China Economic Update

National Australia Bank

China's energy mix poses challenges in addressing the air pollution problem

One of the key challenges in 2014 for China's Central Government will be how it addresses the ongoing issue of air pollution across the country. Rising levels of smog and hazardous PM 2.5 particles (floating particles less than 2.5 micrometres in diameter) have increased public health concerns, leading to greater public commentary about pollution in the nation's press and social media (where two terms were commonly used to describe the situation in 2013 – 'airpocalyse' and 'Beijing cough'). Official data suggests that 2013 had the largest number of smoggy days for at least 52 years – however the accuracy of official data has often been questioned, with sources such as the US Embassy in Beijing typically reporting higher levels of air pollution than official measures.

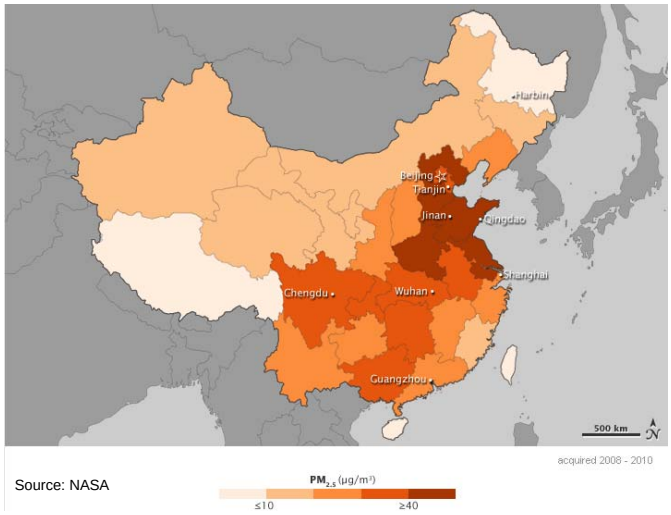
Addressing the air pollution problem will require long term changes to China's energy policy – both in terms of the composition of different fuel sources in the country's energy mix as well as energy efficiency. Any changes would have important implications for Australia's economy, as Australia is a major energy exporter to China.

While air pollution is widespread across China, it is particularly severe in the Beijing-Tianjin-Hebei region in the country's north east. Hebei province is a major industrial centre, and contained seven of the China's ten most polluted cities in the third quarter of 2013. Data from the Ministry of Environment highlights differing conditions in this region to the rest of the country. The Ministry monitored conditions in 74 cities across the country in 2013, with these cities meeting the national air quality standard for almost 69% of the year. In the Beijing-Tianjin-Hebei region, this figure was just 38%.

In late December, northern China was again impacted by severe pollution, with four cities in Hebei province reaching the maximum levels of the government's monitoring scale. Dangerous levels of smog were recorded in sixteen of the 74 monitored cities across the country. Pollution rates are typically higher in the winter, when coal is commonly burned directly for heating purposes.

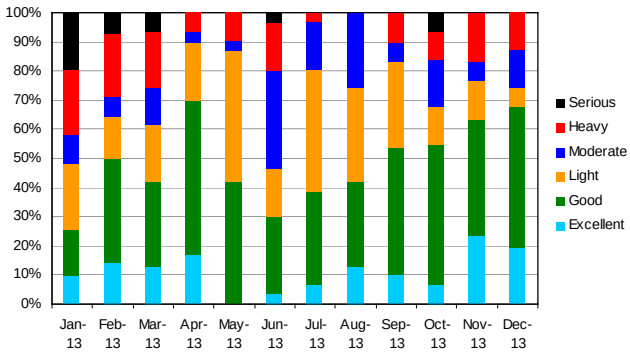
The health impact of air pollution is significant. The World Health Organisation's Global Burden of Disease research argues that China suffered 1.2 million premature deaths in 2010 due to air pollution. Small scale PM 2.5 particles are particularly hazardous because they can settle deep in the lungs (unlike larger particles), contributing to long term respiratory problems. In Beijing for example, there has been an increasing rate of lung cancer – rising from almost 40 cases per 10000 residents in 2002 to over 60 cases in 2011, despite smoking rates remaining relatively stable. In contrast, improving public health standards have seen falling rates for stomach and cervical cancers.

China's air pollution by region



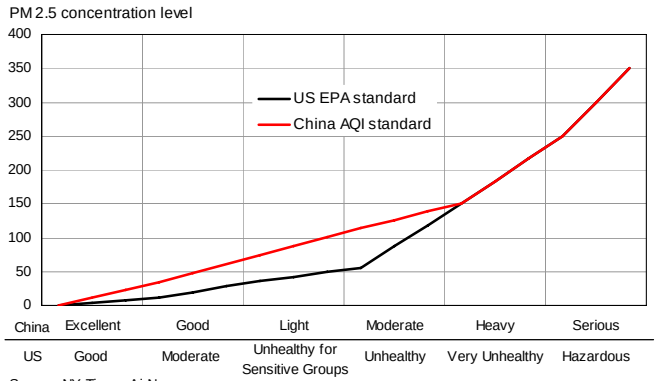
Source: NASA

Beijing's monthly air pollution levels in 2013



Source: Beijing Municipal Environmental Monitoring Centre, NAB Economics

Significant difference in official quality standards



Source: NY Times, AirNow .gov

Attempts to address the air pollution concerns in the capital have included a range of policy measures over the past two years, including cutting coal use, phasing out older motor vehicles and overhauling or closing factories, however so far there has been limited impact. According to the Beijing Municipal Environmental Protection Bureau, the average level of PM 2.5 particles in the city was largely unchanged in 2013 – at 89.5 micrograms per cubic metre – over two and half times the national standard (of 35 micrograms) set by the State Council in 2012.The World Health Organisation recommends 24 hour exposure to PM 2.5 concentrations no higher than 25 micrograms per cubic metre.

