

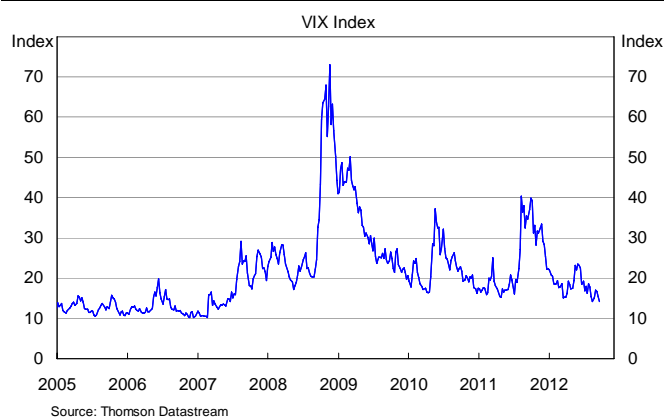
# Commodity Update – Minerals and Energy

## National Australia Bank

- Over September, minerals and energy prices have been assisted higher by central bank monetary easing and various other stimulus measures taken by policy makers around the world. Bad news has become good, and good news has become 'bad' for markets; it is yet to be seen just how supportive this 'good' news will be for commodity prices in coming months and quarters.
- The price of iron ore bounced back to almost US\$110 per tonne (CFR Tianjin) in September, from a low of around US\$85 per tonne earlier in the month. This unwinding largely reflected heightened expectations that Chinese authorities are at the ready to bolster growth.
- Gold continued to outperform most commodities over September, with the price currently trading close to \$1,775 per ounce, supported by expectations of further stimulus. Oil prices have eased from high levels recorded in early September, triggered by a reversion to fundamentals.
- Despite some improvement in financial stability following the ECB announcement that it would resume its bond buying operations, Euro-zone activity remains weak and the outlook for growth is still poor.
- GDP in Europe looks to be heading towards another contraction in Q3, while the Chinese economy has slowed notably and the US economic recovery remains sluggish. Recent downgrades to global growth estimates suggest the rally in minerals and energy prices over September may be short lived.
- As usual, we expect near-term movements in minerals and energy prices to remain volatile as macroeconomic events unfold. Further out, prices are generally expected to soften but remain elevated relative to history.

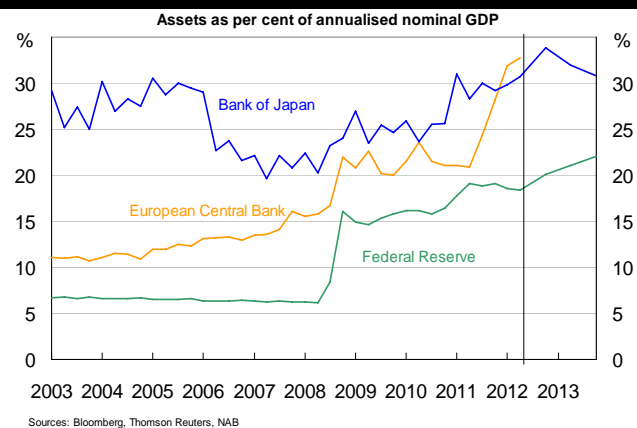
## Monthly Commodity Prices

### Index of Market Volatility



Market conditions over the past month have been largely characterised by central bank monetary easing and various other stimulus measures taken by policy makers around the world. The Federal Reserve recently announced further monetary policy stimulus. This includes an extension of its forward interest rate guidance as well as open-ended purchases of mortgage-backed securities to the value of US\$40 billion a month. The Bank of Japan also extended its quantitative easing program, while the ECB announced that it would resume bond buying operations.

