeven prices for shale are falling every year for the main shale players due to a reduction on well cost and an increase in oil recovery per well. The reduction in well cost is due to shorter drilling time (increased pad drilling) and shorter completion time (increased use of zipper fracs). An increase in oil recovery rates has been observed when estimating it at 30 years with wells decreasing initial decline. This is

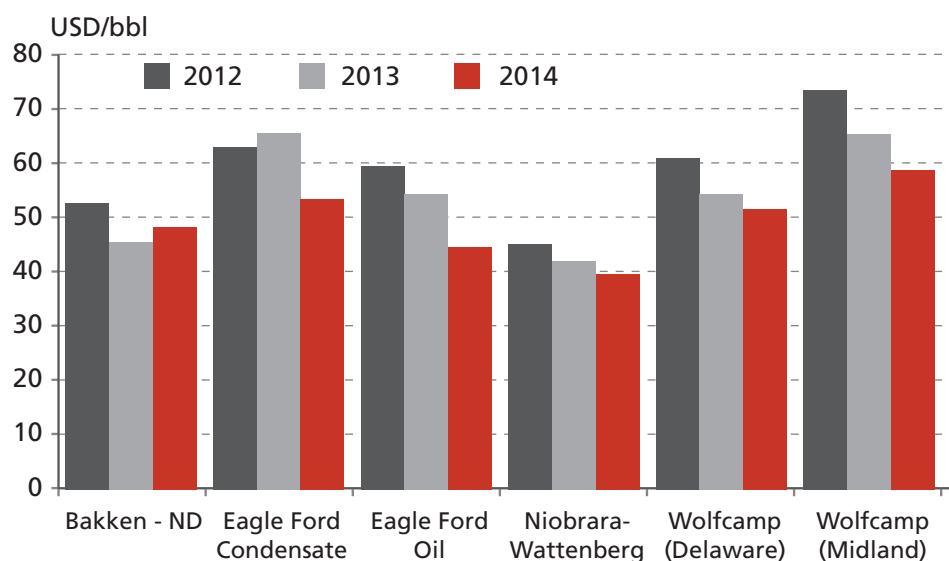
thanks to better well placement and advances in known completion techniques, that is, modified zipper fracs. We believe advances in technology could bring down the cost of shale production further.

Diagram 24: Breakeven production cost estimates for US shale oil plays lower than expected



Source: Rystad Energy Research & Analysis

Diagram 25: Breakeven production cost estimates for US shale oil plays falling every year



Source: Rystad Energy Research & Analysis

The industry's resilience to lower oil prices reduces the power of OPEC to set global prices at higher levels

Frackers can also react with more flexibility to oil price shifts compared with conventional E&P operators. This is because of the relative ease of bringing new wells into production or shutting flows. Any price-induced reduction of US shale production would thus be short-lived. The industry's resilience to lower oil prices reduces the power of OPEC to set global prices at higher levels. Having said that, lower oil prices have discouraged investment into some of the higher-cost shale projects and this will adversely impact the development of US shale in the longer term. The top ten US shale producers have announced capex cut by 23% on average for 2015.

Diagram 26: Top US shale producers cut capex budget by 23% on average

Top shale oil producers in the US	Capex (US\$ bn)		
	2014	2015	yoy chg
EOG Resources	8.3	4.9-5.1	-40%
Anadarko Petroleum	7.8	5.4-5.8	-28%
BHP Billiton Limited*	13.8	11.7	-15%
Chesapeake Energy	6.7	4.0-4.5	-36%
Cabot Oil & Gas Corp	1.5-1.6	0.9	-42%
ConocoPhillips	13.5	11.5	-15%
Concho Resources Inc	2.6	2.0	-23%
Encana Corporation (USA)	2.5	2.0-2.2	-16%
Apache Corporation	8.5	7.23	-15%
Total	65.3	50.3	-23%

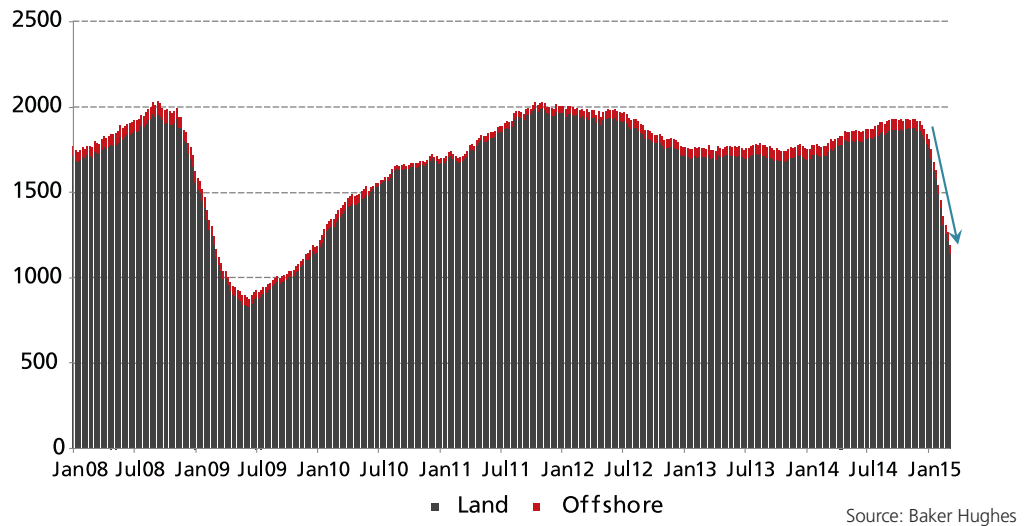
*BHP's financial year end falls in Jun. Capex figures are computed based on average number of two financial years
Source: Various companies

Meanwhile, US rig counts have fallen since December 2014. The rig count is a reflection of the number of rigs actively exploring for, or producing, oil and natural gas. US rig counts had continued to rise during June to November 2014 despite the falling oil price. The sharp fall began a week after OPEC's official statement of no production cut on November 27, which sent oil price on a freefall, from US\$70/bbl to US\$55/bbl within a month.

