

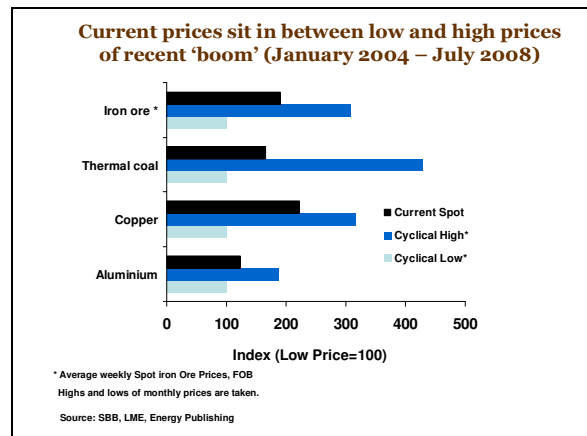
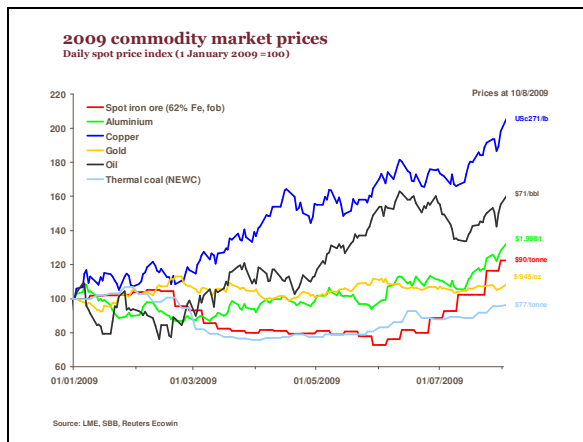
OUTLOOK FOR METALS AND MINERALS

Half Year Results 2009

20 August 2009

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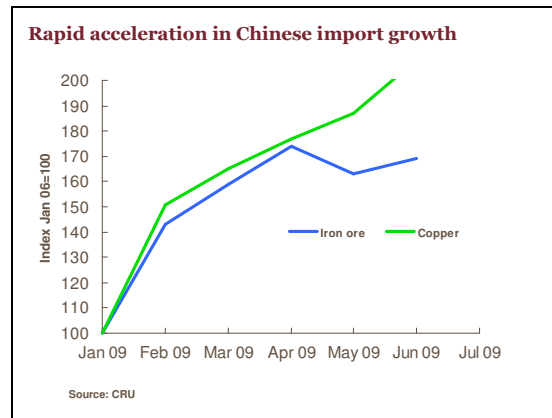
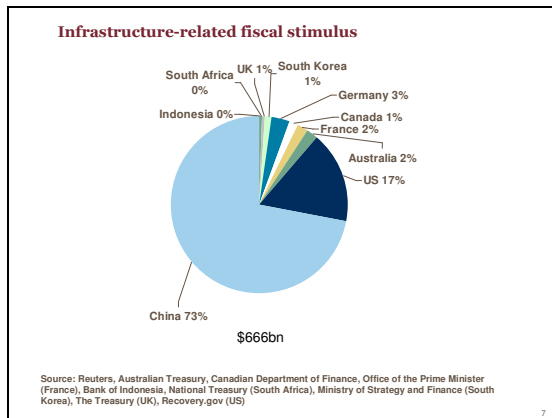
Most metals and minerals prices recovered during 2009H1 following precipitous falls from near record levels during 2008H2. Indeed, despite the fact that the world economy has been experiencing the deepest recession in modern times, real prices for most commodities are again at levels consistent with a continuation of the cyclical strength that started in late 2003.



The pattern of recovery for each commodity has differed because of important specific drivers in each market. Nevertheless, there have been six broad sources of strength.

