Oil Market Update

National Australia Bank

- **Since mid-January, several idiosyncratic factors, such as the ramping up of takeaway capacity by the Keystone XL Pipeline, better US economic data and unseasonably cold weather, have propped West Texas Intermediate (WTI) prices relative to Tapis and Brent.**
- **The escalation of geopolitical tensions in the Ukraine also supported oil prices more generally in February and early March, especially Brent. Prices have since moderated on easing concerns that economic sanctions over Russia's Crimean annexation would cause significant supply disruptions.**
- **Saudi Arabia's effectiveness as a swing producer among OPEC producers has been made increasingly difficult by the rapid recovery of Iraqi crude output, which is free of quota at the moment. Iraqi oil production has been on an upward trajectory since 2007 as security conditions improved, and is poised to record its highest annual growth on record in 2014.**
- **Chinese crude oil imports have been more resilient than its faltering industrial data might suggest, largely reflecting its quickly expanding crude processing capacity.**
- **We expect crude prices to moderate in the near-term, with the correction in WTI likely to be more pronounced from its recent sustained rallies. Brent price prospects are also weighed down by rapidly expanding Iraqi and Iranian output, in additional to mounting competitive pressures from booming North American supplies.**

Recent Oil Prices

Since mid-January, several idiosyncratic factors have propped up the prices of West Texas Intermediate (WTI) relative to Tapis and Brent. WTI rose for eight consecutive weeks since mid-January to the first week of March, the longest sustained weekly rise in close to five years, to be currently just under US$100/bbl. The gains were supported by unseasonably cold winter conditions going into March which resulted in strong demand on distillates and lower stocks and the opening of the southern leg of the XL Keystone pipeline in January which improved the takeaway capacity of crude inventories from Cushing to the Texas Gulf coast. Crude oil inventories at Cushing, Oklahoma, the primary crude oil hub in the US, decreased 13 million barrels (32%) over the past two months (to 21 March) to reach their lowest levels since early 2012. Meanwhile, the surge in natural gas prices in the US Northeast also caused some level of switching by electricity utilities from gas to oil. More benign unemployment and jobless claims data emerging from the US despite the harsh winter conditions and ongoing stimulus withdrawal by the US Federal Reserve, as well as a resilient equity market lent further support to WTI relative to other oil indices. WTI rose by 6% in February, compared to 1% for Brent and little change in Tapis.

Source: US EIA

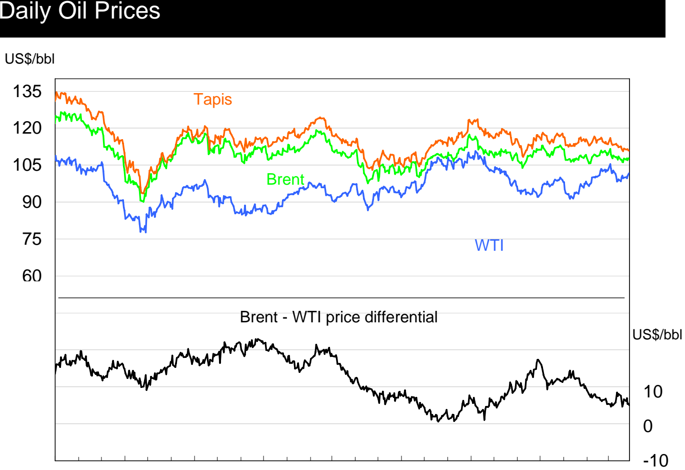
The escalation of geopolitical tensions in the Ukraine also supported oil prices more generally in February, especially Brent. However, the price rises in oil indices immediately after the outcome of the Crimean referendum favouring reunification with Russia and its subsequent annexation were relatively subdued, for the result was largely anticipated and involved little resistance or violence; and despite vehement disapproval from the EU and US, they have limited scope to intervene apart from imposing economic sanctions. The delicate balance between the requirements by Western Europe for Russia's energy exports, and Russia's intractable reliance on these exports for around half of its government revenue has effectively locked opposing parties in a stalemate situation. So far the sanctions imposed by the US and EU on Russia have largely focussed on freezing the personal assets and disrupting business and travel plans of 40 Russian and Ukrainian government officials and politicians, including two top advisers to Russian President Vladimir Putin and former Ukrainian President Viktor Yanukovich. Sanctions have also been imposed on a bank assumed to have close ties with these oligarchs.

