

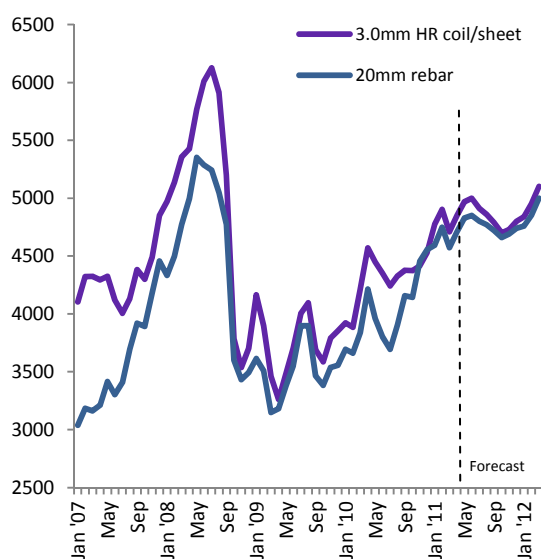
CHINA STEEL INSIGHT

March 2011

BACK TO REALITY FOR THE CHINESE STEEL INDUSTRY?

MEPS forecasts: HRC and rebar spot prices (Shanghai)

| RMB/t (incl 17% VAT) | 3.0mm HR coil/sheet | 20mm rebar |
|----------------------|---------------------|------------|
| Mar to date | 4710 | 4573 |
| Apr | 4850 | 4710 |
| May | 4970 | 4830 |
| Jun | 5000 | 4850 |
| Jul | 4910 | 4800 |
| Aug | 4860 | 4770 |
| Sep | 4790 | 4720 |
| Oct | 4700 | 4660 |
| Nov | 4730 | 4690 |
| Dec | 4800 | 4740 |
| Jan '12 | 4840 | 4760 |
| Feb | 4950 | 4850 |
| Mar | 5100 | 5000 |



Source: Mysteel, MEPS forecasts

2010 steel production is stronger than official figures suggest

- MEPS calculates that finished steel output hit 648 million tonnes (m t) in 2010, up 18% y-o-y.
- Drivers of growth have moved away from the transient extremes of the fiscal stimulus plan. Steel production has a secure base for further expansion. MEPS forecasts finished steel output to reach 700m t in 2011 and 750m t in 2012.
- Official crude production figures tell a different story, but appear to have been under-reported by as much as 47m t. Actual crude output in 2010 looks closer to 674m t than the declared 627m t.
- Global miners could have under-estimated Chinese iron ore demand by as much as 118m t (62% Fe equivalent) over the next two years.

Chinese exports still lacking a solid base

- Chinese exports of finished steel remain driven by speculation abroad. Lack of long term, stable demand is likely to keep 2011 exports at 2010 levels.
- The Chinese government wants to move the steel export industry towards a lower tonnage, higher value model. We see further rebate removals as a key part of this.

Chinese HRC spot prices expected to rise by 12% in 2011

- Input cost pressures and sustained high levels of domestic steel consumption will continue to drive price rises.
- We forecast a tight market for long products taking the HRC premium over rebar to an average of only RMB 109/t through 2011.

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| 1000 t | Actual | | | | Forecast | | | | Year | | |
|-----------------------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|
| | 1Q10 | 2Q10 | 3Q10 | 4Q10 | 1Q11 | 2Q11 | 3Q11 | 4Q11 | 2010 | 2011 | 2012 |
| Production* | | | | | | | | | | | |
| HRC | 23,705 | 26,987 | 26,267 | 24,810 | 25,500 | 28,500 | 27,500 | 27,500 | 101,770 | 109,000 | 116,500 |
| Plate | 12,584 | 13,731 | 13,627 | 12,756 | 13,300 | 15,000 | 14,500 | 14,200 | 52,698 | 57,000 | 61,000 |
| CRC | 9,417 | 11,096 | 10,749 | 10,776 | 11,050 | 12,000 | 11,200 | 11,250 | 42,039 | 45,500 | 49,000 |
| Metal coated sheet | 5,533 | 6,292 | 6,020 | 6,146 | 6,250 | 6,750 | 6,500 | 6,500 | 23,991 | 26,000 | 28,000 |
| Colour coated sheet | 1,072 | 1,442 | 1,438 | 1,685 | 1,540 | 1,660 | 1,600 | 1,600 | 5,637 | 6,400 | 6,800 |
| Silicon steel | 1,353 | 1,394 | 1,385 | 1,528 | 1,500 | 1,550 | 1,500 | 1,550 | 5,660 | 6,100 | 6,600 |
| Total flats | 53,664 | 60,943 | 59,486 | 57,701 | 59,140 | 65,460 | 62,800 | 62,600 | 231,795 | 250,000 | 267,900 |
| Rebar | 28,723 | 32,316 | 31,505 | 32,054 | 32,500 | 34,500 | 33,500 | 35,000 | 124,598 | 135,500 | 146,000 |
| Wire rod | 23,570 | 26,153 | 25,130 | 24,991 | 25,500 | 28,000 | 27,500 | 27,500 | 99,843 | 108,500 | 117,000 |
| Sections | 11,301 | 13,987 | 12,832 | 11,765 | 12,150 | 14,050 | 13,350 | 13,150 | 49,885 | 52,700 | 56,300 |
| Bar | 14,672 | 17,356 | 16,441 | 17,394 | 17,300 | 17,700 | 17,000 | 17,500 | 65,862 | 69,500 | 73,500 |
| Railway steel products | 1,302 | 1,304 | 1,325 | 1,260 | 1,350 | 1,550 | 1,450 | 1,450 | 5,192 | 5,800 | 6,300 |
| Total longs | 79,568 | 91,115 | 87,233 | 87,463 | 88,800 | 95,800 | 92,800 | 94,600 | 345,379 | 372,000 | 399,100 |
| Other finished | 3,250 | 3,819 | 3,468 | 3,986 | 3,750 | 4,000 | 3,900 | 3,950 | 14,523 | 15,600 | 16,500 |
| Welded tube | 6,564 | 8,575 | 8,403 | 8,961 | 8,550 | 9,250 | 8,950 | 9,050 | 32,502 | 35,800 | 38,000 |
| Seamless tube | 5,065 | 6,236 | 6,249 | 6,351 | 6,100 | 6,650 | 6,750 | 7,100 | 23,901 | 26,600 | 28,500 |
| Total | 148,112 | 170,687 | 164,839 | 164,462 | 166,340 | 181,160 | 175,200 | 177,300 | 648,100 | 700,000 | 750,000 |
| Imports | | | | | | | | | | | |
| HRC | 572 | 522 | 486 | 566 | 580 | 580 | 480 | 510 | 2,146 | 2,150 | 2,150 |
| Plate | 318 | 374 | 366 | 360 | 355 | 370 | 355 | 350 | 1,418 | 1,430 | 1,400 |
| CRC | 1,200 | 1,269 | 1,172 | 1,106 | 1,230 | 1,290 | 1,230 | 1,150 | 4,747 | 4,900 | 4,800 |
| Metal coated sheet | 1,051 | 1,145 | 1,104 | 933 | 890 | 1,100 | 1,060 | 1,000 | 4,233 | 4,050 | 4,000 |
| Colour coated sheet | 94 | 101 | 93 | 116 | 90 | 105 | 95 | 100 | 404 | 390 | 410 |
| Silicon steel | 227 | 261 | 243 | 242 | 240 | 250 | 250 | 240 | 973 | 980 | 1,040 |
| Total flats | 3,462 | 3,672 | 3,464 | 3,323 | 3,385 | 3,695 | 3,470 | 3,350 | 13,921 | 13,900 | 13,800 |
| Rebar | 11 | 16 | 15 | 12 | 15 | 15 | 10 | 10 | 53 | 50 | 50 |
| Wire rod | 170 | 175 | 150 | 160 | 170 | 185 | 175 | 170 | 654 | 700 | 650 |
| Sections | 122 | 110 | 97 | 89 | 80 | 115 | 115 | 100 | 419 | 410 | 400 |
| Bar | 99 | 116 | 104 | 104 | 100 | 105 | 110 | 105 | 422 | 420 | 420 |
| Railway steel products | 68 | 28 | 43 | 48 | 55 | 60 | 55 | 50 | 186 | 220 | 210 |
| Total longs | 468 | 444 | 409 | 413 | 420 | 480 | 465 | 435 | 1,734 | 1,800 | 1,730 |
| Other finished | 67 | 86 | 77 | 71 | 65 | 80 | 80 | 75 | 301 | 300 | 300 |
| Welded tube | 49 | 60 | 51 | 61 | 75 | 80 | 75 | 70 | 221 | 300 | 270 |
| Seamless tube | 63 | 63 | 60 | 65 | 55 | 70 | 60 | 65 | 252 | 250 | 250 |
| Total | 4,109 | 4,325 | 4,062 | 3,932 | 4,000 | 4,405 | 4,150 | 3,995 | 16,429 | 16,550 | 16,350 |
| Exports | | | | | | | | | | | |
| HRC | 2,009 | 4,354 | 1,756 | 1,019 | 880 | 2,120 | 1,750 | 1,050 | 9,139 | 5,800 | 6,000 |
| Plate | 944 | 1,494 | 977 | 925 | 850 | 1,360 | 1,000 | 940 | 4,340 | 4,150 | 4,000 |
| CRC | 528 | 1,065 | 977 | 662 | 530 | 1,070 | 950 | 650 | 3,232 | 3,200 | 3,200 |
| Metal coated sheet | 932 | 1,617 | 1,315 | 1,031 | 1,130 | 1,550 | 1,350 | 1,070 | 4,894 | 5,100 | 5,000 |
| Colour coated sheet | 449 | 867 | 882 | 852 | 910 | 930 | 910 | 880 | 3,051 | 3,630 | 3,800 |
| Silicon steel | 33 | 36 | 44 | 43 | 40 | 45 | 45 | 40 | 156 | 170 | 180 |
| Total flats | 4,896 | 9,435 | 5,950 | 4,531 | 4,340 | 7,075 | 6,005 | 4,630 | 24,812 | 22,050 | 22,180 |
| Rebar | 58 | 49 | 56 | 63 | 40 | 60 | 60 | 60 | 225 | 220 | 220 |
| Wire rod | 448 | 902 | 576 | 425 | 430 | 720 | 550 | 400 | 2,351 | 2,100 | 2,000 |
| Sections | 593 | 729 | 314 | 287 | 390 | 650 | 420 | 340 | 1,924 | 1,800 | 1,750 |
| Bar | 500 | 831 | 675 | 610 | 580 | 840 | 640 | 590 | 2,616 | 2,650 | 2,600 |
| Railway steel products | 67 | 93 | 109 | 87 | 140 | 140 | 110 | 90 | 357 | 480 | 500 |
| Total longs | 1,666 | 2,604 | 1,730 | 1,472 | 1,580 | 2,410 | 1,780 | 1,480 | 7,472 | 7,250 | 7,070 |
| Other finished | 825 | 1,059 | 1,010 | 881 | 900 | 1,150 | 1,050 | 900 | 3,775 | 4,000 | 3,800 |
| Welded tube | 557 | 778 | 635 | 723 | 870 | 1,000 | 880 | 750 | 2,693 | 3,500 | 3,550 |
| Seamless tube | 766 | 997 | 1,036 | 1,006 | 1,000 | 1,070 | 1,030 | 1,000 | 3,806 | 4,100 | 4,000 |
| Total | 8,711 | 14,873 | 10,361 | 8,612 | 8,690 | 12,705 | 10,745 | 8,760 | 42,558 | 40,900 | 40,600 |
| Apparent Consumption | | | | | | | | | | | |
| HRC | 22,268 | 23,155 | 24,998 | 24,357 | 25,200 | 26,960 | 26,230 | 26,960 | 94,777 | 105,350 | 112,650 |
| Plate | 11,957 | 12,610 | 13,016 | 12,192 | 12,805 | 14,010 | 13,855 | 13,610 | 49,776 | 54,280 | 58,400 |
| CRC | 10,089 | 11,300 | 10,944 | 11,220 | 11,750 | 12,220 | 11,480 | 11,750 | 43,553 | 47,200 | 50,600 |
| Metal coated sheet | 5,652 | 5,820 | 5,809 | 6,049 | 6,010 | 6,300 | 6,210 | 6,430 | 23,329 | 24,950 | 27,000 |
| Colour coated sheet | 717 | 676 | 649 | 949 | 720 | 835 | 785 | 820 | 2,990 | 3,160 | 3,410 |
| Silicon steel | 1,548 | 1,619 | 1,584 | 1,727 | 1,700 | 1,755 | 1,705 | 1,750 | 6,477 | 6,910 | 7,460 |
| Total flats | 52,230 | 55,180 | 57,000 | 56,493 | 58,185 | 62,080 | 60,265 | 61,320 | 220,903 | 241,850 | 259,520 |
| Rebar | 28,676 | 32,284 | 31,464 | 32,003 | 32,475 | 34,455 | 33,450 | 34,950 | 124,427 | 135,330 | 145,830 |
| Wire rod | 23,291 | 25,425 | 24,705 | 24,726 | 25,240 | 27,465 | 27,125 | 27,270 | 98,147 | 107,100 | 115,650 |
| Sections | 10,830 | 13,368 | 12,615 | 11,567 | 11,840 | 13,515 | 13,045 | 12,910 | 48,380 | 51,310 | 54,950 |
| Bar | 14,271 | 16,640 | 15,870 | 16,887 | 16,820 | 16,965 | 16,470 | 17,015 | 63,668 | 67,270 | 71,320 |
| Railway steel products | 1,303 | 1,239 | 1,259 | 1,221 | 1,265 | 1,470 | 1,395 | 1,410 | 5,021 | 5,540 | 6,010 |
| Total longs | 78,370 | 88,955 | 85,912 | 86,404 | 87,640 | 93,870 | 91,485 | 93,555 | 339,642 | 366,550 | 393,760 |
| Other finished | 2,492 | 2,846 | 2,535 | 3,176 | 2,915 | 2,930 | 2,930 | 3,125 | 11,049 | 11,900 | 13,000 |
| Welded tube | 6,056 | 7,856 | 7,819 | 8,300 | 7,755 | 8,330 | 8,145 | 8,370 | 30,030 | 32,600 | 34,720 |
| Seamless tube | 4,362 | 5,302 | 5,273 | 5,410 | 5,155 | 5,650 | 5,780 | 6,165 | 20,347 | 22,750 | 24,750 |
| Total | 143,510 | 160,140 | 158,539 | 159,782 | 161,650 | 172,860 | 168,605 | 172,535 | 621,971 | 675,650 | 725,750 |

