more give, less take

Oil Market Update – February 2016

by NAB Group Economics

National Australia Bank

Key points:

- Since early November, oil prices have resumed a clear downward trend, punctuated by episodes of sharp declines during early to mid- December and the first half of January. A number of inter-related factors, including heightened volatility in financial markets and renewed concerns about China's growth prospects, have lowered the oil demand outlook for China (the world's largest crude importer and second largest consumer), despite recent data showing Chinese crude demand growing at a robust rate in 2015.

- Against a backdrop of weak fundamentals arising from both demand and supply-side factors, investor sentiment is playing an increasingly prominent role in determining short-term oil price movements. Speculative demand was a major driver in the latest leg of oil price declines in January, with market risk aversion indicated by the oil market VIX index skyrocketing in the month while net long positions of oil futures tanked. Over the period between November and January, Brent, Tapis and WTI generic 1st future price indices fell by 29%, 30% and 27% respectively to average at US$32, US$33 and US$32 a barrel correspondingly in January.
- With the gradual exhaustion of existing spare capacity and lack of infrastructure investment in the past year, a slowdown in US crude production is expected to accelerate over 2016, with the Energy Information Administration (EIA) of the US projecting production to average around 8.7mb/day this year. That said, the EIA's forecast looks to be too weak given recent trends, we believe that the global oversupply might take longer to ease than the EIA's central case outlook.

- In the near-term, there are further upside supply risks stemming from Russia and the OPEC region. With OPEC abandoning its output quota at its December meeting, Iraqi and Russian output continuing to rise, as well as an imminent increase in Iranian production in its post-sanction era, global supply is likely to increase further in the short-term. The lifting of US export crude ban by the Congress suggests further competition in the global markets from US exports, but poor margins currently are a constraint.

- A generally weaker outlook for demand and supply has led us to revise our oil price forecasts moderately lower throughout the entire profile. We now expect oil prices to recover mildly to USD 40/bbl by end-2016 and USD 50/bbl by end-17.

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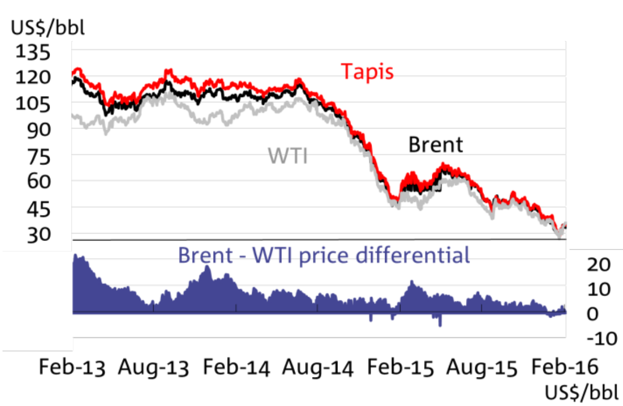
Recent market developments

- **Since early November, oil prices have resumed a clear downward trend, punctuated by episodes of sharp declines during early to mid- December and the first half of January.** A firming USD in anticipation of an eventual lift-off in the US Fed funds rate was the initial trigger for the downward trend, but the more recent sporadic falls were driven disproportionately by concerns about the oil market fundamentals including: **1) the global glut could be worsening; and 2) the slowing in global oil demand mostly stemming from a slowing Chinese economy.**

- **In December, signals of additional supply adding to the overall global glut were mainly responsible for dragging prices lower.** The unexpected outcome from the biannual OPEC meeting that the organisation has resorted to abandoning its output quota altogether caused much skittishness amongst investors. The markets' expectations had been for OPEC to raise its output quota to 32mb/day from 30mb/day to accommodate the expected rise in Iranian output once the economic sanctions were lifted (and which subsequently took place in the second week of January), as well as greater output from Saudi Arabia and Iraq.