	Avg Price (US$/bbl) Mar-14	Monthly % change Mar-14	Mar-13 - Mar-14 % change
Brent	108	-0.9	-1.6
WTI	101	-0.1	8.1
Tapis	112	-1.8	-2.3

Sources: NAB Economics; Thomson Datastream

While the sanctions have triggered a massive sell-off of company stocks in Russia's financial markets, its impacts on oil prices have been more contained to date. However, the US and EU indicated that they are prepared to wield tougher and broader-based sanction measures on sectors of Russia's economy if the country steps up its aggression rhetoric on the Ukraine. Russia's defiance of sanctions so far suggests that the geopolitical landscape in the region remains highly volatile, and further shocks to the oil sector cannot be ruled out just yet. EU officials have suspended talks with Russia on the South Stream pipeline project which is intended to link the EU to Russia through the Black Sea by 2018.

Daily Oil Prices



Source: Thomson Datastream

Apart from the Ukrainian crisis, continued unrest in Libya and South Sudan also lent some support to prices in February, especially Brent. The forced closure of the El Sharara oil field in Libya (with production capacity of around 340,000 bbl/d) due to ongoing protests has caused a significant cutback in Libyan oil output from around 375,000 bbl/d to below 200,000, while South Sudan's oil production fell to about a third of its capacity at170,000 bbl/d.

However, the gains of Brent in February have been largely unwound in March as speculative activity during over the run-up to Russia's annexation of Crimea subsided, while a continuation of weak Chinese economic data reinforced concerns of a slowdown in the world's largest net energy importer. WTI has also moderated from its highs in February as total US commercial crude stocks build from rapid production growth in the US, while refineries enter their maintenance season ahead of peak summer demand.

Market Conditions

Over the past three months, extreme winter conditions in the US have taken a toll on its crude production by affecting well-completion activity in the northern US plays. Total crude production for the season fell short of forecasts by the Energy Information Administration (EIA) to breach the 8 million bbl/d mark by November last year, a feat only achieved in February this year. Despite that, the pace of production was still strong by historical standards, and with some of these seasonal factors already easing, EIA expects that accelerated production in some plays will make up for the shortfall incurred previously.

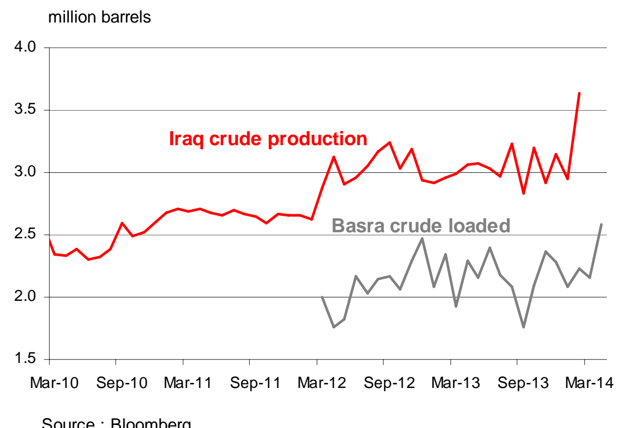
The robust production performance by major oil fields concentrated in the Eagle Ford, Bakken and Permian regions for the past few years is expected to persist and accelerate into 2015. Currently these regions are already accounting for close to half of total US production and are expected be increasingly dominant in the next two years. Based on the rapidly improving drilling efficiency in these major fields, EIA now forecasts total US crude production to rise from an estimated 7.5 million bbl/d in 2013 to 8.4 million bbl/d in 2014 and 9.2 million bbl/d in 2015, approaching the record historical annual average level of 9.6 million bbl/d in 1970. This surge in production will be supported further by rising gas exploration and production from wet gas wells which contain liquid hydrocarbons, so that total liquid fuel output is expected to amount to around 12 million bbl/d this financial year and 12.9 million bbl/d next.