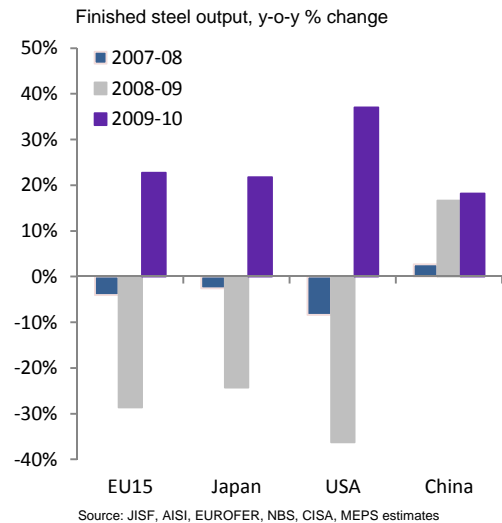
*all production figures are based on MEPS estimates - for an explanation see page 3.

Source: ISSB, NBS, CISA, MEPS forecasts

Steel growth maintained post-stimulus plan

- Finished steel output in China continued on its relentless rise in 2010. Our analysis shows an 18% year-on-year (y-o-y) increase from 548.40 million tonnes (m t) to 648.10m t. This following heady growth in 2009, when steel production in the rest of the world slumped in the wake of the great financial crisis (see chart to right). The resilience of the Chinese steel sector in 2009 was largely due to the RMB 4 trillion injected into the Chinese economy as part of the government's fiscal stimulus plan. The importance of this in driving forward growth at a time of a global contraction has raised questions as to the sustainability of continued expansion in China.
- However, record output was achieved in China over the course of 2010 despite evidence that the effects of the fiscal stimulus plan were waning. Moreover, with the dynamics of growth returning to less transient drivers, we forecast that strong y-o-y gains in finished steel output will be maintained.

Chinese steel output has seen consistent growth in contrast to output elsewhere



Chinese production statistics

MEPS has spent a considerable amount of time and effort to unravel the complexities of production data relating to the Chinese steel sector. Finished steel production figures released by China's National Bureau of Statistics (NBS) gives output totals for major finished steel products. Totals reported for flat products are, however, inflated by double counting. A tonne of hot rolled coil (HRC) can be declared again as a welded tube or cold rolled coil (CRC) and once again as coated material.

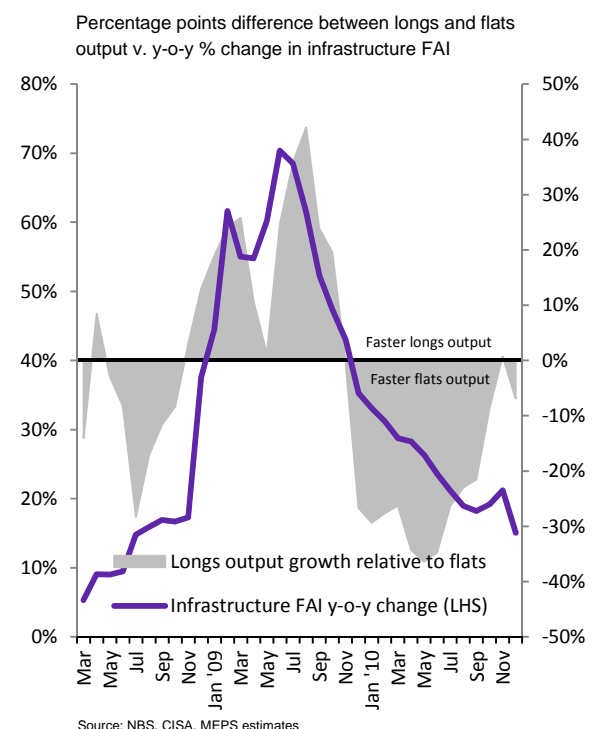
Sales data from China Iron and Steel Association (CISA) member mills, where tonnage is based on the material leaving the mill and therefore not double counted, is a more reliable guide to actual supply to the market from this segment of the industry. We have used this data in conjunction with NBS production statistics to estimate output by product, from the whole of the Chinese steel sector.

All finished steel production figures quoted in this report are (unless otherwise stated) MEPS' estimates. The tonnages cited refer to the volume of material post-production, pre-shipment, available to traders and end users.

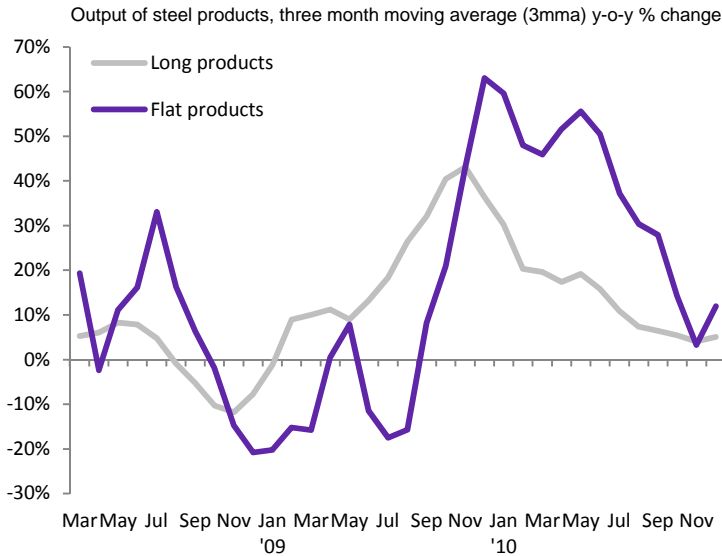
A rebalancing of production dynamics

- In 2009, a sharp jump in the output of long products was recorded. Production rose 23% y-o-y, compared with 7% for flat products, driving the 17% hike in overall output of finished steel. This was a direct result of the massive jump in infrastructure spending prompted by the fiscal stimulus plan, which led to increased construction activity and demand for long products (see chart to right).
- This stood in stark contrast to previous trends in production. Following China's 2005 Steel Industry Development Policy, which called for "the proportion of high grade products in our country to be increased significantly", output of flat products began to take a greater share of total production. At the same time it displayed a faster pace of growth than long products. This is as we would expect in a developing country, where the initial focus on construction steel begins to shift to production of steel for consumer products.
- As the charts overleaf show, there was a return to the norm in 2010. Growth in the output of long products subsided and the share of total output taken by flat products returned to pre-stimulus plan levels.