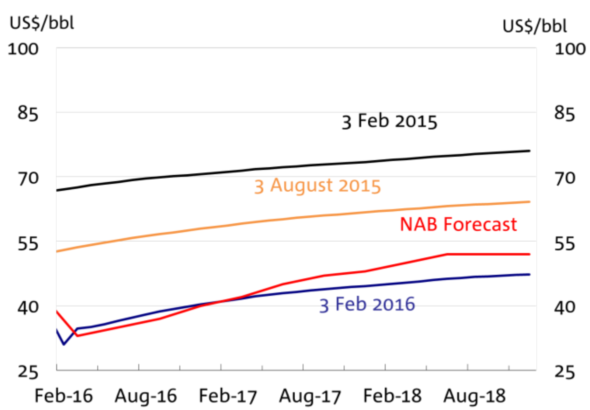
- On the surface, the decision appears to suggest that OPEC as an organisation is adamant in defending its market share by allowing market forces to continue to influence prices. **However, it has also been clear for some time that OPEC's effectiveness as a cartel in swaying market prices by controlling output has been undermined by the fractured dynamics amongst its member countries and heighted competition globally with the entry of multiple US shale producers.**
- More recently, a combination of inter-related factors, including financial markets' volatility, renewed investor concerns about China's worsening growth prospects (hence a possible weakening of oil demand by the world's largest crude importer), as well as greater perceived weakness in oil fundamentals overall prompted massive selloffs by oil investors. **In the past few days, oil market risk aversion as indicated by the oil VIX index spiked to the highest level since the GFC period.**
- Slowing US production has been more than outweighed by a pickup in OPEC production in 2015, maintaining the global oil market surplus to the tune of around 1.5 to 2 mb/day. Global demand is expected to continue to grow this year, but will not be sufficient to offset the surplus. **This suggests that the overall glut will persist into H1 2017, with an increasingly large fall-off in US output likely to contribute more towards closing the gap.**

Figure 1: Oil Price Indexes



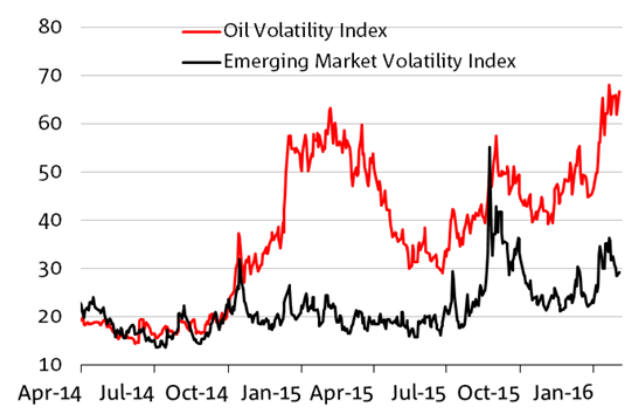
Source: Thomson Datastream

Figure 2: Brent Futures Curves



Source: Bloomberg and NAB Group Economics

Figure 3: Oil & Emerging Market Volatility

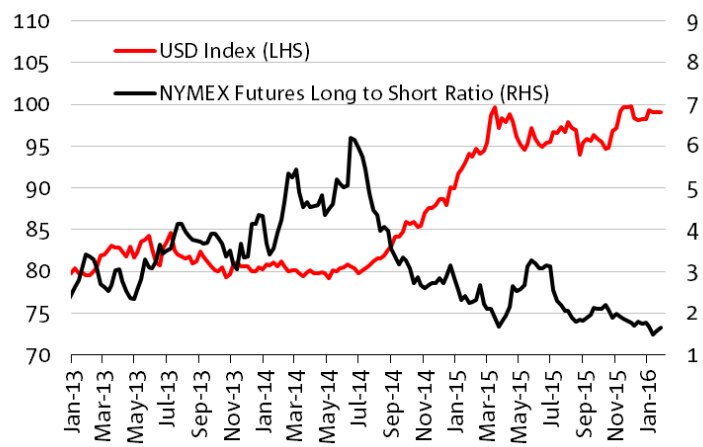


Source: Bloomberg and NAB Group Economics

Deciphering the recent oil price falls – a case of market overreaction ?