There is some disagreement within China as to the main causes of air pollution. The Chinese Academy of Sciences argue that motor vehicle emissions account for 4% of PM 2.5 particles in the capital, while the Beijing Environmental Protection Bureau claim vehicles contribute 22%. This disagreement highlights a key challenge in designing appropriate policy measures to address pollution.

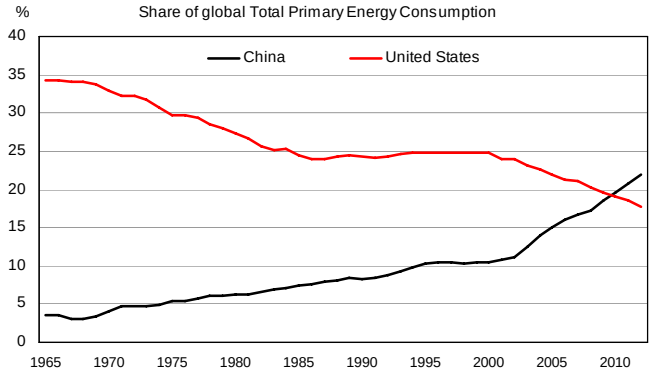
Air quality standards differ considerably between China and advanced economies, such as the United States – leading to a degree of confusion when attempting to compare results. Under China's criteria, Beijing experienced 58 days with either 'high' or 'serious' levels of air pollution, compared with 176 days considered either 'good' or 'excellent'. Under the United States Environmental Protection Agency guidelines, some the days considered 'good' in Beijing in 2013 could have been classified as 'unhealthy' (two categories higher).

In mid 2013, the State Council announced plans to spend 1.75 trillion Yuan (around US$277 billion) between 2013 and 2017 to combat air pollution. The bulk of funding is to be focused on high polluting provinces, such as the broader Beijing-Tianjin-Hebei region. Under the plan, around 37 per cent of funding would be directed towards cleaning up industry and a further 28 per cent on cleaner energy sources. The Chinese Academy for Environmental Planning, who was involved in drafting the plan, argues that this spending will result in a net gain for the Chinese economy.

However, official targets of reducing pollution are relatively modest. As part of its five-year action plan, China's State Council intends to cut the level of airborne particulate matter by 10 per cent in major cities by 2017. The target for Beijing is stronger – cutting by 25 per cent by 2017, however this would only bring PM 2.5 levels down to 60 micrograms per cubic metre, still well above national standard. The head of the Beijing Municipal Environmental Protection Bureau notes that given a rising number of motor vehicles and increasing energy consumption, meeting this target will "remain very challenging" and "require the capital to come up with more stringent measures" (China Daily).

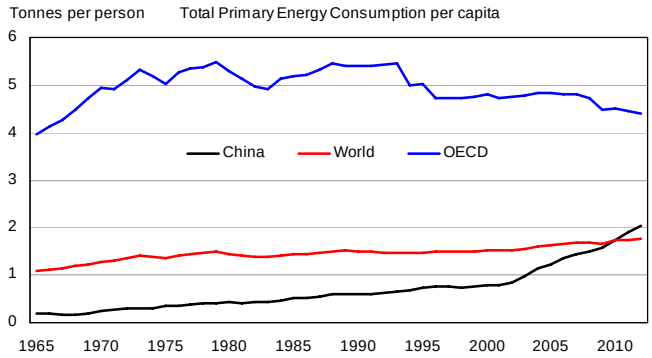
It is not only the cost pressures that have limited progress in tackling air pollution. Local government officials often overlook environmental policies, given that short term economic growth is more likely to benefit their political careers. Highly regulated prices for energy provide limited incentives to implement changes. The regulatory environment is also unclear, with the responsibility for monitoring and administering policies spread across a wide range of government departments at both the national and local level. According to China Daily, the Central Government paid 170 billion Yuan in industry subsidies in 2012 for energy saving and anti-pollution measures, with many plants across the country accepting payments without

China is now the world's largest energy consumer…



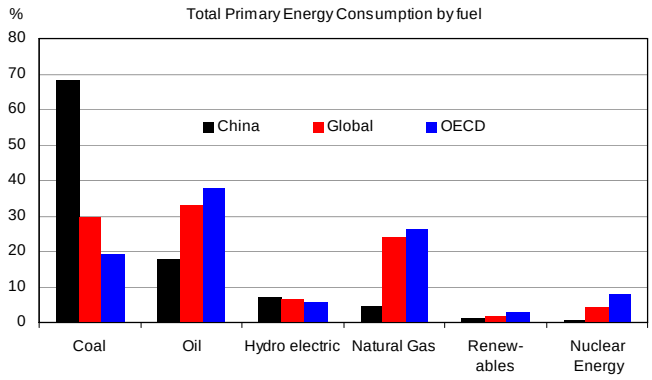
Source: BP Statistical Review of World Energy 2013, NAB Economics