Against a backdrop of fairly resilient shale oil production, the EIA expects US growth to decline from almost 1.5 mmbpd in 2014, to about 0.5 mmbpd in 2016. But production is unlikely to fall. By 2017, however, the EIA expects additional growth from the US to be a more meagre 160 mbpd, as the shale capex cuts take effect, and around 300 mbpd thereafter until the end of the decade.

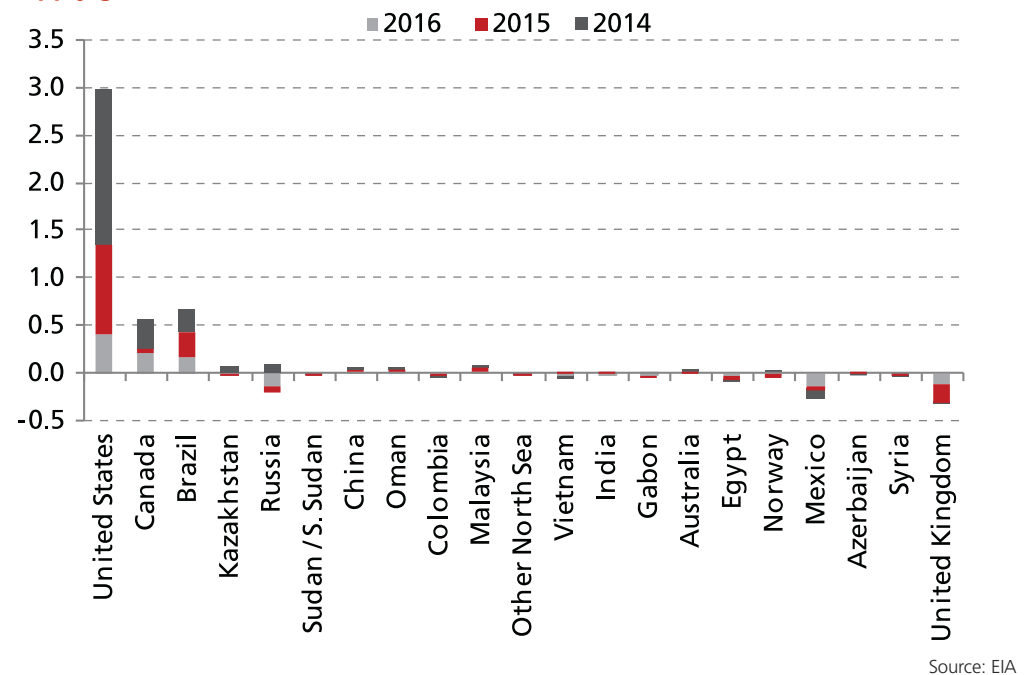
OPEC has tried to dent US shale oil production through lower oil prices. However, the impact of this tactic might not be as decisive in the near term as hoped for. Some of

Diagram 27: US rig counts have fallen by 38% from 1917 as of end Nov-2014 to 1192 on Mar 6, 2015; As a comparison, US rig count hit a low of 876 post-global financial crisis in mid-June 2009



the shale oil companies will be shielded from the full effect of falling oil prices owing to hedges already in place – mostly at around US\$80-90/bbl levels. According to public filings, a number of oil companies, such as EOG Resources Inc, Anadarko Petroleum Corp, Devon Energy Corp and Noble Energy Inc, have hedged some of their 2015 production at prices of \$90/bbl or more.

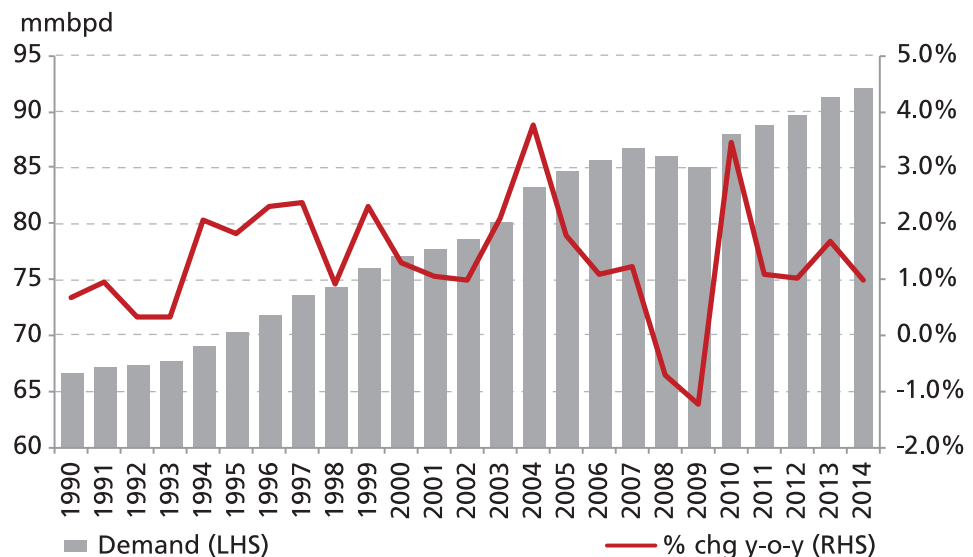
Diagram 28: US production will still be a significant proportion of non-OPEC supply growth in 2015/16



4 Structural Changes: Is the Global Economy Less Oil-Intensive and Demand Less Elastic to Oil Prices?

Global oil demand was up by less than 1 mmbpd in 2014. That is the lowest level of growth in the past five years, and the lowest in the last decade, if we take out the global financial crisis years of 2008-09. In the run-up to the financial crisis, we reckon oil demand growth was the strongest between 2002-07, when China was asserting itself on the global map as a manufacturing superpower.

Diagram 29: Global oil consumption and consumption growth



Source: EIA

Diagram 30: Comparison of oil demand CAGR over certain periods

- 2010 – 2014 CAGR: 1.2%
- 2007 – 2010 CAGR: 0.5%
- 2002 – 2007 CAGR: 2.0%
- 1995 – 2002 CAGR: 0.6%
- 1990 – 1995 CAGR: 1.1%

Source: EIA

Global oil demand forecasts for 2015/16 not that encouraging

The EIA expects global consumption to grow by 1.0 mmbpd in 2015 and 2016. That's not too far off from the 0.9 mmbpd growth in demand in 2014. While demand from non-OECD countries is expected to be around 0.8 mmbpd in 2015, OECD consumption, which fell by 0.3 mmbpd in 2014, is expected to grow by 0.2 mmbpd in 2015 and

then stay relatively flat in 2016. There have been a number of downgrades to global demand estimates for 2015/16 despite the fall in oil prices, largely led by lower demand projections from Russia and China.