- Strong demand from China related to its enormous public infrastructure spending package - contrasting sharply against very weak OECD markets where apparent demand has seen double digit percentage declines across a range of metals and minerals;
- Stocking and or an end to destocking across a range of metals and minerals;
- Production cut backs by high cost producers;
- Signals that the decline in global economic activity has bottomed out - generating speculation that substantial global demand growth will flow from economic recovery and economy-wide inventory rebuilding;
- Speculation related to concerns that project finance constraints arising from the global financial crisis will impede near and medium term commodity supply growth; and
- Low interest rates and below normal returns in other sectors, which have reduced the opportunity cost of speculating in commodity markets.

The key role of China is illustrated in the following two figures: the first showing the scale of China's infrastructure package and the second showing the rapid rise in Chinese imports of iron ore and copper over the year to date.



There is a reasonable basis to assume that many of the factors that drove the price recovery in 2009H1 will continue into next year. In particular, our analysis suggests that China will grow at 7-8 per cent this year and 8-9 per cent in 2010 impelled by continued strong government expenditures, loose credit and some recovery in private sector investment.

But given the role of speculation in driving markets and anaemic OECD demand, it seems prudent to exercise some caution about the scale of the recent rally in some prices. Risks during 2010 arise from a range of sources, including:

- Any deceleration in demand once economy-wide inventory rebuilding slows;
- The possibility that any recent run up in physical commodity stocks could be placed back on the market;
- An inevitable reduction in the pace of growth in government economic stimulus;
- The likelihood that consumer spending – especially in OECD economies - will remain constrained for an extended period on concerns about high unemployment and the need to rebuild wealth following recent asset price deflation; and
- The likelihood that supply and capacity growth will be encouraged by recent price and credit market improvements.
- Risks to the global financial system appear to have abated; but the possibility of further serious shocks with negative consequences for overall economic growth cannot be entirely discounted.

One implication is that many markets are likely to see substantial volatility as speculative forces are affected by a range of factors including: news flow on fundamental developments in individual commodity markets - including for example the pace of any restocking in OECD economies; shifts in broad market sentiment – for example related to the health of the global financial system, the strength of private sector investment in major economies and exchange rates; and changes to the opportunity cost of taking speculative positions.

Taking a longer run perspective, our expectation remains that real long run prices and margins for almost all minerals and metals, will average higher than in the decade preceding the most recent boom. A key factor in this conclusion is our expectation that the industrialisation and urbanisation of China and other developing economies will generate relatively fast average rates of global commodity demand growth following an eventual recovery from the current slump. Future global economic development is expected to require relatively high marginal cost production to meet growing metals and minerals demand. In some instances the speed of expected demand growth relative to capacity combined with input supply problems may increase the frequency of intermittent supply shortages and associated price spikes.

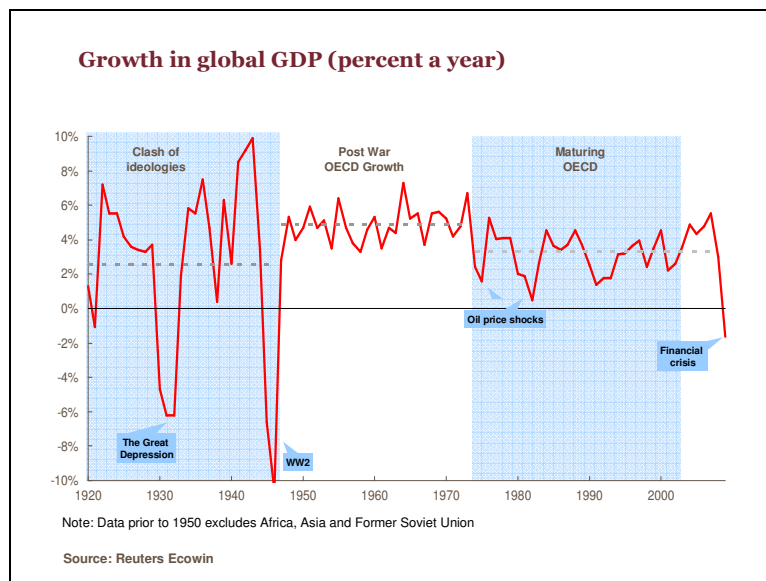
The remainder of this paper addresses key near term drivers of the broad outlook. It also discusses some specific issues affecting aluminium, copper, iron ore and thermal coal markets.

