REDWARD ASSOCIATES

IRON ORE & STEEL REPORT

12 June 2018

OVERVIEW

- Iron ore prices fell 2%m/m while coking coal and steel rebar prices strengthened over the month.
- With the support of the Chinese government, scrap steel has become comparatively attractive for steel mills as a production input and we view this as a long-term negative for iron ore demand and pricing.
- Australian iron ore export growth slowed to just 1.6%y/y in March amid a shift to high grade iron ore production.
- Steel supply was robust in April, driven by elevated steel mill margins and rising capacity utilisation, particularly in China.
- We continue to believe that iron ore port inventories in China are overstocked and that *"this time is not different"* despite arguments to the contrary.

The price of iron ore delivered to Qingdao (62% Fe content) was moderately lower for the month (-2.0%m/m), consistent with the lack of direction indicated by flat SGX futures. Meanwhile, steel prices continue to rebound driven by demand and seasonal factors. While price momentum may continue for the time being, another month of modest Chinese house price growth in April (+2.1%y/y) and continued slowdown in fixed asset investment growth indicates potential downside risk in the second half of 2018.

Following fears of reduced supply, coking coal prices have risen appreciably, to a six-week high at the beginning of June, and recovering a significant portion of their year-to-date losses. Australian coal export volumes reportedly slumped over 20%w/w after Aurizon - Queensland's major rail operator – altered its maintenance practices citing a *"flawed"* rate of return ruling by the Queensland Competition Authority (QCA). If current coal volumes are sustained, it would cut annual hard coking coal exports by 20mil MT (worth roughly A$4bn). Higher relative coking coal prices also has the effect of exacerbating the price differential for iron ore grades with higher grades requiring less coking coal in the production of steel. Although normal rail maintenance and volumes may take time to resume, we believe that the sums involved are large enough to ensure a resolution is reached. When this is anticipated, coking coal prices are likely to revert downwards once again, putting modest pressure on pricing for high grade iron ore.

On 1 June, temporary exemptions to US tariffs on steel (25%) and aluminium (10%) elapsed and the US enacted formal tariffs on China and several of its closest trade partners. In response, the EU promised to launch legal action at the World Trade Organisation (WTO) and is likely to impose "provisional safeguard" tariffs on around US$3.3bn of US exports. Mexico also announced tariffs of between 15–25 percent on $3bn worth of US products while Canada announced tariffs on US$12.8bn worth of goods including a 25% tariff on US Steel products.

Notably, while the majority of US steel production is consumed domestically, in 2017, around 12.3% of US production was exported. According to *'Global Steel Trade Monitor'*, in 2017 the US exported 4.9mil MT of steel product to Canada and 3.9mil MT to Mexico out of total steel exports of 10mil MT. Canada and Mexico are therefore the destination for 49 percent and 39 percent, respectively, of US steel exports. Scrap exports in the North American market could also be affected by tariffs. In the first four months of 2018, the US exported 700k MT of scrap material to Mexico, far outweighing the 138k MT of scrap imports from Mexico. Overall, we view the tariffs as self-defeating and potentially disruptive to the global iron ore and steel trade. For now, however, market participants will remain focussed on changing conditions in China.

Figure 1: Iron ore price & SGX Futures, USD/MT

Source: Bloomberg, Redward Associates

Figure 2: Commodity prices (as of 11 June 2017)