Backed by higher global demand and better prices, growth in Canadian liquid fuels output also gained momentum in the past few months, with February's output estimated to reach a record 4.3 million bbl/d. However, the existing transportation and exporting infrastructures have fallen short in coping with the surge in production and ensure an efficient flow to the US, its biggest export market. This creates a segregation of market across the US border, with Western Canada Select, the Canadian heavy oil benchmark, trading at a discount to WTI. However, the infrastructure situation is gradually improving, with more extensive pipelines and railways being built, which helps to improve the access by Canadian liquid fuels into the US market, hence Canadian crude prices. Western Canada Select saw its discount against WTI fall below $20 per barrel for the first time six months in January.

Canada, along with the US and Brazil, are expected to be the top contributors to the growth in non-OPEC oil supply in 2014 and 2015. Total non-OPEC liquids production is set to account for slightly more than 60% of world's production in both years, totalling 55.8 and 57.3 million bbl/d respectively. OPEC members are likely to respond by cutting back production in 2014 and 2015 to be below the quota of 30 million bbl/d, using the swinging capacity of Saudi Arabia.

However, Saudi Arabia's effectiveness as a swing producer is increasingly made difficult by the rapid recovery of Iraqi crude output, which is free of quota at the moment because its post-war economy still needs room to grow. Iraqi oil production has been on an upward trajectory since 2007 as security conditions improve, and is poised to record its largest annual growth on record in 2014. In February, Iraqi oil exports reached a 25-year high of 2.8 million bbl/d, a 500,000 bbl/d rise from the previous month, benefiting from the alleviation of many export bottlenecks at the southern Basra terminal from which almost all of Iraq's crude is shipped. There has also been a flurry of exploration activity in the southern part of the country relatively untouched by unrest. This helped to boost OPEC's production to its highest level in five months.

Iraq Crude Production and Exports



Source : Bloomberg

There had been some doubts expressed by some analysts as to whether Iraq could keep up with its current pace of production, given its ailing production and export infrastructures, as well as further potential for political violence and volatility. However, in the longer term, given the appropriate investments and no resurgence in violence, Iraq's potential to increase its oil output substantially should not be underestimated, even if it does not attain its extremely ambitious goal of 9 million bbl/d target by 2020. The key questions are when will OPEC impose a quota on Iraq, what level will it be and will Iraq have any incentives to deviate from

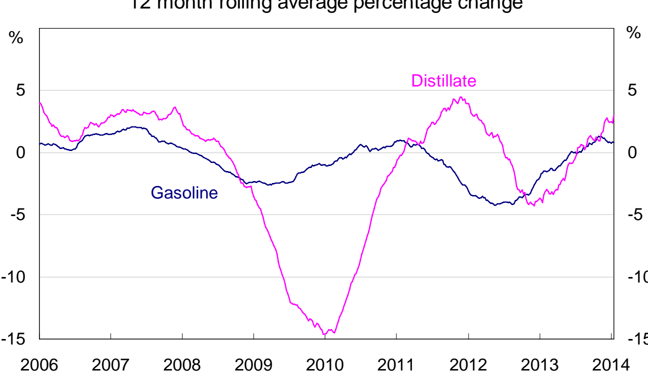
it? According to Oilprice.com, Iraq has recently been discounting its crude compared to rival grades, offering more competitive contract provisions compared to other Gulf exporters and further consolidating political and trade relations with key Asian customers. The self-preservation instincts of Iraq, emboldened further by its rising production capacity, could potentially ignite a trade war with the other OPEC heavyweights, Saudi Arabia and Iran.

