



is a leading steel information service in Englewood Cliffs, N.J.

WSD's steel experience, steel database and availability of steel statistics are the principles for performing steel forecasts, studies and analysis for international clients. WSD seeks to understand how the "pricing power" of steel companies the world over will be impacted by changes in the steel industry's structure.

The views and opinions expressed in this article are solely those of World Steel Dynamics and not necessarily those of AIST.

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## Oversupply Equilibrium: Chinese Threat

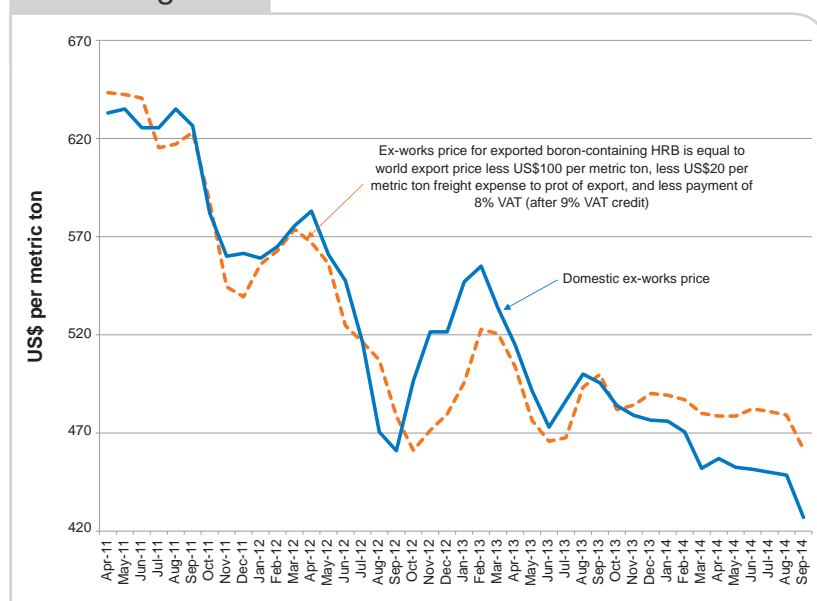
WSD has a theory it calls Oversupply Equilibrium. The assumption is that when oversupply is moderate to substantial, the world hot rolled band (HRB) price, ex-works, has a tendency to decline to:

- The operating cost of the median-cost non-Chinese mill.
  - The marginal cost of the median-cost Chinese mill.
- In this case, the price may remain at marginal cost for

a relatively long time, which would normally not be expected, because Chinese steel production is so "sticky" on the downside.

A pricing "death spiral" on the world market — i.e., when the price falls to the marginal cost of the median-cost mill — is not a long-lived event (i.e., it's a short age) because it forces some of the mills in the third cost quadrant, and many in the fourth

Figure 1



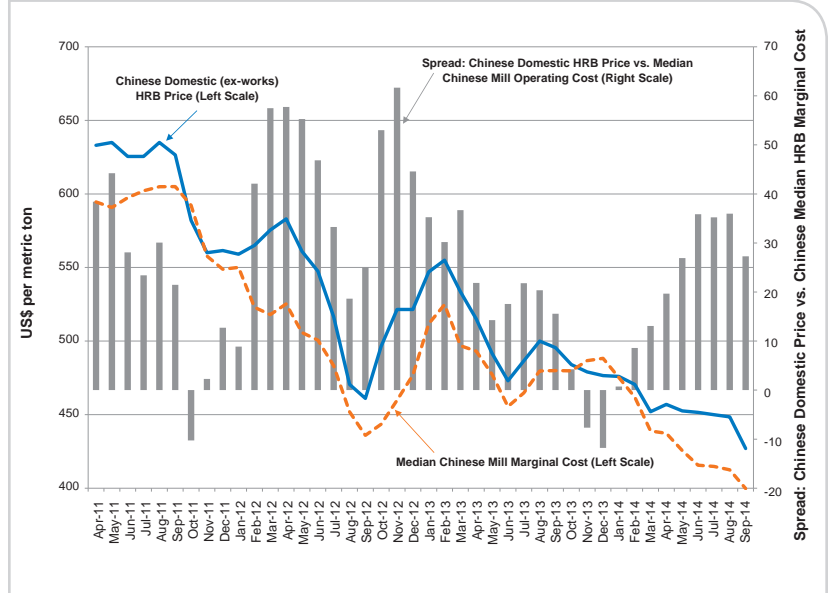
Chinese HRB ex-works export price versus domestic ex-works price. Source: WSD's WCC for Flat Rolled Sheet and SteelBenchmarker™.