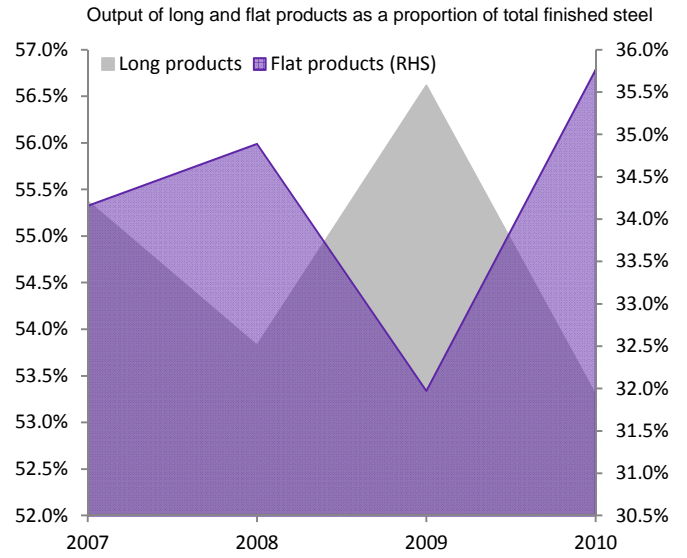
Output of long products grew at a faster pace than flats in 2009, on the back of growth in infrastructure FAI



Production trends were rebalanced in 2010: output of flat products grew at a faster pace than long and took an increased share of total supply



Source: NBS, CISA, MEPS estimates

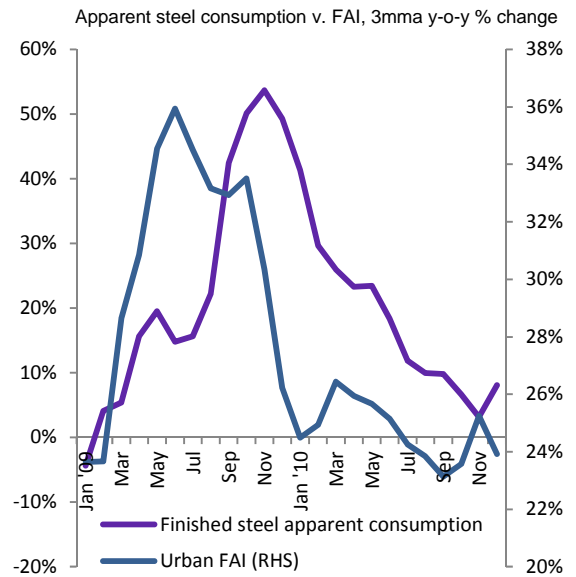


Source: NBS, CISA, MEPS estimates

Extremes of fiscal stimulus plan funding are fading

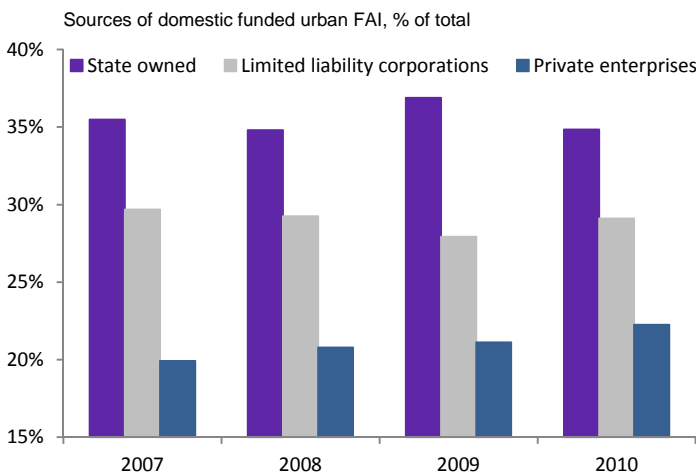
- Urban fixed asset investments (FAI) which is a key driver of steel demand (and which shot up as part of the stimulus plan, see chart to right) is also returning to more normal patterns of growth. Out of the fixed asset investment funded from domestic sources in 2010, a decreasing share was taken by state owned enterprises. At the same time, the proportion taken by private companies has risen. Whilst the rate of growth of FAI slowed from 30.3% between 2008-09 to 24.5% across 2009-10, it is clear that expansion of FAI (and consequently steel demand) is sustainable without the extreme state contribution of the fiscal stimulus plan.
- Moreover, the value of new loans being issued (which was an equally important source of stimulus plan projects' funding), whilst still above government targets, has seen a return to less extreme levels.

Finished steel apparent consumption tracks growth in FAI



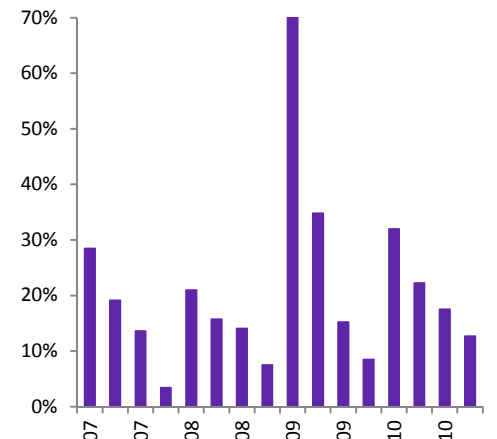
Source: NBS, CISA, MEPS estimates

Sources of investment returning to norm with less extreme contributions from state funds and bank loans



Source: NBS

Value of new loans issued as a proportion of GDP



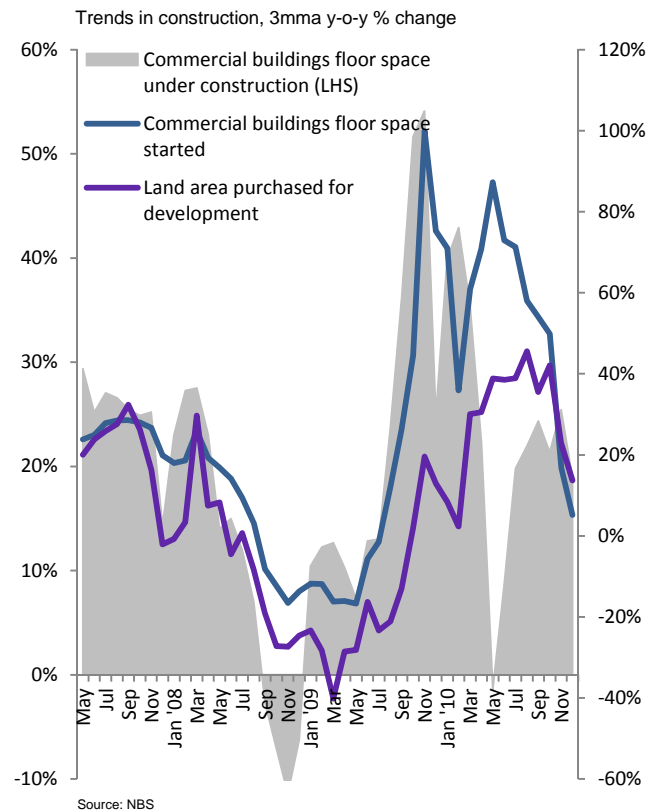
Source: PBOC, NBS

- Steel production in 2010 was therefore far less distorted by fiscal stimulus plan spending than in 2009, when growth was heavily skewed towards long products. Record output in 2010 was driven by more stable long term drivers and, as we detail below, by more sustainable demand. In the long term, this will provide a far more secure base for continued growth than the longs-focused-stimulus-plan fuelled expansion of 2009.

Real estate tightening measures have little impact on long term steel demand

- Despite the withdrawal of many of the key drivers of 2009 growth, output of long products still hit a record in 2010 of 345.38m t - 11% higher than the previous year. This was also achieved despite fears of the impact of a government clamp-down on the property market. Rocketing house prices and the consequences for social stability led to moves on the part of the authorities to cool the real estate sector. This panicked steel market participants who feared a slump in demand for construction steel.
- In reality, government policy was, and is, focused on reducing speculation in the housing market, a key reason for the rapid rise in property prices. Rather than decreasing the supply of housing and demand for steel, the government has pledged to build 10 million low cost homes this year.
- The lack of clarity over how far the government would extend its tightening measures, led to uncertainty over short term housing demand. Consequently, the pace of growth in construction activity (as measured by y-o-y growth in total floor space under construction) slowed from 2Q10. With the rumour mill cranked up to ridiculous levels, developers waited for a clearer picture of future government policy before starting construction on new projects.
- Confidence in long term demand, however, remained strong. Both land sales for development and floor space started (a measure of the number of licenses for construction projects granted) continued to rise over this period. The lag in construction activity led to an overhang which meant that growth in both of these series declined towards the end of the year.
- With real estate cooling measures leading only to a suppression not cessation of growth in construction activity, long products output will continue to be driven by demand from this sector. Double digit growth is unsustainable at these high levels of production, and we see the rate of increase in output moderating in 2011 from 11% to 8%. With little more 'illegal' steelmaking capacity available to be brought on line (that which does not have a license to operate or which has been officially declared idled - see page 7) and with the central government maintaining its hostility to greenfield long product mills, capacity issues could also begin to restrain growth.

Growth in construction activity slumped following real estate tightening measures, but indicators of long term demand remained strong



- In terms of products, short-term growth in construction products will still come from rebar and wire rod as cheap labour continues to enable Chinese developers to maintain on-site fabrication (at least for the immediate future). Railway infrastructure investment has been maintained at high levels. The government have announced a target of RMB 700bn for 2011. This should push supply of railway steel up by 12% this year.

Demand from flat consuming sectors will persist

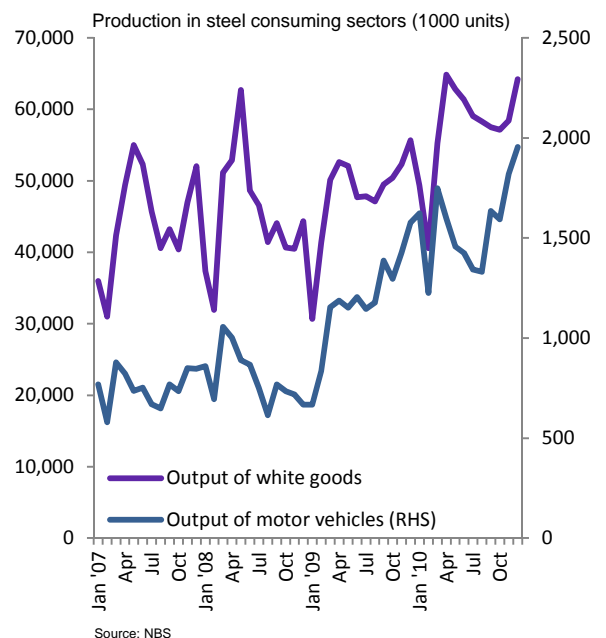
- The sharp jump in the output of flat products in 2010 was largely driven by a strong surge in exports. These more than doubled to 24.81m t in 2010 compared to 2009. However domestic demand was also significant and our estimate of apparent consumption shows a faster y-o-y pace of growth of 24% in 2010 compared to 21% over 2008-09.
- Output of flat products benefited from the lagged impact of fiscal stimulus plan projects, as new developments reached completion and were furnished. This is reflected in rising output of white goods, levels of which were up 20% y-o-y (see chart to right). This sector also gained from government aid in the form of subsidies for purchases of home appliances in rural areas.
- Sustained growth was recorded in the output of motor vehicles over the course of 2010. This too was partly driven by government schemes, with the tax rate halved on purchases of cars with engines below 1.6 litres.
- This and other incentives for the auto industry finished at the end of last year. Together with fading demand from stimulus plan projects and falling export levels, flat product producers will be forced to rely more on non-subsidised domestic demand. We again reiterate, however, that a strong flat products sector is a key part of the central government's development plan for the steel industry. It is likely to remain the central tenet when this policy is updated later this year. Boosting purchases of products such as white goods and motor vehicles is also key to the government's drive to raise domestic consumption.
- In this context, a drastic fall in demand from these sectors is unlikely. The base effect of a strong y-o-y increase in 2009-10 will force output growth in flat products to decelerate this year. Additional pressure will come from the declining share of domestic output which is exported. We forecast foreign supply to fall from 9% to 5% (see page 14).
- We predict output of flat products at 250m t for 2011, 8% over 2010 levels. Growth should be maintained at similar levels in 2012, taking total output to 268m t. The fastest rate of increase is expected to occur in production of value added flat products, as these are likely to be less affected by stagnating export volumes. Domestic output of products such as silicon steel are also likely to benefit from reduced imports from a earthquake-stricken Japan.