Iranian oil exports continued to gain traction in January to February to a one-year high of 1.16million bbl/d. At this rate, it is threatening to exceed the cap of 1million bbl/d over the six months starting from 20 January stipulated in the interim nuclear deal signed with six other major powers. Under the above pressures OPEC is likely to lose further control of its targeted output quantity and, hence, prices in the medium-term, so risks on prices are tilted to the downside.

On the demand side, global refinery runs have moderated in March from their weather-induced highs in the last few months. In its latest monthly report, the International Energy Agency (IEA) expects global refinery crude throughputs to be on track to expand by 1million bbl/d in Q1, to 76.6 million bbl/d. Robust growth in the US, the Middle East and Russia is partly offset by contracting runs in Asia and Europe. Refining activity in Q2 is likely to fall to 74.8million bbl/d in April as some refineries undergo seasonal maintenance, taking global runs to 75.9 million bbl/d on average for Q2, but still up 1 million bbl/d year-on-year.

While major energy institutions around the world have slightly different forecasts for global oil consumption in 2014, they have all predicted an increase relative to last year. EIA expects global consumption to grow 1.2 million bbl/d in 2014 and 1.4 million bbl/d in 2015 to 91.6 million bbl/d and 93.0 million bbl/d respectively, while IEA is more bullish on 2014 (2015 forecast not available) with a forecast of 92.7 million bbl/d. Despite the recent financial volatility in emerging markets, especially concerns over a slowing Chinese economy, non-OECD countries are expected to account for most of this growth.

Weekly US Product Demand

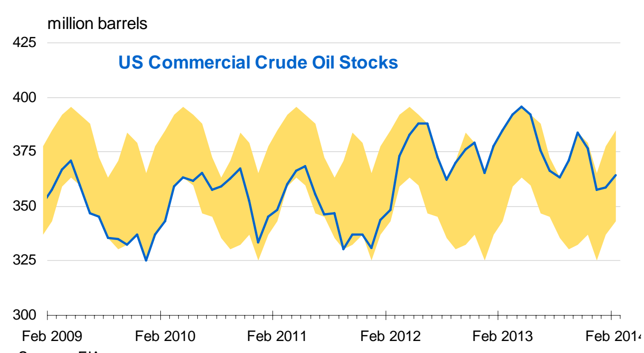


In the **US**, refinery capacity utilisation rates on the Gulf Coast have moderated from their highs (exceeding 90%) in January and February, however they remain elevated compared to seasonal norms to be still in the high 80s. Strong US demand for diesel fuel and other distillates has contributed to high prices for these products, keeping overall refinery margins attractive and refinery runs robust. In 2013, total US fuels consumption rose by an estimated 400,000 bbl/d (2.1%), largely attributable to a sharp rise in the consumption of hydrocarbon gas liquids of 150,000 bbl/d (6.4%). A pick-up in highway travel in the second half of last year also drove the demand for motor gasoline higher by 90,000 bbl/d (1.1%), the largest increase since 2006. Spurred by the frigid winter conditions that large parts of the US endured and a general recovery of its economy, distillate fuel consumption increased by 90,000 bbl/d (2.5%).

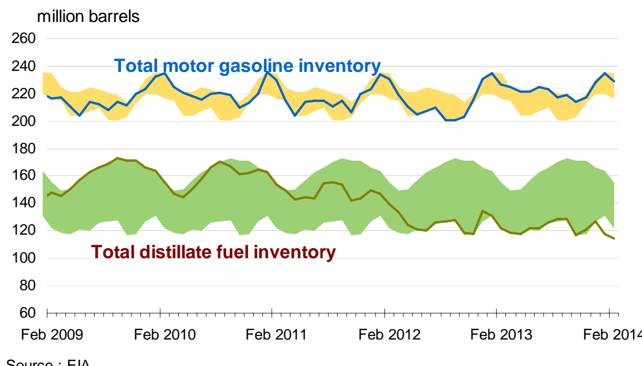
In the mean time, import demand for US refined oil products by Latin American nations continues to be strong, with the pace of additions to refining capacity unable to keep up with the demand of a rapidly growing middle class. Latin American refiners are estimated to have doubled their US imports intake in the past five years amid slow progress in building new capacity. The share of US petroleum product exports as a percentage of total product demand has exceeded 30% since mid-January, and is likely to rise further over the course of this year.

