

Under-reporting in the Chinese steel industry

Explanation, analysis and the implications going forward

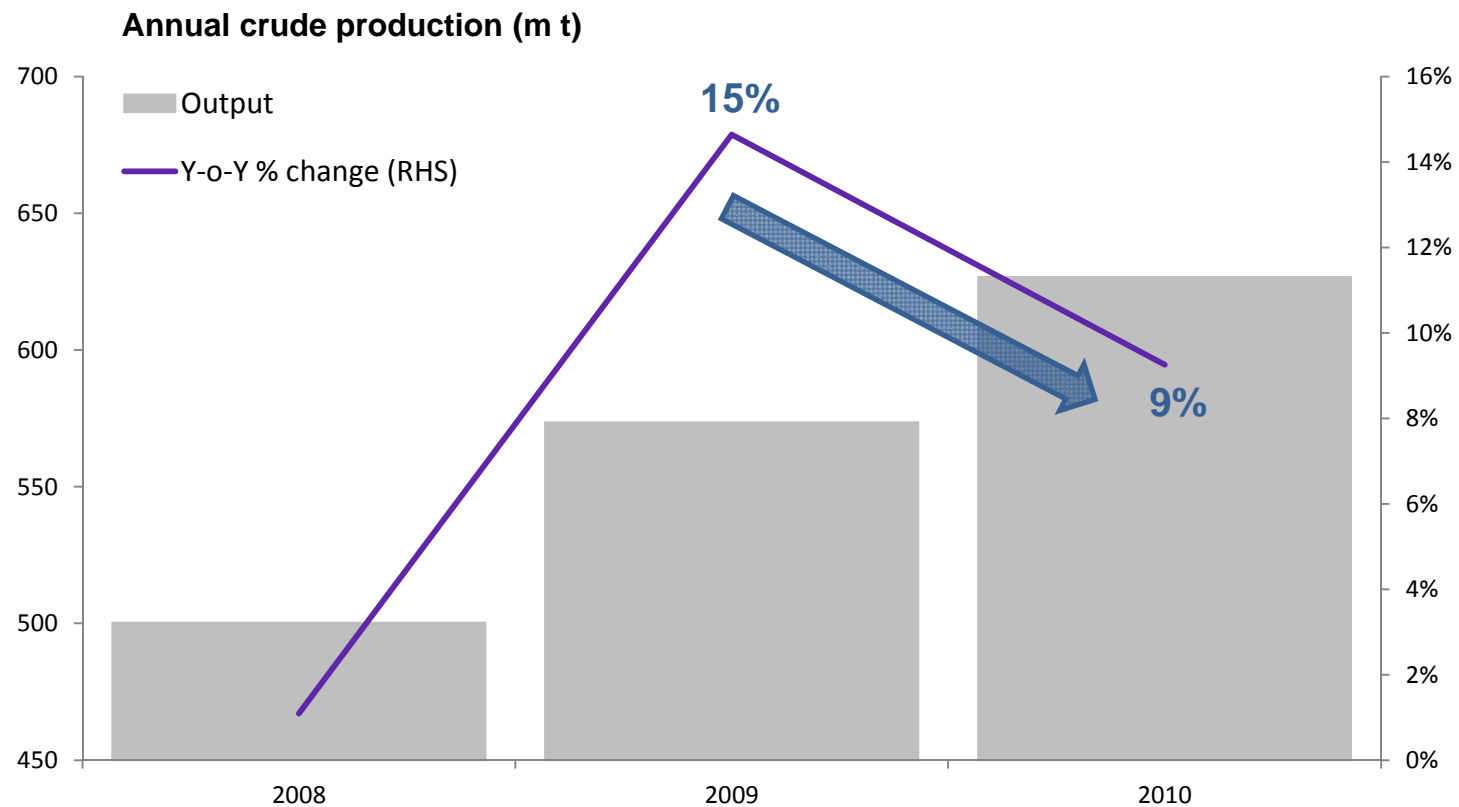


Under-reporting in the Chinese steel industry

- 1. Reported crude production statistics and why they appear to be under-reported**
2. MEPS revised production figures
3. Implications for the iron ore market

NBS stats suggest the pace of growth in crude production slowed over 2010

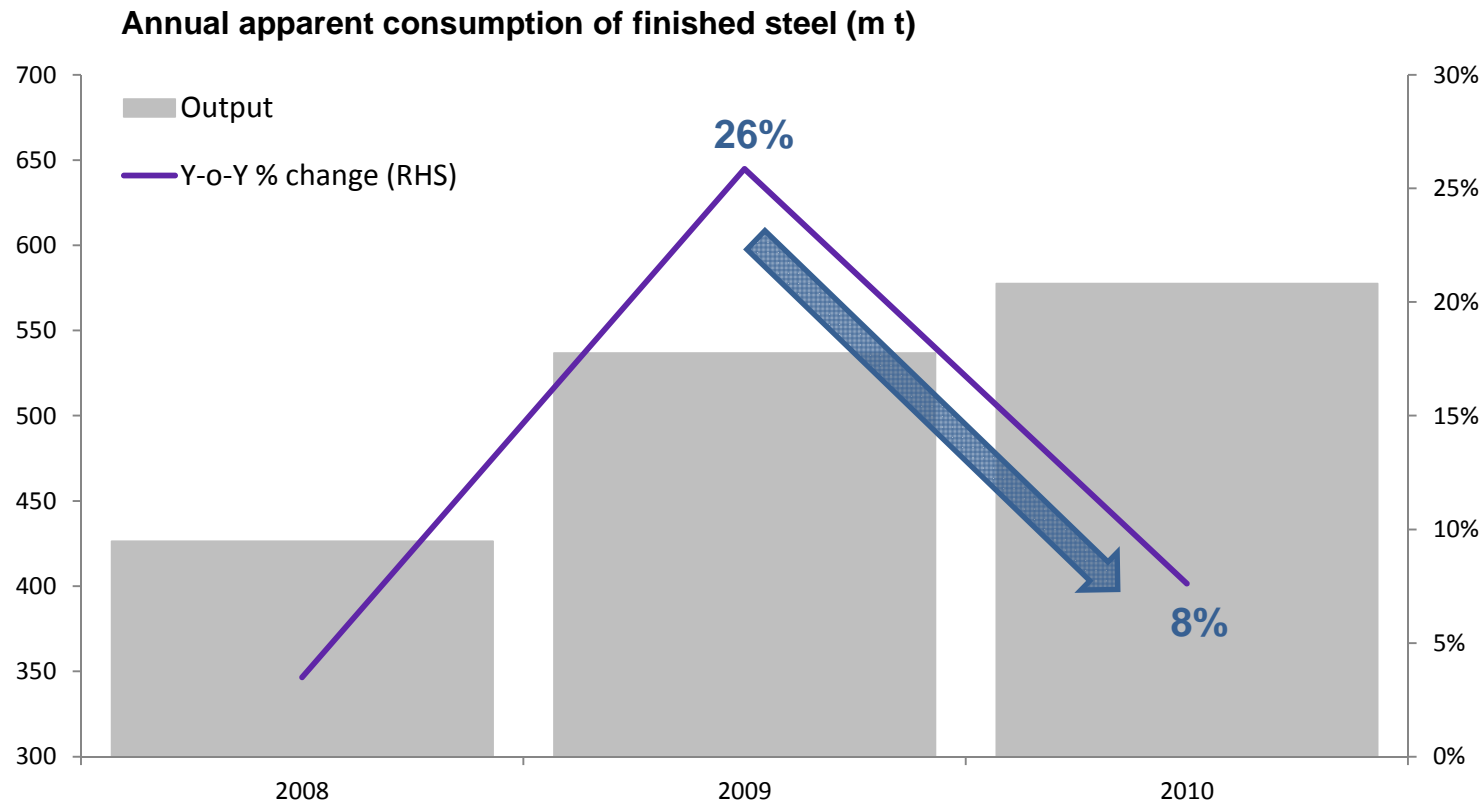
Official National Bureau of Statistics (NBS) figures show a 53m t increase in crude steel production 2009 to 2010. This compares with a 73m t rise 2008 to 2009, and suggests that growth slowed.