Product, USD/MT	Spot	%m/m	%y/y	%YTD
Iron ore, USD/MT	65.2	-2.0%	15.4%	-14.1%
Cobalt, USD/MT	82,750	-6.5%	46.9%	10.0%
Nickel, USD/MT	15,355	10.8%	75.3%	22.2%
Tin, USD/MT	21,305	0.5%	10.5%	5.9%
Zinc, USD/MT	3,226	32.4%	31.7%	-4.4%
WTI Crude oil, USD/bbl	65.47	-7.9%	37.2%	9.6%
Bloomberg Base Metals Index	216.73	4.7%	27.1%	1.4%
Product, CNY/MT	**Spot**	**%m/m**	**%y/y**	**%YTD**
Steel (Flat-rolled)	4,485	2.8%	28.3%	-3.2%
Steel (Long)	4,366	1.2%	21.2%	-1.6%
Steel (Stainless)	15,221	9.1%	33.5%	8.9%
Coking coal (1st grade)	2,200	20.5%	25.7%	-8.3%
Coking coal (2nd grade)	2,093	17.6%	23.8%	-11.1%
Heavy metal scrap	2,079	-3.7%	39.7%	-8.2%
USD/CNY rate	6.4067	0.7%	-5.8%	-1.3%

Source: Bloomberg, Redward Associates

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Scrap is *still* the hidden story

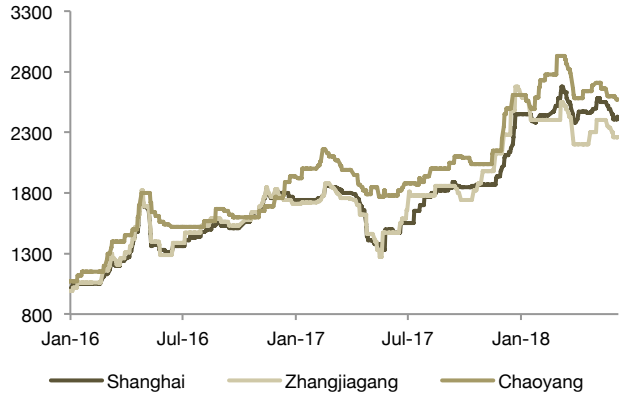
One year ago we wrote about the potential for scrap metal to displace the use of pig iron in the production of steel (see *Iron & Steel Report – June 2017, 'Scrap is the hidden story'*). We outlined that the process of steelmaking involves processing iron ore and coal in a blast furnace to produce pig iron, which can then be re-melted in electric arc furnaces (EAF) or charged into blast furnaces (integrated steel making). Alternatively, scrap metal can be recycled via basic oxygen process (BOP) or EAF.

The story for scrap has become more compelling in light of the anti-pollution drive within China. By comparison, steel production that incorporates the use of scrap metal has a lower environmental footprint and avoids the accumulation of iron ore stockpiles. Moreover, as fixed asset investment slows and China's infrastructure enters the replacement phase, the growing use of available 'obsolete' scrap will precipitate a shift to electric arc furnaces, which emit far less carbon than blast furnaces. Despite a widening cost differential between iron ore and scrap to reach approximately US$300/mt today, mills have begun to reduce output of pig iron while simultaneously raising scrap usage. In the first quarter of 2018, scrap usage rose while pig iron output fell to 174mil MT (-1%y/y).

Increasing use of scrap requires that the Chinese government continues its efforts to curtail capacity and restructure the steel industry. To date, China's steel sector reforms have been particularly effective. Less than 35mil MT of steel capacity remains to be cut by 2020, out of an original target of 150mil MT. S&P Global Platts estimates steel production could fall to around 800mil MT by 2020, equating to a 5.5% decrease from 2017 output. Assuming production at per capita levels of developed countries (~450kg/capita), we estimate crude steel production would decline further to around 700mil MT in 2025. According to the China Association of Metalscrap Utilization (CAMU), Chinese production of scrap is likely to reach 200mil MT by 2020 implying pig iron output of 620mil MT in 2020, 13% below 2017 output. Their estimates indicate that approximately 50mil MT, equivalent to 5% of iron ore import volume, could be displaced by scrap by 2020.