### Monetary stimulus boost commodity prices (CB Balance sheet)



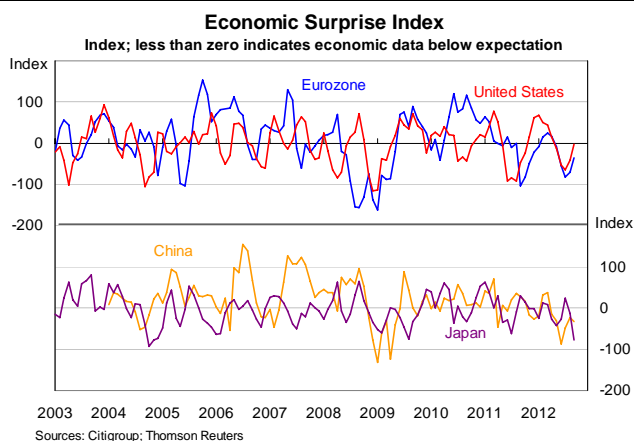
These moves have helped to improve confidence – encouraging purchases of more risky assets – and lower market volatility. Yields on debt issued by distressed European countries were pushed lower following the ECB announcement despite a lack of detail over the size of the purchases, uncertainty over proposed bailout funds, and signs of continued softening in the German economy. This demonstrates how far removed some markets have become from fundamentals as bad news becomes good and good news becomes bad – a trend that has also become more apparent in emerging economies (namely China). Nevertheless, some of the additional liquidity injected by central banks is bound to find its way into commodity markets, which should help to bolster prices in the face of an increasingly uncertain outlook.

Volatility in equity markets – as measured by the VIX – has remained relatively muted, with the index falling to its lowest levels since before the global financial crisis. Improved confidence and the anticipation of liquidity injections saw prices for most hard commodities move higher, although some of the gains have been pared back as markets realise that monetary easing may not be as effective as it has been previous episodes. Gold and base metal prices have seen the largest boost, while gains in oil prices have been restrained by a return to fundamental drivers following unsustainably high prices evident mid September. More recent price moves suggest that it is still unclear just how defensible price rallies will be in the current environment – indeed, high prices may merely prove to be a 'flash in the pan' as the realities of price fundamentals sink in.

Economic data across major regions of the globe have consistently underwhelmed market expectations in recent months. This is even true in the US, which after showing signs of

a solid recovery early in the year, has struggled to sustain enough momentum to bring about improvements in the labour market – the primary concern of the Fed. However, data for the US have started to come more into line with expectations recently, which is in contrast to most other major economic regions. The Eurozone economy has consistently underperformed this year, as has the Chinese economy, with many analysts failing to pick the extent of China's economic slowdown.

#### Economic data has generally been disappointing



Despite some improvement in financial stability follow the ECB's bond buying announcement, Eurozone activity data remain weak and the outlook remains poor. Eurozone GDP fell by 0.2% in Q2, after no growth in Q1, reflecting falls in household consumption and business investment in the quarter. The region's composite PMI fell to 45.9, while the sentiment index also fell driven by both consumers and businesses. Slowing economic activity in Europe is starting to become more broad-based as more competitive economies such as Germany start to feel the pinch. Germany's employment growth has slowed, indicators of consumption have softened, as has the IFO index of business expectations, pointing to weaker business investment.

Effects of recent policy stimulus has not yet become apparent in [Chinese](#) economic data and the downturn in its export markets and problems in the construction sector continue to weigh on activity. Industrial production growth eased to its slowest pace in three years in August (8.9% yoy). Manufacturing PMIs remain below 50, suggesting sluggish activity may have continued into September. Authorities have responded to slowing growth by cutting interest rates twice and reserve requirements three times since late last year. Authorities also announced a slew of infrastructure project approvals to the tune of around 1 trillion Yuan, and there have been calls for more measures to boost trade growth.

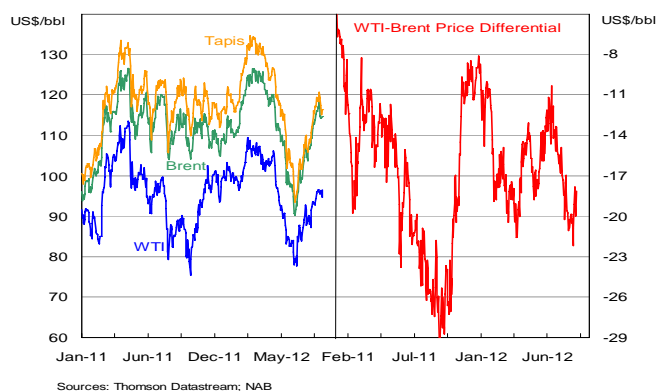
The Fed's action is against the back-drop of the latest indicators pointing to the [US](#) economy experiencing only modest growth and the labour market remaining very weak. The June quarter GDP estimate was revised down from 1.7% qoq (annualised rate) to 1.3%, i.e. below trend growth. The ISM surveys are a little more positive, with our composite measure of the manufacturing and non-manufacturing ISM surveys consistent with an economy experiencing moderate growth. Furthermore, employment growth, while up from its June quarter lows, is tracking at a level which will only slowly reduce the unemployment rate, if at all, unless labour force participation falls further. The slow recovery will continue although we expect it to strengthen towards the end of 2012 and into 2013. Nevertheless, growth will still remain disappointing, as it will be consistent with only a slow reduction in the still high unemployment rate.

