

Box A

China's Steel and Iron Ore Sector

There has been considerable volatility and a noticeable decline in steel and iron ore prices over the past few months (Graph A1). This contrasts with other commodity prices, which have been relatively stable over recent months. Since China produces around 45 per cent of steel globally, the fall in steel and iron ore prices has focused attention on developments in China.

Graph A1
Chinese Steel and Iron Ore Spot Prices



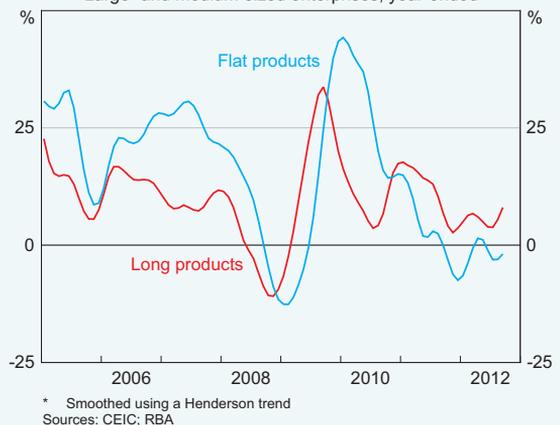
The Slowing in Steel Demand

Demand for Chinese steel has slowed since early 2011, in part due to a range of government policies and sector-specific factors. The withdrawal of the fiscal stimulus from late 2010 reduced the growth of infrastructure investment, which contributed to the slowing in construction activity. Government restrictions on the purchase of residential property and on the availability of credit for property development reduced sales of apartments and constrained the cash flows of many property developers, slowing the growth of dwelling

construction. However, the reduction in steel demand owing to these factors has been partly offset by the government's affordable housing program. Construction of affordable housing has made a significant contribution to new residential floor space in China since the beginning of the year. Furthermore, non-residential building construction has been growing at a rapid pace.

Weaker demand for steel for construction activity has been evident in the slower growth in sales of long steel products since 2011 (Graph A2). But the slowing in steel demand has been even more pronounced for flat steel products, which are typically used in manufacturing. The decline in the sales of flat steel products since the beginning of 2012 has been driven by a fall in domestic sales of household appliances – such as refrigerators and washing machines – and weaker growth in exports of business equipment. Growth in both car sales and sales of flat steel products to shipbuilders have also slowed noticeably. Weaker domestic sales of

Graph A2
China – Steel Sales Growth*
Large- and medium-sized enterprises, year-ended



appliances and cars reflected the expiration of some of the measures introduced to stimulate demand at the onset of the global financial crisis, such as a subsidy scheme for rural buyers of home appliances and a trade-in scheme for urban citizens.

As growth in the demand for steel declined during 2011 (in China and across the world more generally), the production of steel products did not adjust immediately, resulting in a build-up of inventories. This accumulation of inventories was more pronounced for long steel products, whereas the production of flat steel products adjusted more quickly in response to softer sales. The increase in inventories was in part due to the technologies involved in Chinese steel production, which is reliant on blast and basic oxygen furnaces. Blast furnaces, in particular, cannot be shut down easily due to the risk of explosion during cooling and it takes a long time for a blast furnace to become fully operational after being deactivated. Consequently, firms tend to keep these furnaces operating out of the concern that there are large costs of adjusting production, and that delays in restarting furnaces may result in the loss of customers if demand recovers more quickly than they had originally anticipated.

Over recent months, weaker demand conditions in the steel market and rising costs have eroded the profitability of China's steel industry and many steel producers have been reporting very thin margins. This, along with warnings from China's banking regulators, has reportedly led banks to restrict steelmakers' access to credit, particularly for smaller producers. This credit is typically used to cover their purchases of raw materials and ongoing running costs.

Some delayed adjustment to production in response to the decline in steel prices since September 2011 has now taken place, with many steel mills suspending production and bringing forward routine maintenance on plant and equipment. According to the China Iron and Steel Association,

crude steel production capacity reached 850 Mt in December 2011. However, production was much less than this at only 680 Mt in 2011. Growth in production in 2012 has been very modest and so there remains excess capacity. The combination of a very competitive environment and excess capacity in China's steel industry has depressed steel prices and profit margins. In the past, the use of crude steel had grown strongly enough to justify capacity running ahead of current demand. However, crude steel production is not expected to grow as strongly as it has in the past.

Excess capacity and the relatively large number of firms engaged in steel production may both be affected by recent changes in government regulation, which are aimed at increasing the efficiency of steel production and reducing its environmental costs. The Chinese Government announced a new set of regulations, effective from 1 October this year, imposing stricter controls on the quality of steel products, energy consumption and emissions, and higher technology standards. It has banned the production of a number of steel products, including hot rolled silicon steel, for example, which is used in the manufacturing of generators. The government has also put minimum requirements on the size of furnaces. Accordingly, firms with steel-making capacity below certain thresholds will be forced to merge or shut down.

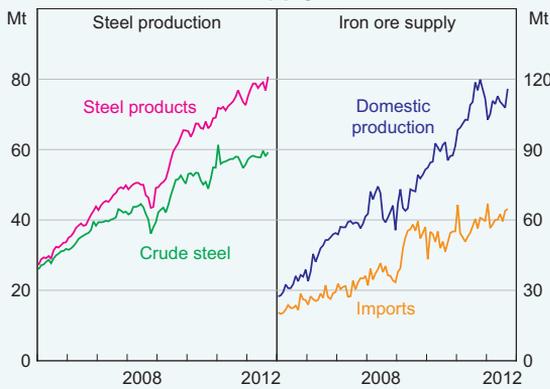
The Effect on the Iron Ore Market

The weakness in steel demand and the reduction in steel production have translated into a fall in the demand for iron ore and exerted downward pressure on iron ore prices, which was magnified by existing high levels of iron ore inventories held by steel mills and traders at ports. As mentioned earlier, tighter access to credit has limited the ability of some firms to purchase iron ore, while it has been reported that some have been forced to sell existing iron ore inventories to cover cash shortfalls.

The reduction in Chinese demand for iron ore has been borne mainly by relatively high-cost iron ore producers in China. High iron ore prices from early 2010 to mid 2011 resulted in a rapid expansion in the domestic production of iron ore by Chinese firms. The lower prices for iron ore since late 2011 had resulted in a cut in China's iron ore production as higher-cost producers scaled back their production (Graph A3). Some mines had reportedly scaled back operations to around 60 per cent of capacity as the price of iron ore fell below the break-even point for many domestic mines. At the same time, substitution towards foreign-produced iron ore has seen imports of iron ore continue to grow, particularly from Australia and Brazil, where the larger miners produce high quality iron ore at low cost. The recent rebound in prices, however, appears to have supported an increase in iron ore production in China.

Recent increases in steel prices and production suggest that China's demand for steel is recovering somewhat. The National Development and Reform Commission approved a number of infrastructure projects that will provide some support to steel demand in the near term and the government announced another year-long subsidy scheme to encourage purchases of energy-saving household appliances. Looking further ahead, China's demand for steel is likely to continue to grow. The ongoing urbanisation process will underpin the demand for high-density dwelling construction. Recent research published by the Bank also suggests that higher incomes will result in increased demand for higher quality apartments and more amenities, such as underground car parks, which tend to increase the steel intensity of these buildings.¹ Also, the growing urban population will require more infrastructure and increase the demand for household appliances and cars.

Graph A3
China – Steel Production and Iron Ore Supply



Sources: CEIC; RBA

¹ For more details, see Berkelmans L and H Wang (2012), 'Chinese Urban Residential Construction to 2040', RBA Research Discussion Paper No 2012-04.