Looking forward, EIA expects demand for liquid fuels to remain largely flat at around 18.9 million bbl/d, with motor gasoline usage likely to stay unchanged as more intensive highway travel is offset by better fuel efficiency of new vehicles, while distillate consumption is expected to rise marginally by 0.3%. US government agency statistics reported that new-vehicle fuel economy has more than doubled since the 1970s.

US Inventories*



Note: Coloured bands around storage levels represent the range between the minimum and maximum from Jan. 2009 - Dec. 2013.

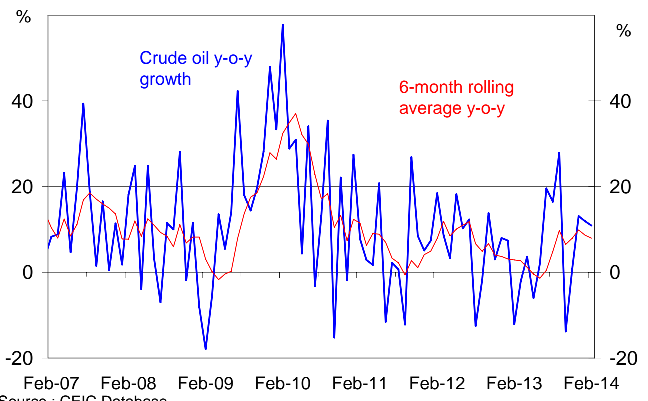


Note: Coloured bands around storage levels represent the range between the minimum and maximum from Jan. 2009 - Dec. 2013.

Changes in US crude oil and product inventories were mixed over the past few months. US commercial crude oil inventories have recorded 8 consecutive weekly rises as of the first half of March on the back of production gains in oil plays in the onshore Bakken, Eagle Ford, and Permian regions, combined with slightly lower refinery runs from seasonal maintenance. Lower refining capacity common at this time of the year has also prompted refiners to run down the inventories of their finished products. With record crude production and historically high crude inventory levels, US crude oil imports fell for a 21st straight month in November last year, which halted in December as production slowed from the adverse weather, amid spiking heating demand. As domestic production is able to meet an increasing share of the US energy needs, the US was been overtaken by China as the world's largest net importer of crude oil and other liquid in September last year.

Chinese economic data showed some volatility in the start of the year due to the typical Lunar New Year effects, but the monthly industrial business surveys for early 2014 are consistent with trend slowing in manufacturing. Growth in industrial production slowed significantly in February – down to 8.6% yoy, well below market expectations of 9.5%. This level is the lowest recorded since May 2009 when China was recovering from the global financial crisis.