## Summary of Price Developments

### Oil

[Oil prices](#) have eased since the start of September with all three major benchmarks down significantly. In September, Brent prices finished the month down 4.9 per cent, WTI prices were down 7.3 per cent while Tapis was down 3.3 per cent, with much of the fall in prices occurring on 17 and 18 September. Similarly, managed money had significantly liquidated net long positions by the week ending 25 September. Reflecting relative price movements, the Brent-WTI spread widened through the month, finishing at 20US\$/bbl. Consistent with what had been the case for some time now, prices have been pulled in various directions by a number of competing influences. Up until the correction, prices were pulled higher by a crude oil market that was fairly tight as physical constraints hit North Sea crude supply and US crude inventories had further contracted. Similarly, while Saudi output had been strong, much was absorbed by Saudi energy demand due to weaker than expected natural gas production. Further price strength was then added by speculation then realisation of further monetary easing in the US, EU and Japan while a more aggressive approach to Iran from the US also helped.

#### Oil Prices – Daily nominal terms

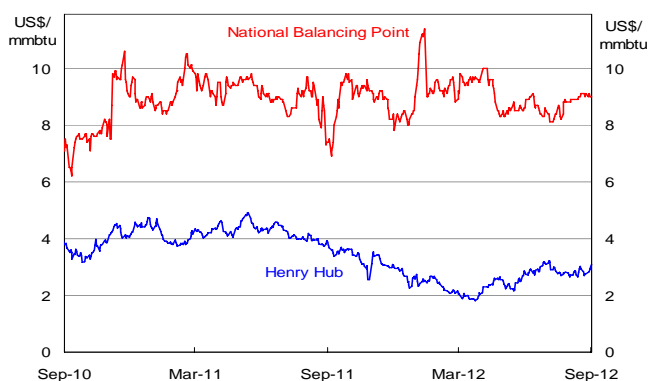


However, hovering around 117US\$/bbl, prices were unsustainably high and the subsequent correction was easily justified. The global economy could not afford such a high price and this was bringing into question the possible release of strategic reserves. Similarly, OPEC was clearly uncomfortable with such a high price and had lifted output accordingly. In our view, the recent correction in prices puts them on a more sustainable footing given our forecast for Brent prices to average 109US\$/bbl through the quarter. Looking ahead, competing influences of weakening global growth and geo-political risk/supply disruptions will continue pulling prices in either direction. While markets appear somewhat pacified, the global economy has weakened and the impact on crude oil demand has been particularly evident through the northern hemisphere summer. On the flip side, the Iran nuclear issue will continue to simmer below the surface. With a US federal election around the corner, we do not believe that any US intervention is likely to happen this year. However, into 2013 and in the absence of a diplomatic solution, a greater risk premium may need to be factored in. This could offset expectations of improved supplies as the unusually high outages evident over the past two years are slowly unwound. Also providing some degree of upside to prices, China is likely to embark on an inventory build in the coming months following their current inventory levels and energy needs through the northern hemisphere winter. Balancing all these influences, we expect Brent prices to average around 113US\$/bbl through 2013.

### Natural Gas

Despite record inventories and a relatively mild summer, [natural gas](#) prices in the US lifted considerably through September, with Henry Hub prices lifting significantly late in the month, finishing up 13.2 per cent and pushing again through 3US\$/mmbtu. Helping drive Henry Hub prices higher was the impact of short covering ahead of the expiring October contract while a forecast increase in heating degree days in October also suggests demand may pick-up over the coming month. Looking ahead, we think it likely that Henry Hub prices will need to fall back to below 3US\$/mmbtu. Driving this view, natural gas inventories are on track to hit a new record of 3,950 Bcf according to recent EIA forecasts. While production is expected to slow as the rig count has dropped dramatically in recent months, prices will need to fall to help clear the market. With US coal prices also low, downward pressure is likely to be exerted on Henry Hub prices at current levels.