Macroeconomic overview

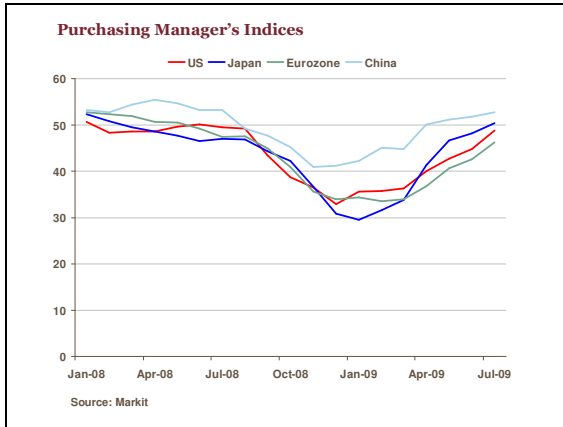
The current global economic downturn is the deepest since 1945. Consensus views point to a contraction of around 1.5 percent in global GDP this year (purchasing power parity basis). This means that 2009 will probably be the first year in the post war period in which the world economy has contracted.

Given the pace of decline in economic activity some [commentators] have drawn parallels between the current economic experience and that in the 1930's Great Depression or Japan's 'lost decade' during the 90s. Our modelling suggests that given the enormous scale of global economic stimulus and strong measures to rescue the global financial system, it is difficult to imagine contractions in GDP of the scale seen during the Great Depression. A 'lost decade' type of outcome would require sustained high levels of global risk aversion among consumers and investors for several more years.

An alternative and increasingly relevant scenario is one in which there is a progressive return to normal levels of risk aversion among consumers and investors. This can be expected to generate a return to positive growth relatively quickly. In that scenario, our modelling suggests the emergence of new inflationary pressures early in the next decade.



A number of indicators now suggest that global economic activity has started to bottom out and that market concerns about financial systems have abated substantially. The consensus forecasts shown below now reflect a progressive return to normal levels of risk aversion and a low risk of further major disruptions to the global financial system. But while there are some positive signs, it needs to be acknowledged that most economies remain fragile and where there is more substantial growth, such as in China, government intervention is the driving factor. At the same time, the resilience of the global financial system is yet to be tested against any new major shocks.



World Economic Activity and Consumer Price Inflation

	Real GDP Growth		Consumer Prices	
	2009	2010	2009	2010
China	8.3	9.3	-0.5	2.1
Brazil*	-0.8	3.4	4.3	4.2
India	6.2	7.2	6.2	5.9
Russia**	-6.5	1.5	12.3	10.3
Saudi Arabia	-0.2	3.8	4.6	3.4
Taiwan	-4.6	3.5	-0.8	1.1
US	-2.6	2.3	-0.5	1.8
Japan	-6.1	1.3	-1.2	-0.6
Australia	0.3	1.8	1.7	2.2
Canada	-2.3	2.2	0.5	1.8
France	-2.8	0.4	0.1	1.0
Germany	-5.8	0.7	0.3	0.9
South Korea	-1.5	3.5	2.8	2.8
UK	-4.3	0.9	1.8	1.7

Source: Consensus forecasts (Aug 09), *July 09; **Global Insight (July 09)

China

Chinese growth in particular has recovered strongly over the year despite weakness in export markets. The domestic economy – led mainly by public spending on infrastructure – has taken the lead in generating growth.

After double digit growth for several years, quarter-on-quarter growth in the Chinese economy came to a standstill at the start of this year driven by falling export demand and its effects on investment. This was compounded by something of a hangover in the housing market following a build up of housing inventories in 2008 as government policies reduced credit availability for this sector earlier in that year and consumers held off from buying given the heightened economic uncertainty.

The government responded with both an aggressive easing in credit availability through changes in reserve rates and interest rates and a four trillion renminbi (US\$590 billion) fiscal stimulus announced last October. These measures have been highly successful in stimulating infrastructure investment, which of course is a commodity intensive activity. At the same time, has been a solid recovery in the private housing market – earlier than previous expectations. As a result consensus growth projections for China have been revised upwards progressively and currently stand above 8 per cent for 2009.