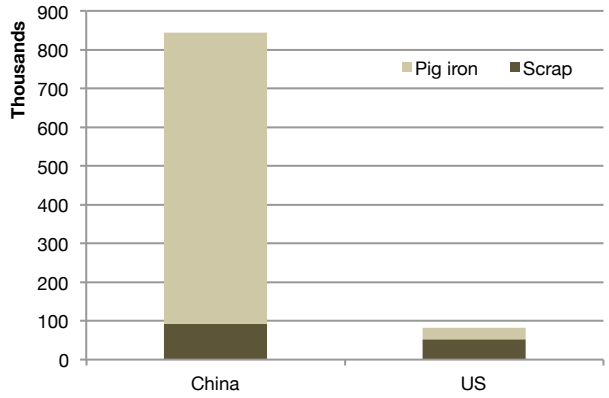
China aims to raise the portion of scrap usage from 11% in 2017 to 20 percent of crude steel production by 2020 and 30 percent by 2025. This compares with scrap usage of around 65 percent of steel production in the US today. China has also begun to crack down on illicit export of scrap with authorities announcing widespread arrests of individuals involved in scrap smuggling rings. While we would expect any decline in steel mill margins to reduce the attractiveness of scrap as compared to the cheaper iron ore input, we view growth in scrap usage in the steel making process as a long-term trend, with potentially negative consequences for iron ore demand and pricing.

Figure 3: China heavy steel scrap prices, CNY/MT



Source: Bloomberg, Redward Associates

Figure 4: Scrap & Pig iron based steel output (2017), mil MT



Source: World Steel Association, Redward Associates

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Supply – Iron ore

Australian iron ore exports grew to total 69.54mil MT in March – a rise of 1.6% relative to volumes in March 2017. Port Hedland accounted for 42.08mil MT (+7.7%y/y) or just over 60% of all Australian iron ore exports in March. Subsequently, in April, iron ore loaded for export from port Hedland slowed to 42.61mil MT (+0.8%y/y). In recent years, Australian iron ore export volumes have demonstrated resiliency but the rate of growth has slowed markedly. Over the twelve months ending March 2018, Australian iron ore exports grew 2.7%. This compares with growth of 5.1% in the year ending March 2017 and 'peak' growth of 25.1% in the year to August 2014. Although not anticipated, structural changes to iron ore demand in China accompanied by cyclone related disruptions earlier this year could see year-on-year supply of exports from Australia turn negative – a first in this century.

In late May, Fortescue (FMG) announced the development of the Eliwana mine in the Pilbara region of Western Australia. Commencing in 2021, the project is expected to cost US$1.28bn and add approximately 30mil MT p.a. to FMG production. The grade ore is anticipated at 60% Fe consistent with Fortescue's previously announced efforts to raise its production ore quality. Meanwhile, Canada's IOC announced an end to a nine week strike and the resumption of production. IOC has production capacity of approximately 18mil MT per year.

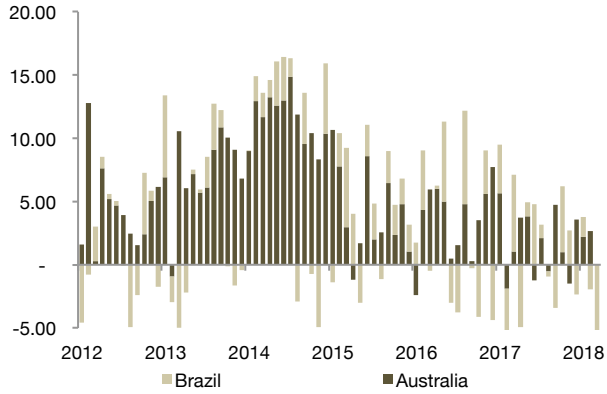
In Brazil iron ore exports registered 25.88mil MT in April, +7.6% on levels recorded in April one year ago. Iron ore exports rose 1.0% on a year-on-year basis through to the end of April.

Supply – Steel

Worldwide supply of steel remained robust in April. The World Steel Association reported global crude steel production at 148.32mil MT, a rise of 4.1% over April 2017. Chinese steel production grew by 3.50mil MT, while India also rose (+464k MT), along with the US (+239k MT), and EU (+472k MT). Among major steel producing nations, only Japan saw a modest decline in output (-32k MT). World Steel reported international crude steel capacity utilisation at 76.9% in April (+2.4%y/y).