…but remains comparatively small on a per capita basis



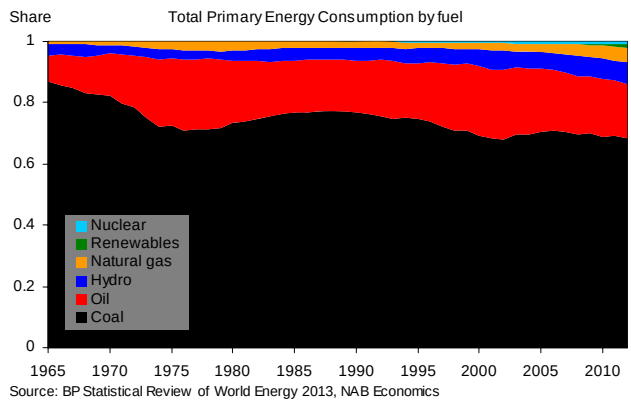
Source: BP Statistical Review of World Energy 2013, The Conference Board Total Economic Database, NAB Economics

Coal is the dominant fuel in China's energy mix (2012)



Source: BP Statistical Review of World Energy 2013, NAB Economics

Coal's share relatively stable over past decade



Source: BP Statistical Review of World Energy 2013, NAB Economics

implementing changes. Industry groups generally have resisted efforts to close polluting factories and power plants.

Despite disagreements regarding the contributions to sectors to the country's pollution problems, there is little doubt that the energy sector is a major factor.

China's energy consumption has risen significantly over the past fifteen years, the period of dramatic industrialisation for the country. In 2000, China accounted for around 10.5% of global primary energy consumption. Rapid growth in energy consumption since this time pushed this share to almost 22% of the global total in 2012. In 2010, China overtook the United States to become the world's largest energy consumer.

That said, on a per capita basis, China's energy consumption remains comparatively modest – exceeding the global average for the first time in 2010. In 2012, China's per capita energy consumption was less than half the level of the advanced economies.

The composition of China's fuel mix is one of the key factors contributing to the air pollution problem – particularly the exceptionally high reliance on coal. Coal is by far the dominant energy source in China – accounting for around 68% of total primary energy consumption in 2012 (BP). In contrast, coal provided 30% of global energy in 2012, and only 20% in advanced economies.

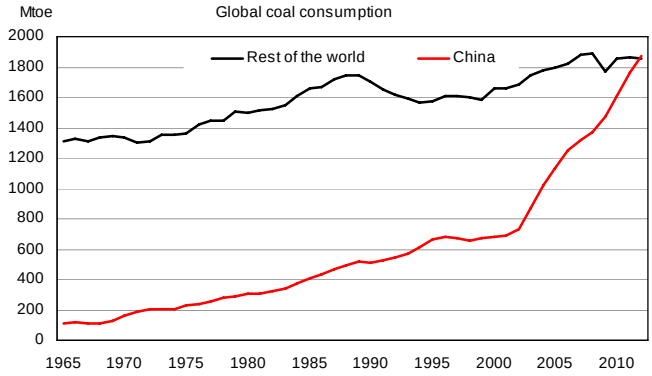
China's consumption of oil and natural gas remains comparatively low. Natural gas – a considerably cleaner burning fuel, particularly in domestic heating applications – accounted for just 5% of China's primary energy consumption in 2012 (compared with around 26% in the OECD). That said, consumption has increased by an annual average rate of 15% over the past five years. China's proven natural gas reserves are slightly smaller than Australia's, and are largely located in the country's western and north-central regions – geographically distant from key demand regions on the eastern coast. As a result, infrastructure constraints (both in terms of domestic pipelines and capacity to receive LNG imports) have limited growth in gas consumption.

Domestic pricing controls have also hampered natural gas development – particularly non-conventional resources. There have been some experiments in deregulation – including linking prices to international benchmarks in two regions from late 2011, however further progress has been limited. Broader energy price reforms may be critical to longer term air pollution management. Official targets for natural gas are relatively modest, with a goal of expanding the share of total energy consumption to 10% by 2020.

Until recent times, China's energy focus has been related more to efficiency than pollution – namely energy intensity (the consumption of energy per unit of GDP). Under the twelfth five year plan (running from 2011 to 2015), the Government targeted a 16% decrease in energy intensity (over 2010 levels). In November 2013, the National Development and Reform Commission suggested that the country was lagging on this plan – with a gain of only 5.5% over the first two years of the plan.