Source: NBS

Growth in apparent consumption of finished steel severely moderated

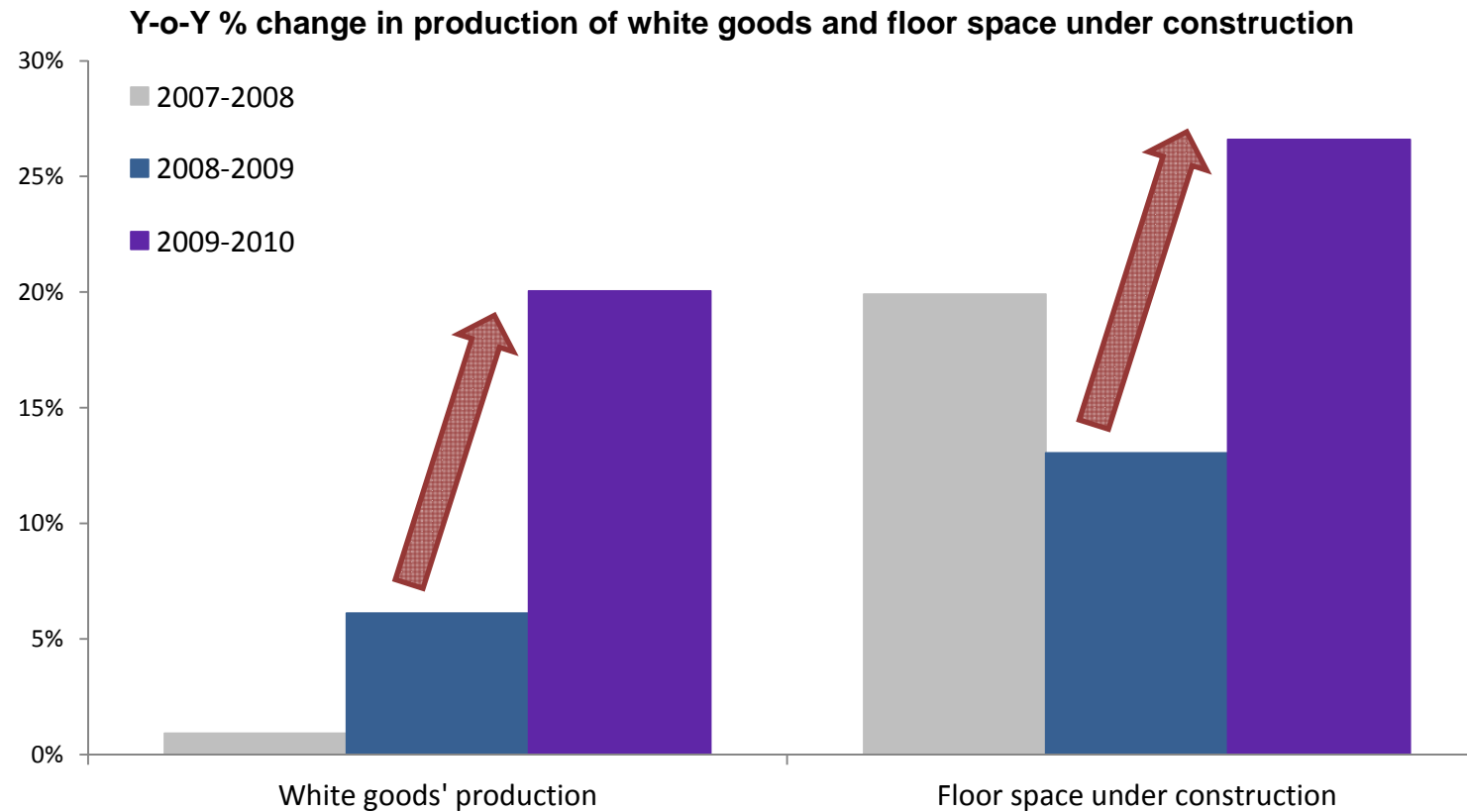
NBS crude production figures imply that finished steel output was in the region of 600m t in 2010. A surge in exports of finished steel meant that domestic apparent consumption appears to have grown only 8% 2009 to 2010. This is down from 26% y-o-y growth 2008 to 2009.



Source: NBS, ISSB

But end user output displayed double-digit y-o-y growth

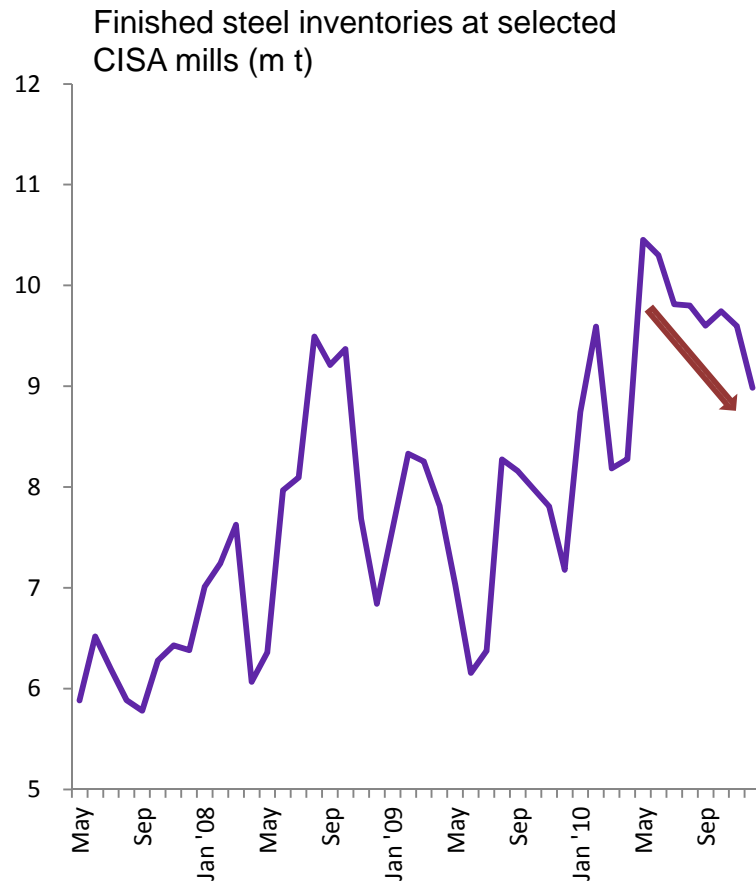
Slowing growth in domestic apparent consumption of steel contrasts with rising output at steel end users over 2010. Production of white goods rose 20% and floor space under construction 27%, from 2009 levels.