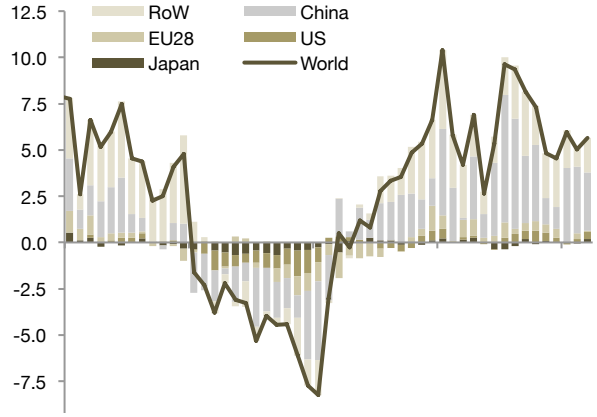
Robust steel output in China has been driven by elevated steel mill margins. According to Platts, mill profitability over the winter period averaged US$140/mt for rebar and US$130/mt for hot rolled coil. Steel output is likely to remain firm for the time being but we expect falling construction demand growth to result in mills destocking and ultimately this will weigh on steel pricing.

Figure 5: Australia and Brazil export growth, mil MT



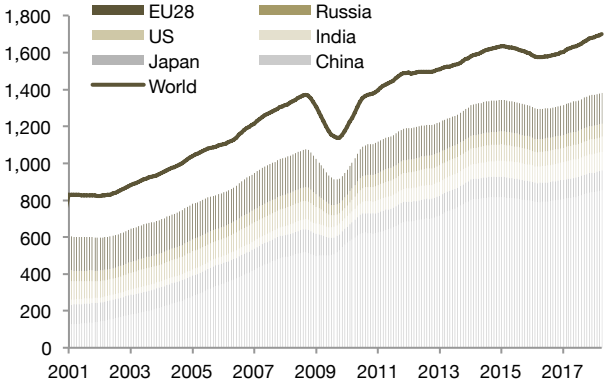
Source: Bloomberg, Redward Associates

Figure 6: Global crude steel production, y/y mil MT



Source: World Steel Association, Redward Associates

Figure 7: Steel production (12-months), mil MT



Source: World Steel Association, Redward Associates

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Demand – Iron ore

Iron ore imports into China totalled 82.92mil MT in April, equivalent to a rise of 0.8% over the prior year period. This is a continuation of 2% growth on an annual basis to the end of April. A drawdown in iron ore port inventories in China and relaxation of environmental restrictions could see demand drift lower as the year progresses. Increase use of scrap steel is also likely to weigh heavily on Chinese demand over the longer term.

The EU saw iron ore imports fall 17.7% in March, to total 8.84mil MT (-1.9mil MT y/y). The decline was driven by France (-468k MT) and the Netherlands (-1.2mil MT). Spain recorded a gain (+152k MT) and imports from the Czech Republic grew (+114k MT) but otherwise there was little noticeable growth across the Euro region. Imports in the UK and Germany were also lower by 131k MT and 152k MT, respectively.

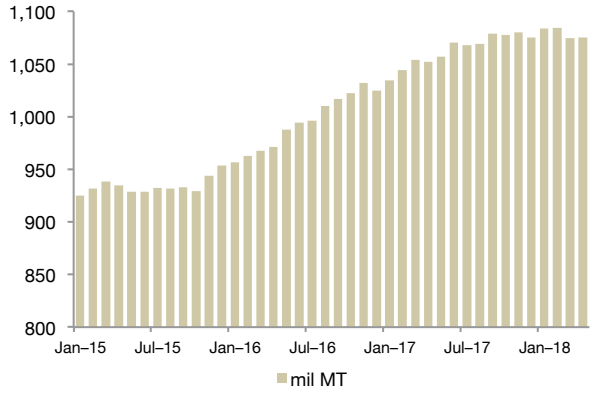
Demand – Steel

We estimate implied steel demand for selected countries by simply adding production and net imports. Our estimate of demand reflects consumption and additions to inventory stockpiles, but does not account for indirect steel trade associated with trade of steel-containing goods.