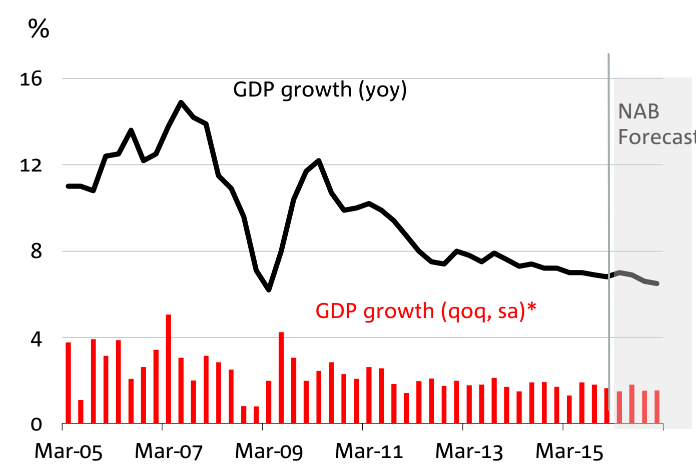
- The global oil market is becoming increasingly linked to the financial markets through futures trading and investment flows into other commodities. Over the last decade, open interest and managed fund activity in the oil market have increased significantly. Meanwhile, the correlation between daily returns on crude futures with other commodities and financial investments such as the USD, S&P 500 and US bond yields have also risen in recent years. **Given these developments, investor sentiment is playing an increasingly prominent role in determining short-term oil price movements.**
- This is especially the case when market fundamentals are severely out of balance. Against the backdrop of stubborn oversupply which deprives the market of "floor" support, short-term price movements are guided predominantly by **changes in investors' expectations of future demand and supply growth, with a bias towards "bad" news that would either imply slower demand or greater supply.**
- **We are of the view that the sharp deterioration in oil prices in January was largely driven by speculative demand. While concerns of potential further slowing in the Chinese economy were valid to a certain extent, there was no evidence from recent Chinese crude oil consumption patterns that its actual crude demand growth is slowing.** According to the latest data from China's General Administration of Customs, the country's total crude oil imports rose by a reasonably healthy rate of 8.8% from the previous year to 335.5 million tonnes. Furthermore, recent China's Q4 GDP data was only marginally lower than market expectations at 6.8% (markets had expected 6.9%), but the oil price reaction to the data release was disproportionately large. **This suggests that markets were weighting more towards perceived future market weakness, and these perceptions may not be entirely justified by recent underlying performance.** The recent speculative demand-driven falls in oil prices were further highlighted by money managers' net long positions, which fell to the lowest level since mid-2012.
- We continue to forecast China's economy to follow a gentle downward trajectory to 6.7% in 2016 and 6.5% in 2017. However, a further deterioration in investors' perceptions of China's economic outlook suggests additional downside risks to oil prices, even when China's oil demand growth is expected to be reasonably robust relative to history (refer to page 5 for more details about Chinese crude demand outlook). **In the near-term, oil prices are likely to maintain the current USD30 to 35/bbl range, with additional Iranian supplies capping the upward mobility in oil prices. A narrowing surplus from further expected falls in US production will see prices reach the USD 40/bbl mark by end-2016 and 50 by end-2017,**