MEPS forecasts for output of selected long products

| 1000 t | 2010 | 2011 | 2012 |
|----------------------------|----------------|----------------|----------------|
| Rebar | 124,598 | 135,500 | 146,000 |
| Wire rod | 99,843 | 108,500 | 117,000 |
| Sections | 49,885 | 52,700 | 56,300 |
| Bar | 65,862 | 69,500 | 73,500 |
| Railway steel products | 5,192 | 5,800 | 6,300 |
| Total long products | 345,379 | 372,000 | 399,100 |

Source: NBS, CISA, MEPS forecasts

Output at flats intensive industries rises to record highs



MEPS forecasts for output of selected flat products

| 1000 t | 2010 | 2011 | 2012 |
|----------------------------|----------------|----------------|----------------|
| HRC | 101,770 | 109,000 | 116,500 |
| Plate | 52,698 | 57,000 | 61,000 |
| CRC | 42,039 | 45,500 | 49,000 |
| Metal coated sheet | 23,991 | 26,000 | 28,000 |
| Colour coated sheet | 5,637 | 6,400 | 6,800 |
| Silicon steel | 5,660 | 6,100 | 6,600 |
| Total flat products | 231,795 | 250,000 | 267,900 |

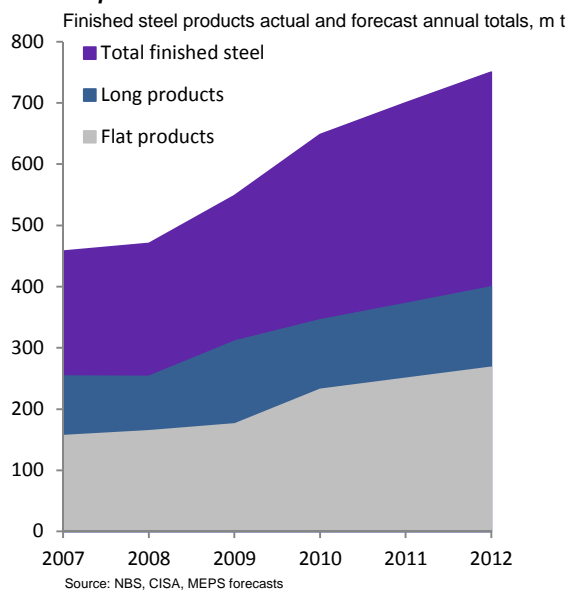
Source: NBS, CISA, MEPS forecasts

- With production dynamics back in balance we forecast output of long and flat products growing at a similar pace in coming years (8% 2010-11 and then 7% 2011-12). The relative share of total output should be stable at 36% for flat products to 53% for long products. We forecast this taking total finished steel output to 700m t in 2011, gaining 8% over 2010 levels. Domestic supply will be significantly ramped up going into 2Q11 when demand from the construction industry, as well as the white goods and automobile sectors is traditionally strong. Growth is expected to be maintained at 2011 rates going into 2012, taking finished steel output to 750m t.

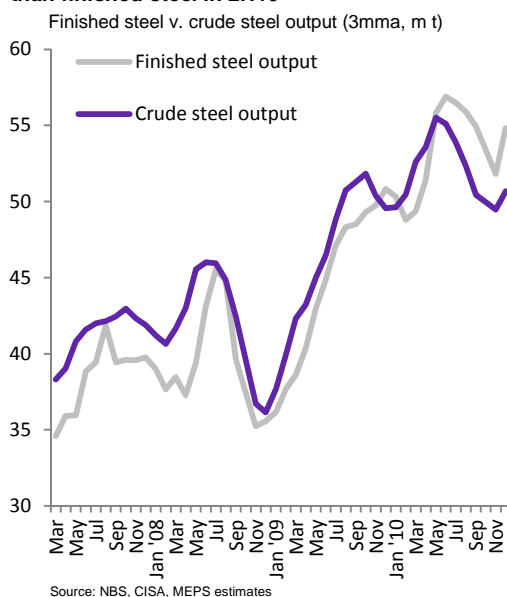
Estimating real crude production

- Despite 2010 y-o-y growth in finished steel output hitting 18%, figures published by NBS suggest that crude production rose by only 9%. There are several reasons to doubt this figure. First and foremost, output of finished steel appears to have been higher than crude steel over the second half of the year (see chart to right). At 637,000 t, imports of semi-finished steel are insufficient to account for this discrepancy. Crude production was reported at below finished steel at the end of 2009. At the time CISA attributed this to mills in Hebei province under-reporting crude output by an estimated 7.94m t.
- Under-reporting of crude steel production, particularly in Hebei province, appears to have intensified in 2010. Chinese mills were under pressure to meet government legislation that all blast furnaces below 300 cu m and all convertors and electric arc furnaces below 20 t should be closed by the end of the year. The government forcibly reiterated this in April 2010 and in August took the unusual step of publically publishing a list of mills with capacity that must close by the end of September.
- Much of this 'backward' capacity was at mills producing construction steel, which were reluctant to cut upstream production whilst demand for their products remained strong. Local governments as well were presumably hesitant to reduce one of the few tax streams which does not go directly to Beijing.
- It appears that mills, targeted for closure, continued producing pig iron and crude steel, but stopped submitting production statistics. Similarly, steel makers with 'backward' capacity, which had previously shutdown would have been encouraged by surging prices to restart production in 2010. These producers may also have withheld output figures. Finished steel production, which was not the target of government campaigns, continued to be reported.
- Consequently, from May to September 2010 output of hot rolled products in Hebei was greater than crude production (see chart to right). The relationship between the two returned to norm in October, when the government enforced production cuts at heavy industries, in an effort to meet 2005-2010 energy consumption targets.

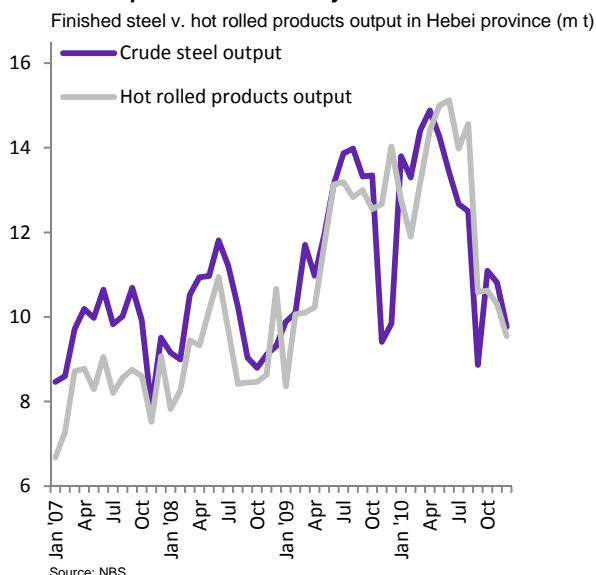
MEPS forecasts show sustained growth in finished steel output



NBS statistics suggest that crude output was lower than finished steel in 2H10

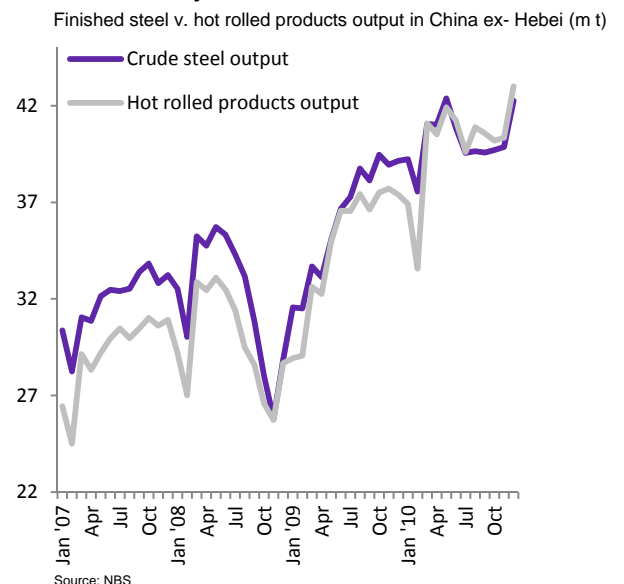


Output of hot rolled products in Hebei was higher than crude steel production from May - October 2010



- This led to output of hot rolled products in Hebei falling by 3.94m t between August and October. However crude production figures only decreased by 1.41m t. In this scenario we would expect mills' stocks of semi-finished steel to record a sharp rise over this period, which was the case.
- Instead we believe that the majority of mills which cut hot rolled steel production from August to October, had previously not been reporting their crude steel output. These mills appear to have borne the brunt of the enforced production cuts (given that they have smaller and more inefficient production facilities), and this led to output of hot rolled products falling faster than crude steel.
- Assuming a 96% ratio between output of hot rolled products and crude steel in Hebei province (based on historical data), a 3.94m t fall in hot rolled output should have been matched by a cut in crude production in the region of 4.1m t. Given that production statistics show only a 1.4m t fall in crude output, we estimate that crude steel production in August was under-reported by 2.7 m t.
- We have applied this estimate of under-reported crude steel production to the May to September period, based on the divergence in daily hot rolled steel output between these months and August. On this basis we estimate that between May and September crude production was under-reported by 13m t.
- We note that the sharp month-on-month fall in crude steel output from August to September of 3.63m t, would appear to have been created by overzealous local officials adjusting crude output figures to show a similar fall to finished steel output. Chinese media were quick to pick up on the implausibility of cuts on this scale and October's figures were less controversial.
- Given that power restrictions restrained mills from producing at maximum capacity, we believe that the October to December reduction in output seen in production statistics was genuine, and these figures do not need to be adjusted. We have, however, modified Hebei crude production data from January to April, as we believe that 7.94m t not reported in November to December 2009 remained undisclosed for this period. This gives us an adjusted figure in the region of 159m t for 2010 crude steel production in Hebei, suggesting that crude output was under-reported by around 14m t. We have also made an adjustment to the 2009 total to 143.5m t to take into account apparent end of year under-reporting.
- Mills in other provinces also came under increasing pressure to meet government targets for 'backward' capacity closures. Outside of Hebei province, crude steel production relative to hot rolled products output, again shows the latter unrealistically below the former (see chart to right). We note that enforced production slow-downs from September had less of an impact outside of Hebei.

Output of crude relative to hot rolled products was also unrealistically low outside of Hebei



- However, we are able to estimate levels of under-reporting in crude steel production by looking at the historical ratio between the crude and hot rolled figures, and applying this to total output of hot rolled products in 2010. This would suggest that Chinese crude steel production excluding-Hebei in 2010, was in the region of 515m t, rather than the reported 482m t.
- On this basis we estimate crude steel production in China could have been as much as 674m t, with under-reporting of around 47m t. This is a more realistic figure relative to the MEPS estimated finished steel output total for the year of 548m t. We would expect that for every tonne of steel available in China (domestic production of crude steel plus the crude equivalent of semi-finished steel net imports), 0.94 tonnes of finished steel is produced. This may appear to be a high conversion ratio, but we note that the Chinese steel industry is relatively efficient, with more modern facilities than developed steel industries in the West. Chinese mills with less modern equipment tend to focus on production of long products, where the yield loss between crude and finished steel is lower than for other steel products.
- On MEPS calculated numbers, the finished to crude steel production ratio has historically kept to 94%. However, on the basis of NBS crude production figures this relationship broke down in 2010, and to a lesser extent in 2009. Substituting NBS crude output numbers with MEPS estimated crude production figures, gives a more realistic crude to finished steel production ratio.