In April, we estimate that China steel demand grew by 5.1%y/y to 71.26mil MT. This comprised a fall in imports (-3.7%y/y) with exports modestly down over the period (-0.2%y/y), and with some offset due to contribution from the Belt and Road Initiative. In addition to steel, import volumes of key industrial commodities including copper and oil appear to have levelled off recently, a sign that construction activity is beginning to falter.

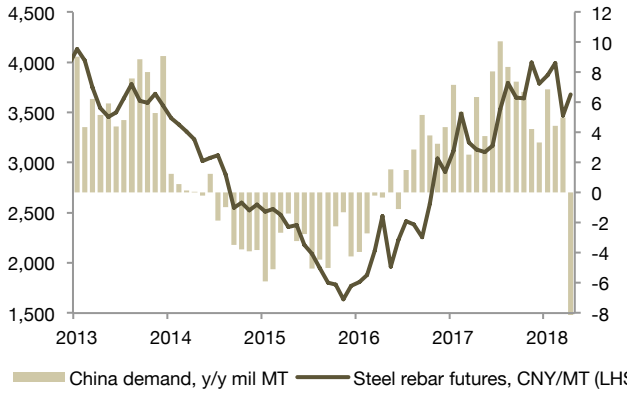
Implied steel consumption for March rose across other major steel consuming nations. In Russia consumption increased to 1.81mil MT (+3.5%), while consumption in EU-28 rose to 14.88mil MT (+4.3%). Japan reached consumption of 6.37mil MT (+3.4%), while Brazil rose to 2.05mil MT (+20.5%) and the US rose to 9.57mil MT (+4.8%).

Figure 8: China iron ore imports (12-months), mil MT



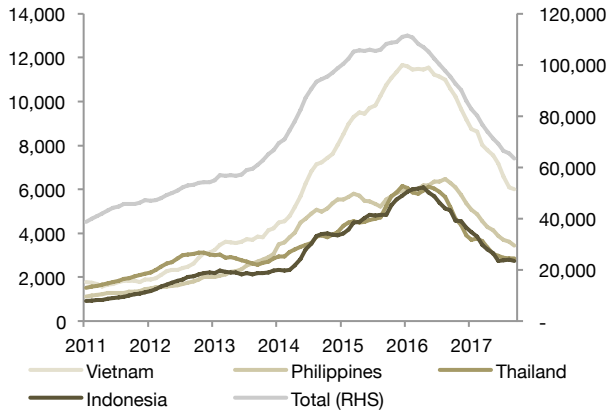
Source: Bloomberg, Redward Associates

Figure 9: China steel demand and rebar futures, mil MT



Source: Bloomberg, Redward Associates

Figure 10: China steel exports (12-months), mil MT



Source: China Customs, Redward Associates

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Inventory – Iron ore

Chinese port inventory totalled 160.6mil MT in May, a slight uptick on last month's 159.3mil MT but below the 161.7mil MT recorded in February. Port iron ore stocks may finally be plateauing and on the verge of destocking after a meteoric rise in 2017 and through to 2018. House prices again registered modest growth in April (+2.1%y/y) while growth in fixed asset investment continues to decline.

We noted the view recently put forward by Bloomberg columnist David Fickling (see *'This Iron Mountain Looks More Like a Molehill'*) in which he suggests four reasons why rising port inventory levels are not a significant concern for the iron ore market 1) rising inventories are a natural consequence of rising iron ore imports 2) Falling iron ore production within China is placing more reliance on foreign suppliers 3) Steel mills are stockpiling iron ore at ports rather than mills, making it easier to preserve the quality of ore before it's fed into blast furnaces 4) Rising open interest in futures contracts requiring physical delivery.