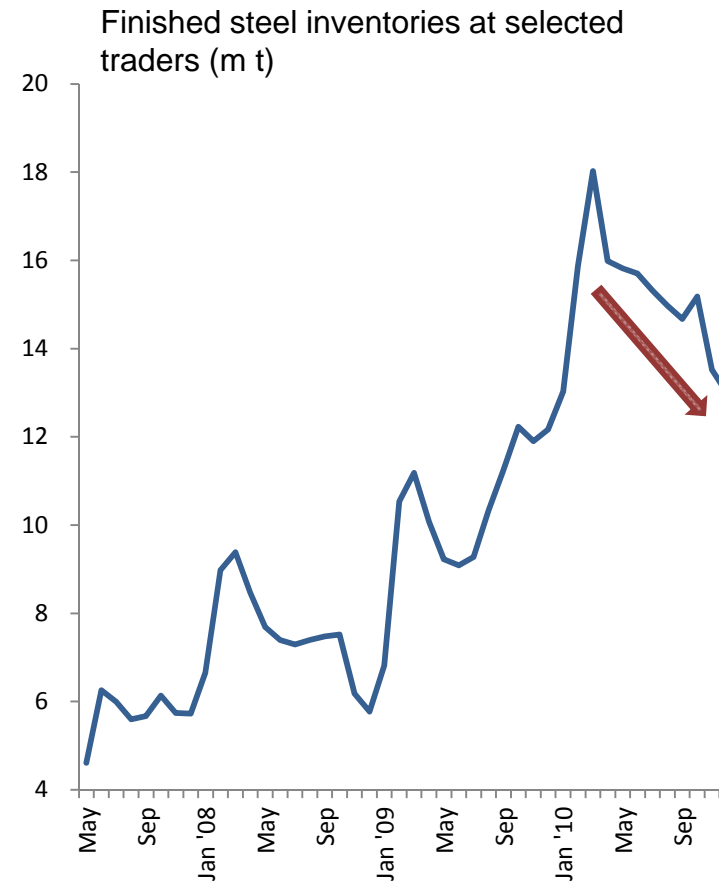
Source: NBS

Destocking reflected strong demand for steel

Both traders and mills ran down stocks of finished steel over 2010 pointing to strong demand. This destock was not however on a large enough scale to explain the apparent disconnect between steel production and demand in NBS statistics.



Source: CISA

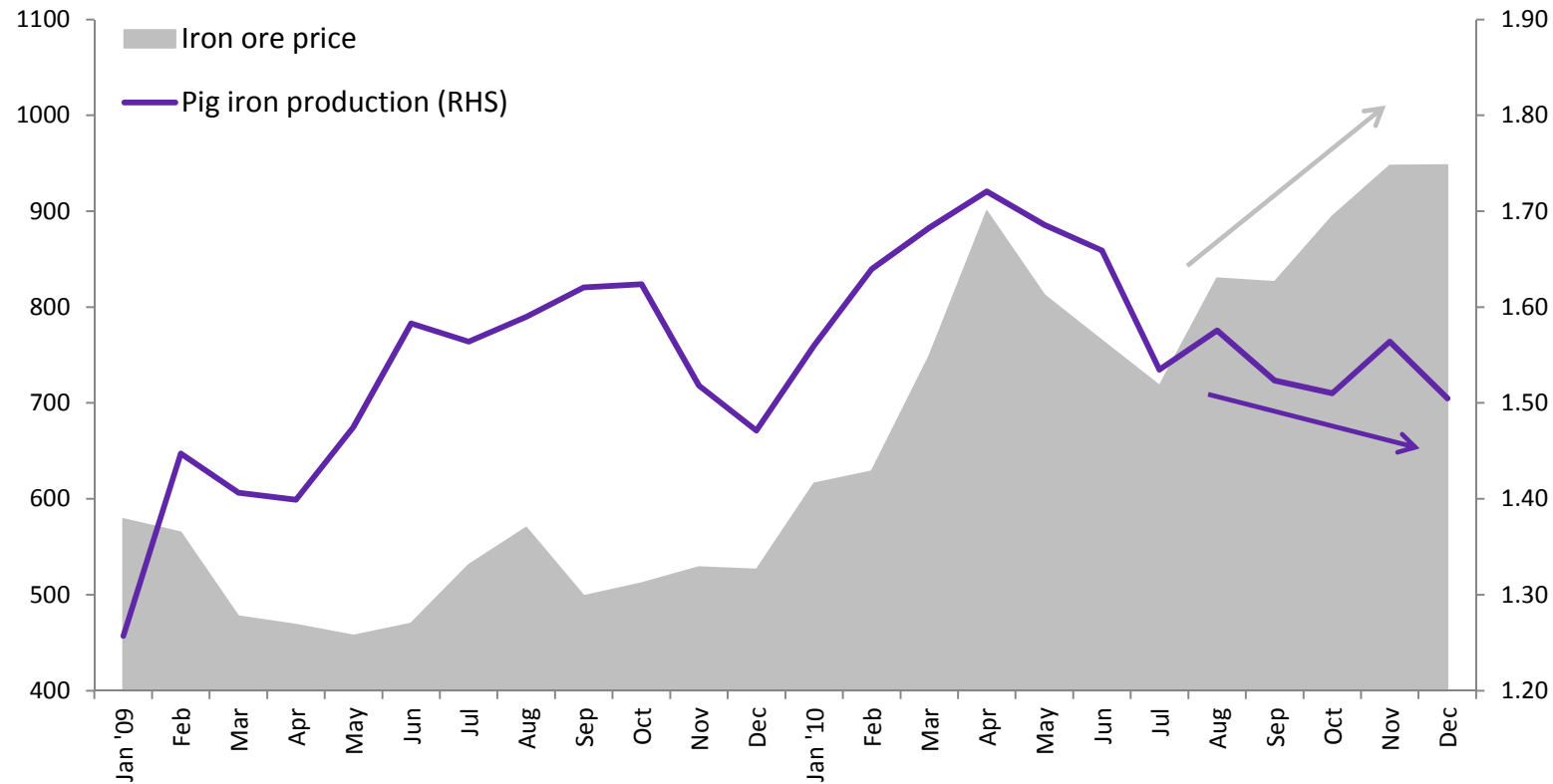


Source: Mysteel

Falling reported pig iron production contrasts with rising iron ore prices

Daily pig iron run rates fell during 2H10. Domestic iron ore prices should have dipped in line with this drop in China's iron ore requirements, but prices gained 32% over the period.