The consensus is predicting growth for 2010 above 9 per cent. This is plausible implying an eventual pick up in private sector investment including housing and a stabilisation in trade to offset any slowdown in the rate of government spending.

There are risks, however, that become increasingly apparent from the second half of 2010. The speed with which growth has accelerated recently and the likely leakage of some stimulus related lending into asset markets has raised concerns that the stimulus package may be generating asset price bubbles in the economy, and generating the basis for increased bad debts. At the same time, there are some concerns that the government may begin to re-impose more significant constraints on credit growth to address any inflationary pressures, before private sector economic recovery has had a chance to take root.

OECD

While continued growth in China will be the most important single driver of commodity demand it is worth noting that, in aggregate, OECD countries consume over 50 per cent of most commodities. So a return to growth in those economies with an upswing in their inventory cycles is a necessary condition for a return to healthy demand conditions in most commodity markets.

In many OECD economies purchasing manager indexes (PMIs) now suggest that economic contraction is ending and that there will be a return to growth during the second half. Car sales generally are starting to increase, but from very low levels. Importantly, the US housing market, which has proven to be such an important driver of global economic outcomes, now appears to be recovering, albeit from a weak position.

A more general point is that most OECD economies have seen very substantial inventory destocking. A return to inventory rebuilding could give a boost to economic activity and GDP. Government spending and loose monetary policy will of course need to remain as critical supports to growth.

The consensus forecasts for the OECD are for a return to growth over the remainder of 2009 and into 2010. When considering risks to this outlook, it is important to note that: any bounce related to economy-wide inventory re-building will be temporary; credit remains relatively constrained and the banking sector may be vulnerable to further unrealised losses. In addition, unemployment can be expected to continue to rise for some time. These factors coupled with a need to rebuild personal finances in OECD economies and the potential for further de-leveraging in the banking sector could constrain global consumer spending and hold back investment in the near term.

Commodity markets

The following section provides some assessment of specific issues relating to costs in the mining sector and some major Rio Tinto products.

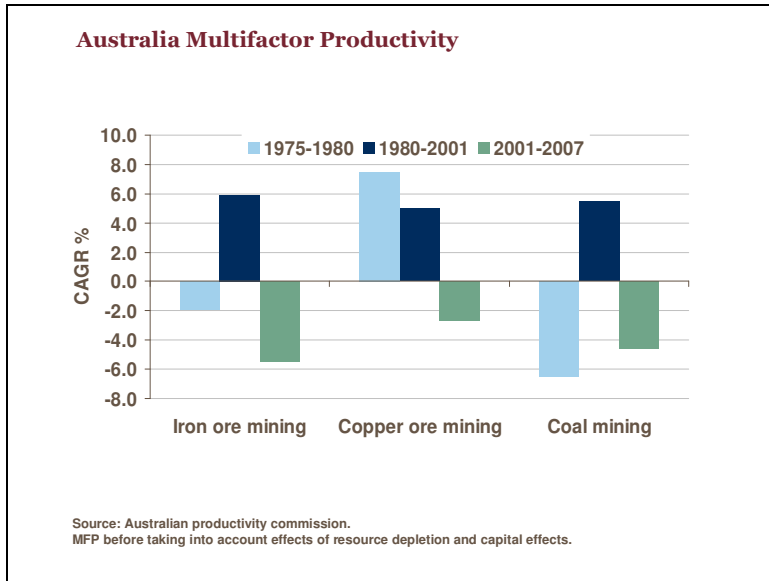
Costs

The decline in project activity as well as general mine operating activity has led to large reductions in mining input prices from 2008 levels. Prices of energy, explosives and steel along with other items such as sulphuric acid and caustic soda have dropped significantly through 2009. Except for some recent uplift in energy prices, the prices of other inputs have remained at relatively low levels.