Fall in consumption in Europe and Japan is structural

Japan and Europe accounted for almost the entire 2014 decline in OECD oil consumption. Consumption in these areas is expected to continue declining over the next two years, albeit at a slower rate than in 2014. Developed countries tend to use oil more for the transportation sector rather than industrial/manufacturing usage and hence, oil demand growth is slower. Taxes on oil usage for vehicles and other policy mechanisms also ensure that oil efficiency in these countries improves, thus reducing demand per capita over time. This tends to lower the elasticity of oil demand even in the face of strong economic growth. Moreover, the economies in OECD countries tend to have larger service sectors relative to manufacturing. As a result, strong economic growth in these countries may not have the same impact on oil consumption as it would in non-OECD countries.

Stronger US dollar will also affect the extent to which countries enjoy low oil prices

The US dollar has been climbing steadily over the past year, fuelled by expectations of US interest rate hikes and the relative strength of the US economy compared with other developed countries, particularly Europe. The US dollar index, a closely-watched measure of the currency against a basket of other currencies, just hit 100. That is the highest level since April 2003. Given that most oil trade is denominated in US dollars, an appreciating greenback adversely affects import costs in local currency, which means that some of these countries will not be able to fully reap the benefit of falling oil prices.

The US is probably the only bright spot among OECD countries

The US is the leading contributor to projected OECD consumption growth, with US consumption projected to increase by 0.3 mmbpd in 2015 and by 0.1 mmbpd in 2016.

5

What is China's Impact on Global Oil Prices?

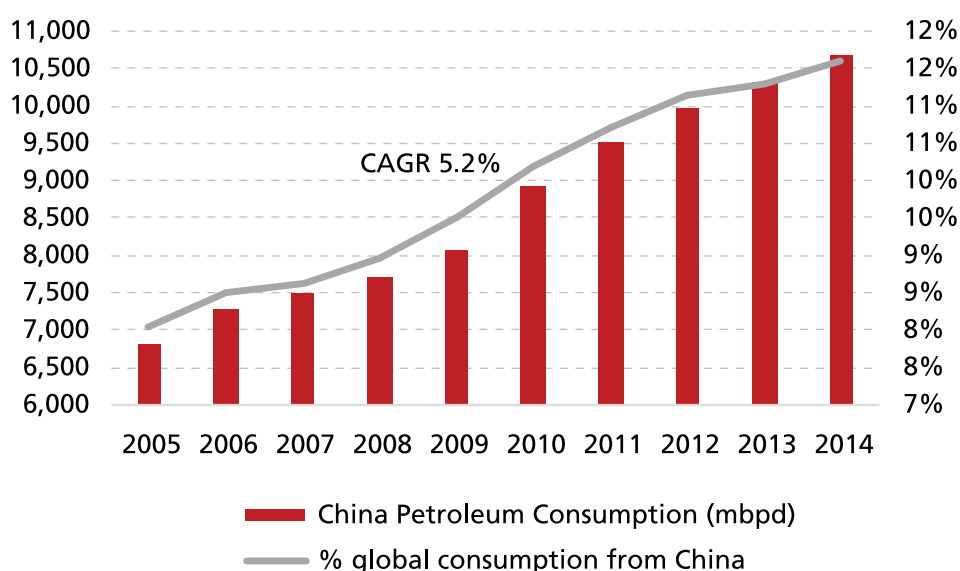
As China moved into its strongest phase of growth over the last decade with a big push in manufacturing and infrastructure development, oil demand skyrocketed. From 8% of global oil demand in 2005, China now accounts for close to 12% of global oil demand. That represents a CAGR of 5.2% over the last ten years, and an even stronger run up

China has been the biggest driver of oil demand for much of the last decade

of 5.7% CAGR over the last five years following the financial crisis years. Compare this with global oil demand growth rates of around 1.2% and you know how important China is to the oil producers.

In terms of incremental growth, China accounts for roughly 40% on average of all incremental growth in global oil consumption over the last five years. But is that going to be sustained going forward? We think it is unlikely, given the structural changes happening in China's economy. Asia will still be a key driver of oil demand, but China's role will likely diminish to an extent. The EIA projects annual average increase in demand from China of 0.3 mmbpd in both 2015 and 2016, down from growth of 0.4 mmbpd in 2014.

Diagram 31: Growth of oil consumption in China



Source: EIA

Going by current projections, China's demand for oil will grow at 2.5% to 3.0% over the next five years, roughly half the pace seen in recent times. Global oil experts like the EIA and the IEA have been downgrading demand numbers for China in recent months. This is to reflect significant changes in China's growth patterns, economic policies and energy efficiencies. Policy shifts in China visualise reduced oil demand with the closure of excess capacity in many industries, most notably coal and steel. Additionally, there are government efforts to satisfy tighter clean-air regulations and a "new normal" of lower economic growth rates. The International Monetary Fund (IMF) projects Chinese GDP growth rates of 6.8% and 6.3% in 2015 and 2016, respectively, down from the heady days of 7-8% growth. All these factors together point to slower growth in oil demand.

