



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

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.



Authors

Peter Marcus (left)
managing partner,
World Steel Dynamics
pmarcus@worldsteeldynamics.com
+1.201.503.0902

John Villa (right)
research strategist,
World Steel Dynamics
jvilla@worldsteeldynamics.com
+1.201.503.0911

Goodbye to steel cost inflation: Cost cuts, moderate wage boosts, lower raw material and energy prices

Steelmakers' cost to produce hot-rolled band (HRB) will continue to swing sharply over the steel cycle. However, in the next five years from the mid-point of one cycle to the next, WSD expects little to no steel mill cost inflation.

The mills' operating cost to produce hot-rolled band in the past 10 years has swung wildly — it's been a cost roller coaster. Based on WSD's monthly World Cost Curve results for the median-cost Chinese steel mill, the operating cost has ranged from a high of US\$664/metric ton in September 2011 to a low of US\$353/metric ton in January 2016 — for a variation of US\$311/metric ton. For the median-cost non-Chinese mill, the high cost figure was US\$710/metric ton in July 2011 and the low was US\$367/metric ton in February 2016 — for a variation of US\$353/metric ton.

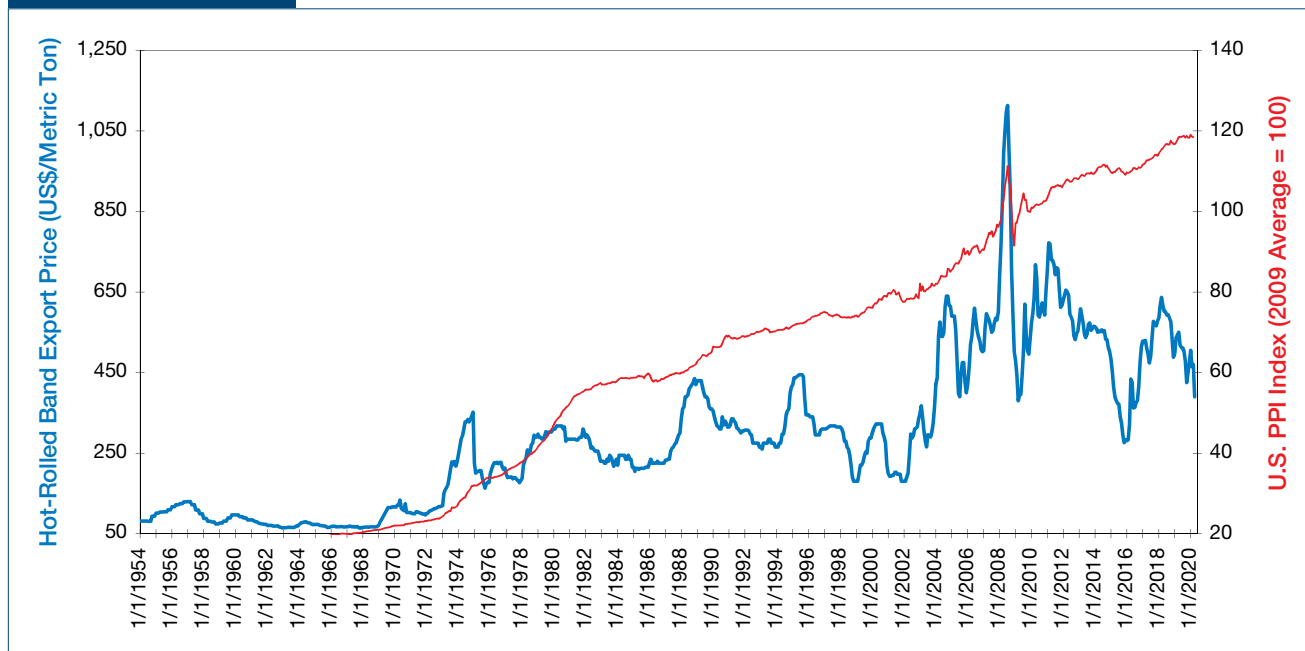
Looking ahead to 2025, rather than no change in costs, some decline would also be no surprise.