Chinese Crude Oil Imports Growth



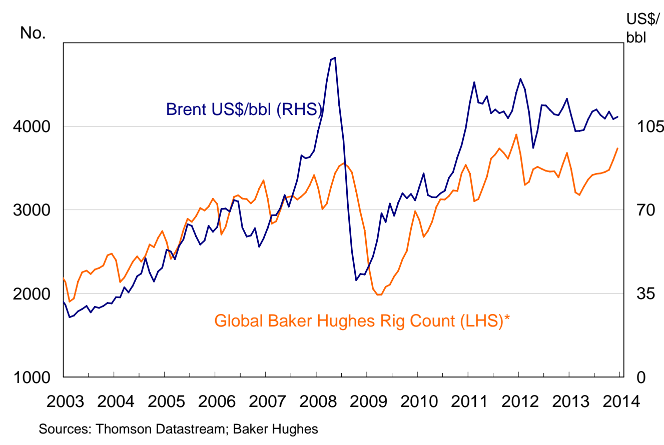
Source : CEIC Database

However, Chinese crude oil imports have demonstrated more resilience than industrial data might suggest. Chinese crude oil imports reached a record high in January of 6.6 million bbl/d, but this is partly attributable to Lunar New Year seasonality. In February, oil imports moderated from the peak in January, but remained above 6 million bbl/d for the third consecutive month, reflecting the rising crude processing capacity of the country. In contrast, its imports of refined products fell notably in the month due to lower teapot refinery runs and feedstock substitution with crude oil. Over the past few years, China has invested substantially in expanding its crude-processing capacity, which allows it to be less dependent on refined petroleum imports while boosting its demand for crude imports. Based on anecdotal data, it is estimated that China has refining capacity of around 12mb/day, with around 650,000 bbl/d of additional capacity likely to be added this year, which will translate into a moderate demand increase of 350,000 bbl/d of crude oil.

Exploration

A period of relative stability in global oil prices at elevated levels has offered some certainty and confidence to oil mining companies to keep up pace with mining activity. After hitting its recent trough in May, the Baker Hughes global rig count turned the corner to be on a rising trajectory. In the quarter to February, rig count rose by 5% despite winter conditions in northern hemisphere and is 2% above the corresponding period. Nonetheless, in the current global environment where oil supply constraints are limited and profitability falling, it is unlikely that the rig count will track up significantly, but rather, should follow a relatively stable path going forward.

Crude Oil Supply Response

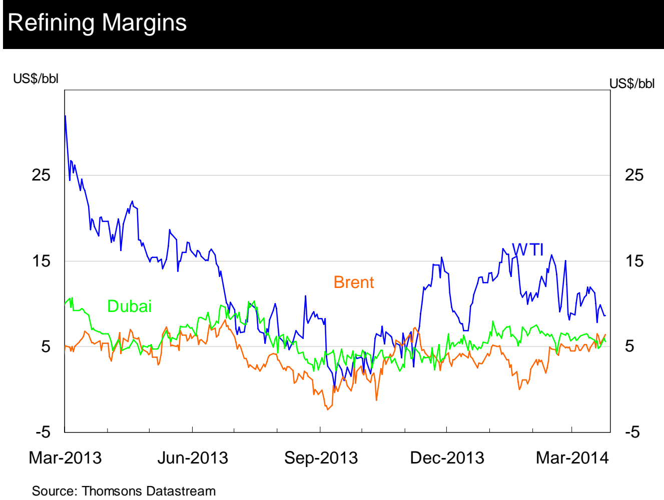


Sources: Thomson Datastream; Baker Hughes

Refinery Operations

Product markets across major oil producers were mixed in February and March. Along with sharp rises in the WTI index in the past two months, refinery margins fell by US$1 and US$2 in January and February respectively to the current level of US$6/bbl, the lowest in four months. Meanwhile a relatively moderating trend in Brent index sees its refining margins trickling upwards. The long embattled margins of European refiners took a positive turn in February, with pickups experienced across nearly all product cracks on the back of higher export opportunities.

Refining Margins



Source: Thomsons Datastream

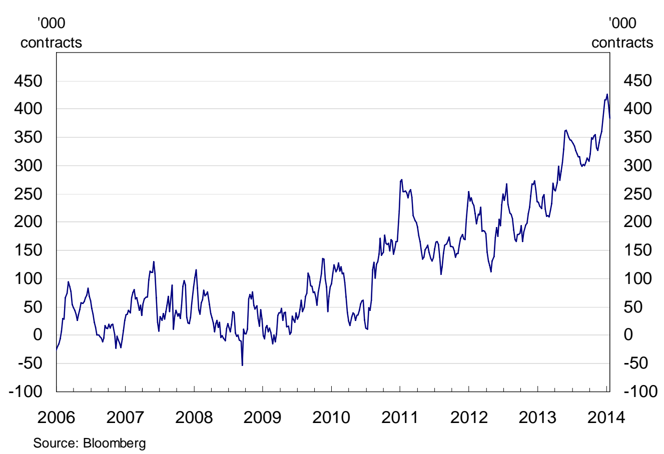
Futures Prices

In the past two months, heightened geopolitical tensions stemming from the Ukraine crisis in February and March and