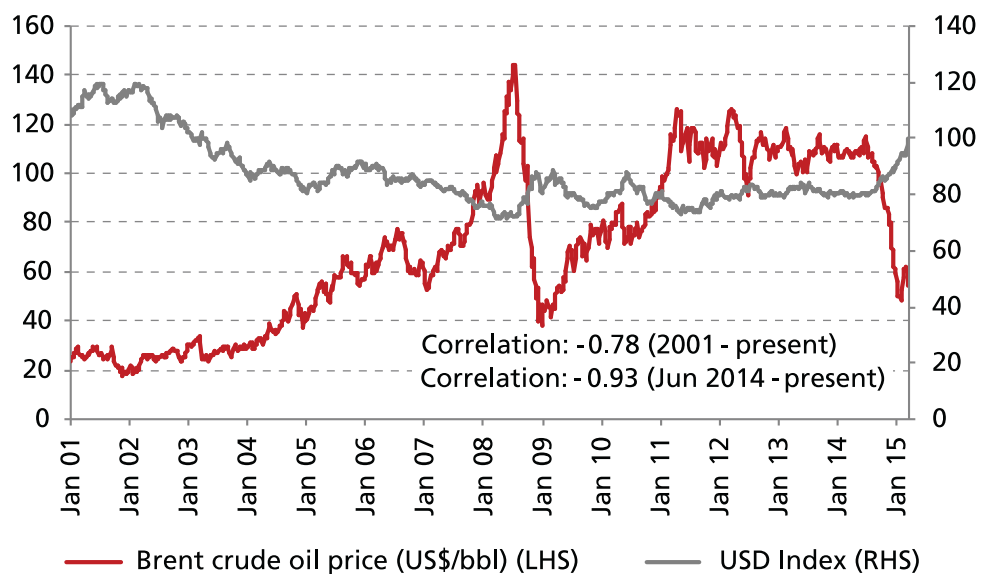
6 Will the Stronger US Dollar Weigh Negatively on Oil Prices?

The US dollar has gone from strength to strength in recent months as oil prices have fallen. The Dollar Index is up almost 25% since June 2014. The US dollar's rise came as support drained away from the euro. When the European Central Bank (ECB) launched a massive quantitative easing programme in March to boost growth, expectations grew of an interest rate hike by the US Federal Reserve.

Oil, like most global commodities, is quoted in US dollars and it often falls when the US dollar is strong. The current decline in oil prices has not been fundamentally caused by US dollar rally. However, it has exacerbated the situation by preventing the oil price from rebounding off its lows to any significant extent.

If the US dollar continues to rally, it will negate the benefits of lower oil prices to oil-importing countries with currencies not pegged to the US dollar. So, the demand for cheaper oil will not materialise to the same extent if the US dollar had stayed flat.

Diagram 32: High negative correlation between US dollar and oil prices

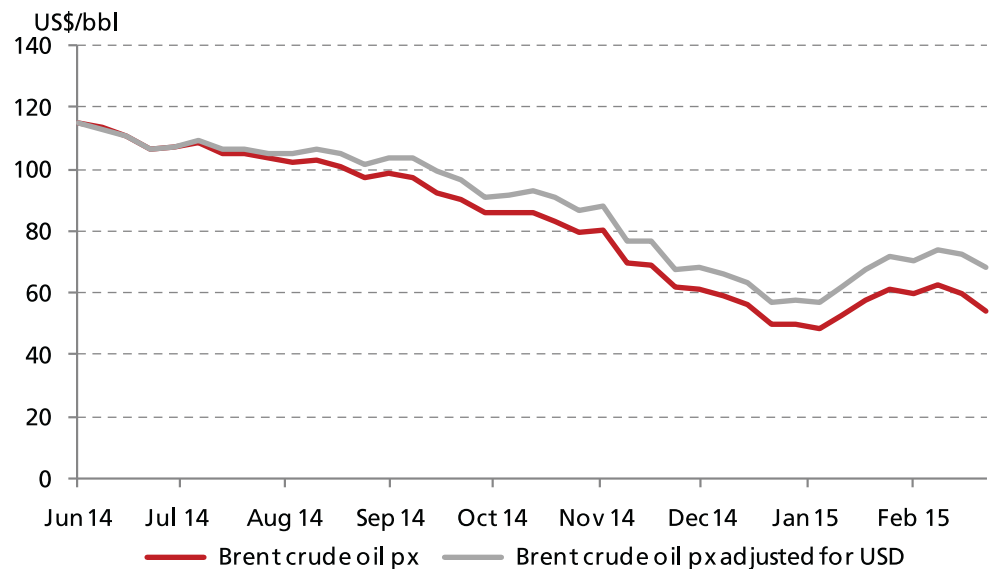


Source: Bloomberg/DBS Group Research

The greenback has been traditionally negatively correlated with oil prices

Unplanned global supply outages are averaging around 3 mmbpd currently

Diagram 33: Oil prices would have been closer to US\$68/bbl now if US dollar had not rallied so strongly



Source: Bloomberg/DBS Group Research

7

What are the Geopolitical Risks Ahead?

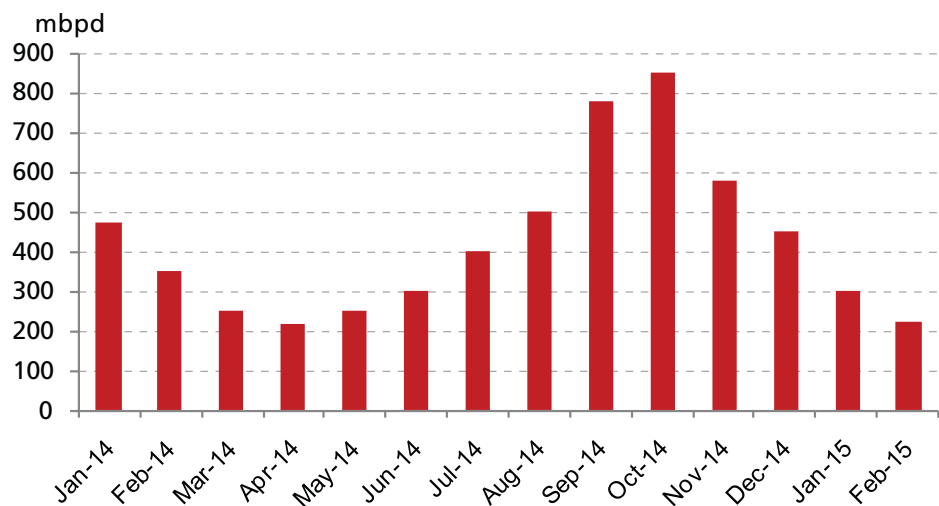
In February 2015, unplanned crude oil supply disruptions among OPEC producers averaged 2.7 mmbpd. That was an increase of 0.1 mmbpd compared with the previous month. This was mainly attributable to rising outages in Iraq, Nigeria, and Libya. Unplanned OPEC crude supply disruptions averaged 2.4 mmbpd in 2014, 0.5 mmbpd higher than in the previous year. The high level of OPEC disruptions contributed to higher crude oil prices during the first half of 2014. Unplanned supply disruptions among non-OPEC producers averaged slightly less than 0.6 mmbpd in February 2015, similar to the previous month. South Sudan, Syria, and Yemen accounted for more than 85% of total non-OPEC supply disruptions in February. The EIA estimates that unplanned non-OPEC supply disruptions averaged slightly more than 0.6 mmbpd in 2014.