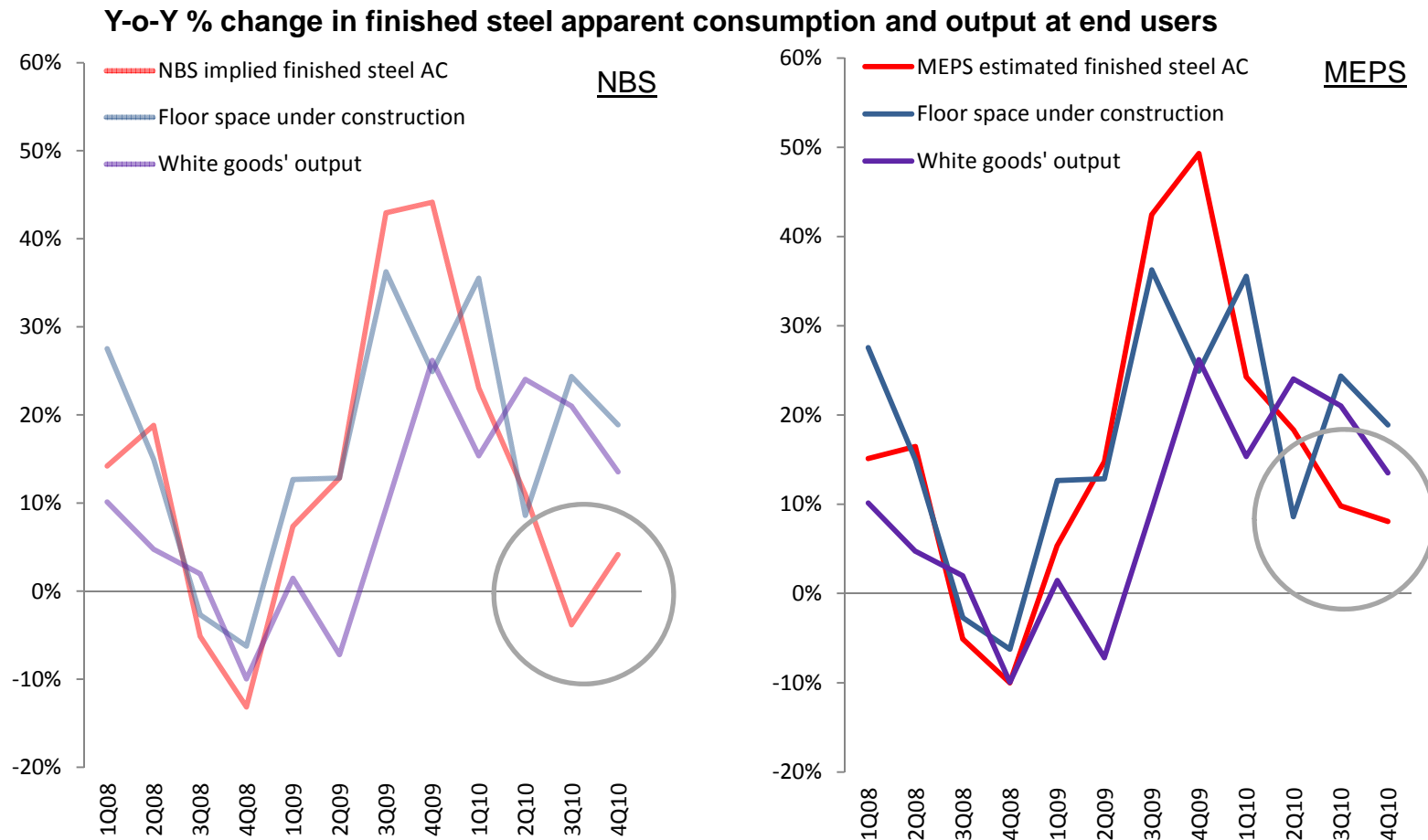
**Iron ore concentrate (66% Fe wet basis, Tangshan, RMB/t, incl VAT)
v. daily pig iron production (m t)**



Source: NBS, Mysteel

MEPS estimated finished steel output shows a more likely scenario

Destocking would lead us to expect lower growth in steel apparent consumption than in end user output. Apparent consumption growth rates implied from NBS crude steel figures are unrealistically low. MEPS estimated finished steel output shows more realistic growth rates.