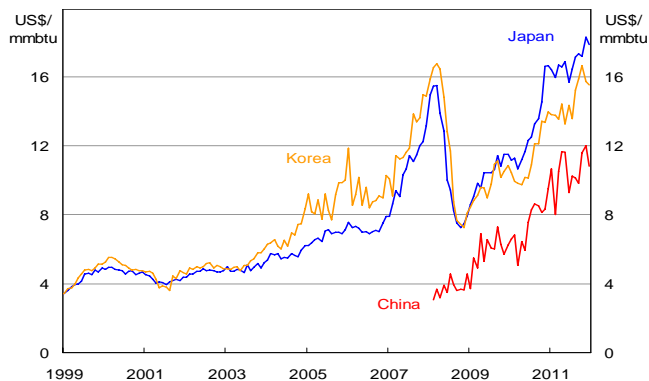
#### US and UK Natural Gas Prices



Source: Datastream, NAB Economics

In Europe, prices were fairly range bound with UK National Balancing Point prices trading between 8.90 - 9.10 US\$/mmbtu through September, finishing the month up 1.1 per cent. Looking ahead, European gas prices are likely to marginally weaken, although despite weakening English demand, weaker Norwegian gas flows suggest a need to boost imports from elsewhere in the continent, thereby offsetting some of the demand driven downside to prices. Nonetheless, importers have plenty of options given that the Asian spot market has gone quiet over the past month.

#### Asian LNG Import Prices



Source: Datastream, CEIC, NAB Economics

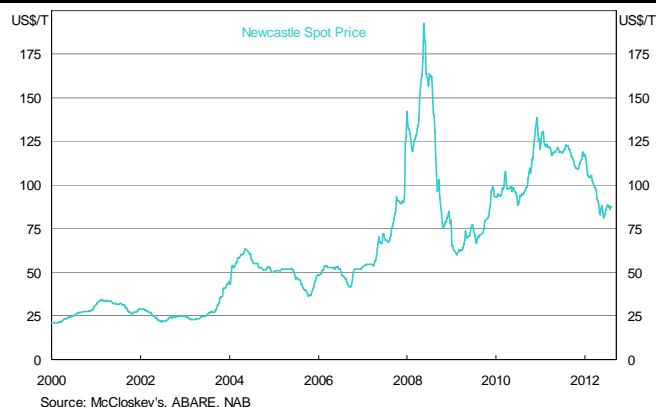
In Asia, the weakness that had been playing out in the spot LNG market has manifest itself in import prices, with trade data showing import prices across Asia's three main importers pulling back in August. The Japanese import price pulled back to 17.85 US\$/mmbtu, down 2.4 per cent from its lofty highs in July. According to the spot market, LNG prices are generally hovering

above 13 US\$/bbl. We expect spot prices are likely to lift coming into the northern hemisphere winter, although at present levels, LNG stocks within the region are quite sufficient given the relatively mild summer. Similarly, industrial production within the region has been fairly weak, suggesting little demand from industry over the coming months. Some offsetting effect is likely to come from recent pipeline attacks in Yemen although increased supplies from elsewhere should largely cover this. With a relatively soft oil price profile anticipated, we expect the Japanese LNG import price is likely to ease through the December quarter and into 2013.

### Coal

Thermal [coal](#) prices have remained on their broadly sideways track over recent weeks despite continued signs of sluggish economic activity around the globe, including in the emerging markets. Prices have fallen by more than 20 per cent since December 2011, but have managed to partially rebound nearly 4 per cent from July's lows, supported by robust demand for energy in Asia, renewed interest in coal stemming from Europe, and production cuts at some coal mines. Chinese electricity production remained soft in August, increasing just 2.6 per cent over the year, although thermal production has been particularly weak (-7.2% yoy) as we continue to see some substitution with hydropower (43.9% yoy). Consequently, China's demand for thermal coal imports has weakened considerably, although volumes have still risen around 10½ per cent over the year to August. Stocks of coal sitting at Chinese ports have also come off their recent highs, but inventories held at utilities remain very elevated, muting demand for restocking. The average spot price of thermal coal shipped from Newcastle (FOB) fell by around 1 per cent over September, following a 3½ per cent increase over the previous month.

#### Coal Prices



Source: McCloskey's, ABARE, NAB

Coal spot prices are currently around \$US85 per tonne (FOB), up slightly from the recent lows in July – their lowest level since late 2009. The price averaged US\$86.4 per tonne for the month as a whole. The current spot price (US\$84.3 per tonne) is well below the negotiated contract price of US\$115 per tonne FoB between Xstrata and Japanese utilities for JFY12 (effective from April), and is likely to remain below US\$100 per tonne despite an expected improvement in demand later this year as utilities restock ahead of the northern winter.