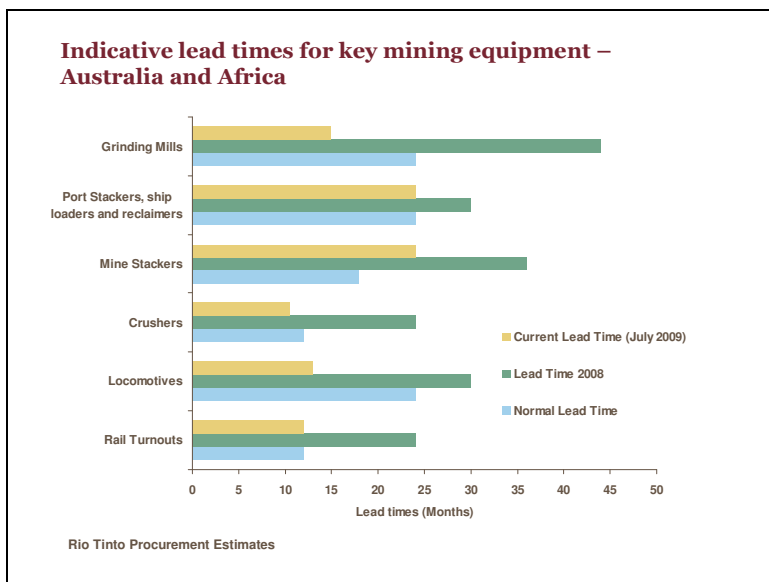
Appreciation of the US\$ when compared to 2008 levels has also reduced costs further for inputs paid in local currency terms (such as labour). Most recently however, we have seen some reversal in this trend, and some upward pressure to costs from depreciation of the US dollar. Relative to the greenback the Australian dollar has appreciated by 20% (spot versus

January 2009 average), Brazilian real by 21%, and both the Canadian dollar and Chilean peso by 13%.

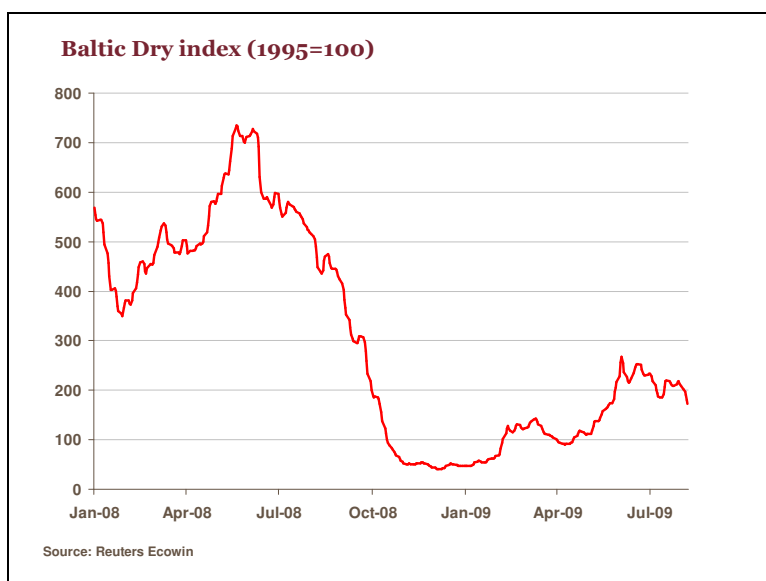
The cost of engaging contractors has also fallen, although the declines vary by region. For example, while contractor costs have declined significantly in Eastern Australia with project cut backs, rates in Western Australia have held relatively steady, buoyed by continued activity in energy and infrastructure projects. Labour costs will have been further affected by declining productivity that has accumulated through the boom years. However, in the current environment we will probably see productivity improvements as mining companies aim to increase the efficiency of the labour to levels consistent with more normal operating conditions.



One key feature in mining input markets in recent years is that the high levels of project activity have also led to longer delivery lead times for key mining equipment. But over the past six months lead times have dropped back to near normal levels, or in some cases even below normal lead times, highlighting the weakness in the current input market.