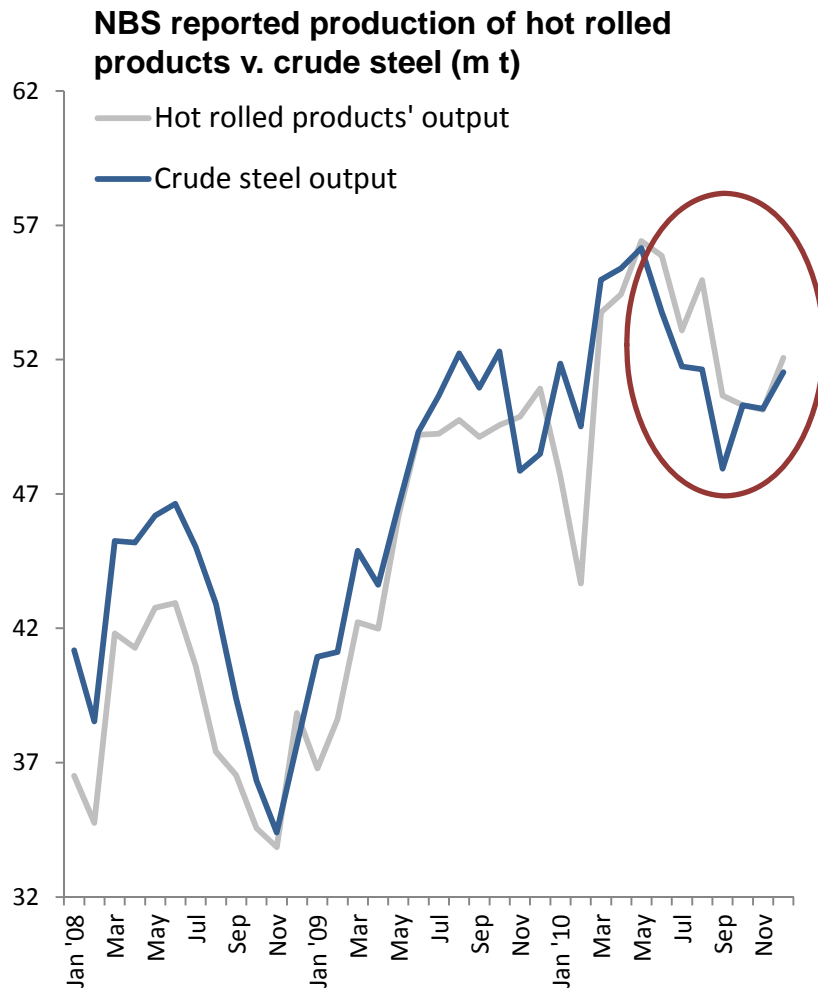


Source: NBS, ISSB

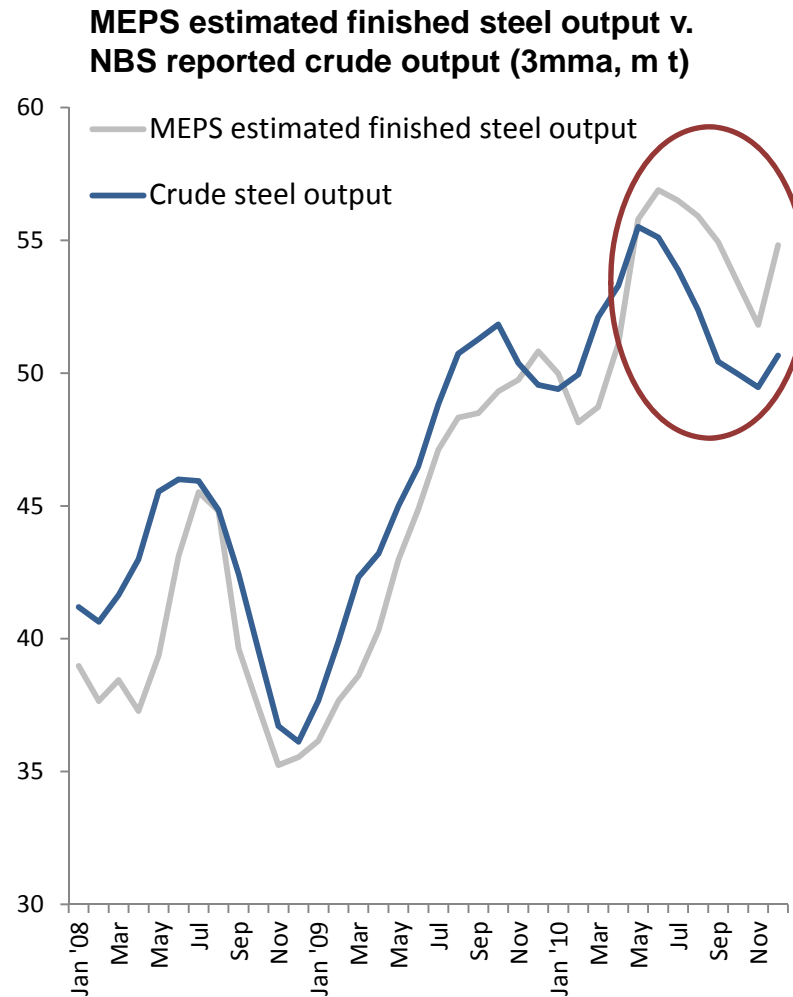
Source: NBS, ISSB, CISA, MEPS estimates

Crude steel production looks to have been under-reported

Reported crude steel production over 2010 was lower than that of output of hot rolled products and below MEPS estimated finished steel output. This and the disconnect between crude production and end user demand suggests crude production was under-reported last year.



Source: NBS



Source: NBS, CISA, MEPS estimates

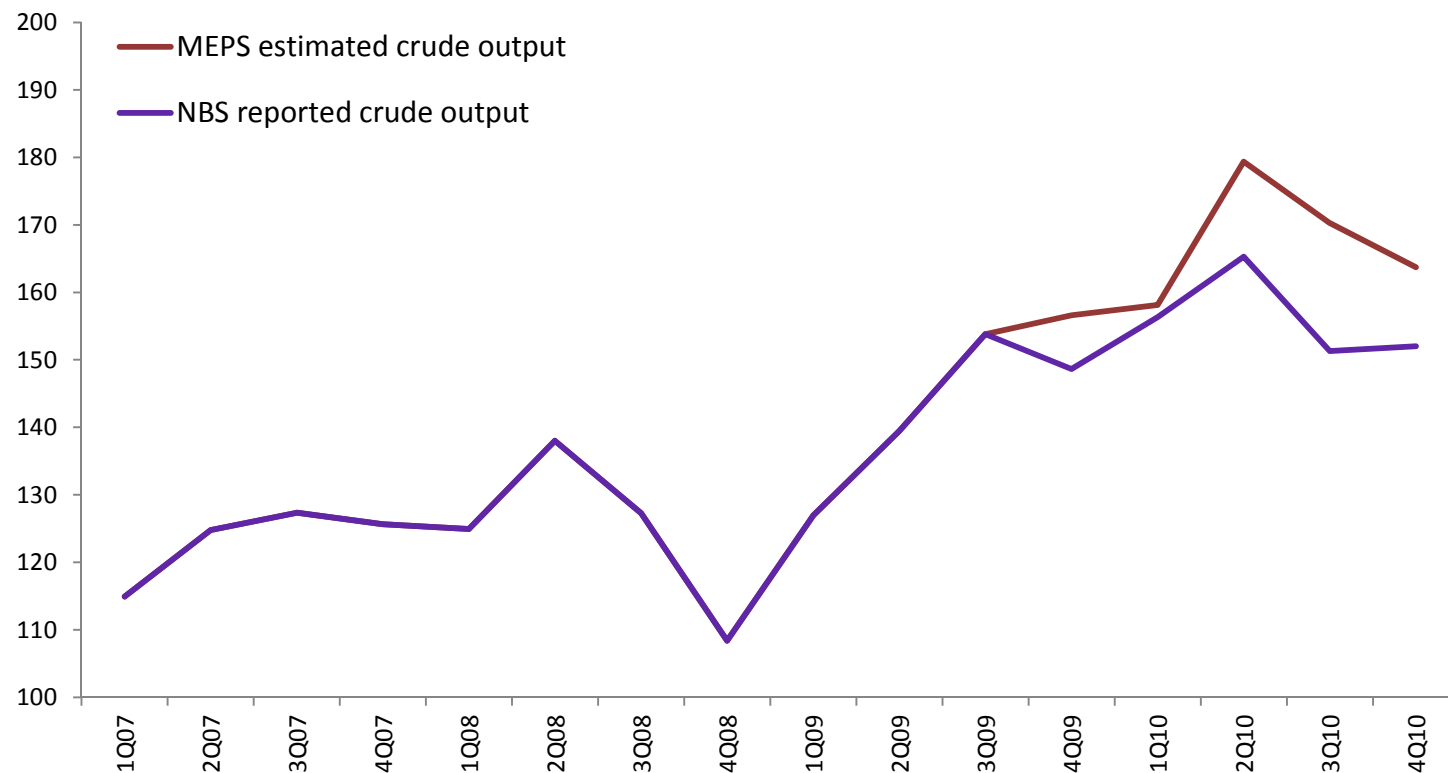
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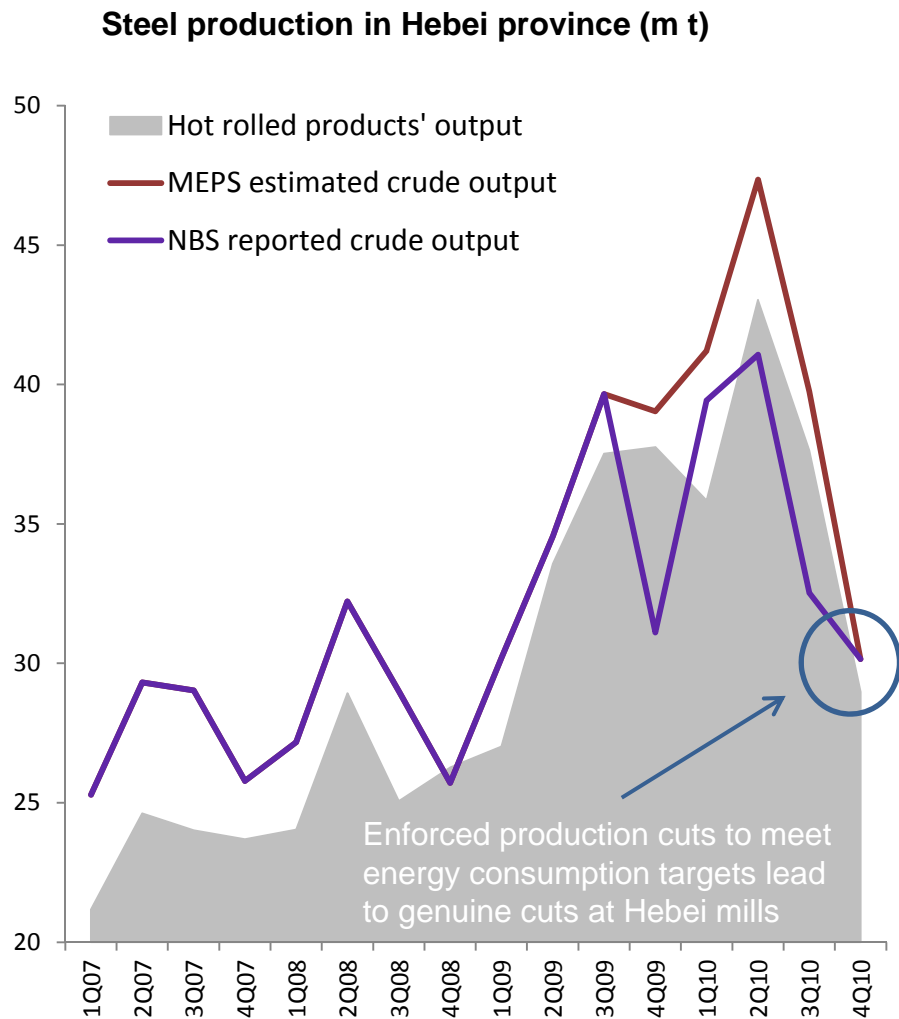
MEPS revisions suggest that crude steel production was under-reported by as much as 45m t in 2010