cost quadrant, to cut back output. In general, death spirals are susceptible to occurring when the price of the hot rolled band is elevated and buyers' inventories are so high that, once the buyers fear the price may decline, there's a marketplace "chill" — i.e., a dearth of orders — that can persist for two months or more. As a consequence, the price plummets until it hits an unsustainable low that's rarely in place more than six weeks, if that.

In Figure 1, the marginal cost of the median-cost Chinese mill is plotted against its ex-works export price realization after taking into account: (a) the cost to ship the steel to the port of export and load it on the boat, plus other costs; and (b) an 8% value-added tax (VAT) on the steel, assuming it contains some boron (which means that, at least for the present, it doesn't pay 17% because there's a 9% VAT credit). The price is assumed to be equal to WSD's assessment of the world export price for hot rolled band less US\$10/metric ton — which, as of September 2014, is about US\$430/metric ton ex-works (and about US\$490/metric ton, FOB the port of export).

As of September 2014, the Chinese export price is highly depressed in the eyes of many people in

Figure 2



Median Chinese mill HRB marginal cost versus Chinese domestic spot price. Source: WSD's WCC for Flat Rolled Sheet and SteelBenchmarker™.

the marketplace; yet, it's still about US\$27/metric ton above the marginal cost of the median-cost steel mill (Figure 2).

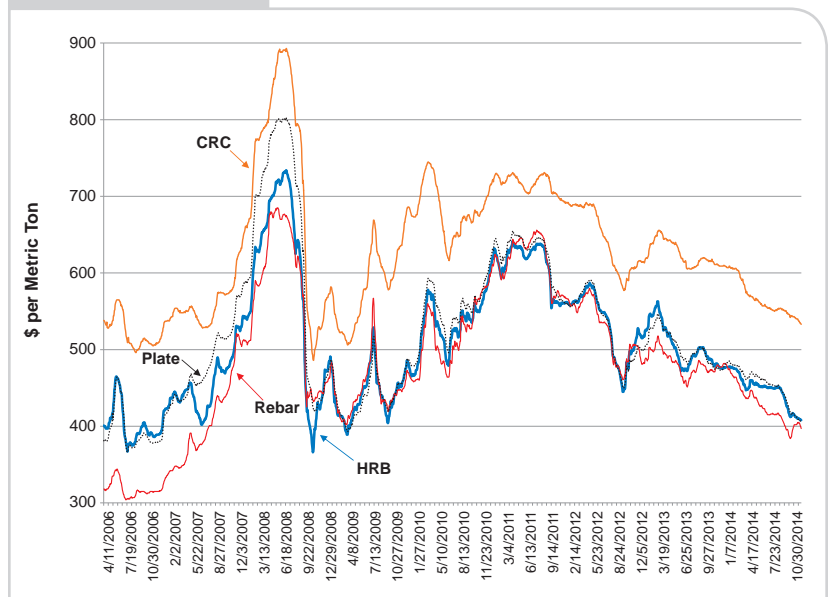
The median-cost Chinese mills' cost, of course, has fallen sharply in the last six months due to the lower prices for steelmakers' raw materials.

## Chinese Steel Prices: Spiraling Down

Figure 3 is based on the prices received each business day from Shanghai SteelHome, a leading Chinese steel industry information Internet provider. The prices for Chinese hot rolled band (HRB), cold rolled coil (CRC), standard plate and rebar are assumed to be ex-works (after the market price has been reduced by 100 RMB/metric ton to take into account the cost to ship the steel to the market). Steel scrap is assumed to be delivered to the steel plant. All prices exclude the 17% VAT.