Finally, shifts in freight rates have had substantial effects on the pattern of price movements for a range of commodities. *The Baltic Dry Index* rose 133% through Q2 as Chinese commodity imports absorbed a looming surplus of dry bulk fleet capacity. Rapid escalation in Chinese demand for iron ore and coal pushed up trade over the quarter. During the period net fleet capacity grew by 8.1 million deadweight tonnes, almost two percent. This rise in supply was countered by strong trade and port congestion limiting vessel availability and supporting freight rates. It is expected fleet capacity will grow by 16% through 2009H2; however the impact of this growth in supply on freight rates will be highly dependent on the continued strength of trade in bulks, specifically from China.



Commodity case studies

Aluminium

Transport and construction, two key end-use sectors for aluminium, have been hit strongly by the economic crisis. The sharp slowdown in activity in these sectors combined with heavy destocking throughout most manufacturing supply chains have had the aluminium market facing its sharpest contraction in demand since 1975. Having grown by around 50 per cent over the six-year period between 2002 and 2008, global primary aluminium demand fell by just over 20 per cent during the first half of 2009, back to levels last seen since 2005.

Reflecting their position towards the top end of the cost curve in 2008 Chinese producers were first to react to falling prices, reducing output by 25 per cent (or about 3.5 million tonnes) from peak levels by the start of 2009. Producers outside China also announced significant production cutbacks from late 2008, but the implementation of those were much slower and lagged the collapse in end-use demand, leading to a rapid stock build-up. Just over two million tonnes were added to LME inventories over the first six months of 2009 on top of the 1.25 million tonnes already accumulated during the second half of last year.

Indeed the financing of aluminium stocks proved an attractive activity for traders during the first half of 2009 due to low three month LIBOR rates, a stable and wide cash-to-3 month contango and the availability of discounted warehouse rent deals. Therefore, despite a paucity of consumer demand, producers have been able to dispose of their metal with relative ease and limited risk exposure. This has allowed aluminium producers to run down stocks with unwrought inventories as reported by the IAI reaching record lows in June 2009.

In China, where demand also declined (especially during the first quarter of the year), the State Reserve Bureau (SRB) and provincial governments stepped in to buy production. These entities either directly purchased or facilitated the financing of producers' stocks, helping to put a floor under the SHFE price. So while in July 2008 Chinese smelters selling to the SHFE were receiving about \$700 per tonne less on average than western smelters selling on the LME, the SHFE price (ex-VAT) moved to trade at a premium to the LME price throughout most of the first half of 2009.

This very significant shift in the SHFE/LME price differential did two things. First, it improved (at least temporarily) the relative cost position of Chinese smelters on the global cost curve. Second, it created an incentive to import aluminium into an already oversupplied Chinese market. Over one million tonnes of unwrought aluminium were imported into China during the first half of 2009, most of which during the 2009Q2.

With the worst of the destocking cycle now probably behind us the aluminium market is on its way to gradually rebalance. In the short run, physical availability might be tight as a result of the stock financing deals put in place over the past few months. This could potentially lead to upward pressure on market premiums (as seen in Japan from late in Q2) and some strength in near term spot prices, especially if additional demand from consumer restocking surprises on the upside. Of course, very substantial increases in regional premiums and declines in the LME contango could see metal exit from financing deals back onto the market.

Looking forward, the market will still need to absorb the overhang of stocks and excess capacity for prices to be sustained at higher levels. Chinese producers are already responding to stronger domestic demand and prices by restarting pot lines and commissioning delayed expansions. China is therefore unlikely to be a significant outlet for any western surpluses in coming months and it is likely that pressure will remain on western producers to restrict output through the remainder of 2009.

Copper

With prices hovering back around \$2.80/lb, LME inventories about 20% below start of year levels and equivalent to just 9 days of western demand the copper market appears to have shrugged off the effects of recession. Prices did fall sharply in the second half of 2008 but never to levels that cut deep into the industry cost curve, as has usually been the case in previous downturns.