MEPS estimates that Chinese crude steel output in 2010 was closer to 672m t than the 627m t reported by NBS. Our model takes into consideration significant revisions made to January and February 2010 production data by NBS. We have consequently lowered our 2010 crude steel and pig iron figures from those we originally published.

Crude steel production, actual and estimated (m t)



Under-reporting was focused on 'out of control' Hebei province



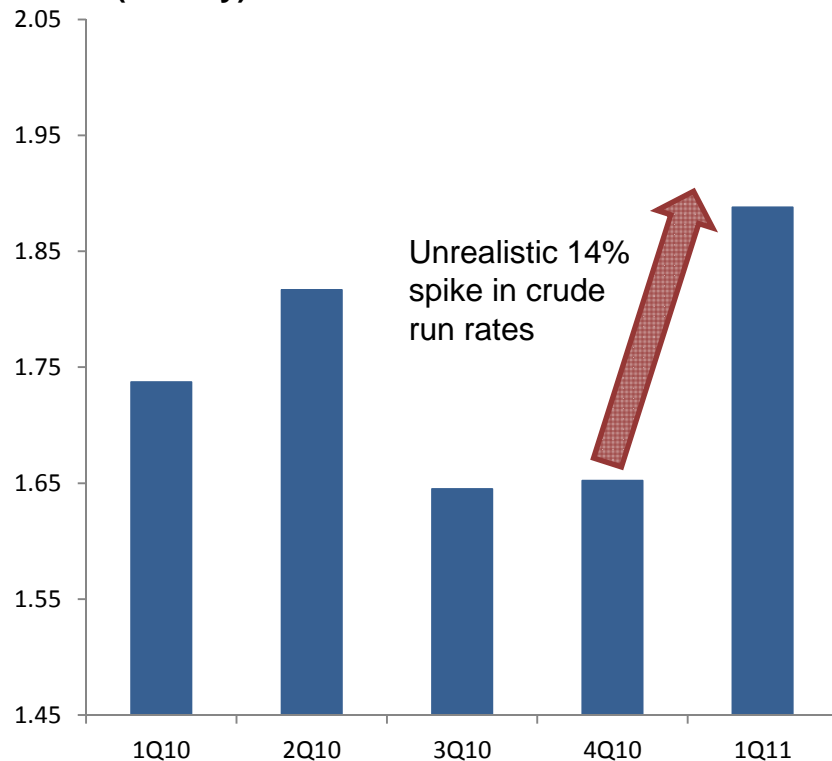
Source: NBS, CISA, MEPS estimates

- Under-reporting was limited to crude steel and pig iron production. Finished steel output, which was not the focus of government campaigns to close out-dated capacity, continued to largely be accurately reported in 2010.
- Crude steel and pig iron production in Hebei province does however appear to have been fully reported in 4Q10. China's drive to reduce energy consumption and the ensuing power restrictions forced previously under-reporting mills to halt production.
- Output of hot rolled products in Hebei fell at the start of the energy consumption campaign by more than we would expect given the fall in crude production. This suggests that crude was under-reported by 2.7m t in August and 14m t across 2010.

2011 production data confirms 2010 under-reporting

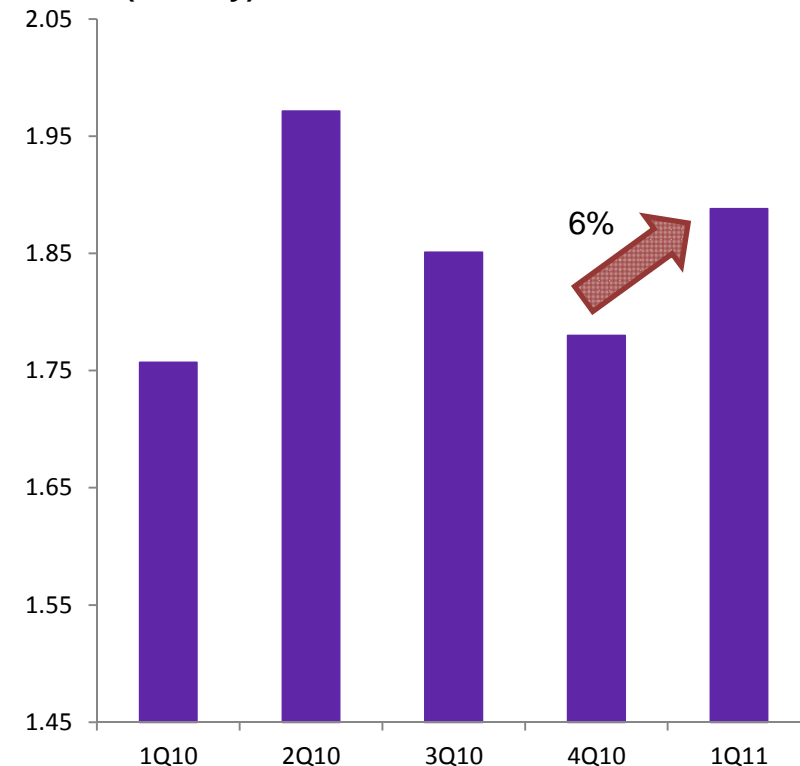
With targets having been officially met for closing out-dated capacity by the end of 2010, mill and local government officials appear to now be reporting more accurate production statistics. We note however that January to February 2011 production data (which is released together due to Chinese New Year) contained errors which have been amended in the full Q1 output data released by NBS. This corrects previously unrealistic pig iron to crude production ratios.