Figure 4: USD Index and NYMEX Oil Futures Long to Short Ratio



Source: Bloomberg, NAB Group Economics

Figure 5: China's GDP Growth

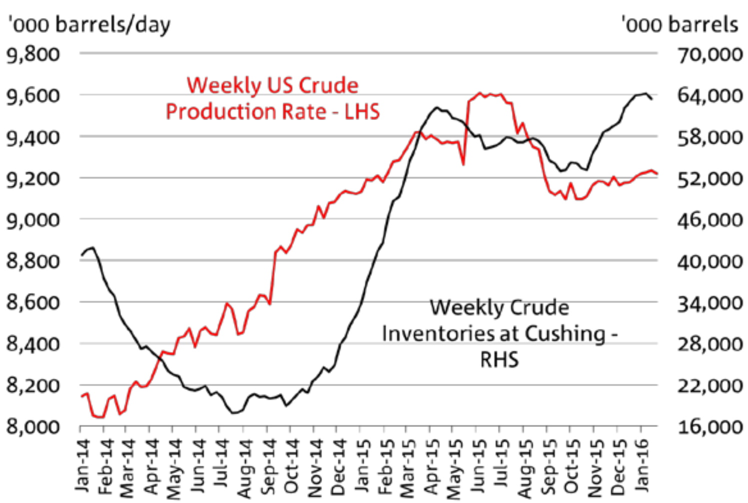


Source: CEIC, NAB Economics

Supply conditions: US

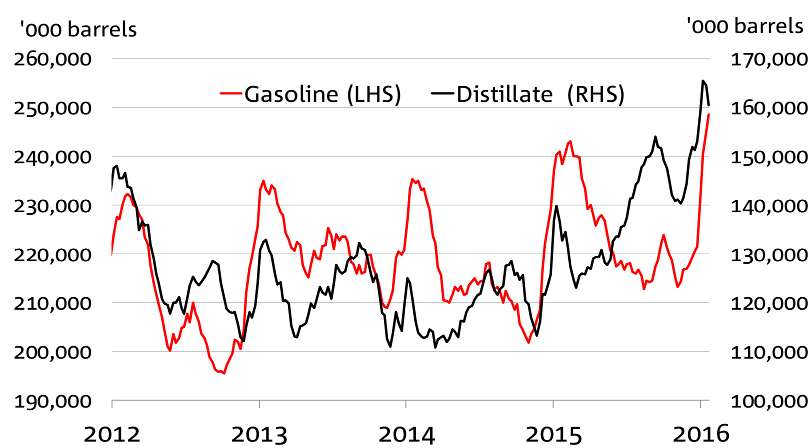
- **Since mid-2015, US crude production has started to ease, but so far the decline has been more gradual than the rig count would suggest. The high depletion rates and relatively short investment horizon of shale production has been partly offset by existing latent capacity and efficiency gains in new wells, which have a higher initial production rate.** The latter has been partly driven by the more intensive use of fracturing sand (“frac sand”) in new wells in Eagle Ford and other shale plays during their hydraulic fracturing process.
- **After peaking at 9.6mb/day in May, US crude production fell to 9.4mb/day in October (latest monthly data).** The more frequent but less accurate weekly production data suggests that US oil production was around 9.2mb/day in late January. **A seasonably warm winter resulted in lukewarm consumer heating demand in the last few months, culminating in a build-up of commercial crude inventories at Cushing and the Gulf Coast to reach a record level of 495mb in the 3rd week of January**. Inventories of finished petroleum products also increased over the period, with gasoline products creating new records as well. With the gradual exhaustion of existing spare capacity and lack of infrastructure investment in the past year, the slowdown in US crude production is expected to accelerate over 2016, with the US Energy Information Administration projecting US production to average around 8.7mb/day this year. That said, the EIA’s forecast looks too weak given recent trends, as such we believe that the global oversupply might take longer to ease than the EIA’s central case outlook. US commercial inventories continued to build over 2015.
- **In mid-December last year, the US Congress lifted a 40-year ban on crude exports, which was first introduced in 1975 as an energy security measure in response to an embargo of oil shipments to the US by a number of Arab countries in 1973.** The US currently exports around 500,000 barrels of oil per day, mostly to Canada. Its near-term exporting prospects to a wider region are hampered by poor economics. Higher shipping costs of US crude exports to the key Asian markets of around USD 2/bbl compared to Middle Eastern oil makes it necessary for WTI to trade a few dollars below Brent to be competitive. Furthermore, it is not currently cost-effective for most Asian refineries to process the lighter version of US-produced crude.