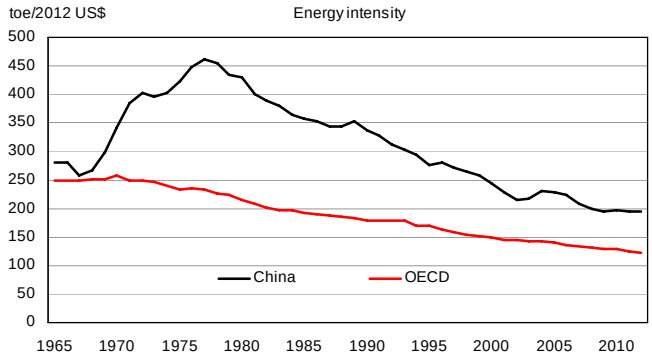
These estimates are based on a comparatively low rate of growth for energy consumption – at 3.9% in 2012 – compared with stronger growth from other sources – around 7.6% according to the BP Statistical Review of World Energy (which indicates energy intensity being relatively stable since 2009).

Coal consumption has grown rapidly during industrialisation



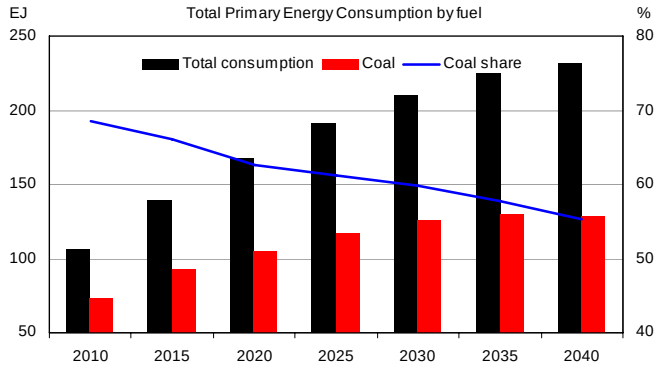
Source: BP Statistical Review of World Energy 2013, NAB Economics

International estimates point to stable energy intensity



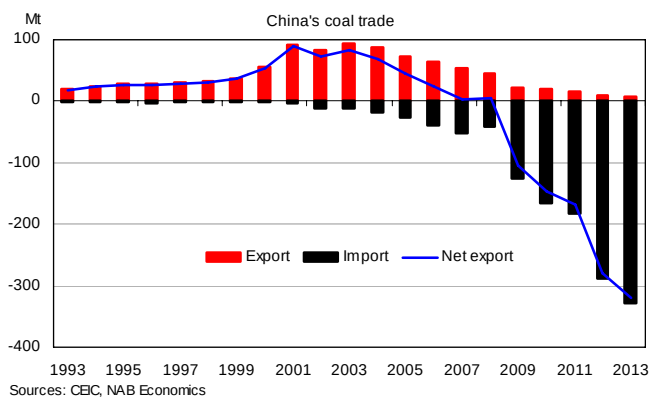
Source: BP Statistical Review of World Energy 2013, The Conference Board Total Economic Database, NAB Economics

Coal to remain the dominant fuel longer term



Source: EIA International Energy Outlook 2013, NAB Economics

Surging imports since '09 have altered global coal trade



Sources: CEIC, NAB Economics

Energy efficiency presents a key opportunity within China's economic development. In 2011, China accounted for around 21% of global energy consumption, but only around 10% of global GDP. Rapid development of less energy intensive parts of the economy – particularly consumer and business services – will improve this balance, closer to advanced economy levels.

Longer term, energy consumption in China will continue to increase – reflecting the comparatively low level of per capita consumption, along with the country's long term growth potential. The US Energy Information Administration forecasts energy consumption to increase at an annual average rate of 4.6% in the decade to 2020 and expanding further (though at a slower rate) to 2040. In these forecasts, coal remains the dominant fuel in the country's energy mix, but declining in share – down to 63% in 2020 and 55% by 2040. Even so, coal consumption is expected to increase significantly, around 38% higher than 2010 levels in 2020.

The relative competitiveness of domestic coal producers – compared with international suppliers – could have a significant impact on major coal exporters (such as Australia) over the longer term. While Japan remains Australia's largest export market for coal, exports to China have increased rapidly over the past five years. Any changes to China's coal trade – which has swung from being a major net exporter to major net importer in the space of the past decade – will have a significant impact on Australia's economy.

China's annual energy commodity imports

Mt	2008	2009	2010	2011	2012	2013
Coal	40.8	126.6	166.2	183.2	288.9	327.2
Crude oil	178.9	203.8	239.3	252.5	271.1	282.2
LNG	3.3	5.5	9.4	12.2	14.7	15.6 *

Australian energy exports to China

Mt	2008	2009	2010	2011	2012	2013 *
Coal	3.5	44.6	37.0	32.6	59.5	78.9
Crude oil	0.9	1.6	2.9	4.1	3.7	2.9
LNG	2.7	3.5	3.9	3.6	3.6	3.2

Australia's share of China's energy imports

%	2008	2009	2010	2011	2012	2013 *
Coal	8.7	35.2	22.2	17.8	20.6	27.0
Crude oil	0.5	0.8	1.2	1.6	1.4	1.2
LNG	81.9	63.5	41.9	29.8	24.2	20.7

* 11 months to November

Source: CEIC, NAB Economics

Recent economic data

China's latest National Accounts data shows that the economy grew by 1.8% quarter on quarter in December, and 7.7% year on year – representing a marginal slowdown from the September quarter (when yoy growth was 7.8%). For the full year, China's economy expanded by 7.7%, marginally below the rate of growth in 2012, and therefore the slowest rate of growth since 1999.