Some of the reasons behind copper's recent price strength are rooted in the structural issues that have constrained the industry's supply side response during the recent period of elevated prices. Strikes that were prevalent over the past couple of years are having a lesser disruptive effect today, but grade issues and equipment failures have led to continued output shortfalls at existing operations. Meanwhile the development of new projects remains challenging with EPCM and supplies bottlenecks being replaced by significant capital and credit constraints.

However, the main factor supporting the swift price recovery has been the appetite for refined copper from China in 2009H1. China imported close to 1.8 million tonnes of cathodes between January and June 2009, 30% more than the levels imported throughout the whole of 2008. Refined copper demand outside China has not been immune from destocking and reduced economic activity, with falls estimated in the order of 20% during the first half of 2009. But China's buying activity was able to completely offset that weakness.

The level of Chinese imports seen so far this year implies a year-on-year growth in apparent demand of close to 50 per cent. Although copper demand will have benefited from

government stimulus programmes, copper also tends to be more exposed than steel or aluminium to the underperforming export-oriented Chinese manufacturing sector. This raises questions as to whether the high level of Chinese imports might therefore also have been driven by speculative and stocking activity.

The general consensus seems to be that some restocking has indeed taken place in China during the first half of 2009. But a significant part of the surprisingly high apparent consumption estimates can also be explained by the additional need for refined copper created by a sharp contraction in scrap availability in China since the fourth quarter of 2008. Weak industrial activity, lower copper prices in the first quarter of the year, issues related to default of payments by scrap purchasers and increased scrutiny by customs authorities have all combined to reduce Chinese scrap supplies in 2009H1.

Copper scrap imports were down by 40 per cent during the first half of 2009 but these are reported on a weight basis and interpretations will therefore differ according to assumptions made about the copper content of the scrap. Reported imports data are also hard to reconcile with export statistics from China's main scrap sources, with classification issues and smuggling making any analysis even more difficult. Given these constraints it is not surprising that analysts' estimates of scrap substitution cover a wide range with some suggesting that this factor alone could create an additional boost to refined copper demand of up to 1 million tonnes.



Source: China Customs Data

As we step into the second half of the year the level of Chinese imports is expected to ease. The SHFE/LME price gap has closed and therefore has already ceased to support trade for the time being. The focus will therefore shift back towards western consumers. There are some early signs of a slight pick up in underlying activity in OECD countries but from very weak levels.

Iron ore

Following the steep fall in spot iron ore prices during the last quarter of 2008, prices recovered somewhat in January and February this year. This occurred as the plunge in global steel production reached bottom and China's steel output held up better than expected, posting a 1% y/y growth rate for 2009 Q1.

In March however, prices fell again and stayed low through to late May. Over this period supplies to the seaborne market from Australia and Brazil expanded, steel producers ran down iron ore stockpiles and the rate of global steel production returned to the lows first touched in December 2008.

But even as iron ore prices fell through Q2 Chinese steel production remained strong and indeed improved steadily reaching new record levels. Crude steel output was 41.2mt in January, and increased to 49.4mt in June. The increase in Chinese steel production was supported by strong demand related to railway infrastructure spending from the stimulus package, reconstruction related to damage from the Sichuan earthquake and a sharp increase in rural housing construction. These factors alone contributed more than half of the rise in steel consumption over the same period last year.

The boost from rural housing, in particular, exceeded expectations. It was a function of the government stimulus package which set aside rmb 370bn to improve housing in rural areas. At the end of 2008 a number of provinces, especially in Northern and Western China initiated a five year rural housing construction program, to help and subsidise farmers to upgrade and/or rebuild houses in danger of collapse. Farmers and rural families were also being offered easier access to bank finance and local governments offered substantial subsidies on mortgage interest.

During June and July fob prices started to rise and, at the time of writing, spot prices exceeded \$100/t CFR China. The drivers were continued strong demand for steel, including now from urban residential construction; reduced availability of Chinese domestic material due to earlier low prices and a substantial slowing in iron ore stock run downs not just in China but also in Korea, Japan and Europe.