Key potential problem areas

- ❌ Libya – production at high risk owing to civil unrest, production still way off pre-civil war levels of 1.6 mmbpd.
- ❌ Iraq – production has been averaging around 3.3 mmbpd, despite ISIS issues and loss of wells in the northern part of the country. However, risks of conflicts intensifying could impact production.

- ✘ Nigeria – facing rising threats of militancy amidst continuing social, economic and political unrest.
- ✘ Iran – production of 2.8 mmbpd amidst sanctions. Removal of sanctions could easily open the tap, given Iran’s estimated capacity of around 3.6 mmbpd.

Diagram 34: Libya oil production has been volatile in recent months but hasn’t made a dent to overall OPEC numbers



Source: EIA

Six countries – Libya, Iran, Nigeria, Syria, Iraq and Yemen – are expected to contribute to the bulk of unplanned supply disruptions, going forward. Unplanned supply disruptions could still affect crude oil prices in the future, but it seems that the rise in US production has more than offset the outages and offered the market a safer barrel of oil from a geopolitical perspective. In light of robust global production and increases in inventory levels worldwide, the threshold of supply disruptions that the market can bear has risen.

Negotiations toward a possible US nuclear deal with Tehran have advanced in recent weeks, which have led to fears that this could allow more Iranian oil exports. The deal would remove Western sanctions that have been in place against Tehran for some time now and Iran officials have stated that it could take them a matter of a few months to increase oil exports by up to 1 mmbpd if sanctions are lifted.

What is the near-term risk of lifting sanctions on Iran?

8 How Will the Response of International Oil Companies Affect the Long Term?

Most oil companies believe low oil prices are here to stay

“We have now entered a new and challenging phase of low oil prices through the near and medium term,” cited the CEO of BP Group, Bob Dudley in February. He cautions that it could be three years before oil comes out of a **US\$40/bbl to US\$60/bbl** price range and a “long time” before oil returns to US\$100/bbl.

In an analyst briefing in early March, ExxonMobil echoed BP’s view that the world should settle in for a period of relatively low oil prices. ExxonMobil now assumes oil price of **US\$55/bbl** for global crude in next three years, in a presentation to investors outlining its business plans through 2017. While Shell is sharing the same views that oil price may stay relatively low and volatile in the next three years, it is keeping the long-term price expectation beyond **US\$90/bbl**.

Diagram 35: Supermajors’ views on oil price in the short term (1 year) and longer term (3-5 years)

Oil Majors	Oil Prices (ST)	Oil Prices (LT)	
Shell	The short-term movements in the oil price can be driven by perception, and prices tend to overreact, both on the upside and on the downside. We don’t have much visibility as to how long this downturn will last – months, years	In the medium term, supply and demand fundamentals tend to reassert themselves again around the marginal cost of supply. We have not changed, therefore, our long-term planning assumptions of US\$70 to US\$110 Brent because the long-term outlook remains robust and industry underinvestment today simply leads to more upside risk in oil prices in the future.	
Chevron	CEO John Watson: “Very few large oil projects will go ahead if crude stays below US\$50/barrel, setting the scene for a rebound in prices.	Long-term market fundamentals remain attractive. The fall-off in new investment, combined with the inevitable decline of output from existing fields and rising global demand, would work to push oil prices higher again	
ConocoPhillips	CEO expects oil prices to stay low for 2015.	Prices are expected to make a gradual recovery, but not to the peaks seen in the last three years	
TOTAL SA	CEO Patrick Pouyanne: “Oil prices are unlikely to rebound in the first half of the year”	CFO, Patrick de La Chevardiere said TOTAL's objective is to cut its breakeven point by US\$40/bbl to about US\$70/bbl.	
ExxonMobil	CEO Rex Tillerson doesn’t see oil prices strengthening anytime soon. The world should “settle in” for a period of relatively weak oil prices, in view of the ample global supplies and relatively weak economic growth. US shale production is more resilient than many people had expected. There is enormous amount of global capacity in geopolitically unstable areas, which could be released when things stabilize.	Exxon assumes a price of US\$55 a barrel for global crude in next three years, in a presentation to investors outlining its business plans through 2017.	
BP	BP boss Bob Dudley is very bearish on oil price. He says this feels the same as 1986, when oil slumped from US\$30/bbl to US\$10/bbl and didn’t recover until Iraq invaded Kuwait in 1990.	Oil prices may stay in a range below US\$60 for as long as three years. “It will be a long time before we see US\$100 again.”	

Source: Companies, Upstream

Low oil prices have already taken a toll on earnings and cash flow of oil majors.

The oil price collapse since June 2014 has pulled down profits of E&P companies significantly in the 2014 December quarter. The supermajors saw adjusted profit after tax and minority interests (PATMI) falling 54% year-on-year in the 2014 December quarter, dragged lower by over US\$5 billion losses reported by TOTAL SA.

BP is leading the pack in asset impairment, having reported a substantial headline loss after a US\$3.6 billion impairment on upstream assets. The other peers, however, did not make significant asset impairment in the 2014 December quarter, taking a positive stance on longer term oil price above US\$90/bbl.