The easing in economic activity in the December quarter was broadly in line with our expectations and was consistent with partial indicators during the quarter that pointed to a modest slowing in industrial production. A slowing in government stimulus flowed through into softer industrial activity, while a crackdown on measures to circumvent capital controls contributed to slower export growth in the second half of 2013.

Despite intentions to rebalance the economy, the main contributor to China's economic growth in 2013 was investment (which contributed 4.2 ppts to growth), followed by consumption (with 3.9 ppts). Investment was boosted in the middle of the year by the mini-stimulus program, which was largely focussed on infrastructure spending. In contrast, net exports were modestly negative for economic growth, at -0.3 ppts (the weakest export contribution since Q3 2012).

The slowing trend for China's economy is expected to continue into 2014, as the government becomes increasingly focussed on its reform agenda. A clear signal as to this focus should come at the National People's Congress in March, when the official growth target is announced. There is speculation that the target could be cut to 7%, which would likely signal weaker growth prospects for the year. Our expectations remain unchanged at 7¼%.

A major concern for Chinese policy makers is the credit intensity of the country's growth in 2013. Driven in part by the mid year 'mini-stimulus', the ratio of credit growth to nominal GDP growth accelerated in early 2013, peaking at 2.3 times GDP growth in the second quarter of the year – the highest level since 2003 (excluding the period of emergency stimulus during the Global Financial Crisis). In Q3, this ratio pulled back to 1.6 – a level still quite high when compared with the past decade.

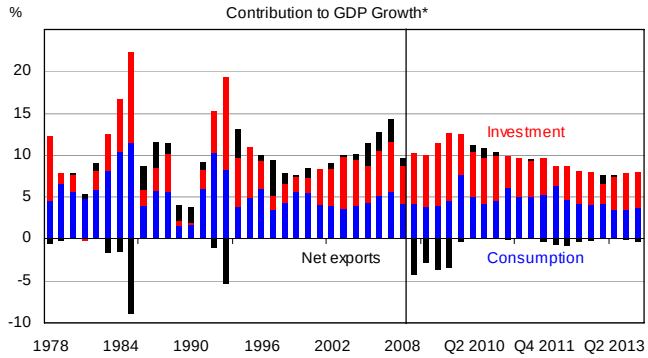
The People's Bank of China is attempting to manage credit growth via passive tightening in liquidity – allowing market rates to rise without any direct intervention. Market interest rates trended higher across 2013, and the central bank is gradually liberalising the money market – which should eventually lower speculative investment and shadow financing.

Business surveys point to softening conditions – with the Business Climate Index down to 119.5 points in the December quarter, the lowest reading since mid 2009. The index has been broadly trending downwards since late 2010. Conditions were softer in the fourth quarter in all of the major industry categories, although the climate for Real Estate is near its strongest levels since Q3 2011. In contrast, conditions in Retail & Wholesaling remain comparatively weak – near the levels recorded during the worst of the GFC.

Real GDP growth eased to 7.7% in 2013

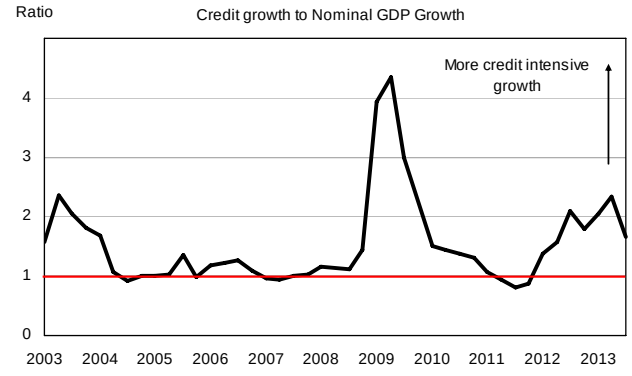
* Data prior to DQ2010 are estimated by NAB.
Source: CEIC, NAB Economics

Contribution to GDP growth



* Annual data until 2008, Quarterly from Q1 2009
Source: CEIC, NAB Economics

Credit intensity increased in the first half of 2013



Source: ADB, CEIC, NAB Economics

China's business climate – retail near GFC lows

Source: CEIC, NAB Economics

Looking closer at partial indicators, the slowing trend in economic activity was evident in industrial production growth – which eased back to 9.7% in December (from 10.0% in November). The rebound in industrial production – also boosted by the mid year 'mini-stimulus' program – peaked in August (at 10.5%), but growth has eased back since this time. Production trends in major construction related sectors were marginally stronger in December – with cement production growing by 10.8% yoy (compared with 10.0% in November) and rolled steel production rising by 10.3% yoy (from 10.0% previously). In contrast, there was a moderating trend in motor vehicle production – which grew by 22.8% yoy in December, down from 25.6% in November. Electricity generation increased by 8.3% yoy in December, compared with just 6.8% in November.

The slight softening trend in the industrial sector was in line with the results of the manufacturing PMIs, which have eased back from recent highs in October. The official NBS PMI – which is weighed more towards the large, state owned enterprises – pulled back to 51.0 points (from 51.4 points previously). The HSBC Markit PMI (which has a greater representation of small to medium sized manufacturers) was at 50.5 points in December (down from 50.8 points in November).