Premium hard coking coal contracts for the December quarter were confirmed at US\$170 per tonne FOB, following an agreement late last month between Anglo American and Korean steelmaker POSCO. This was in line with the contract price settled between BMA and Nippon Steel earlier in the month. Contract prices at this level are likely to encourage additional purchases in the spot market where prices have been much lower. According to AME, spot prices for premium hard coking



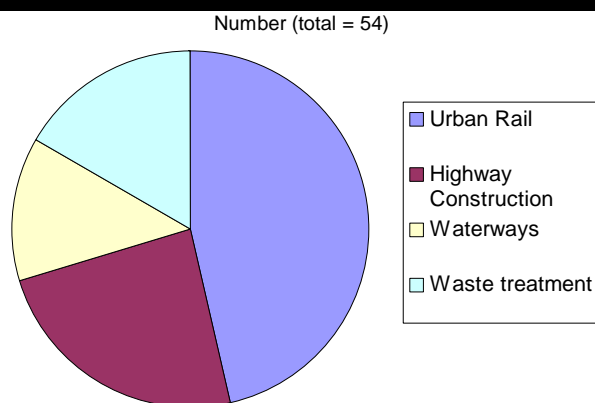
coal fell to around US\$140 per tonne FOB in mid-September, a 17½ per cent decline from the August average. Conditions in the steel market are expected to remain subdued for some time, but the delayed impact of investment stimulus in China should assist prices to almost US\$200 per tonne late next year. However, if we see a substantial supply response from coal producers, prices may start to rise sooner.

### Iron Ore

Iron ore prices appeared to bottom out at almost US\$85 per tonne (CFR Tianjin) in early September, bouncing back to almost US\$110 per tonne following an announcement by the NDRC of more than US\$150 billion in infrastructure investments for China. This, along with a string of soft economic data out of China, has heightened expectations that Chinese authorities will do even more to bolster growth in the world’s largest steel producing and consuming nation.

Over a period of just two days, the NDRC approved more than 50 resource intensive infrastructure projects, primarily focussed around an ambitious rail expansion plan. However, we remain cautious over what this move actually signals in terms of both the outlook on growth and expectations for further stimulus. A number of the projects had actually been approved in the months prior to the NDRC announcement, suggesting that authorities did not just decide to suddenly ‘turn on the tap’ – some of the projects may have already been captured in data on newly commenced investment. The size of these projects pale in comparison to the stimulus of 2009 and they are expected to take place over a number of years, suggesting the immediate impact on growth may be limited. Finally, the majority of the investment relates to rail investment, which was a sector already targeted for heavy expansion under the 12<sup>th</sup> Five Year Plan; estimates suggest that an annual average of RMB640 billion in rail investment is needed under the pre-existing Five Year Plan (2011-15). The Ministry of Railways raised its target for railway construction spending this year to RMB496 billion, but rail investment has been significantly disrupted over the past year or more following a high speed train crash and financing difficulties. Nevertheless, the recent increased target for this year suggests a significant increase in spend over the remaining months of the year.

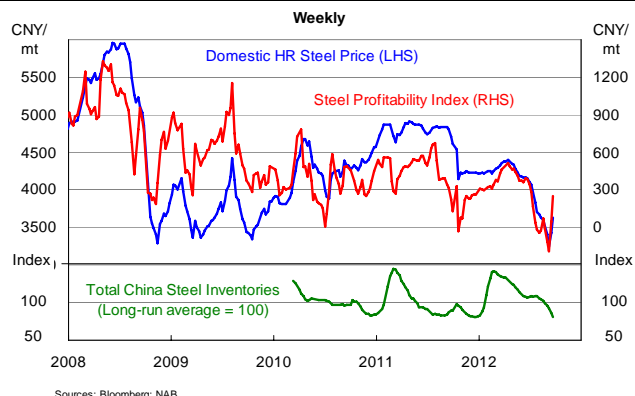
**NDRC approves more than 50 projects in 2 days (est. US\$156bn)**



Conditions for steel smelters remain poor, although there has been a slight improvement recently. Demand for steel remains sluggish as a result of slowing economic activity, but iron ore prices have now adjusted and steel prices have risen marginally, helping to improve the profitability of smelters. We have also started to see signs of a supply response in Chinese steel production as unprofitable producers cut back, helping to run down inventories of steel in the market. There have been some tentative signs of improvement in China’s real estate sector as well that could help to support demand for steel, although there is