Figure 6: US Weekly Crude Production and Inventories at Cushing



Source: EIA, NAB Group Economics

Figure 7: US Gasoline and Distillate Inventories

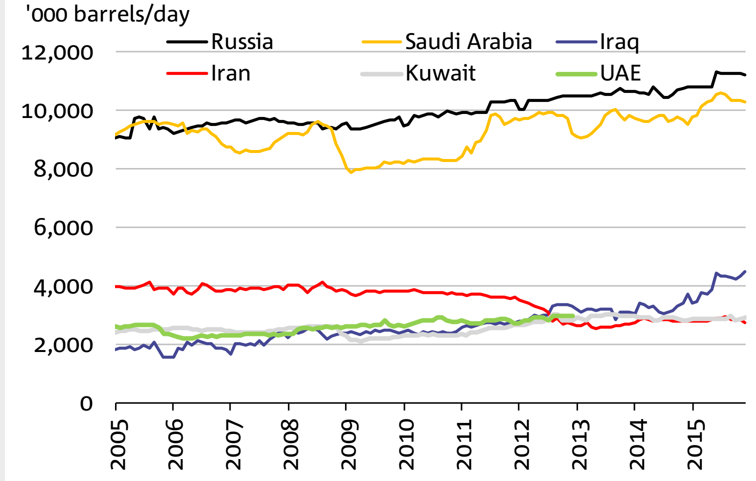


Source: EIA, NAB Group Economics

Supply conditions : OPEC and Others

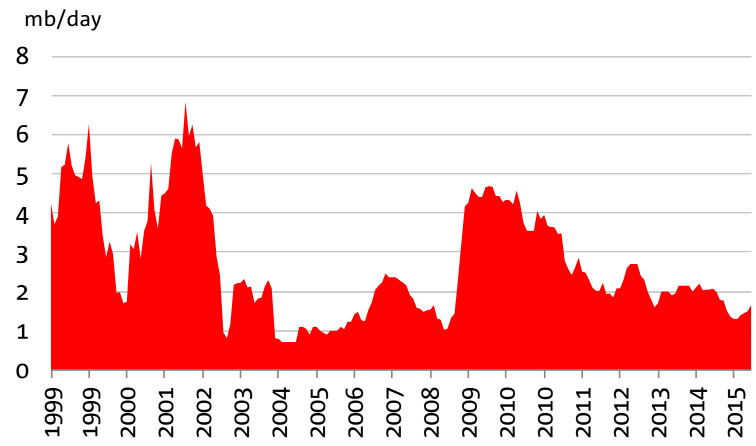
- **OPEC production continues to tick up gradually, reaching a record level of 32.9 mb in December and exceeding the organisation's previous quota of 30mb/day for the 19th consecutive month.** In its biannual meeting on the 4th of December, OPEC decided to abandon the quota system, potentially paving way for further output gains in the coming months.
- **Saudi Arabia and Iraq were responsible for most of OPEC's output growth in 2015.** Saudi Arabia, OPEC's top producer, spearheaded the organisation's move to defend market share, ignoring the calls by smaller producers such as Algeria and Venezuela to cut output in order to boost prices. Meanwhile, Iraqi output also increased rapidly despite ongoing civil wars and fight against ISIS, aided by its production cost (of as low as USD10/barrel) and strong demand from China. Iraqi output reached a record level of 4.13mb/day in December and is expected to increase further this year.
- **Russian crude output has also increased significantly since mid-2015** as the sharp devaluation of the ruble makes it necessary for state-owned oil companies to improve cash flow through increased production.
- **The official lifting of economic sanctions against Iran by major western powers in mid-January cleared the last hurdles for the country to expand its oil output.** Iranian oil production has fallen significantly below its output potential since the imposition of the sanctions in 2012, currently producing around 2.7 mb/day compared to 3.5mb/day during the pre-sanctions era. The Iranian government has signalled its ambition to lift the country's oil output and exports significantly this year, but there are questions around the rate of recovery and final output level achievable. Iran's upstream oil infrastructure has been severely impaired as a result of the sanctions and Iran would thus require massive investment in the sector before a sizeable output gain can be achieved. However, the country currently holds around 20mb of crude oil in inventory (equivalent of 500,000 barrels for 40 days) which can be released anytime to the market. We believe that that Iranian output increase will be gradual in the coming months before gaining traction in H2, increasing by around 200,000 to 300,000 barrels at first before reaching an additional 500,000 barrels by end-2016.
- **As such, upside supply risks from OPEC continue to build while US production is slowing gradually. OPEC currently still has around 1.6mb/day of spare production capacity. As such the global oil glut is expected to persist into the first of half 2017 and cap the upward potential of prices.**