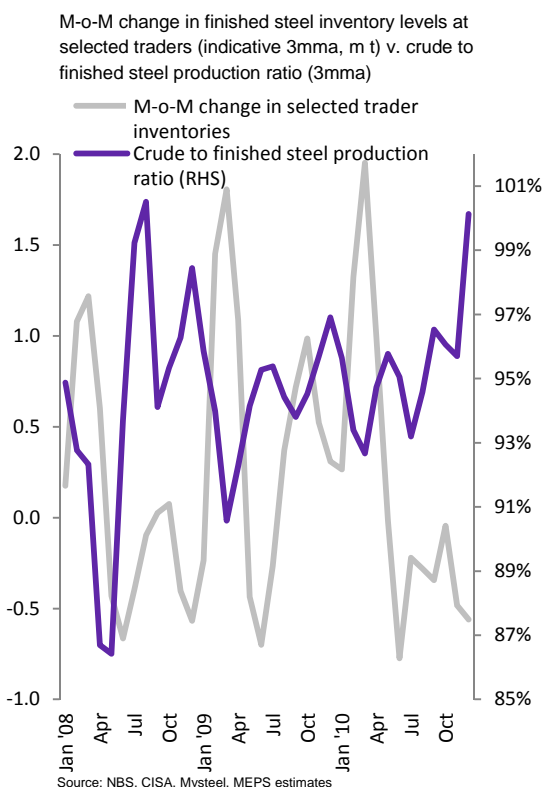
Original and revised crude production figures

| m t | | 2007 | 2008 | 2009 | 2010 |
|----------|--|-------|-------|--------------|------------|
| Hebei | NBS reported crude steel output | 110.5 | 115.2 | 138.3 | 144.6 |
| | MEPS calculated crude steel output | 110.5 | 115.2 | 143.5 | 159 |
| | <i>Estimated total under-reported</i> | | | 5 | 14 |
| Ex-Hebei | NBS reported crude steel output | 384.4 | 385.1 | 435.2 | 482.1 |
| | MEPS calculated crude steel output | 384.4 | 385.1 | 435.2 | 515 |
| | <i>Estimated total under-reported</i> | | | | 33 |
| National | NBS reported crude steel output | 494.9 | 500.3 | 573.6 | 626.7 |
| | MEPS calculated crude steel output | 494.9 | 500.3 | 579 | 674 |
| | <i>Estimated total under-reported</i> | | | 5 | 47 |
| | Net-imports of semis (crude equivalent) | -6.5 | -1.1 | 4.8 | 0.5 |
| | Finished steel output | 457.8 | 470.2 | 548.4 | 648.1 |
| | <i>NBS crude to finished steel production ratio</i> | 94% | 94% | 95% | 103% |
| | <i>MEPS crude to finished steel production ratio</i> | 94% | 94% | 94% | 96% |

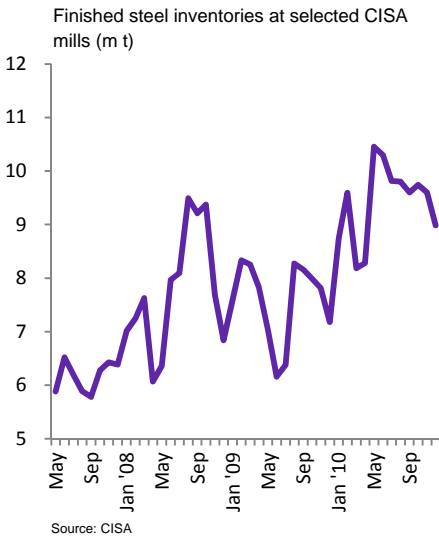
Source: NBS, CISA, ISSB, MEPS estimates

- We note that fluctuations in the crude to finished steel ratio on a three month moving average basis, are closely related to changes in stock levels (see graph to right). In light of this we would expect a higher than normal crude to finished steel ratio in 2010, given the inventory drawdown that took place over the year (see charts overleaf).

Crude to finished steel production ratio fluctuates in line with changes in finished steel inventory levels



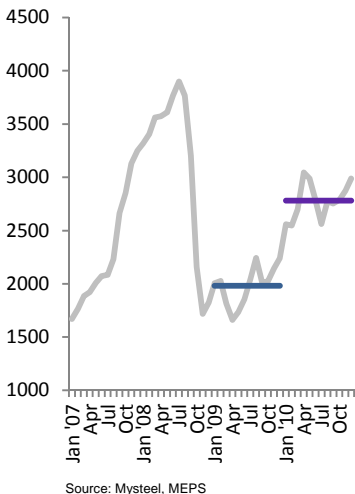
Following a stock build up over 2009, an inventory draw down took place in 2010



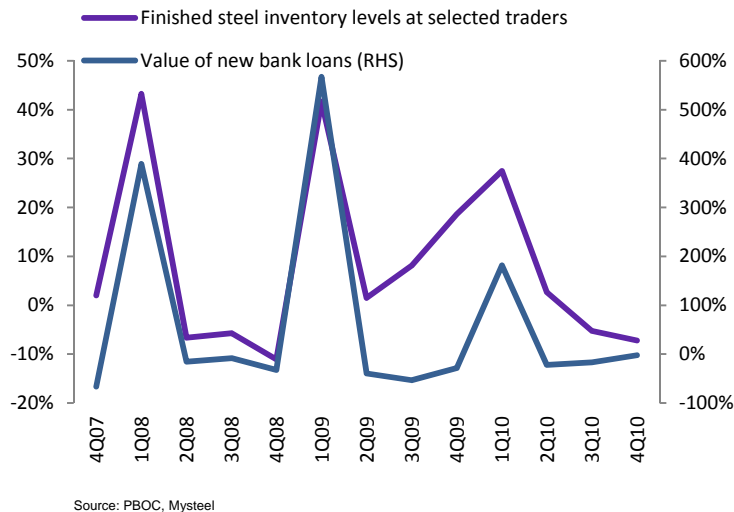
- There were two key drivers to this inventory draw down. Firstly stockholders were sitting on material with input costs some RMB 1000/t lower than more recently produced material. Secondly the large jump in liquidity over 2009 enabled traders to hold inventories for longer. Conversely a tightened cash flow in 2010 forced many traders to liquidate stock. As the chart below shows, sharp changes in liquidity relative to recent levels has a marked impact on stock levels.

2010 inventory destock was driven by higher input costs and tighter cash flow

Estimated key input costs to produce a tonne of finished steel with annual averages (RMB/t)



Finished steel inventory levels at selected traders v. value of new bank loans issued, Q-o-Q % change

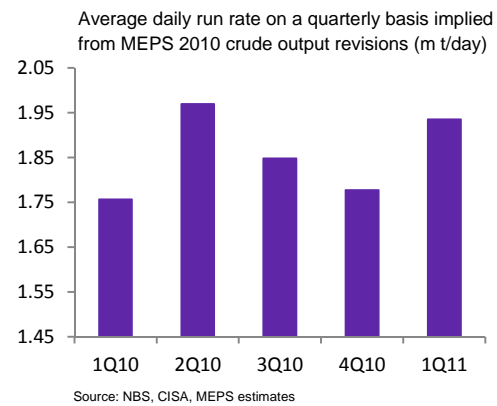
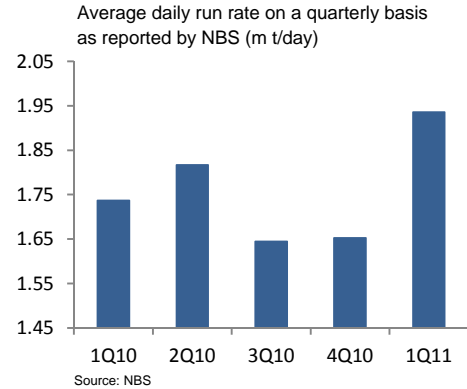


2011 production data appears to confirm 2010 under-reporting

- Preliminary crude production figures have been released for January to February 2011. At 114.18m t, levels are 13% higher than the same period in 2010. On the basis of data released by NBS January's crude output was up 16% m-o-m. We think that it is more likely that, following the cessation of government campaigns to close 'backward' capacity and reduce energy consumption in 2010, the majority of mills are again declaring full crude steel and pig iron production data.

- On the basis of the MEPS revised crude steel production figures, the average daily run rate of 1.94m t over February compares with our estimate of 1.97m t/day through 2Q10, when 2010 crude production peaked. This looks more realistic than a rise from 1.82m t/day implied from NBS data. We also note that, on a provincial basis, January and February data shows the relationship between production of hot rolled products and crude steel returning to more realistic levels both in and outside of Hebei province.
- We are cautious as to how long these full disclosures of production will last. The government has previously set the target of closing all blast furnaces below 400 cu m and converters/ EAFs below 30 t by the end of 2011. Increased pressure from the central government to meet this target could again be met with under-reporting of crude steel and pig iron.
- We have therefore based our forecasts for crude production on reported crude output figures from NBS. We suspect that problems with under-reporting will intensify through 2011, and have factored this into our forecast.
- With finished steel production returning to more stable, long term growth, we are similarly bullish on crude production, forecasting a declared figure of 700m t for 2011, up 12% y-o-y. We see crude output levels peaking in Q2 in line with demand for finished steel, with output easing towards the end of the year. We emphasise again, however, that real crude production is likely to come in a lot higher. We forecast levels for 2011 will be in the region of 745m t and 800m t in 2012.