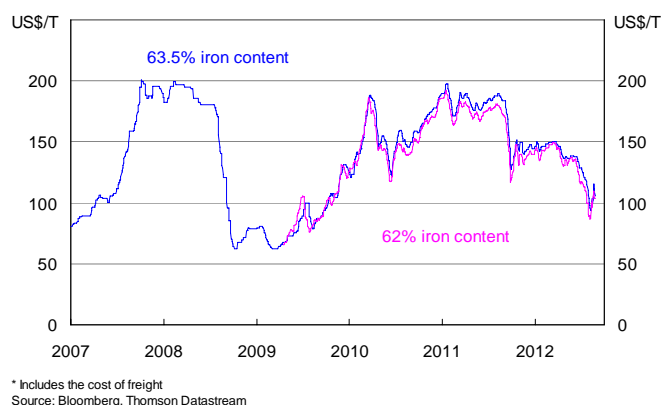
a risk that authority’s concerns over inflation and property prices could limit policy response, and may even trigger another round of tightening to clamp down the real estate market. However, indicators for the sector have generally been mixed.

### China’s steel industry is under pressure



Iron ore prices fell to a 34-month low of US\$86.9 per tonne (CFR Tianjin) in early September, which appeared to undershoot fundamentals as stocks were run down, and prices partially recovered to US\$109.6 per tonne later in the month. Prices have again eased to slightly below US\$104 per tonne, and are expected to remain somewhat stable in the very near term due to the lack of activity during the golden week holiday. The average iron ore price (CFR Tianjin) fell by almost 8 per cent in September, following a 16 per cent decline in August; the current price is around 3½ per cent below the August average. One tonne of iron ore traded at around US\$93 per tonne in September on a FOB basis, down from an average price of US\$110 per tonne (FOB) in August. Freight rates for shipping between Port Dampier and Qingdao remain well down from last year’s highs – and around their lowest level since mid-2010 – due to soft demand and increased global shipping capacity.

### Chinese Iron Ore Prices\*

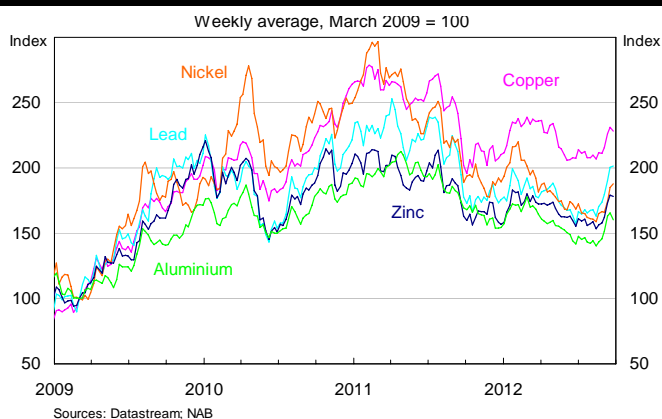


### Base Metals

Since last month, [base metals](#) have been among the greatest beneficiaries of the shift in risk appetite in the lead up to, and immediately following, additional monetary easing by central banks. However, with economic data continuing to disappoint in most regions around the world, it would appear as though this recent rally may have little support from fundamentals, and may be relatively short-lived. Traders have turned bullish on copper, with net-long positions returning to levels last seen in April when the copper price was almost US\$8,500 per tonne. Prices right across the base metals complex have experienced similar gains, although production cuts and other market factors (eg. substantial short-coverings) are contributing to the support for metals prices.

The risk is that the rally occurred for all the wrong reasons. It is likely that it was just another case of markets interpreting bad news as good, and as the bearish fundamentals become more prominent again the market is likely to retreat. This has certainly been the case following previous stimulus measures, and the subsequent rallies have become more and more short-lived each time. We have already seen copper and aluminium give back some of the gains and we would not be surprised to see prices backtrack further over coming weeks and months. The economic recovery in the US appears to have shifted down a gear and the looming fiscal cliff has the potential to spook markets. Growth in China – and surrounding Asian economies – is likely to continue to experience the slowing trend seen in recent quarters before stimulus measures start to gain more traction some time next year. That said, improving sentiment towards Europe and recent progress in addressing debt problems in the region could pave the way for continued risk appetite, but the problems are far from resolved and there are still a number of significant hurdles to overcome.