Fixed asset investment slowed in December, with our seasonally adjusted estimates for growth declining to 17.2% yoy (compared with 18.4% in November). Across the majority of 2013, growth government influenced fixed investment was stronger than private investment – boosted by a strong pickup in Central Government funded infrastructure projects.

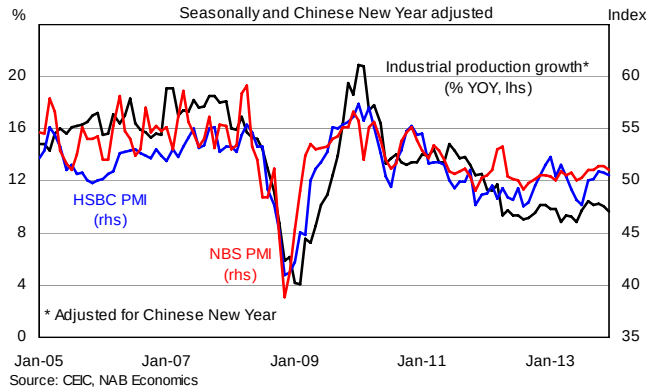
By industry, investment growth in the manufacturing sector slowed in December, down to 18.1% yoy (seasonally adjusted) – broadly in line with typical levels in 2013, but well below the rates prior to 2012.

Investment in the real estate sector was marginally softer in December – with seasonally adjusted growth of 19.7% yoy (compared with 20.0% in November). Policy uncertainty – particularly related to proposed property tax legislation – is an issue for the sector. In mid-January, the Ministry of Land and Resources announced plans to establish a national system for tracking real estate ownership and sales – a likely prerequisite for establishing taxation for the sector.

In contrast to declines elsewhere, investment in public utilities (electricity, gas and water) recorded stronger trends across 2013, increasing by a seasonally adjusted 21.9% yoy in December.

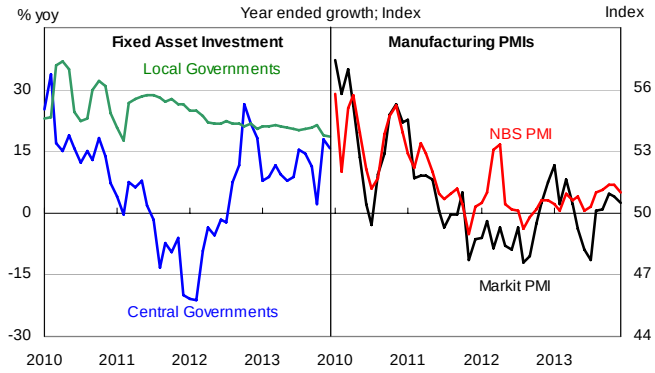
Retail sales growth was largely in line with market expectations, at 13.6% yoy in nominal terms (edging down from 13.7% in November). Real retail sales were slightly stronger in December – moving up to 12.2% (compared with 11.8% in November), the strongest rate of growth in 2013. These sales trends came despite a pullback in consumer confidence, which fell to 98.9 points in late November (compared with 102.9 points previously). By product category, growth in food and beverage sales edged higher (to 14.8% yoy from 14.1% in November), along with a pickup in motor vehicle sales (13.4% in December, compared with 11.6% previously). In contrast, there was a slowing trend in household electronics – with growth at 10.9% (down from 19.6% in November).

Industrial Production



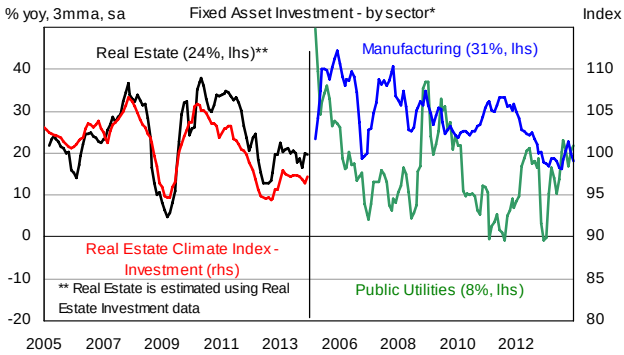
Source: CEIC, NAB Economics

Mini stimulus contributed to recent growth trends



Source: CEIC, NAB Economics

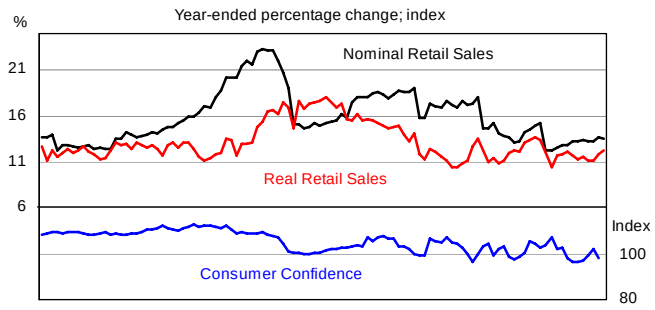
Fixed Asset Investment by Sector



* Number in brackets represents share of total FAI in 2010

Source: CEIC, NAB Economics

Retail Sales



* No observation is shown for January due to the effect of Chinese New Year; Feburary shows the average of January and February compared to December.