2011 hike in crude production looks unrealistic on NBS 2010 crude output data, but more likely relative to MEPS revised crude output figures



Crude production, actual and forecast (m t)

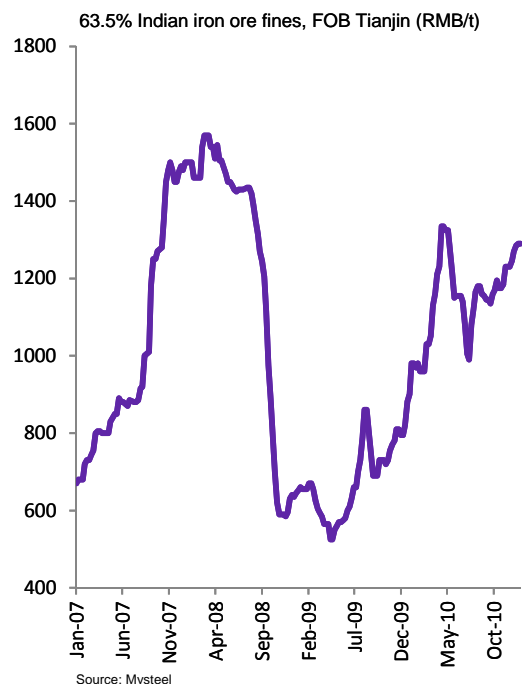
| m t | 1Q10 | 2Q10 | 3Q10 | 4Q10 | 1Q11 | 2Q11 | 3Q11 | 4Q11 | 2010 | 2011 | 2012 |
|---------------------------------------|-------|-------|-------|-------|-------|-------|------|------|-------|------|------|
| NBS reported crude production | 157.9 | 165.3 | 151.3 | 152.0 | 174.5 | 183.5 | 171 | 171 | 626.7 | 700 | 765 |
| MEPS calculated real crude production | | | | | | | | | 674 | 745 | 800 |

Source: NBS, CISA, MEPS forecasts

Chinese iron ore demand under-estimated

- Higher than reported Chinese crude production goes some way to explain the sustained rise in spot iron ore prices during 2010 (see chart to right). This was surprising given the comparatively low levels of reported crude output. However rising iron ore prices is more understandable in light of demand generated from an additional 47m t of unreported crude steel.
- Revised crude production figures also sheds new light on the strength of the Chinese iron ore industry. Domestic iron ore production data released by NBS is of limited use as it gives no indication of Fe content. We are however able to estimate the volume of iron ore sourced from domestic mines, by subtracting the volume of imported material, from the iron ore required to feed China's pig iron output. Pig iron production statistics were also affected by under-reporting and we believe that 2010 output was in the region of 635m t, rather than the reported 590m t. This would have required an additional 70m t of iron ore (on a 62% Fe equivalent basis) from domestic iron ore mines (see table overleaf).

Iron ore spot prices surged in 2010



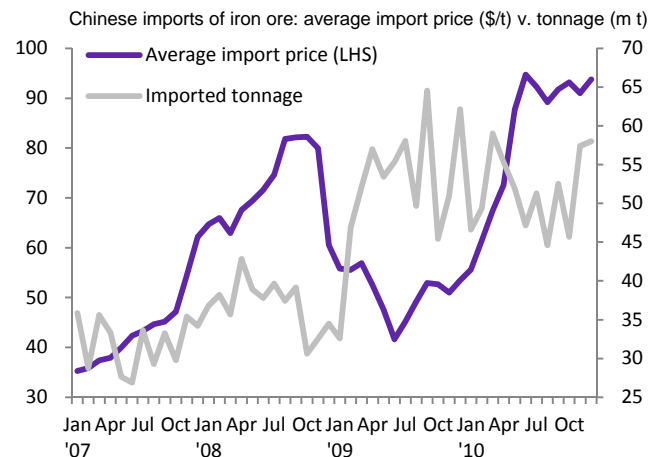
Pig iron output and implied iron ore demand in China

| <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 |
| Iron ore required | 734.9 | 731.6 | 856.6 | 920.1 |
| MEPS calculated pig iron output (m t) | 471.4 | 469.3 | 554 | 635 |
| Iron ore required | 734.9 | 731.6 | 864 | 990 |
| Estimated additional iron ore required | - | - | 7 | 70 |
| 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 | 284.0 |
| Proportion of iron ore sourced from domestic mines | 46% | 37% | 25% | 31% |
| Iron ore required from domestic mines based on MEPS figures | 336.9 | 267.1 | 220 | 353 |
| Proportion of iron ore sourced from domestic mines | 46% | 37% | 25% | 36% |

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

- These revisions suggest that China is more self-sufficient in iron ore than previously thought. We estimate that the proportion of total iron ore requirements (on a 62% Fe equivalent basis) sourced from the domestic iron ore industry was 36%, rather than the 31% implied from NBS production figures.
- China's iron ore self-sufficiency ratio returning to 2008 levels is logical given that 2009 imports of iron ore were an extreme divergence from norm. The slump in global steel output in 2009 led to a relative abundance of seaborne iron ore. China was able to take advantage of the ensuing sharp fall in prices, and increased its import tonnage to feed on-going demand from its steel sector (see chart to right). As global demand returned in 2010, prices rose and China reduced the proportion of its iron ore requirements sourced from imports.
- Going forward, China will struggle to increase this self-sufficiency ratio. Domestic sources of iron ore, limited to begin with, are dwindling. Consequently the domestic iron ore industry is mining ore with increasingly lower Fe content. This has raised production costs, as it costs more to both mine this ore and to beneficiate it up to a suitable grade. The domestic mining industry was able to ramp up iron ore production in 2010 because of surging global iron ore prices, which gave the necessary cost support to this sector. It was not, however, indicative of China being able to switch from imported to domestic iron ore, as and when global availability tightens.
- With the domestic iron ore industry struggling to increase output relative to China's iron ore requirements, additional demand in coming years will be largely sourced from imports. Chinese under-reporting of crude steel and pig iron production has however grossly distorted the anticipated scale of future Chinese demand. On the basis of reported figures we expect Chinese pig iron output to be 660m t this year. But we believe this could be under-reported by as much as 42m t. This is the equivalent of 66m t of iron ore (62% Fe equivalent) or 6% of the expected level of China's iron ore demand in 2011.

A fall in the price of imported iron ore over 2009 was met by increased imports into China



Source: ISSB

- Chinese real demand for iron ore could be 118m t, or 5%, higher than anticipated levels over the next two years. If global miners have based production plans on vastly under-reported steel production figures, globally high iron ore prices are likely to continue.

Pig iron output and implied iron ore demand forecasts

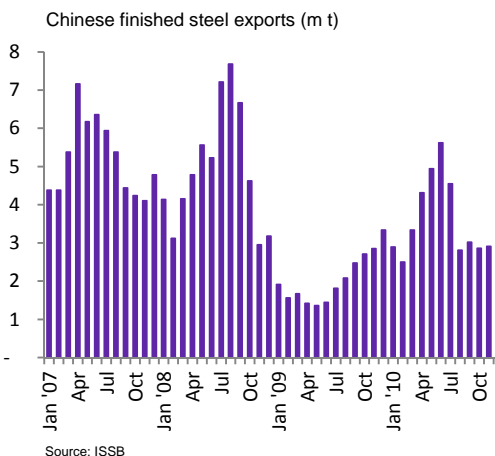
| <i>m t</i> | 2011 | 2012 |
|---|------|------|
| NBS reported pig iron output | 660 | 720 |
| Iron ore required (62% Fe equivalent basis) | 1029 | 1122 |
| MEPS calculated pig iron output | 702 | 753 |
| Iron ore required (62% Fe equivalent basis) | 1095 | 1174 |
| Additional iron ore required | 66 | 52 |

Source: NBS, CISA, MEPS forecasts

Exports stage a fragile recovery

- Exports of finished steel staged something of a recovery in 2010, up 73% y-o-y to 42.56m t. Growth continued to come largely from demand in Asia. South Korea was China's top export destination, as has been the case for several years. Exports to India rose 187% to form an Asian top three with Vietnam.
- Demand in Europe recovered from lacklustre purchasing in 2009, but volumes shipped to key European markets such as Italy were still well below 2008 levels. One noticeable divergence from 2009 trends was rising South American purchases. This was led by Brazil with Chinese exports to the country leaping by 234% last year.

Finished steel exports jumped in 1H10 but ended the year stagnant



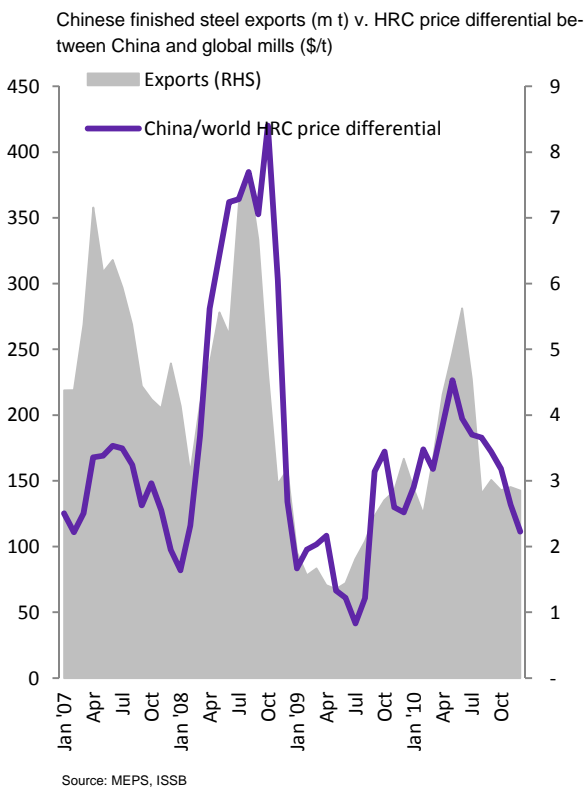
Top five destinations for Chinese exports by tonnage (t)

| 2007 | | 2008 | | 2009 | | 2010 | |
|--------------|-------------------|-------------------|-------------------|-------------|-------------------|-------------|-------------------|
| South Korea | 11,602,680 | South Korea | 13,962,736 | South Korea | 5,561,459 | South Korea | 8,440,080 |
| USA | 4,152,063 | USA | 5,037,919 | Vietnam | 1,477,797 | India | 3,395,393 |
| Vietnam | 3,376,203 | Vietnam | 2,766,591 | India | 1,182,586 | Vietnam | 2,422,926 |
| Italy | 3,310,626 | Italy | 2,656,792 | USA | 1,051,169 | Brazil | 1,722,861 |
| Iran | 3,144,368 | Utd Arab Emirates | 2,622,976 | Thailand | 686,626 | Italy | 1,313,565 |
| Total | 62,693,872 | | 59,261,746 | | 24,593,448 | | 42,557,802 |

Source: ISSB

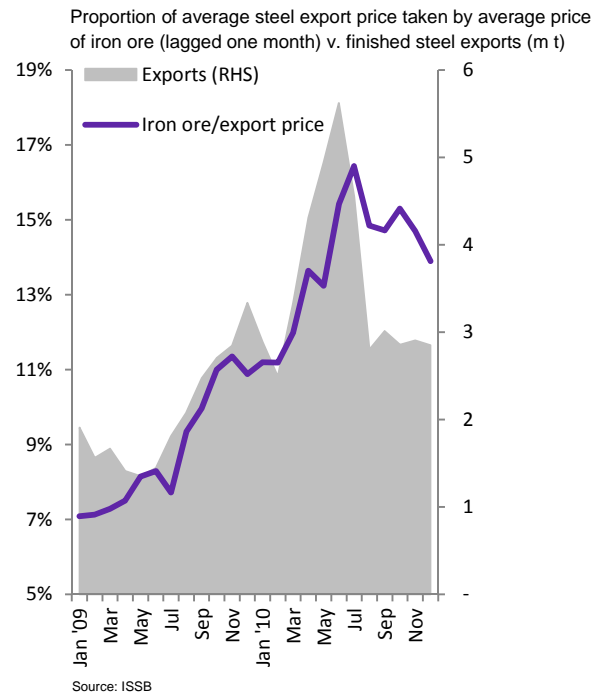
- Export levels continue to be driven by the price play between China and its export markets. This leads to an inherently unstable trade flow with this price differential driving temporary spikes in export levels. The volumes leaving China plummet once this margin begins to fall, with essentially no gains made in terms of long term demand for Chinese material (see chart to right).
- Much of the steel leaving China is not being purchased out of necessity (to fill domestic shortages). Importers largely book material in speculation that, on delivery, local prices will be higher. But it is often the case that local demand does not stand up to the volume of material imported. For instance Chinese exports to Vietnam surged by 143% over 2Q10 on the back of orders placed in 1Q10, in expectation of rising domestic demand and prices. However material landed as demand slipped, and the ensuing oversupply kept both prices and appetite for further Chinese material low. A similar trend was seen in other key export markets such as India and South Korea and the surge in exports over 1H10 can be seen as a key factor in stagnant levels over 2H10.
- Speculative driven trade also means that imported material often displaces locally produced products. A flurry of trade actions, or threat of such actions, against China, took place in 2010 as local mills became increasingly aggravated. In particular Brazilian steelmakers have been vocal in the need for measures against the surge in Chinese imports. There have been suggestions that an anti-dumping case will be opened against Chinese coated steel, which show a 194% y-o-y rise.