### Base Metals Prices



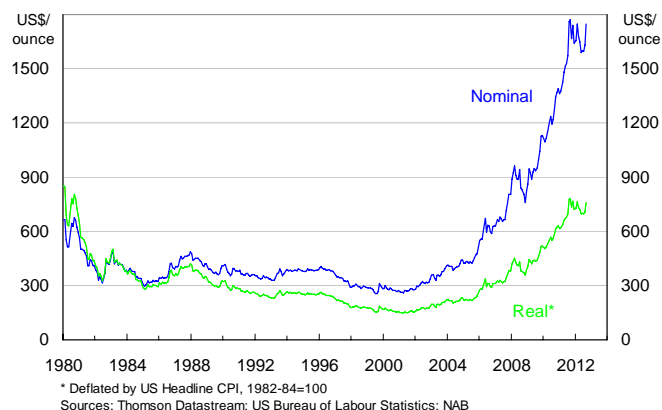
In aggregate, base metals prices on the London Metal Exchange (LME) were up strongly over September, after falling slightly in August, to be 7½ per cent lower than a year ago. Each metal experienced a significant jump in price following central bank announcements during the month; prices of aluminium, lead, nickel and zinc all rose by close to 10 per cent, while copper saw the weakest gains but were still up by around 7½ per cent. Despite the jump in prices during the month, prices of all of the base metals remain well down on levels last year, prior to the sharp deterioration in sentiment towards Spain and rapid slowing of China's economic growth. The largest decline in price has been for nickel (down 10 per cent), followed by aluminium (down 10 per cent) and lead (down 5 per cent), while copper and zinc have performed relatively better, with prices falling by around 3 per cent.

### Gold

The price of [gold](#) continued to strengthen over September on the increased prospect of policy easing in the major economies. The gold price rose by a solid 7 per cent over the month, consolidating a 2.3 per cent rise over August, and is currently trading at around \$1,780 per ounce. While financial and equity markets have generally strengthened on the back of recent announcements of QE and financial volatility has reduced, it is difficult to deny the underlying risks in the global economy at present, which could destabilise the current sense of 'calm' in markets. Much of the strength in the price of gold over recent months has come about because of the increased likelihood of policy easing, increasing the likelihood of higher inflation, which gold is often purchased to hedge against. However, recent downgrades to global growth estimates also imply that part of the price rise reflects concern about a weakening global economy; unlike other commodities,

gold tends to be negatively correlated to economic cycles. Furthermore, gold benefits from not having any default risk, a characteristic financial assets do not share.

### Gold Price (\$US)



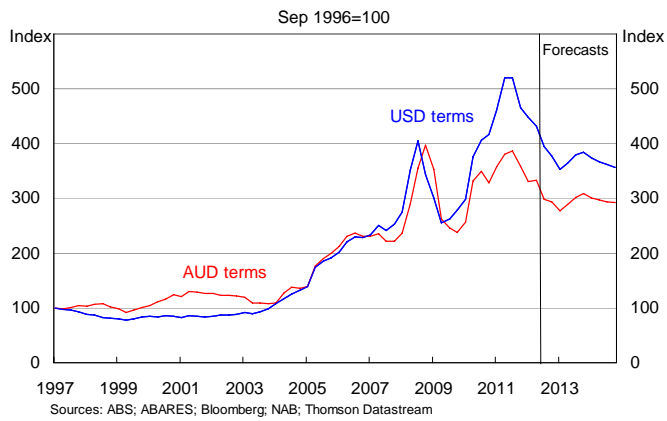
Abstracting from some near-term volatility, we expect the price of gold to ease from its current level as the recovery in the US economy gains momentum and its currency appreciates. However, in the near term, it is likely that the price will remain elevated, reflecting the current climate, which is filled with an high degree of uncertainty, keeping investor's interest in gold elevated. Furthermore, Chinese demand for physical gold should remain strong, supported by rising incomes, and while Indian demand may soften on the back of relatively high prices and a weak rupee, it will remain supportive overall due to cultural tradition. In the medium to longer term, we expect more certainty surrounding the European sovereign debt situation to emerge and for the European economy to continue to muddle through more generally, while a relatively stronger US dollar and a return to fundamentals should also help to reduce prices.