- A sizable number of higher-cost plants will be either eliminated or downsized — especially during periods of shake-out in the industry such as the current one. Multi-plant companies, which are probably growing in number due to heightened M&A activity, will consolidate output at their most efficient units. In China, plant rationalization and company consolidation will be a major event. Baowu Group is seeking to double its size to about 200 million metric tons per year largely by acquisition. If iron ore prices remain high relative to steel scrap prices, more integrated steel plants will be shut down due to lack of cost competitiveness. Capital spending needs at integrated

plants are especially huge. For example, the relining of a blast furnace may cost more than US\$75 million and the replacement of aging coke ovens could cost US\$300+ million.

- Labor costs per metric ton will rise only marginally. Man-hours/metric ton shipped by 2025 may be 5% lower given new labor-saving technologies. The rise in the worker wages may be just moderate because steelworkers, along with those in other manufacturing industries, are losing their negotiating power. As capital replaces labor (Karl Marx is turning over in his grave), workers are becoming increasingly replaceable.
- Iron ore prices delivered to China may drop significantly. For example, they are currently lofty relative to the world's leading iron ore producers' sinter feed cost delivered to the port of export — only about US\$16/metric ton. More iron ore supply is coming into production in Australia, India, Russia and even Iran. Also, if the steel scrap price is as low as expected, a larger amount of it will be charged into basic oxygen furnaces (as an alternative to higher cost liquid pig iron). Chinese pig iron and steel production will be lower in a few years reflecting reduced demand in the country. (Note: If the international iron ore price drops sharply, China's domestic production of sinter feed and pellet, which is high cost, could fall 50% to roughly 125 million metric tons per year.)
- Coking coal in May 2020 was selling for only about US\$112/metric ton, FOB Australia;

Figure 1



World hot-rolled band export price vs. U.S. producer price index. Sources: SteelBenchmarker, WSD estimates, Reuters.

hence, there's far less room for it to drop in price than iron ore. The price is at a level at which a number of non-Australian export-oriented coking coal mines can't long survive. A "wild card" that could tighten the supply/demand balance for this product would be further mandated closures in China of dangerous coal mines, due to their great depth and the emission of combustible gases. Also, highly polluting privately owned coke ovens in Shanxi Province may be further cut back.

- The price of obsolete steel scrap is forecast to be lower over the steel cycle in the next decade despite the rising global share of electric arc furnace (EAF) steel production. In China, the obsolete steel scrap reservoir, that's on average 10–40 years old, is forecast to rise to 318 million metric tons by 2030 versus 124 million metric tons in 2019. Growing direct reduced iron capacity and increased pig iron offerings on the world market at times will exert downside pressures on steel scrap prices.
- Expenses to meet additional air and water pollution mandates through 2025, and perhaps to 2030, may not rise significantly for those plants already meeting the mandated standards.

However, beyond 2030, a number of steel mills will begin to take actions to achieve zero carbon emissions by 2050. (Note: Integrated steel plants emit about 2 metric tons of CO₂/metric ton of steel production, versus about 0.5 metric tons for EAF-based units. For most integrated plants, the achievement of zero carbon emissions would entail huge capital outlays in order to re-orient the plant's steelmaking processes — to the hot briquetted iron/EAF route rather than the blast furnace/basic oxygen furnace route. Also, a separate facility to produce hydrogen might be needed. Besides the capital costs, the rise in operating cost could be US\$50–100/metric ton.)

- The purchase price of energy in different forms, including electricity and fuel oil, may be reduced. Because of oversupply, the Brent oil price may not recover to US\$50/barrel versus the May 2020 figure of US\$25/barrel. The average price in 2019 was US\$64/barrel.

As seen in the figure, the export price for HRB has risen far less than the U.S.'s producer price index (PPI). Since its peak in 1989, the HRB export price is about unchanged, while the PPI is up about one-third.

This report includes forward-looking statements that are based on current expectations about future events and are subject to uncertainties and factors relating to operations and the business environment, all of which are difficult to predict. Although WSD believes that the expectations reflected in its forward-looking statements are reasonable, they can be affected by inaccurate assumptions made or by known or unknown risks and uncertainties, including, among other things, changes in prices, shifts in demand, variations in supply, movements in international currency, developments in technology, actions by governments and/or other factors. ◆