Average crude daily run rate as reported by NBS (m t/day)



Source: NBS

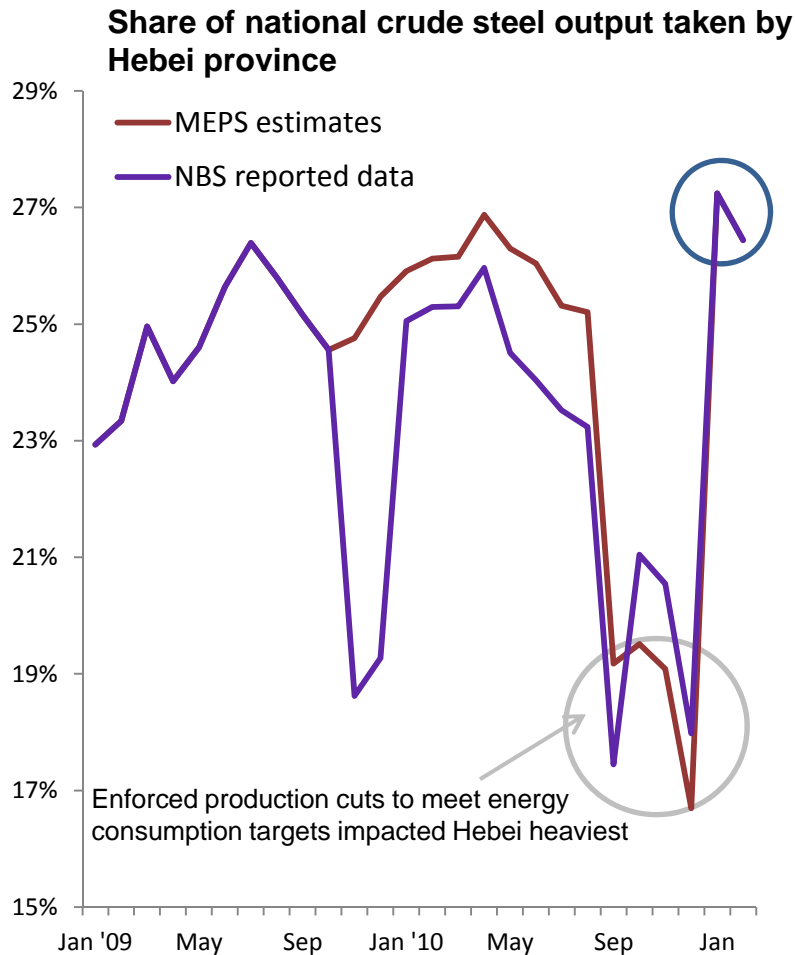
MEPS calculated average crude daily run rate (m t/day)



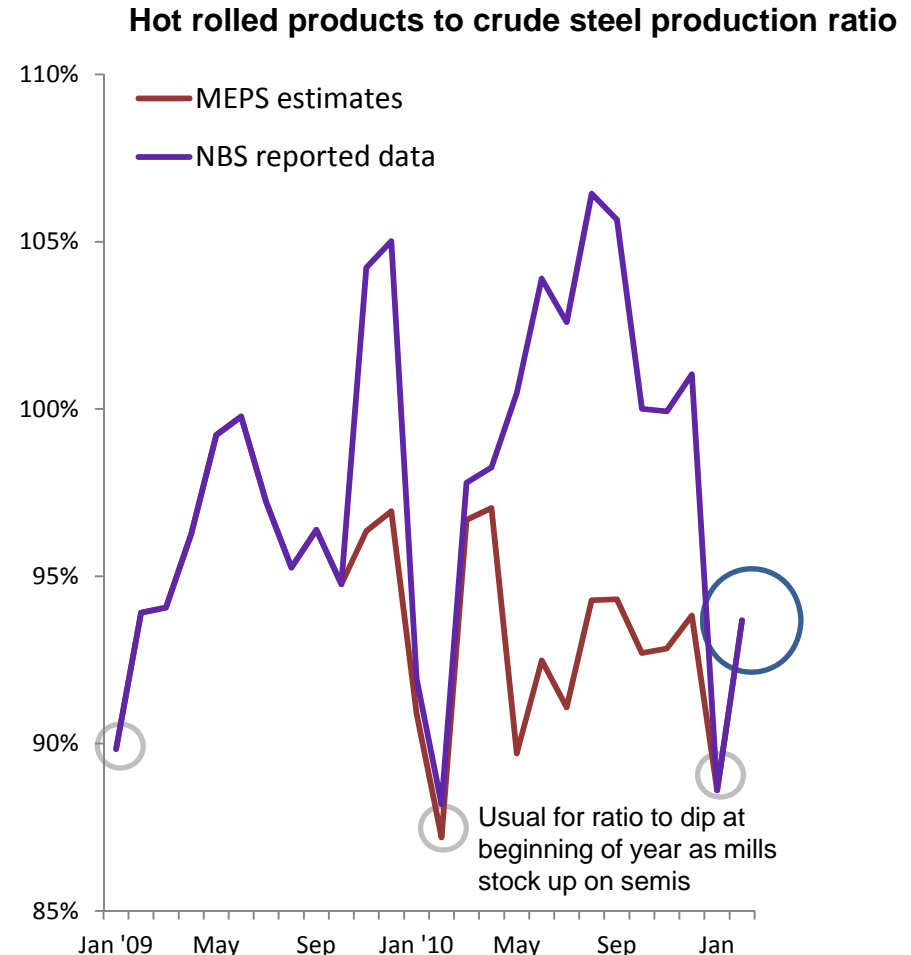
Source: NBS, CISA, MEPS estimates

Production trends are returning to norm

Previous anomalies in production trends have been corrected in 2011, again suggesting that we are seeing more accurate reporting.



Source: NBS, CISA, MEPS estimates



Source: NBS, CISA, MEPS estimates

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Chinese domestic iron ore industry stronger than previously thought

MEPS estimates suggest that China required 66m t more iron ore (62% Fe) than NBS figures suggest. This means China's self-sufficiency ratio in iron ore is higher than previously thought, with the proportion of China's total iron ore requirements sourced from domestic mines hitting 35% in 2010.

