Chinese Steel Mills Outperforming the Others — Forever Strong? Part II

In the last issue, Part I of this report emphasized the positives for the Chinese economy and its steel mills. There is no doubt that, today, the Chinese economy is performing much better than almost any other. And, its policymakers have a number of directions to take in the future, including placing more emphasis on the growth of household spending, in order to keep the economy growing at a good rate.

Also, its steel industry, as was the case after the global economic crisis that had a devastating impact on the non-Chinese steel industry in the fourth quarter of 2008 and 2009, is faring far better than the great bulk of its offshore competitors (except for the low-cost Russian steel mills). The Chinese steel industry is currently producing steel at close to record rates — i.e., just about 1.0 billion metric tons annualized. And, steel prices and volumes are high enough for the mills to be reasonably profitable. In April 2020, which will be the low point this year for steel production outside of China, Chinese steel production accounted for a record 60% of the global total. And, its pig iron was an amazing 70% of the global total.

Part II of this report considers selective threats to the Chinese economy and its steel mills.

Threats to the Chinese Economy

- Two "black clouds" are overhanging the Chinese economy. They are:
  - The diminishing outlook for apartment sales. Residential construction accounts for about 12% of GDP.
  - The sustainability of merchandise exports. The country's exports account for about 25% of GDP.
- GDP growth after 2021 seems likely to fall back to a 4–5% growth rate due to substantial debt, and its fixed asset investment growth looking ahead probably can't rise much as a share of GDP because it's already so high (about 43% of GDP).
- China's current unemployment rate when including migrant workers may be close to 20% rather than the reported figure of 6%, which excludes migrant workers.
- Air and water pollution problems in China are so massive and widespread that, especially in the winter months, factories and construction activity in the country's north at times are shut down or reduced in activity levels in order to lessen air pollution.
- China's public utilities are highly dependent on domestic steam coal. They consume about 3.0 billion metric tons of it each year to generate electricity. Each metric ton of steam coal that is consumed, believe it or not, generates about 2.7 metric tons of CO_2. Hence, CO_2 generation from just this source is about 7.0 billion metric tons per year, or about 19% of the global total of 37 billion metric tons per year from all sources (industry, transportation, buildings and agriculture).
- China's low birth rate over the past 20 years is reducing the number of workers in the country — as is the case for the U.S., Europe and South Korea.

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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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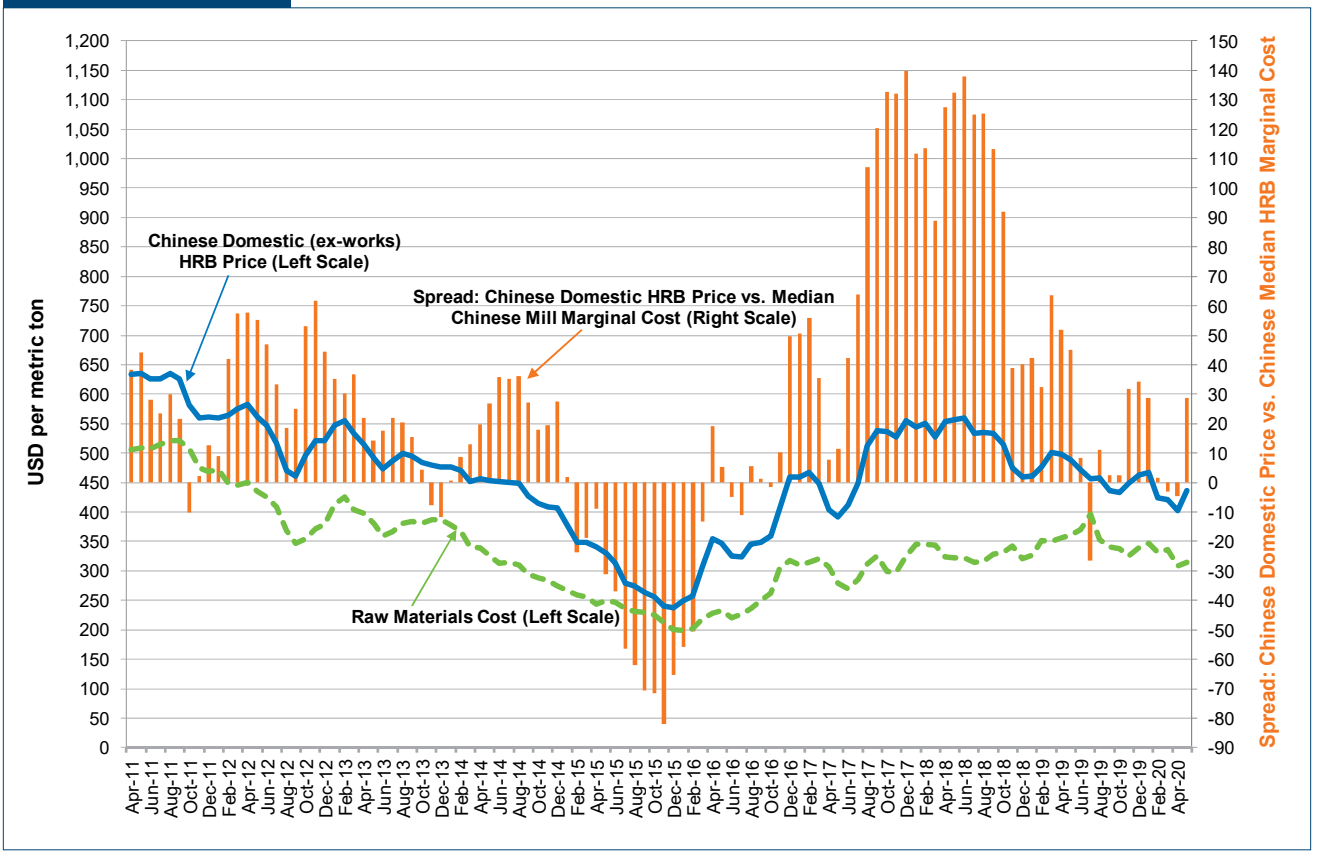
Figure 1



Median Chinese mill hot-rolled band raw materials cost vs. Chinese domestic spot price. Source: WSD's World Cost Curve for Flat-Rolled Sheet and SteelBenchmarker™.