Diagram 36: Supermajors reported an average 21% y-o-y decline in 4Q14 adjusted PATMI

Supermajors	Release date	4Q13		4Q14		YoY Chg	
		PATMI	Adj PATMI*	PATMI	Adj PATMI*	PATMI	Adj-PATMI
		US\$ bn	US\$ bn	US\$ bn	US\$ bn	%	%
ExxonMobil	2-Feb	8.4	8.4	6.6	6.6	-21%	-21%
Chevron	30-Jan	4.9	4.9	3.5	3.5	-30%	-30%
Shell	30-Jan	1.8	2.1	0.6	2.7	-67%	29%
BP	3-Feb	1.0	2.8	(4.4)	2.2	nm	-19%
ConocoPhillips	29-Jan	2.5	1.7	(0.0)	0.7	nm	-57%
TOTAL SA	12-Feb	2.2	2.2	(5.66)	(5.7)	nm	nm
Total		20.8	22.1	0.5	10.1	-97%	-54%

*Adjusted for exceptional items
Source: Bloomberg, Companies

Oil majors are slashing capex to safeguard shareholder return

BP and ConocoPhillips started guiding down 2015 capex since early December 2014 following OPEC's resistance to output cuts that sent the oil price into a freefall. Following the fiscal year 2014 results announcement, the six supermajors plan to reduce 2015 capex by 14% on average, vis-à-vis guidance prior to the oil plunge.

The smaller E&P companies, for instance, Continental Resources, Concho Resources, Cresdent Point, Lundin Petroleum, Linn Energy, are projecting a steeper cut of 30-50% on capex in 2015.

Diagram 37: Supermajors reported an average 21% y-o-y decline in 4Q14 adjusted PATMI

Capex for 2015	Jun-14 US\$ bn	Dec-14 US\$ bn	Jan-Mar-15 US\$ bn	Dec Chg %	Jan-Mar Chg %	Total chg %
ExxonMobil	37	37	34	No chg	-8%	-8%
Chevron	40	40	35	No chg	-13%	-13%
Shell	37	37	32	No chg	-14%	-14%
BP	26	24	20	-8%	-17%	-23%
TOTAL	25-26	25-26	23-24	No chg	-8%	-8%
ConocoPhillips	16.9	13.5	11.5	-20%	-15%	-32%
Sub-total	182	177	156	-3%	-12%	-14%

Source: Companies, Upstream

Global E&P capex could drop 17% in 2015

Assuming WTI averages US\$70/bbl, global capex for oil and gas E&P projects could drop 17% to US\$571 billion in 2015, according to a survey of 476 oil and gas companies' E&P capex budgets. The decline represents the third largest in global expenditures since 1985. The largest was the 33% plunge in 1986 when oil prices tumbled below \$10/bbl. Spending is expected to hold up in the Middle East, where small increases will come from Abu Dhabi National Oil Co. (ADNOC), Kuwait Oil Co., Saudi Aramco, and Qatar Petroleum.

Cost-cutting measures, layoffs, pay freezes, share repurchase curtailment...

Several oil producers and service companies have announced layoffs and cost cutting programmes in addition to reductions in spending on new drilling projects.

- ❌ BP is cutting mid-level supervisors in its oil production and refining businesses and in back-office corporate functions in an effort to streamline activity and increase efficiency throughout the group. It would also freeze pay for 2015.
- ❌ Chevron is scrapping its 2015 share repurchases programme as part of the effort to curb spending. In addition, "significant cost-reduction efforts" are also underway, and layoffs are possible, according to CEO John Watson.
- ❌ ConocoPhillips has also pre-empted its employees that layoffs could be on the way. The layoffs and an accompanying pay freeze will supplement cost-control steps it has already taken, such as slashing its E&P budget.

Capex deferral does not mean it is forgone forever

The capex reduction in the current low oil price environment is an interim measure to manage returns, cash flow, and shareholders' dividend expectation. Capex is expected to trend down in next two to three years with the completion of major projects and delay of greenfield projects. Nevertheless, the capex commitment cannot be held back forever as prolonged periods of underinvestment will lead to future supply shortages and driving up oil prices consequently.

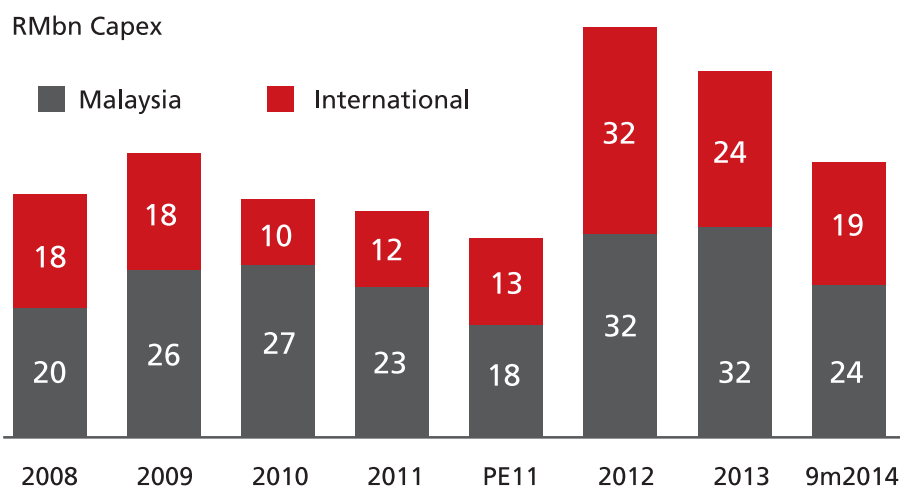
National oil companies feel the pinch, but production targets remain

In addition to capex cuts by the supermajors and the smaller independent oil companies, who are driven by shareholder returns in the short term, some of the national oil companies have also been forced to announce lower levels of investment.

Petronas among the first in Asia to trim capex

Malaysia's state-owned Petronas said in November 2014 that it would cut 2015 capex by 15-20% following the decline in crude oil prices. Therefore we expect a total annual capex spend of 45-50 billion Malaysian ringgit (RM) in 2015 by Petronas. The group typically spends 55-60% of their annual capex on Malaysian projects while the remainder is spent on international projects and acquisitions. In 2012-13, Petronas spent RM 32 billion per annum in Malaysia. And, in the first nine months of 2014, the group spent RM 24 billion. Another point to highlight is that Petronas is also reviewing its operating expenditure (OPEX) and reports indicate that they might slash it by up to 30%.