While reasonable observations, they are not altogether new or indicative of a structural change. We continue to see considerable scope for a contraction after accounting for these factors, which we view as largely temporary in nature. We believe stockpiles could contract to below 120mil MT, equating to a 25% fall in inventory levels, as the effect of falling property prices and construction investment growth becomes apparent. We note that even modest oversupply could place considerable pressure on iron ore prices if, as we expect, construction demand in China begins to taper off.

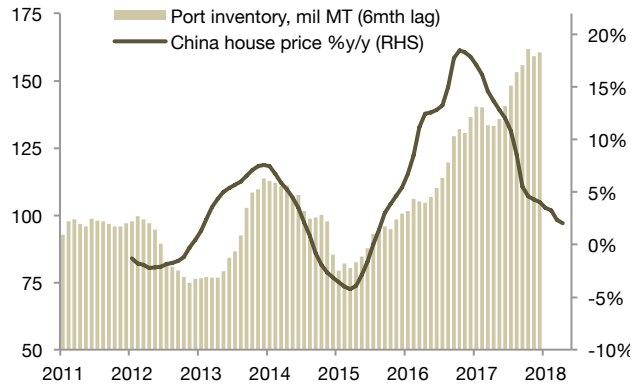
Inventory – Steel

Steel inventories continue build in May with traders in China reporting total inventories of 11.6mil MT (+15.8%y/y). Rebar inventories of 5.65mil MT were 44.1% above levels recorded in May 2017, while Wire Rod inventories were 48.2% above prior year levels.

Meanwhile, Japan reported ordinary steel inventories of 6.63mil MT in March (+6.4%y/y) and specialty steel inventories of 1.64mil MT (+3.1%y/y).

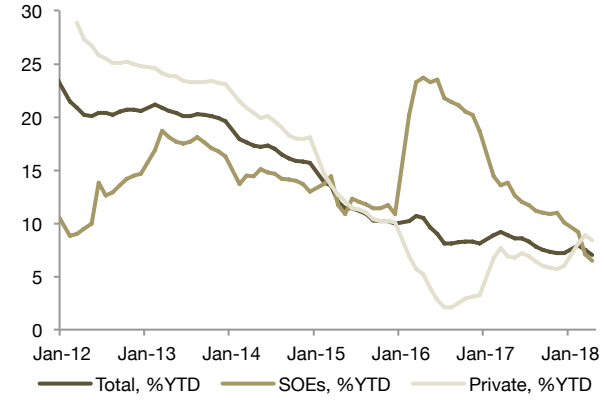
Global steel inventories were 35.1mil MT in March, a rise of 15.6%y/y, largely driven by steel inventory growth in China.

Figure 11: China port inventory of iron ore, mil MT



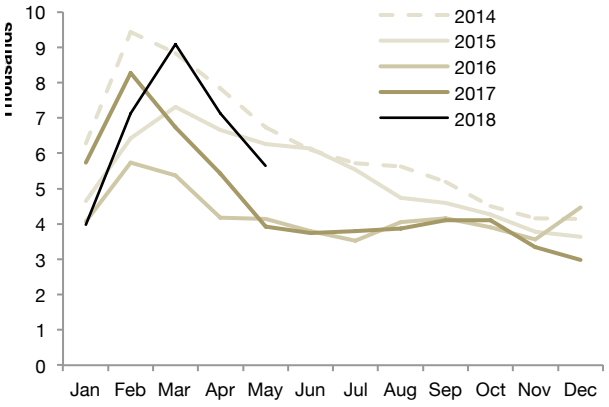
Source: Steelhome China, Bloomberg, Redward Associates

Figure 12: China fixed asset investment, %YTD



Source: Bloomberg, Redward Associates

Figure 13: China rebar inventory held by traders, mil MT



Source: Steelhome China, Redward Associates

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