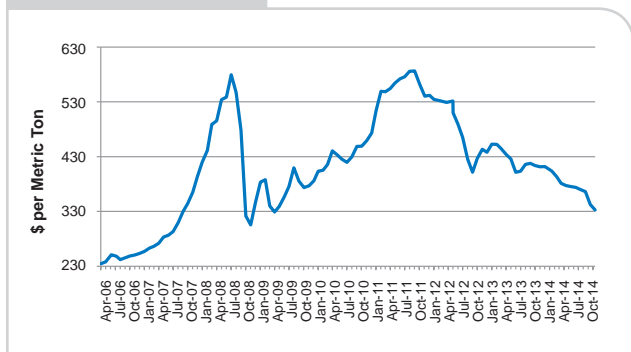
WSD receives each day for each of the steel products typically three or four prices from 28 steel markets/cities, with the reported price being the average of the inputs less 100 RMB per metric ton. The scrap price is composed of one to five inputs for 37 city markets, delivered to the steel mill (Figure 4). All prices are converted to U.S. dollars at the

Figure 3



Chinese ex-works daily prices. Source: Shanghai SteelHome.

Figure 4



China monthly scrap prices. Source: Shanghai SteelHome.

daily RMB/US\$ exchange rate. Shanghai SteelHome has the background data on the name of each price provider and the price that has been provided.

As indicated in Table 1, from 6 November to 20 November 2014, the price decline was US\$3/metric ton for HRB, US\$2 for steel scrap, US\$4 for standard plate, US\$7 for CRC and US\$8 for rebar. ♦

Table 1

Daily Benchmark Prices, China (dollars per metric ton)

Ex-works	7 Nov 2014	10 Nov 2014	11 Nov 2014	12 Nov 2014	13 Nov 2014	14 Nov 2014	17 Nov 2014	18 Nov 2014	19 Nov 2014	20 Nov 2014	21 Nov 2014
Hot rolled band* (5 mm thick x 1,200–1,500 mm wide)	410	410	410	410	409	409	409	409	408	408	408
Cold-rolled coil* (0.7 mm x 1,200–1,500 mm wide)	538	538	537	537	536	535	535	534	534	533	533
Rebar No. 5* (16 mm in diameter)	404	405	405	404	404	403	401	400	399	397	396
Standard plate* (24 mm x 2,400 mm x 6,000 mm)	409	409	409	409	408	407	407	406	406	406	406
Scrap (incl. VAT) (6–10 mm thickness)	335	335	335	335	334	334	334	333	333	333	333
Exchange rate (RMB per US\$)	6.1220	6.1190	6.1240	6.1250	6.1270	6.1270	6.1270	6.1270	6.1270	6.1270	6.1270

\* Ex-works (the same as FOB mill), US\$ per metric ton. Hot rolled band is the first product off the hot strip mill.

## Did You Know?

### ArcelorMittal Providing 310,000 Metric Tons of Steel for Gas Pipeline Across Europe

To enable the construction of one of the largest oil and gas pipelines in the world — the Trans Anatolian Natural Gas Pipeline (TANAP) — ArcelorMittal is providing 310,000 metric tons of hot rolled coils from its production site in Bremen, Germany, which is more than one-third of all the hot rolled coils needed for the TANAP project.

It is also the largest order ever placed with ArcelorMittal Europe Flat Products by a company in the oil and gas industry.

TANAP is a 2,000-km natural gas pipeline that will cross Turkey, from the Shah-Deniz field in Azerbaijan to the European border, helping to secure the supply of energy to Europe.

Construction is expected to be complete by 2018, at a total cost of around US\$7 billion. Once complete, the new pipeline will be able to transport more than 16 billion m<sup>3</sup> of natural gas a year.

The TANAP pipeline will be subject to very high operating pressures and atmospheric conditions along its route. The latest technologies have therefore been applied on this project, using ArcelorMittal's innovative steel products. The steel used is an X70, high-end grade for pipeline applications that has a very high thickness. The Bremen mill is one of the few mills in the world that can make this product.