Source: CEIC, NAB Economics

After a strong result in November, December's trade data was softer than market expectations, driven by a large increase in imports. For the full year, total trade was US$4.2 trillion, an increase of 7.6% over 2012 (compared with the official target of 8%). China's trade surplus pulled back in December to US$25.6 billion (from US$33.8 billion in November, which was a four year high).

In US dollar terms, growth in merchandise exports pulled back significantly in December – to 4.3% yoy (compared with 12.7% in November). That said, this result reflects base effects from these periods in 2012 – where November was particularly weak, and December particularly strong.

By category, there was a slowdown in growth rates for both High Tech goods (contracting by -1.5% yoy in December, from 6.2% previously) and Mechanical and Electrical goods (increasing by 2.3%, down from 10.4% in November). Combined, these sectors accounted for around 86% of total exports in the month.

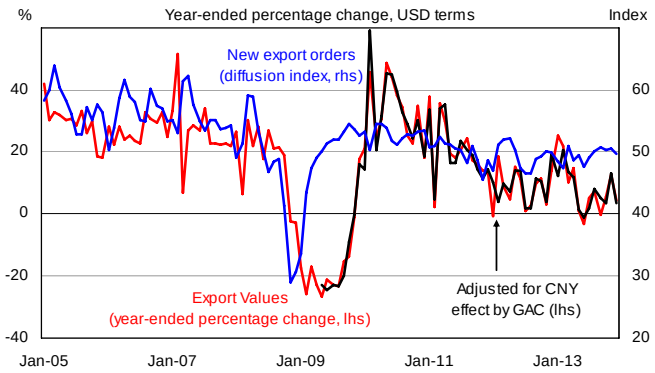
In line with the overall pullback in export growth, there was a slowdown in the growth rates to each of the major export regions in December. Exports to the European Union grew by 3.9% yoy (slowing from 18% in November) while shipments to the United States increased by 3.0% yoy (down from 18%). Exports to non-Japan East Asia also slowed – down to 2.8% yoy – largely due to slower export growth to Hong Kong (in part reflecting efforts by China Customs since the second half of 2013 to crack down on fake export invoices that disguise financial flows that circumvent the country's capital controls). In the short term, export prospects are somewhat mixed – with stronger economic conditions expected in both the United States and Europe in 2014, but comparatively subdued conditions in Emerging Asia.

Growth in imports was stronger than market expectations in December, increasing by 8.3% yoy. Softer trends in import data in 2013 largely reflected declining commodity prices over the year – with increasing volumes of most raw materials (particularly coal and iron ore). Import trends for major commodities in December were mixed – with strong increases copper (29% yoy) and crude oil (13% yoy), while coal increased by almost 9% yoy. In contrast, iron ore imports increased more slowly, at just 3.4% yoy.

Inflationary pressures were considerably softer in December, with the headline CPI pulling back to 2.5% (from 3.0% in November) – a level marginally softer than market expectations. This slowdown was largely in food prices – down to 4.1% in December from 5.9% previously, with lower price increases for vegetables was the main driver (2.6% compared with 22% in November). Non-food inflation was marginally stronger in December – at 1.7% yoy (from 1.6% previously).

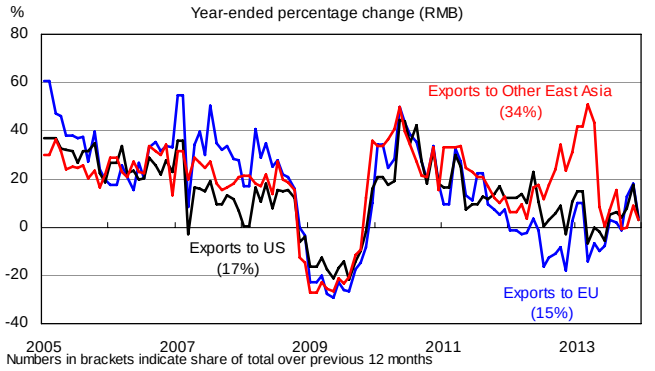
The negative trend in producer prices remained in December – with the level unchanged at -1.4% yoy, the twenty second consecutive month of falling prices. As noted last month, there is a close relationship between declining producer prices and falling commodity prices over this period – with the bulk of declines in producer prices reported in heavy industry.

