Megatrends -
iron ore, metallurgical coal and scrap

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Agenda

• Summary of trade flows
• Recent trends for the bulks – why have prices collapsed?
• Forecast – 3 megatrends to watch for
• What are our expectations for the scrap market?
• Conclusions
Summary: trade flows are dominated by China and Asia on demand, whilst Australia takes centre stage on supply.

- **2013 GLOBAL IMPORTS**
  - Iron ore: China, Asia, excl China, Europe, Middle East, Other
  - Metallurgical coal: China, Asia, excl China, Europe, Central and South America, Other

- **2013 GLOBAL EXPORTS**
  - Iron ore: Australia, Brazil, South Africa, Canada, West Africa, India
  - Metallurgical coal: Australia, USA, Canada, CIS, Asia, excl China, Other

- **2013 value**
  - Iron ore: $254 bn
  - Metallurgical coal: $166 bn
  - Gold: $158 bn

Data: CRU, GTIS.
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Recent trends: prices for the bulks have fallen dramatically this year and industry costs are having to adapt

Metallurgical coal price (LHS) and iron ore price (RHS), spot, nominal, $/t

Business cost curve, metallurgical coal
X-axis: Cumulative seaborne HCC production, Mt
Y-axis: Business Costs, $/t, FOB

These industries are suffering

Some relief:
- Currency movements
- Deferred of non-essential costs

Data: CRU, company reports.
We assess that iron ore is one step behind metallurgical coal, meaning that price support is forecast further out. However, iron ore has proved to be a more responsive market.

Displacement of high-cost iron ore production seen in 3 groups:
- Chinese domestic production
- Non-traditional exporters
- Junior miners
A surge of low-cost supply from Australia has been the principal driver dragging prices lower...

Australia’s share of global exports, %

Metallurgical coal production by selected major company, Mt

Australian iron ore shipments by selected company, Mt

Data: CRU, GTIS, company reports.
...combined with a poor data releases from the Chinese economy in H2, which hit sentiment across the value chain

Despite weakness in raw materials prices, Chinese steel mill margins are poor as steel prices also slump

Average Chinese steel mill EBITDA margin (1), %

Data: CRU, WSA, CEIC.
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1. Rate of demand growth to ease for global and China

CHINA
- Chinese growth to slow but not peak in next 5 years
- Development spreading westward will support growth
- Different sectors will drive continued growth
- BOF technology to dominate – scrap has no major impact in this time frame

Data: CRU, WSA.
No crash in demand in CRU’s long-run forecast

China finished steel consumption by end use sector, Mt

Global iron ore demand, Mt

Global demand levels supported in the long-run by development of large population economies, e.g. Indonesia

Data: CRU.
2. More supply cuts are to come as prices hold at low levels and certain miners are unable to compete

- More announcements of supply cuts to existing production, especially for iron ore

- Supply cuts in metallurgical coal to be realised next year

*Exports set to drop by 2% y/y as a proportion of US and Canadian volumes drop out*

- Another set of projects likely to be cancelled

- Further M&A/JV activity is likely

- Stickiness of production in both markets provides downside risk to price forecasts

**Stickiness of Chinese iron ore production has increased towards year-end**

x axis: Quarterly Chinese domestic ore production, saleable basis, Mt
y axis: Iron ore price, 62% Fe fines, CFR China, 2013 real

Data: CRU
In efforts to stay in the market, there will be an increased focus on cost reduction and productivity amongst suppliers.

Metallurgical coal cost cutting example
LHS: USA weighted average costs\(^{(1)}\)\(^{(2)}\), $/t
RHS: USA weighted average met. coal\(^{(1)}\) profitability, EBITDA, %

Data: CRU, company reports. Note: (1) Contains some thermal coal. (2) Not accounting for VIU adjustments.

E.G. Sustaining capital will be deferred

Why is this important?

These actions will lower the cost curve and keep more material in the market – both imply lower price levels to hold.
PLEASE NOTE: the majors are still in a good position (although margins down on last year)...

EBITDA margins of selected companies’ iron ore divisions (1), %

Majors EBITDA margins remain between 40-50%...still what many businesses dream of, despite a >40% drop in the iron ore price y/y

...but, they too, will look to lower costs and one way to do this is to push volume (much of this has already happened in coal)

BHBP quote (iron ore)
“We are targeting unit cast costs of $20/t (excludes freight and royalties) in the medium-term”

Data: CRU, company reports. Note: (1) 2014 H2 is an estimate.
Therefore, for ore, with further big additions from the majors looming, the supply-side is set to become more consolidated. No equivalent stark change for coal.

Data: CRU, GTIS.
3. Depressed price levels to hold for both bulks. However, some mild uplift is forecast as markets return to equilibrium.

Data: CRU Iron Ore Cost Model.

x axis: Cumulative iron ore production, Mt
y axis: Iron ore Business Costs in 2018, $/t real 2013

90th percentile = 1979 Mt
@ ~$85/t, real 2013

2018 iron ore demand
This is set to happen sooner for metallurgical coal than iron ore

Hard coking coal contract prices, real 2013$, $/t, FOB Australia

No return to 2011 highs
- Cost structure of industry has lowered
- As prices recover, this will attract idled mines to restart, and a potential switch in the metallurgical/thermal mix, keeping a cap on the price lift

Data: CRU.
A critical difference between the bulks = the role of Chinese domestic supply

For iron ore...
- High-cost Chinese supply has been, and will be, squeezed out (NOTE – more resilience recently)
- China’s import reliance will rise

For metallurgical coal...
- Chinese supply is not a key supplier in the 4th quartile
- Greater protection from the government

Chinese import penetration, iron ore, %

Iron ore seaborne trade is more reliant on China

Data: CRU, GTIS.
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Scrap megatrend 1: Volumes demanded from key importing regions are not set to return to 2011/2012 levels

Trade: demand-side weakness next year and through to 2018

- Deterioration in finished steel demand from these regions
- China’s increased presence in finished steel markets

Data: CRU, GTIS.
Scrap megatrend 2: Any marked impact of scrap in China is not set to kick in until the next decade

By 2025, the vast majority of steelmaking will still be via the BOF route, despite the expected increase in the scrap pool.

Assumption
• Lifespan of steel in construction = 30-40 years
(This sector has been the largest driver of steel demand)
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→ what megatrends in the next 5 years?

1. Steel demand to continue to grow but at a slower rate
2. More supply cuts for the bulks – those in coal to come sooner
3. Increased focused amongst producers on cost control
4. Today’s lower price range is the new norm
5. Import demand in scrap markets to remain weaker than recent history
Thank you for your attention
Please address any questions or comments relating to this presentation to:

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