Diagram 38: Petronas' capex split



Source: Petronas

CNOOC's deep capex cut took market by surprise

CNOOC, China's state-owned oil producer, announced on February 3, 2015, that it would slash its capex by 26-35% to between US\$11.19 billion and US\$12.79 billion. It also vowed to cut costs and boost efficiencies, as the nearly 50% slide in oil prices are putting a heavy burden on oil companies across the globe. The magnitude of capex cut took market by surprise, far bigger than the 8% forecast earlier by analysts. Other major oil firms in China, including PetroChina and Sinopec, are also expected to announce lower budgets for the current year.

Most of the capex cut will be coming from delaying non-priority and less-prospective projects, some pricey deepwater exploration drilling, and to a lesser extent, bargaining down service providers' fees. It will review its asset portfolio and consider selling those with poor quality and prospects, and consider whether it needs to book impairment charges on its assets due to sharply lower oil prices. However, CNOOC would not relinquish its high-cost shale gas and oil sands projects in North America, according to its chief executive, Li Fanrong. This is because the loss from shutting them down would be higher than keeping them running. Quoting an example, one of the oil sands producers in Canada saw their output fall by one-third post resumption from a six-month shut-down.

The exploration budget will be chopped by 29% to 38%, with two-thirds of the remaining spend to go on wells off China. About 67% of capex is expected to be spent on development to raise production to between 475 and 495 million barrels of oil equivalent (boe), representing a 10-15% year-on-year increase in production.

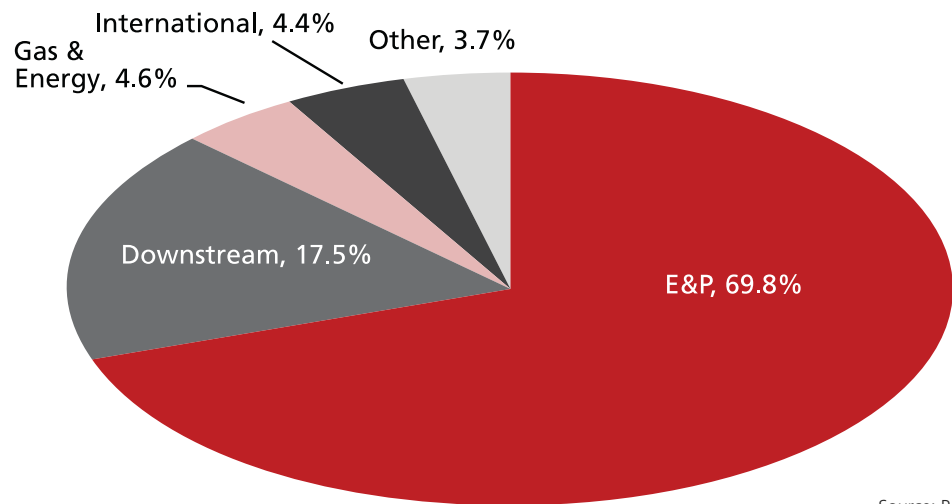
Petrobras could also pump up production in the near term

Brazil is a net oil importer currently, and the falling oil price threatens the viability of its pre-salt reserves, which are believed to have a breakeven oil price of US\$45-52/bbl. However, domestic production is expected to turn around this year with forecasts it will rise to 2.5 mmbpd, the first step to doubling output by 2020. But, Petrobras will have to clean up its operations and save itself from a credit crunch scenario though. Petrobras has been undertaking the world's largest corporate capex programme, valued at up to US\$221 billion over five years (2014-2018), to exploit its "pre-salt" discoveries, which lie up to seven kilometres beneath the waters of Brazil's southeast coast. We estimate that its yearly E&P capex accounts for approximately 5% of global E&P capex, larger than supermajors' 3-4% each.

Petrobras, as the state-run oil company, was made the sole operator of the pre-salt fields. This has overburdened its balance sheet over time. Furthermore, it has to juggle

Corruption allegations have thrown Petrobras into disarray

Diagram 39: Petrobras' capex breakdown, US\$221bn for 2014-2018



Source: Petrobras

with the expensive local content programme and to subsidise domestic fuel prices to help the government control inflation. These have led to delays and the missing of output targets over the past few years.

Making thing worse, Petrobras has been thrown into disarray by an investigation by Brazilian police and prosecutors alleging that former senior executives, construction companies, and politicians of President Dilma Rousseff's Workers Party-led ruling coalition creamed billions of dollars off Petrobras' contracts. Police have arrested senior executives both within Petrobras and in some of the country's largest construction and engineering firms that work with the oil major. Petrobras is also the most highly indebted oil giant. It has lost direct access to capital markets while awaiting the release of its audited results, leaving it vulnerable to a cash crunch given its huge capex programme.

All these capex cuts will pave the way for higher prices in the longer term

All these announced capex cuts won't necessarily translate into significantly lower production in the near term. It is likely that the most productive projects will go ahead while costs are also likely to decline along with the oil price. It is hard to gauge, but we could expect some impact on supply in the medium term given it typically takes five to seven years to bring a greenfield into commercial production. In the next one to three

years, there could be some easing on supply pressure as oil majors shelve higher-cost projects in their development phase, but the impact may not be as substantial as market expected it to be.