Figure 8: Monthly Production by Major OPEC Producers and Russia



Source: Bloomberg, NAB Group Economics

Figure 9: OPEC Excess Production Capacity



Source: Bloomberg, NAB Group Economics

Demand conditions

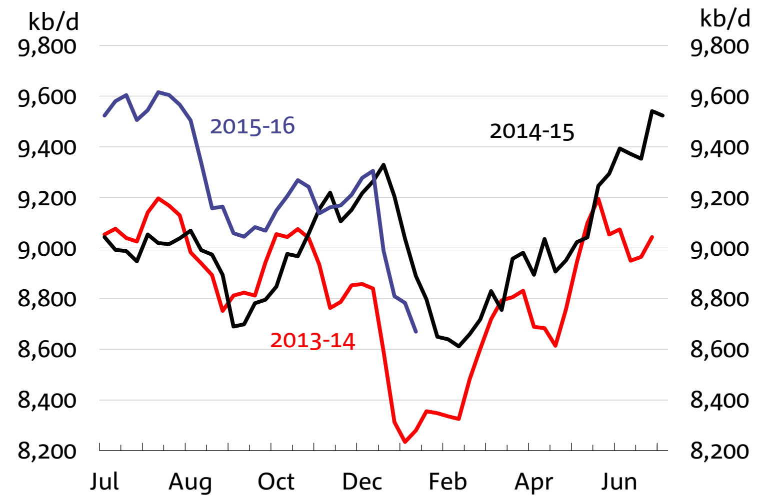
- **While a seasonably warm winter has capped US heating demand over the last couple of months, 2015 was still an exceptionally strong year for the consumption of refined oil products, aided by historically low pump prices and a pick-up in US economic activity.** According to Energy Information Administration (EIA), motor gasoline consumption, which constitutes slightly less than half of total US liquid petroleum consumption, increased by an estimated 240 kb/d (2.6%) in 2015 to an average of 9.2 mb/day, the highest level since the record of 9.3 mb/day in 2007. Meanwhile, jet fuel usage rose by 70kb/day (4.8%) to be around 1.54 mb/day, while distillate demand fell by 80kb/day (1.9%) to 3.96mb/day. That said, a slowing in US economic growth since late last year and the fading stimulatory effect of lower oil prices on consumption and business investment suggest that US petroleum consumption growth is likely to be more moderate this year, with the EIA forecasting 0.8% growth to 19.53mb/day.

- **Meanwhile, Chinese crude imports appear to defy the gravitational pull of a notably slowing Chinese economy (including weaker industrial activity) to continue to expand at a robust pace in 2015.** Chinese crude imports surged by 8.8% in 2015, partly driven by the additional licences given to "teapot" or independent refiners by the government to sell more refined products, as well as a continuous expansion in the country's strategic reserve capacity. A pick-up in domestic refinery activity suggests a lesser need for imports of finished petroleum products, which culminated in flat imports last year.

- **Overall, the growth in Chinese apparent demand for refined products was also relatively resilient, despite growth slowing since mid-2015.** However, sustained weak growth in Chinese manufacturing activity and softer prospects for the country's growth in 2016 point to further downside risks to oil consumption growth.