### Outlook

Market sentiment improved notably following central bank policy announcements, triggering a rally in many commodity prices as risk appetite improved. However, the global growth outlook remains soft, suggesting the recent rally may be relatively short-lived. Weaker demand – namely from China – is expected to keep prices of bulk commodities well below previous levels, while base metal prices are likely to backtrack somewhat once the initial boost to sentiment from monetary easing starts to wane.

The outlook for the Chinese economy is becoming increasingly uncertain, and indicators of manufacturing activity continue to be disappoint despite widely held expectations of an economic recovery later in the year. Recent investment stimulus announcements may suggest that authorities are determined to stave off a hard-landing via any means necessary, but we are somewhat sceptical over what the true impact will be on the economy in the near term. Further policy easing in China is likely to be needed if growth is to remain above the government's target of 7.5 per cent for the year. The US economy is still expected to strengthen in 2013, but at a more gradual pace than previously thought. Recent actions in Europe have calmed markets for now, but there are still a number of hurdles to negotiate and the impact on commodity markets are likely to be felt for the foreseeable future.

### NAB Non-Rural Commodities Price Index



In US dollar terms, the NAB non-rural commodity price index is forecast to fall by around 19 per cent over 2012, before seeing a slight, and temporary, boost of around 2 per cent in 2013 (see Graph). Given our forecast for the AUD/USD over the remainder of the forecast horizon, AUD prices are expected to fall by 18 per cent through the year to December 2012, before rising 5¼ per

cent over 2013. In aggregating the index, iron ore, thermal coal and metallurgical coal have a combined weight of around 55 per cent.

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## Quarterly Price Profile

### Oil Price Forecasts – Quarterly Average

#### Oil Price Forecasts - Quarterly Average Terms

	Actual	Forecasts							
	Sep-12	Dec-12	Mar-13	Jun-13	Sep-13	Dec-13	Mar-14	Jun-14	Sep-14
Brent US\$/bbl	110	109	111	112	114	115	117	117	119
WTI US\$/bbl	92	98	102	106	107	109	111	111	113
Tapis US\$/bbl	113	117	118	117	116	117	119	119	121
Petrol AUc/L*	142	141	143	145	147	148	148	149	150

Source: AAA, Datastream, NAB Economics

### Natural Gas Price Forecasts – Quarterly Average

#### Natural Gas Price Forecasts - Quarterly Average Terms

	Actual	Forecasts							
	Sep-12	Dec-12	Mar-13	Jun-13	Sep-13	Dec-13	Mar-14	Jun-14	Sep-14
Henry Hub US\$/mmbtu	2.89	2.95	3.02	3.45	3.80	3.90	4.00	4.05	4.15
Japan LNG Price US\$/mmbtu	17.21	16.75	16.25	15.50	14.95	14.85	14.65	14.50	14.30

Source: Datastream, CEIC, NAB Economics

### Iron Ore and Coal Price Forecasts – Quarterly Average (FOB)

	Actual	Forecasts							
	Sep-12	Dec-12	Mar-13	Jun-13	Sep-13	Dec-13	Mar-14	Jun-14	Sep-14
Iron Ore*	114	105	90	95	105	105	100	100	100
Hard Coking Coal	225	170	150	165	175	190	180	170	160
Semi-soft Coking Coal	150	115	100	110	125	135	130	120	115
Thermal Coal	115	115	115	100	100	100	100	90	90

Source: NAB

### Base Metals Price Forecasts – Quarterly Average

US\$/MT	Actual	Forecasts							
	Sep-12	Dec-12	Mar-13	Jun-13	Sep-13	Dec-13	Mar-14	Jun-14	Sep-14
Aluminium	1929	1990	2010	2050	2080	2100	2100	2100	2100
Copper	7729	7960	7880	7920	7920	7920	7920	7920	7920
Lead	1987	2170	2100	2060	2080	2090	2090	2090	2090
Nickel	16384	17610	17080	17340	17730	18000	18090	18090	18090
Zinc	1892	1970	1990	2010	2010	2010	2010	2010	2010
Base Metals Index	289	300	300	300	300	310	310	310	310

Sources: Datastream, NAB Economics

### Gold Price Forecasts – Quarterly Average

	Actual	Forecasts							
	Sep 12	Dec 12	Mar 13	Jun 13	Sep 13	Dec 13	Mar 14	Jun 14	Sep 14
Gold - US\$	1656	1630	1580	1540	1500	1460	1420	1380	1350
Gold - AU\$	1608	1630	1600	1570	1530	1510	1470	1440	1400

Source: Thomson Datastream, NAB

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