Diagram 40: List of deferred / scrapped oil & gas

Company	Project	Location / Area	Description (Short)	Type	Est. Capex (US\$ bn)	Status
ConocoPhillips	Permian Basin, Niobrara, Montney and Duvernay	North America, Canada	Plans to slow activity in US shale oil and gas exploration. Will defer work in several of the newer emerging areas for shale development in North America, including the Permian Basin of west Texas, the Niobrara shale of Colorado, and the Montney and Duvernay formations in western Canada.	Largely Shale oil and gas	-	Deferred
Chevron	Oleska shale gas field	Ukraine	Chevron lost interest in the western Ukraine shale exploration project after findings in nearby Poland and Lithuania with similar geology showed worse than expected reserves.	Shale gas	10	Scrapped
Chevron	Canadian Arctic drilling	Beaufort Sea, Canada	Cited "economic uncertainty in the industry" as oil prices fall.	Exploration	-	On Hold
Chevron	Shale gas drilling in Poland	Poland	Chevron will discontinue its shale gas project in Poland as it no longer makes business sense.	Shale gas	-	Scrapped
Qatar Petroleum / Shell	Al Karaana	Emirate	Qatar Petroleum and Royal Dutch Shell Plc (80:20) ended plans to build a \$6.5 billion petrochemical plant in the emirate, one of the biggest casualties of slumping oil prices so far as producers scrap projects to conserve cash.	Petrochemical	6.5	Scrapped
Shell	Arrow Greenfield LNG	Queensland, Australia	Shell has abandoned its plans for what would have been a 4th coal seam gas-LNG project at Gladstone in Queensland.	LNG	20	Scrapped
Shell	Carmon Creek Phase III and IV	Canada	Slowed down the pace in deepwater. Will delay phase three and four of the Carmon Creek project in Canada	Upstream	-	Deferred
Premier Oil	Sea Lion	Falkland Island	The Falkland Islands' first commercial oil discovery will be delayed until crude prices start to recover. It is estimated that the project requires oil price above US\$80/bbl to be economically viable.	Exploration	2.0	On Hold
Husky	White Rose Extension	Canada	Husky Energy will defer the final investment decision on its offshore West White Rose oilfield extension project for a year	Development	2.8	Deferred
Statoil	-	Greenland	Statoil had handed back three exploration licences on the west coast of Greenland, an area considered one of the highest-cost frontiers in the industry.	Exploration	-	-

Source: Upstream, various companies















Conclusion

We believe that oil prices will recover in some way over time as demand-supply fundamentals improve. But it would be tenuous at best to predict the timing and extent of such a recovery. Forecasting oil prices nowadays involves more than a simple demand-supply equation. There are too many extraneous factors involved.

We believe unfavourable trends on both the supply and demand fronts, as well as the strong US dollar will keep oil prices from breaking out before the second half of 2015 at least. As the storage capacity in OECD countries nears peak levels, there could be high volatility in the market from spillover fears, until we see production cuts. We can see a market bottom for oil prices at US\$45/bbl which was last seen in January 2015. Of course, this could be affected by occasional variables in the coming months.

Diagram 41: How each of these structural issues are likely to impact oil prices, going forward

Key Driver	Short term impact	Long term impact
OPEC Response		
Inventory Buildup		
Profile of US shale production		
Global demand characteristics		
Geopolitical issues		
Response from global oil majors		

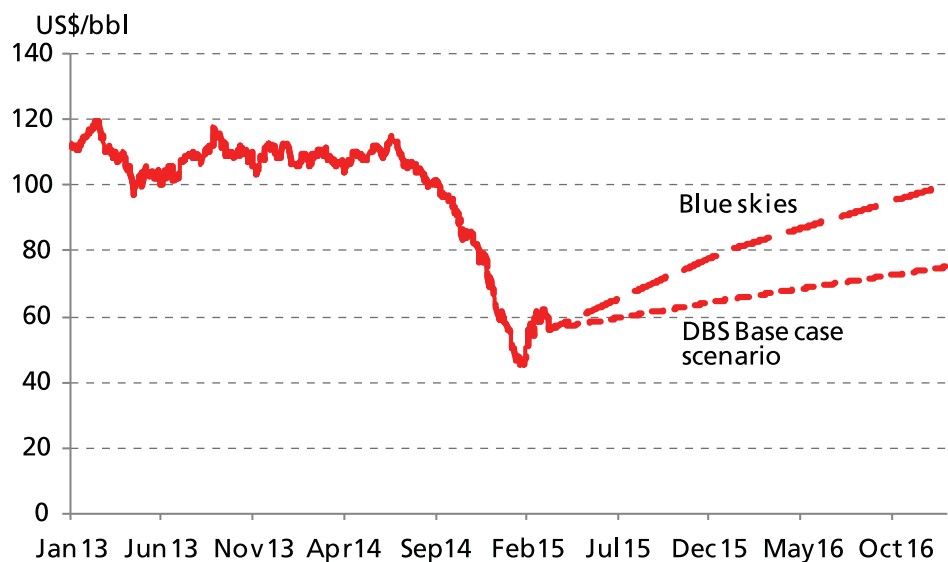
Source: DBS Bank

That said, we are reasonably confident that oil prices will not tank and sustain at lower levels for long, as we do not expect OPEC to maintain production levels below US\$40-50/bbl because of budget pressures on its weaker members. From the second half of 2015 onwards, we expect production cuts to kick in and support higher prices. But, unless this is matched by a strong global demand push, the recovery could be a little limp.

Overall, our base case scenario forecast for oil prices for the rest of 2015 is around US\$55-65/bbl. For 2016, we project oil prices could be in the range of US\$65-75/bbl.

However, we also cannot totally discount a “blue skies scenario” under which oil prices could rise to near pre-crash levels in the next two years. But that would need a combination of forces to come together. For starters, non-OECD countries would have to generate stronger economic growth. Moreover, OPEC and non-OPEC oil producing nations – like the US and Russia – would need to set mutually agreed output levels. Of course, nothing is impossible but the odds of this happening are long.

Diagram 42: Oil price forecast scenario



Source: Bloomberg Finance L.P., DBS Bank forecasts

Diagram 43: Key short term and long term catalysts for oil price – up and down

SHORT TERM	LONG TERM
<ul style="list-style-type: none"> • Drop in US rig count, if it yields any immediate sharp production declines • Unexpected supply disruptions owing to geopolitical tensions intensifying • Positive action at next OPEC meeting 	<ul style="list-style-type: none"> • Low oil prices stimulating new demand growth, especially in developing Asia • Cut in E&P capex over next 2 years will lead to supply decline beyond 2017, especially if deepwater offshore projects delayed • Countries with budgets linked to oil prices will need to take affirmative action
<ul style="list-style-type: none"> • No big decline in shale production in 2015 owing to hedged revenues of producers • Huge oil inventory buildup in the US and elsewhere • Saudi seems intent so far on limiting growth of non-OPEC oil • Impact from speculative oil trades 	<ul style="list-style-type: none"> • Shale oil drilling pretty elastic in terms of lead time – can bounce back quickly • Continuing low economic growth across the world • Impact from structural changes to demand for oil

Source: DBS Bank





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