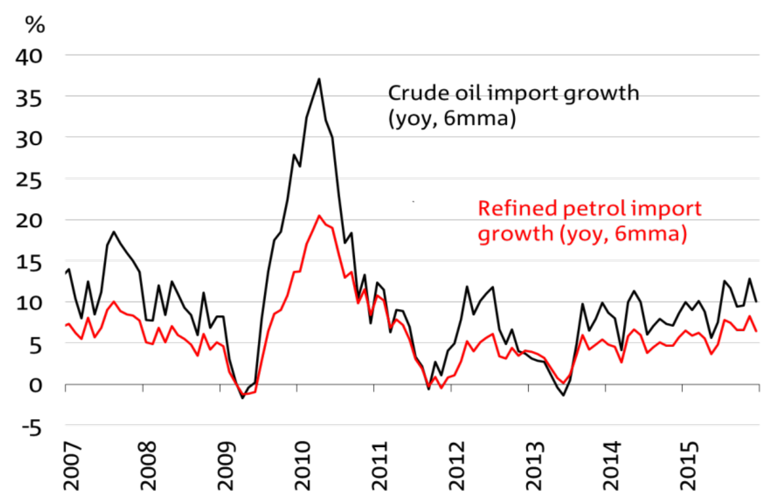
- **Indian fuel consumption surged to the highest level on record in 2015, supported by the usage of gasoline, LPG and diesel.** In volume terms, domestic sales of refined oil products rose for the 14th consecutive month in December, to be 8% higher year-on-year in the month.

Figure 10: Weekly US Gasoline Demand (4-week moving average, '000 barrels)



Source: US Energy Information Administration, NAB Group Economics

Figure 11: Chinese Imports of Crude Oil and Refined Oil, 6-month Moving Average Growth (y-o-y)



Source: CEIC Database, NAB Group Economics

Summary and NAB quarterly oil price forecasts

- **Bouts of global equity market jitters on the back of renewed investor concerns about China's economic outlook has driven oil prices lower since the start of the year, despite recent data showing Chinese crude demand growing at a robust rate in 2015.** With OPEC abandoning its output quota in its December meeting, Iraqi and Russian output continuing to rise, as well as an imminent increase in Iranian production in its post-sanction era, global supply is likely to increase further in the short-term. That said, an acceleration in the fall of US production is expected to offset most of this increase by the end of 2016/early 2017. Together with an expected increase in global demand, the excess supply in oil markets globally is expected to disappear by mid-2017.
- **However, there continue to be downside risks in oil demand stemming from the sustained deterioration in China's industrial production growth. Possible interventions by the Chinese authorities to devalue the yuan further and their implications for underlying weakness in China's growth would be bearish for prices.** Chinese oil demand has not slowed to the same extent as other major commodities such as iron ore and coal, given the wider demand for oil by consumers to power their homes and vehicles beyond industrial purposes. However, weaker-than-expected growth in China's energy consumption from a contracting industrial base could serve to prolong the current global glut.
- **A weak outlook for oil fundamentals driven by both supply and demand factors suggests that oil prices are likely to be largely guided by investor sentiment, and hence remain volatile, in the short-term. Meanwhile, a gradual narrowing of the oversupply gap will bolster in the medium term.** Further expected appreciation in the US dollar in line with the normalisation of US monetary settings, albeit likely to be more gradual than previously expected, is expected to exert downward pressure on oil prices in over the next two years.
- **In light of the above, we have revised our oil price forecasts lower for 2016 and the forward estimates period, with prices expected to fluctuate between USD30 to 35 a barrel in H1 of 2016, before reaching USD 40/bbl by end-2016 and USD 50/bbl by end-2017.**
- **Given the decline in global crude prices, Australian petrol prices have moderated further in the last few months, averaging around AUD 1.12/litre in January,**

Figure 12: NAB Oil Price Forecasts (Quarterly Average)

	Current	Actual	Forecasts							
	3/02/2016	Dec-15	*Mar 16*	*Jun 16*	*Sep 16*	*Dec 16*	*Mar 17*	*Jun 17*	*Sep 17*	*Dec 17*
WTI (US$/bbl)	32.3	41.9	32	34	36	39	40	43	45	47
Brent (US$/bbl)	35.5	44.1	33	35	37	40	42	45	47	48
Singapore Gasoil (AUD/L)	0.35	0.47	0.34	0.38	0.41	0.45	0.49	0.50	0.51	0.52
Tapis (US$/bbl)	34.6	45.3	34	37	39	42	44	47	49	50
Australian Retail Unleaded Petrol (AUc/L)	NA	125.5	114.3	119.3	121.9	126.2	126.5	130.1	133.7	133.9

Sources: NAB Economics; RACQ; Thomson Datastream

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