Looking forward, it is reasonable to expect that strong conditions will be sustained into 2010. Spending associated with the Chinese stimulus package is expected to remain strong; improvements in the Chinese housing market will add to demand for steel and therefore iron ore; and some recovery is expected in western world demand. At the same time, project cutbacks announced this year will constrain the availability of low cost supplies next year.

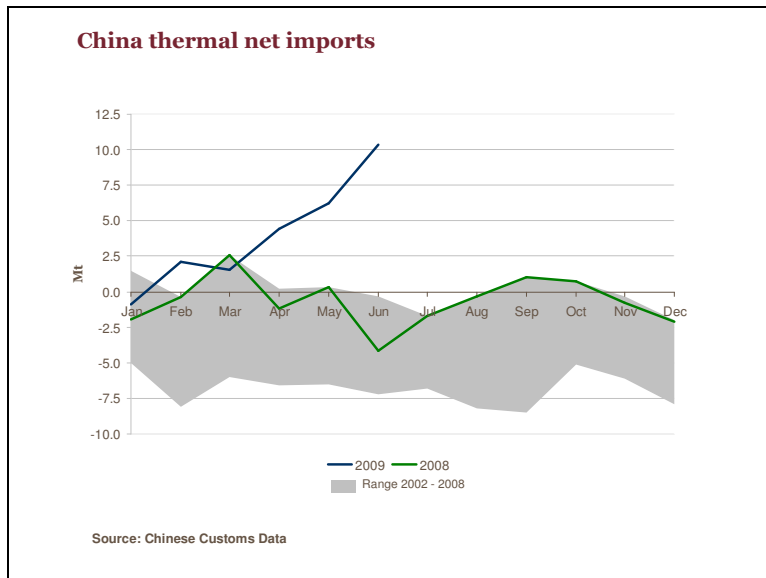
Thermal Coal

Australian thermal coal prices have been at a substantial premium (over \$10/t) to South African coal for the past couple of months. This differential reflects contrasting conditions in the Pacific and Atlantic basins with China as the defining factor.

The traditional Pacific thermal coal demand hub of Japan, Korea and Taiwan has been seriously affected by the global financial crisis but China's massive swing as an importer into the seaborne market has provided a solid floor to seaborne prices. Japan is the largest thermal coal importer and its demand has been particularly hard hit due to its export focus. Japanese industrial electricity demand for 2009H1 was 25% lower than 2008H2 and thermal coal imports over this period were down by 18% (11 Mt). Taiwan's imports were down by a similar proportion. South Korea imports were higher as new coal-fired plants came online. The market balance was helped by lower Indonesian production in the first quarter, with official statistics reporting a fall of 27% (13 Mt).

The positive shift in Chinese seaborne demand was triggered by small mine closures in early 2009. High Chinese domestic prices, and low freight rates contributed to Australian coal being competitively delivered into China. In the first six months of 2009 China imported 35 Mt, more thermal coal than for all of 2008. Australian coal exports were up from less than 2 Mt in 2008 to 18 Mt for 1H 2009.

Recently, however, as freight rates and seaborne coal prices have risen, the arbitrage window for Australian relative to Chinese thermal coals has closed and the economics of domestic Chinese production has improved.



Conclusion

The world economy has experienced the worst downturn in several decades but the response by governments to stimulate activity and rescue the financial system has been swift and unprecedented in scale. In particular, the Chinese economic stimulus, speculative activity based on the improving prospect of global economic recovery and stocking activities have provided a basis for price strength across most commodity markets.

It is reasonable to assume that many of the factors that drove the price recovery in 2009H1 will continue into next year. But because there are a range of ongoing risks to economic activity and given the important role of speculation in many commodity markets it seems prudent to remain cautious about the recent strength of rally in some prices.

It is clear that the world economy is going through a process of a severe cyclical adjustment. But the assessment that ongoing development in emerging markets will generate underlying strength in metals and minerals demand over the long term remains unchanged. Per capita metals consumption in most emerging markets is below developed country levels suggesting scope for significant incremental demand growth over time.