Export levels are driven by China/overseas price differential



- More worrying for Chinese exporters is the increasingly negative stance taken by the Chinese government towards a booming export industry sustained by low prices. The jump in the tonnage of steel leaving the country from April 2009 was not matched by a corresponding rise in value and for much of this period the value per tonne was moribund. At the same time there was a drastic rise in the cost of iron ore (for which China is largely reliant on foreign supplies). This meant that the proportion of the export price taken by iron ore costs, rose in tandem with export levels (see chart to right). By failing to pass on these rising costs to foreign buyers, Chinese mills were effectively subsidising their purchases of steel. Moreover, by keeping demand for iron ore high, production of these exported products fuelled further gains in the price of imported raw materials.
- A booming trade surplus and concerns about the rate of inflation, led the Chinese government to take action. VAT rebates for exports of lower priced commodity products were slashed from 15 July. These products had enjoyed rebates of between 9% and 13% on the 17% VAT paid. Exports in August fell to half of June's peak levels. However, the removal of rebates only exacerbated but was not the cause of a softening in demand for Chinese material (see above). The impact of this policy was also muted by the fact that rebates were still available for alloy grades of steel. Exporters were able to add small quantities of boron to their products, insufficient enough to substantially alter the material's properties, but sufficient for it to be classed as a low alloy specification.
- It seems almost certain that this loophole will be closed, with an announcement most likely to come when rebates are reviewed in early April. This is likely to lead to a surge in export volumes in Q2, as overseas customers rush to book Chinese material at lower prices. However, we forecast a fall in levels for the rest of the year, taking the total for 2011 to 40.90m t, down 3.9% from 2010 volumes (see table to right - for full forecasts see page two).
- We foresee the export industry responding in part to government attempts to shift it to a model of smaller tonnage but higher value exports. MEPS forecasts the volume of colour coated sheet leaving the country to rise 19% this year, with gains also seen in metal coated sheet and electrical steel. By the same measure, exports of commodity products such as HRC are expected to decline from 9.13m t in 2010 to 5.80m t (see table to right).
- However, there is little prospect of a wholesale change in the nature of Chinese exports and for the immediate future it will continue to be fuelled by speculative driven demand. Whilst overseas traders are likely to be more confident in domestic demand (which in the past has encouraged bookings of Chinese material) they will be more cautious in the volumes purchased having over ordered last year.

Exporters failed to pass on higher iron ore costs to overseas buyers in 2010



Actual and forecasted export tonnage

| 1000 t | Longs | Flats | Tubes | Total |
|-------------|-------|--------|-------|--------|
| 1Q10 | 1,666 | 4,896 | 1,323 | 8,711 |
| 2Q10 | 2,604 | 9,435 | 1,775 | 14,873 |
| 3Q10 | 1,730 | 5,950 | 1,671 | 10,361 |
| 4Q10 | 1,472 | 4,531 | 1,729 | 8,612 |
| 1Q11 | 1,580 | 4,340 | 1,870 | 8,690 |
| 2Q11 | 2,410 | 7,075 | 2,070 | 12,705 |
| 3Q11 | 1,780 | 6,005 | 1,910 | 10,745 |
| 4Q11 | 1,480 | 4,630 | 1,750 | 8,760 |
| 2010 | 7,472 | 24,812 | 6,499 | 42,558 |
| 2011 | 7,250 | 22,050 | 7,600 | 40,900 |
| 2012 | 7,070 | 22,180 | 7,550 | 40,600 |

Source: ISSB, MEPS forecasts

Actual and forecasted export tonnage for selected flat products

| 1000 t | HRC | CRC | Plate | Metal coated sheet | Colour coated sheet |
|-------------|-------|-------|-------|--------------------|---------------------|
| 1Q10 | 2,009 | 944 | 528 | 932 | 449 |
| 2Q10 | 4,354 | 1,494 | 1,065 | 1,617 | 867 |
| 3Q10 | 1,756 | 977 | 977 | 1,315 | 882 |
| 4Q10 | 1,019 | 925 | 662 | 1,031 | 852 |
| 1Q11 | 880 | 850 | 530 | 1,130 | 910 |
| 2Q11 | 2,120 | 1,360 | 1,070 | 1,550 | 930 |
| 3Q11 | 1,750 | 1,000 | 950 | 1,350 | 910 |
| 4Q11 | 1,050 | 940 | 650 | 1,070 | 880 |
| 2010 | 9,139 | 4,340 | 3,232 | 4,894 | 3,051 |
| 2011 | 5,800 | 4,150 | 3,200 | 5,100 | 3,630 |
| 2012 | 6,000 | 4,000 | 3,200 | 5,000 | 3,800 |

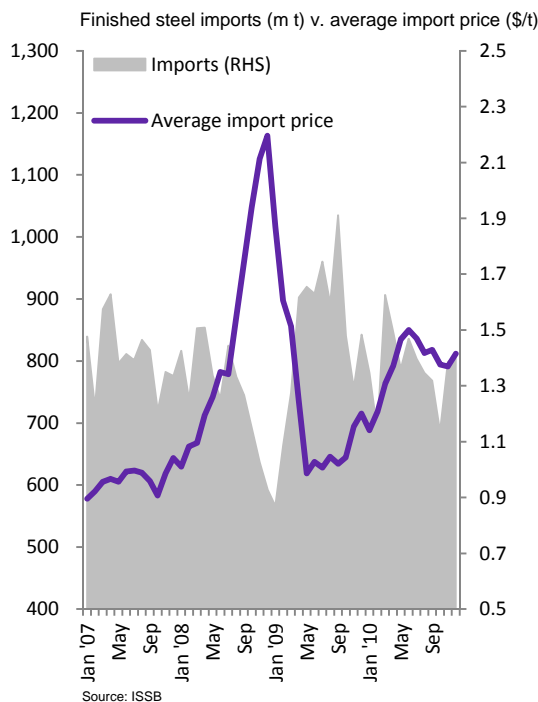
Source: ISSB, MEPS forecasts

- Of concern to flat products mills (which had been reliant on exports to soak up material surplus to an oversupplied domestic market), is that exports will take a steadily smaller proportion of their total output. From 11% in 2010 we forecast that this proportion will fall to 9% this year. This is likely to reach 8% in 2012 when we expect total exports of finished steel to dip to 40.6m t.

Import levels remain stable as China turns to domestic supply

- Imports of finished steel fell by 7% last year to 16.43m t. We note, however, that 2009 was an exceptional period when falling global prices encouraged Chinese traders to import material to sell at a profit in the domestic market (*see chart to right*). A 78% jump in imports over 1H10 corresponded with a 47% fall in the average import price.
- Rising import selling figures pushed tonnage down in 2010 and, in particular, this led to import volumes of HRC coming in at half those in 2009. This, when traders had booked material from Russia and South Korea at lower prices.
- Imports of value added products continued to rise over 2010. The volume of metal coated sheet entering the country increased by 29% to 4.23m t. However we note that imports of some value added products fell over the year. Seamless tube supply, for example, drifted from 350,000 t to 252,000 t.
- This reflects the efforts that the Chinese steel sector is making to become less reliant on imports of higher grade products. We see this as continuing to drive a reduction in the proportion of domestic consumption fed by imports. Whilst we forecast a slight rise in 2011 imports to 16.55m t (up 1%), we envisage the figures falling by a similar amount in 2012 to 16.35m t.

Cheaper import prices in 2009 encouraged more imports, but rising prices pushed levels down in 2010



Actual and forecasted import tonnage

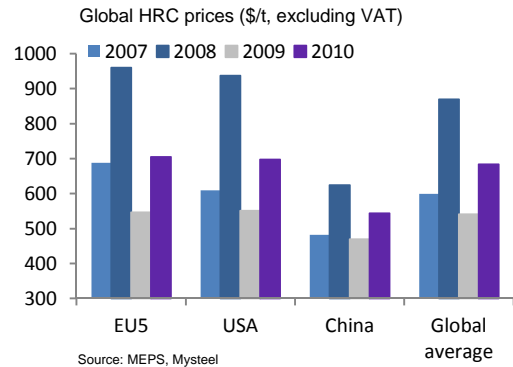
| 1000 t | Longs | Flats | Tubes | Total |
|-------------|--------|-------|-------|--------|
| 1Q10 | 3,462 | 468 | 112 | 4,109 |
| 2Q10 | 3,672 | 444 | 123 | 4,325 |
| 3Q10 | 3,464 | 409 | 112 | 4,062 |
| 4Q10 | 3,323 | 413 | 126 | 3,932 |
| 1Q11 | 3,385 | 420 | 130 | 4,000 |
| 2Q11 | 3,695 | 480 | 150 | 4,405 |
| 3Q11 | 3,470 | 465 | 135 | 4,150 |
| 4Q11 | 3,350 | 435 | 135 | 3,995 |
| 2010 | 13,921 | 1,734 | 473 | 16,429 |
| 2011 | 13,900 | 1,800 | 550 | 16,550 |
| 2012 | 13,800 | 1,730 | 520 | 16,350 |