the drawdown of crude stocks at the WTI delivery hub of Cushing helped push the Nymex WTI front month contract up higher relative to future months' contracts, i.e. in a steeper backwardation. This was partly attributable to high levels of speculative activity in recent months, with net-long positions held by money managers in NYMEX WTI crude scaling new heights in early March, erasing the previous set in August when supply disruptions arising from the Middle East reached extreme levels. However, investors have since cut their bullish bets on WTI as US inventories continue to rise and concerns that sanctions against Russia will disrupt oil supplies ease.

Brent futures backwardation has eased from December levels, following subdued Brent prices on the back of softer Chinese data and rising Iraqi and Iranian exports.

NYMEX Net Long Crude Non-commercial Futures

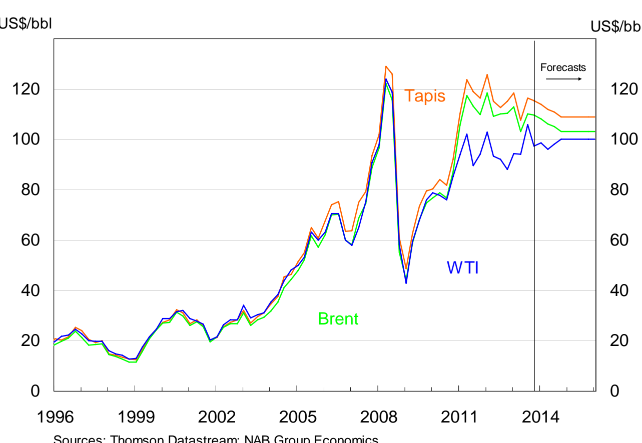


Source: Bloomberg

Oil Price Outlook

In the central case of our forecasts, without a major flare-up in the Russian-Ukraine crisis as major Western economies threaten Russia with more severe economic sanctions, Brent and WTI are likely to succumb to lower seasonal demand while the pace of production picks up in major producing regions of North America and the Middle East. Therefore, we expect crude prices to moderate in the near-term, with the correction in WTI likely to be more pronounced from its recent sustained rallies, and further supply pressures as total US commercial crude stocks continue to build, partly offset by the ramp-up in the takeaway capacity of the Keystone XL Pipeline. Brent price prospects are weighed on by rapidly expanding Iraq and Iranian output, in addition to mounting competitive pressures from booming North American supplies. In the medium term, we expect WTI and Brent to continue to converge, as the transportation infrastructure for moving crude supplies in the US continues to improve, along with an expansion in refining capacity at the Gulf of Mexico from upgrades of existing refineries or construction of new refineries. This month, the forecast profile is kept largely unchanged for we view it as having captured all the foreseeable risks factors for now. Meanwhile, the latest March quarter outcomes were almost identical to our forecasts published last month, and were within a whisker of those made a quarter ago.

NAB Oil Price Forecasts



Sources: Thomson Datastream; NAB Group Economics

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Quarterly Price Profile

Oil Forecasts – Quarterly Average

	Spot	Actual	Forecasts							
	28/3/2014	Mar-14	*Jun 14*	*Sep 14*	*Dec 14*	*Mar 15*	*Jun 15*	*Sep 15*	*Dec 15*	*Mar 16*
Brent US$/bbl	107.7	108	106	105	103	103	103	103	103	103
WTI US$/bbl	101.7	98	96	98	100	100	100	100	100	100
Tapis US$/bbl	110.9	114	112	111	109	109	109	109	109	109
Petrol AUc/L*	NA	**150	150	151	151	152	153	154	155	155

Sources: NAB Economics; RACQ; Thomson Datastream

* Denotes 5-capital average **Estimate

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