Pig iron output and implied iron ore demand in China

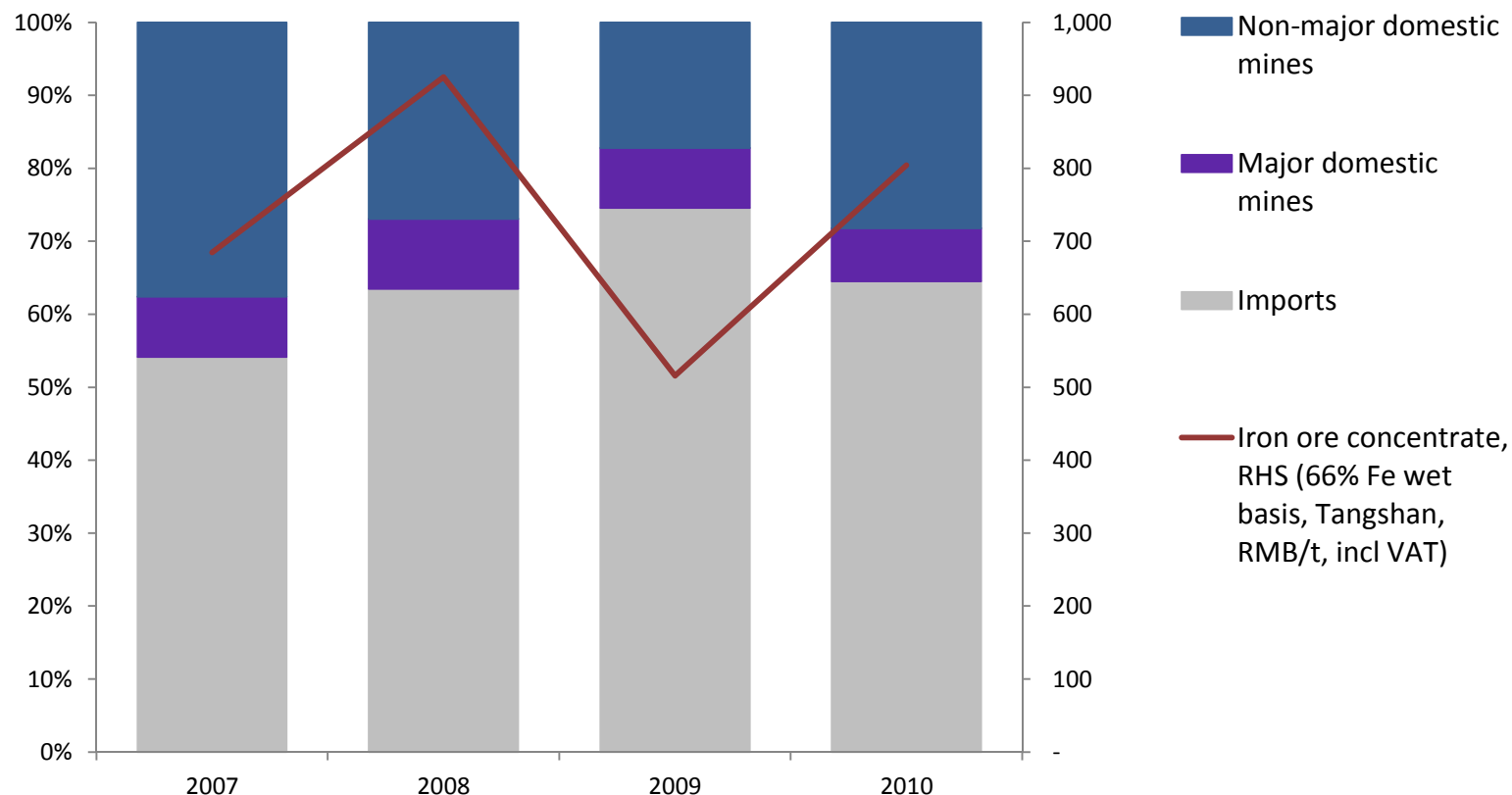
<i>m t, 62% Fe basis - unless otherwise stated</i>	2007	2008	2009	2010
NBS reported pig iron output (m t)	471.4	469.3	549.4	590.2
<i>Iron ore required</i>	734.9	731.6	856.6	920.1
MEPS calculated pig iron output (m t)	471.4	469.3	554	632
<i>Iron ore required</i>	734.9	731.6	864	986
Estimated additional iron ore required	-	-	7	66
Iron ore imports	389.8	451.2	638.3	628.9
Iron ore port stocks y-o-y change	8.3	13.3	6.3	7.3
Iron ore required from domestic mines based on NBS figures	336.9	267.1	212	284
<i>Proportion of iron ore sourced from domestic mines</i>	46%	37%	25%	31%
Iron ore required from domestic mines based on MEPS figures	336.9	267.1	220	350
<i>Proportion of iron ore sourced from domestic mines</i>	46%	37%	25%	35%

Source: NBS, CISA, ISSB, Mysteel, MEPS estimates

Boom in domestic iron ore output came from smaller mines

The 2010 boom in domestic iron ore output came largely from independent small and medium domestic iron ore mines. We believe that the owners invested heavily on the back of profit generated in 2008. We expect these mines to be nearing peak output in terms of Fe units, but there is potential for further growth at major mines who are reported to have invested in improved infrastructure over the last year.

Source of China's Fe requirements v. domestic iron ore prices



Source: NBS, CISA, ISSB, Mysteel, MEPS estimates

Chinese demand to keep iron ore prices high

MEPS forecasts, based on revised pig iron production figures, suggest that in 2011 China's Fe requirements will be in the region of 679m t – 50% above 2008 levels. Is iron ore supply sufficient to feed this demand? We believe that non-major mines are near peak output in terms of Fe units, but that investment in major mines will begin impacting on supply this year. Assuming 2% y-o-y growth 2010 to 2011 in Fe units sourced from domestic mines, imports of iron ore (including material taken from port stocks) will have to increase 17% over the same period to meet Chinese demand. Rising global seaborne supply can meet these requirements, with China's share of global supply increasing, but still to well below 2009 peak levels. Demand for iron ore from China on this scale will however maintain upward pressure on global iron ore prices.

Source of China's Fe requirements, actual and forecast

<i>m t</i>	2008	2009	2010	2011	2012
MEPS calculated pig iron output	469	554	632	702	753
Fe units required	454	536	611	679	728
Chinese imports of iron ore	444	628	619	726	796
<i>Y-o-Y % change</i>	16%	41%	-1%	17%	10%
Global seaborne supply (CLSA estimates)	840	930	1033	1151	1271
<i>China's share of seaborne market</i>	53%	68%	60%	63%	63%
Fe units sourced from imported material	288	400	394	458	502
<i>Share of total requirements</i>	63%	75%	65%	67%	69%
Fe units sourced from major mines	43	44	44	49	54
<i>Y-o-Y % change</i>	15%	1%	1%	10%	10%
Fe units sourced from non-major mines	122	92	173	173	173
<i>Y-o-Y % change</i>	-29%	-25%	87%	0%	0%
Fe units sourced from domestic mines	166	136	217	221	226
<i>Share of total requirements</i>	37%	25%	35%	33%	31%

Conclusions

- Chinese crude steel production looks to have been under-reported by 45m t in 2010, and output of pig iron by 42m t. Domestic demand for steel was strong enough to meet this elevated level of supply, and indeed reported crude output is too low relative to indications of end user demand.
- 2011 production figures do not represent an extreme ramping up of production from 2010 levels. Supply is consistent with actual levels over 2010 and concerns about oversupply have been exaggerated.
- Iron ore prices will be kept high in the short term by on-going Chinese demand, even in the face of rising global supply.
- Unaccounted for crude steel production is unlikely to have any unforeseen impact on global coking coal supply and prices, where the consensus is already for an increasingly tight market. The majority of mills which under-reported output in 2010 are small pig iron and crude steel producers (with blast furnaces below 300 cu m and EAFs/convertors below 20 t). These producers are not reliant on high quality hard coking coal and will be able to draw on relatively abundant supplies of poorer quality domestic coking coal.

For further details of our methodology in estimating crude steel production see ***China Steel Insight***, March 2011 or contact rhalpin@meps.co.uk

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