Source: ISSB, MEPS forecasts

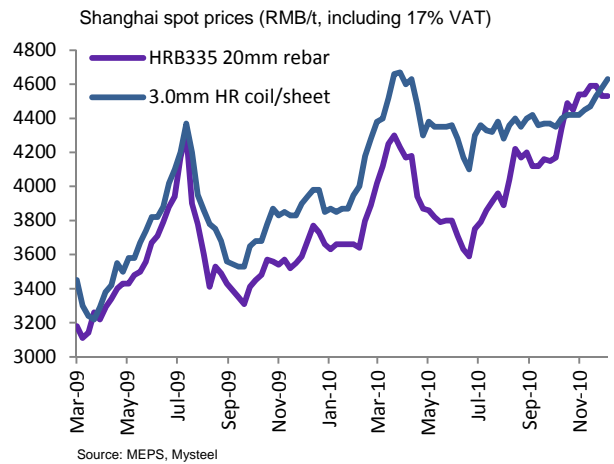
Input costs drive steel prices higher

- Chinese HRC spot prices gained 15% y-o-y giving a 2010 average of RMB 4307/t (including 17% VAT). Rebar prices averaged RMB 4012/t over the year, which was up 14%. Prices did not perform as strongly as in other regions of the world, but suffered less extreme decreases in 2009, which provided a higher base year (see chart to right).
- Last year started firmly with Q1 HRC prices gaining RMB 269/t on 4Q09 levels (see chart to right). Prices slumped from May, but picked up substantially in late October. The reduction in prices from May was partly a seasonal correction. Mills traditionally ramp up production over the first half of the year in anticipation of a strong Q2, and the volume of this material generally bears down on prices. It was also the consequence of the negative reaction to the flurry of policies launched in April to cool China's real estate sector. This caused an earlier, sharper and more prolonged correction than seen in other years, particularly for rebar.
- This is a good indication of the extent to which steel spot prices continue to be heavily influenced by speculation and wider market sentiment. The price of steel contracts on the Shanghai Futures Exchange for settlement in three months time, weighs heavily on the physical spot market, with the latter often reacting to movements in the former. On a wider scale, losses and gains on the Shanghai Stock Exchange can also impact on spot steel prices (see charts to right).
- Steel spot prices in 2010 were also heavily affected by raw material prices. Rising input costs, particularly iron ore and coke, put sustained upward pressure on steel selling values. Despite this, the proportion of the nominal mill price taken by key input costs surpassed 2008 levels, driving down mill margins (see chart to right). Our model uses a notional ex-mill price excluding VAT. Estimates of iron ore costs are based on Indian export prices lagged two months and grade two domestic coke prices lagged one month.
- The rise in input costs relative to finished steel prices was, however, less relentless than it was in earlier years. The shift from annual, to quarterly and monthly prices for iron ore and coking coal, led to more fluctuations in input costs. Despite staunch opposition to these changes, this inadvertently offered some relief to mills, allowing them to recoup losses made when input costs were high and enabling marginal producers to maintain output levels.
- Increasing raw material prices in 2011 have pushed input costs close to peak 2010 levels when steel production fell. The reduction in Japanese iron ore demand, due to earthquake related shutdowns, could make more material available to China on the spot market. This has the potential to reverse some of this cost support for steel prices, and could lead to a continuation of the recent softening in selling values into April.

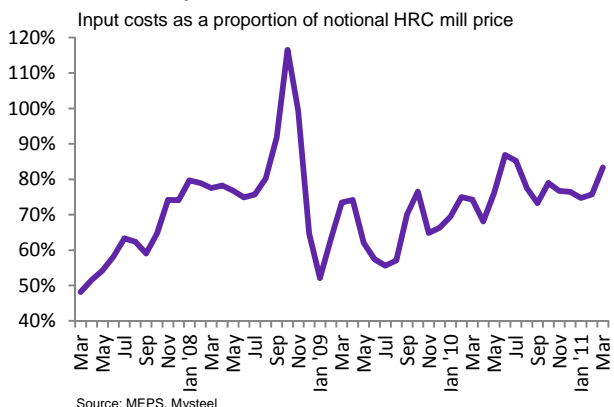
2010 growth in Chinese prices was below that seen in other regions



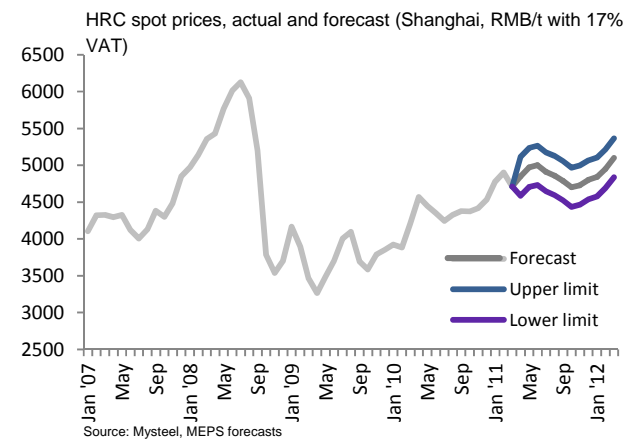
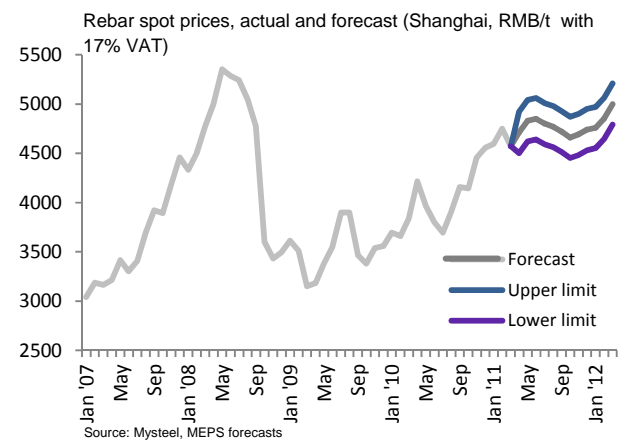
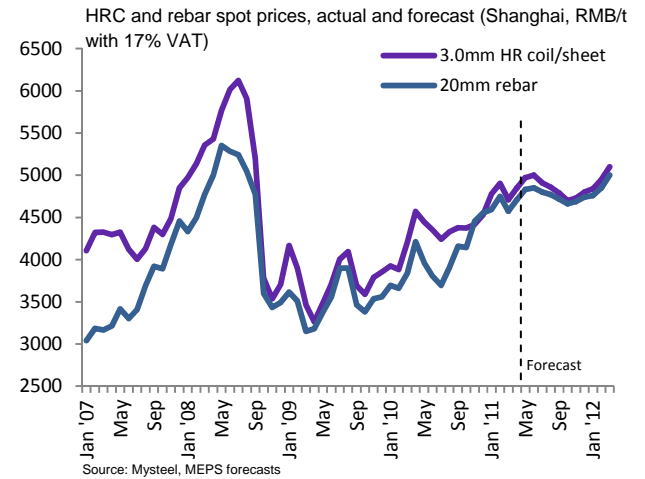
Speculation on the Shanghai Futures Exchange and Stock Exchange continued to influence spot prices in 2010



Fluctuations in input costs offered some relief to mills in 2010



- We believe a more likely scenario is that Chinese steel prices will continue on the uptick we have seen in recent days, as buyers return to the market in what should be a strong period for steel end users. However, this rebound in steel prices will be muted with poor demand from Japan impacting on iron ore spot market sentiment. Despite higher prices for contract iron ore kicking in from April, a bearish spot iron ore market will have a negative impact on finished steel spot prices, and make it harder for mills to push through higher prices.
- Reduced Japanese steel output is expected to have only a limited impact on demand for Chinese steel both domestically and overseas. Only a handful of mills are in a position to replace high end Japanese exports.
- We forecast prices staying high for most of Q2 when consumption is traditionally strongest, but with some downside risk coming from oversupply. Prices are predicted to dip as demand eases in Q3, but should pick up by year end. Ultimately the fundamentals for rising prices are very much in place. Strong domestic steel consumption is likely to be maintained and so too is the tight market for raw materials, as Chinese real demand continues to outstrip supply. We forecast that the average HRC price will hit RMB 4833/t (including VAT). This will be a gain of 12% from 2010 values.
- We see a better year for long products in what looks like an increasingly tight market. We note that enforced shut downs over 3Q10, which were focused on long product production lines, led to spot prices for rebar overtaking those for HRC. Continued growth in demand for long products is forecast and we believe that this will begin to press on supply. Consequently HRC may achieve only a marginal premium over rebar for much of 2011. Flat product prices under-performing relative to long, may be behind indications that Hebei Iron and Steel Group is planning to withdraw from its joint venture with Shougang Group, a 10m t/y integrated flat product mill.
- Detailed price forecasts are set out below. In this highly speculative market we expect prices to fluctuate between our limits - the mathematical confidence interval of our forecasts.



HRC and rebar spot prices, actual and forecast (Shanghai, RMB/t with 17% VAT)

| Actual RMB/t (with 17% VAT) | 3.0mm HR coil/sheet | 20mm rebar | Forecast | | | | | | |
|--------------------------------------|------------------------|---------------|---------------------|-------------|-------------|------------|-------------|-------------|------|
| | | | 3.0mm HR coil/sheet | | | 20mm rebar | | | |
| | | | Forecast | Upper limit | Lower limit | Forecast | Upper limit | Lower limit | |
| Apr | 4570 | 4214 | Apr | 4850 | 5114 | 4586 | 4710 | 4920 | 4500 |
| May | 4448 | 3963 | May | 4970 | 5235 | 4705 | 4830 | 5040 | 4620 |
| Jun | 4353 | 3803 | Jun | 5000 | 5265 | 4735 | 4850 | 5060 | 4640 |
| Jul | 4242 | 3694 | Jul | 4910 | 5176 | 4644 | 4800 | 5009 | 4591 |
| Aug | 4328 | 3905 | Aug | 4860 | 5126 | 4594 | 4770 | 4979 | 4561 |
| Sep | 4378 | 4158 | Sep | 4790 | 5056 | 4524 | 4720 | 4928 | 4512 |
| Oct | 4374 | 4144 | Oct | 4700 | 4966 | 4434 | 4660 | 4868 | 4452 |
| Nov | 4415 | 4455 | Nov | 4730 | 4995 | 4465 | 4690 | 4899 | 4481 |
| Dec | 4532 | 4556 | Dec | 4800 | 5064 | 4536 | 4740 | 4949 | 4531 |
| Jan '11 | 4778 | 4595 | Jan '12 | 4840 | 5103 | 4577 | 4760 | 4969 | 4551 |
| Feb | 4903 | 4749 | Feb | 4950 | 5213 | 4687 | 4850 | 5059 | 4641 |
| Mar to date | 4710 | 4573 | Mar | 5100 | 5363 | 4837 | 5000 | 5209 | 4791 |

Source: Mysteel, MEPS forecasts

- The considerable upside risk to rebar prices is the impact of a genuine campaign of capacity closure, which will remove the out-dated capacity vital for meeting long product demand.
- There are some indications that mills are becoming increasingly concerned about this. Smaller mills in Hebei province have agreed to the Hebei Iron and Steel Group (the province's largest producer) taking a 10% stake in their companies. These mills have been nominally integrated into the larger group, and this might offer a degree of protection against government campaigns.
- Ultimately, however, this out-dated capacity was not taken out of service, because demand for the products produced by these mills (largely construction steel), was still exceptionally strong. China is in fact reliant on 'backward' capacity to meet surging demand for long products. Investment at CISA member mills has, in line with government plans for the development of the steel industry, been mainly focused on flat product supply. Following fiscal stimulus plan spending, output of long products jumped 23% 2008-09. However, y-o-y growth in CISA mills' sales of long products was lower, at 19%.
- The extreme case scenario here is a short to medium term heavy surge in steel prices, led by demand from long products in an under-supplied domestic market. On the raw materials front there could also potentially be a big upswing in prices, if miners have under-estimated the scale of Chinese demand. This will further fuel gains in steel prices. Even in less extreme circumstances, MEPS analysis suggests that Chinese steel production is far from peaking.