Merchandise exports and new export orders



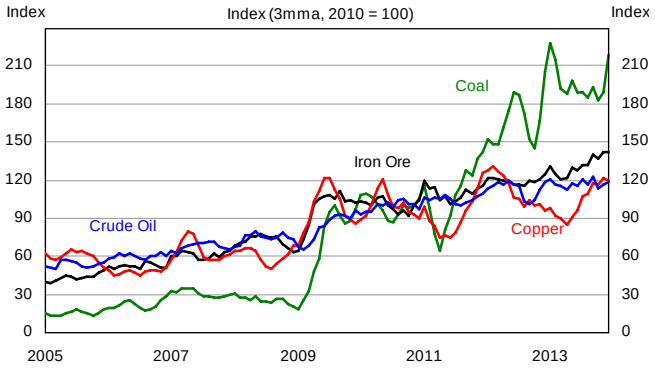
Source: CEIC, NAB Economics

Merchandise exports to major trading partners



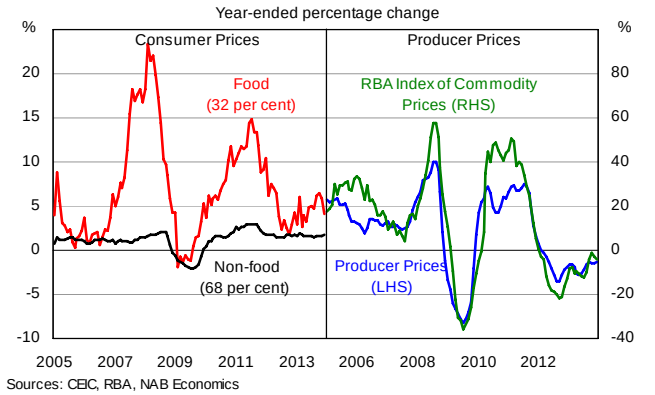
Numbers in brackets indicate share of total over previous 12 months
Sources: CEIC, NAB Economics

Commodity import volumes supported by investment



Sources: CEIC, NAB Economics

Consumer and Producer Prices



Sources: CEIC, RBA, NAB Economics

Policy expectations:

Slowing headline inflation (and particularly food price inflation) means that there is little requirement for the People's Bank of China (PBoC) to tighten liquidity via its traditional policy measures – the benchmark lending rate (unchanged at 6% since July 2012) and the reserve requirement ratio (unchanged at 19.5% since May 2012). Over the past quarter, the PBoC has allowed passive tightening, as market rates have trended higher in the absence of liquidity injections via open market operations. This tightening is largely seen as an attempt to curb the debt levels.

While Chinese monetary policy is gradually being liberalised, the volatility of the 7-day Shanghai Interbank Offered Rate (Repo) poses some significant challenges for policy makers. The Repo rate spiked in late December – rising from 4.4% on 16 December to 8.9% on 23 December – as demand for cash surged before the end of the quarter.

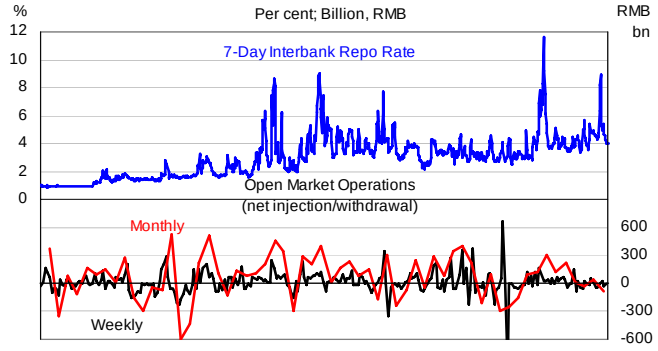
In part this peak reflects regulatory requirements for the finance sector – such as loan-to-deposit and reserve ratios – increasing short term demand for cash. In addition, the maturing financial products require additional cash reserves for payments. The sharp pullback in rates following this peak – back to 4.3% in mid-January – was supported by corporate tax refunds from the Ministry of Finance.

The increasing importance of the Repo rate highlights the gradual process of liberalisation of China's money markets – such as the decision in December to allow banks (initially only ten) to issue negotiable certificates of deposit (NCDs), priced using the Interbank rate as its reference.

On 12 December, both the China Construction Bank and Bank of China issued three month NCDs – at a rate of 5.2% (compared with the 3 month SHIBOR at 5.33% at this time). However, activity in the NCDs market has so far been relatively limited.

The path to full liberalisation of deposit markets is likely to be slow, with the Central Government signalling its intention to introduce a deposit insurance scheme prior to further reforms – such as scrapping the regulated deposit rate ceiling. Rising deposit rates would lead to higher lending costs (which rose across 2013). That said, pushing up rates for State Owned Enterprises could reduce the risk of private sector firms being crowded out of traditional lending – which would reduce the uncertainty surrounding shadow financing

Liquidity conditions

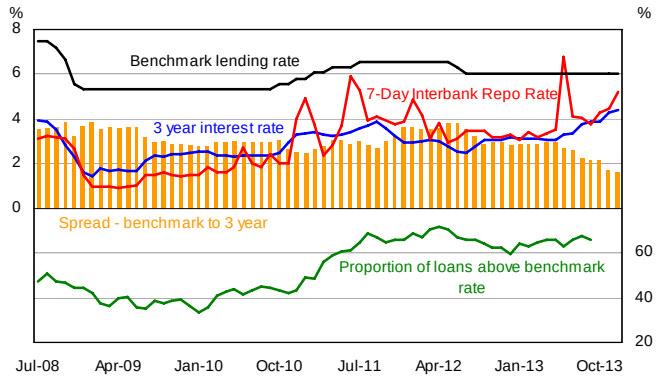


Source: CEIC, NAB Economics

Longer maturity interest rates

Sources: CEIC

Liberalisation of lending rates will push them higher



Sources: CEIC, NAB Economics

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