- A number of foreign countries are increasingly imposing sanctions on Chinese goods entering their country.
- Because of the coronavirus pandemic, Chinese consumer sentiment in 2020 has become far less optimistic. And, it will likely take several years, if ever, before the prior feeling about optimism about the future has fully returned.
- As is the case elsewhere in the world, Chinese workers are rapidly being replaced by machines. This circumstance places great pressure on its policymakers to undertake actions — such as boosting fixed asset investment — that create new jobs.
- The Chinese offshore bond market may be losing some of its luster as a number of Chinese companies, with sizable offshore debt, are in a difficult financial position.

Threats for Chinese Steel Companies

- Apparent steel demand by 2030 may decline by at least 50 million metric tons, if not 100 million metric tons, as the economy becomes far less steel-intensive — with household spending growing as a share of GDP and fixed asset investment declining as a share of GDP. In 2019, on a crude steel basis, apparent steel consumption was about 950 million metric tons.
- An avalanche of trade suits have been filed against Chinese steel mills since 2016 that are limiting the Chinese steel mills' exports. These suits are still ongoing. The Chinese mills are facing more competition for their product especially in East Asian markets.
- Mandated temporary steel mill production closedowns, or slowdowns, occur fairly frequently in northern China in order to lessen air pollution.
- When any economy expands at a slower rate, there's a strong tendency for steel intensity — which is steel consumption per point of GDP — to recede at a faster pace because services are accounting for a higher share of the GDP growth).

- China's steel mills have about average operating costs on a global basis. Its median-cost steelmaker in May 2020 had an operating cost to produce hot-rolled band of about US$470/metric ton based on WSD's World Cost Curve.
- Ironmaking and steelmaking capacity in China is higher than several years ago, reflecting in part the construction of more than 15 large-sized blast furnaces in recent years.
- China's domestic iron ore mines are low grade and high cost — in a number of cases with an operating cost for 65% sinter feed at about US$75/metric ton. The "Big Four" international iron ore companies are delivering in some cases a higher quality sinter feed to their ports of export for an operating cost of only US$14–16/metric ton.
- The country's mid-size and larger steel mills are historically "production driven" rather than "profit driven," which adds to the competitiveness of the domestic pricing structure for commodity-grade products in the country. In the case of hot-rolled band, more than 75 wide hot strip mills are vying for market share. The number of rebar producers, including a sizable number of independent rolling mills, probably exceeds 200.
- CO_2 emissions by China's steel industry, as noted earlier, are massive since about 90% of its output is via the blast furnace/basic oxygen furnace steelmaking route (that emits at least 2.0 metric tons of CO_2 per metric ton of steel production).
- The current ex-works price for hot-rolled band in China, US$470/metric ton as of 22 July 2020, is vulnerable to a US$100/metric ton decline if significant overcapacity develops in Chinese steel — and, as well, the world export price falls back and iron ore prices fall sharply.
- Steel's new "Age of Protectionism," which came into effect in the third quarter of 2016, has added to price competition on the world market since fewer countries are now open to the import of hot-rolled band and other commodity-grade steel products.
- Closures of coking coal mines and coke plants, for safety and environmental reasons, will be a force working to sustain the international price of coking coal.
- Cross-provincial mergers have been rare in China because each municipality wants steel production to be maximized in its region. Although, this is about to change as Baowu and at least one or two other large companies are seeking to double their size largely via acquisition.

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. ✦

Did You Know?

Namesake of Hunt-Kelly Award

Born in Fallsington, Pa., USA, to Dr. Robert A. and Martha Lancaster (Woolston) Hunt, Robert W. Hunt received his early education in Covington, Ky., where he ran the family drugstore from 1855 to 1857 following his father's death. Soon, however, he was working in Pottsville, Pa., for John Burnish and Co. at a rolling mill. He then changed his career by gaining chemical training in Philadelphia (1859–1860) in the laboratories of Booth, Garrett & Blair. After this training, he became a chemist for the Cambria Iron Co. (1860–1861), setting up a laboratory for the company. From 1865 to 1866, after serving in the Civil War, Hunt returned to the Cambria Iron Co. as superintendent of steel works in Wyandotte, Mich., but then returned to Pennsylvania (Johnstown, this time), where from 1866 to 1873 he worked for Cambria and filled the first order for steel rails for the Pennsylvania Steel Co. In the early 1870s, he helped design the Cambria Bessemer steel plant, thus establishing himself as a pioneer and innovator in steel. He later worked for the Troy Steel and Iron Co. (Troy, N.Y., 1875–1888) and founded the firm of Robert W. Hunt & Co. in Chicago, which emphasized the work of construction engineers (1888–1923).

Robert Hunt was AIME president in 1883 and 1906 and received Honorary Membership in 1919. In 1912, the American Institute for Mining, Metallurgical and Petroleum Engineers Inc.'s (AIME's) sister organization, the American Society of Civil Engineers, awarded Hunt the John Fritz Medal, following that in 1923 with the Washington Award. In his honor, AIME established the Robert W. Hunt Medal and the Robert W. Hunt Prize. AIST now annually confers the joint Hunt-Kelly Outstanding Paper Award.