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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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Chinese steel hijinks: Unsustainable steel production

High prices in China, especially for rebar after the 2017 capacity curb, have driven up Chinese steel output to unsustainable levels.

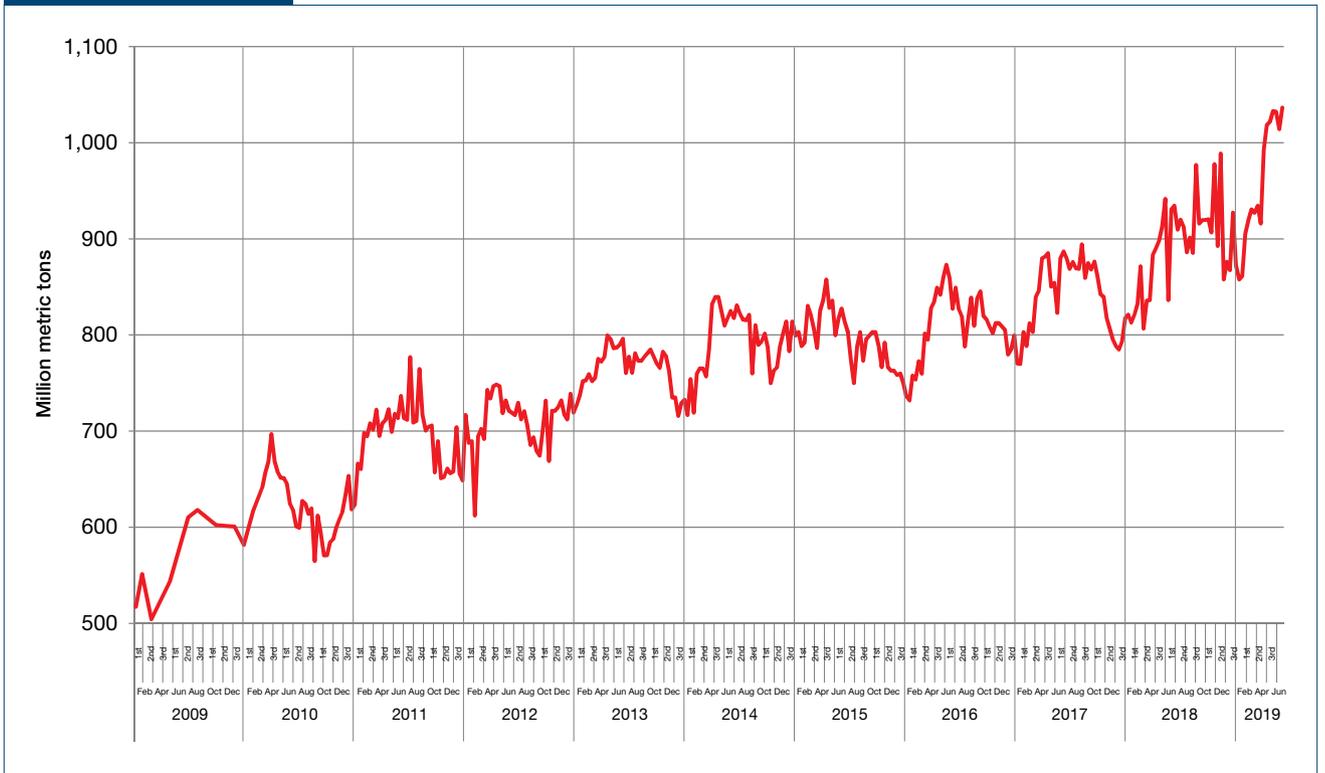
Key Chinese steel metrics:

- Capital spending by the Chinese steel industry: US\$64.3 billion in 2017; US\$71.2 billion in 2018; US\$83 billion in 2019; and US\$90 billion in 2020. The 2019 figure is so elevated because profits have surged compared to lows in 2015 and sizable funds are being expended to move steel plants out of city centers in order to reduce air pollution and shift the land to other productive uses. Apart from the huge expense of moving steel plants out of city centers to new locations, a sizable number of new blast furnaces, electric arc furnaces and wide hot strip mills have been built the past three years.
- Iron ore concentrate: Domestic production is estimated in 2017 at 255 million metric tons; 2018 at 240 million metric tons; 2019 at 255 million metric tons; and 2020 at 250 million metric tons. In comparison, total concentrate usage in 2019, including iron ore pellet, will be about 1.4 billion metric tons. Sinter feed that's about 65% Fe is expensive to produce in China, with an average cost of perhaps US\$75/metric ton, because of the low grade of the iron ore in the ground — perhaps only 25–30% Fe in many cases. In comparison, the operating cost for sinter feed for the Big Four iron ore producers, prior to Vale's calamitous tailings dam collapse in Brazil, was only about US\$15/metric ton at the port of export.

- Steel production: In 2017, it was 862 million metric tons and in 2018 at 928 million metric tons. The forecast for 2019 is 965 million metric tons, and for 2020 it is 1.0 billion metric tons. Production has surged in 2018 and 2019 even though net steel product exports are little changed. Note: In May 2019, Chinese steel production rose to an annual rate of 1.05 billion metric tons.
- Blast furnace output: 990 million metric tons in 2017 and 987 million metric tons in 2018. The forecast for 2019 is 984 million metric tons, and for 2020 it is 978 million metric tons. There are roughly 700–800 blast furnaces in the industry, including many at small integrated mills that don't register in the official database.
- Steelmaking gross capacity: 1,135 million metric tons in 2017; 1,132 million metric tons in 2018; 1,123 million metric tons in 2019; and 1,110 million metric tons in 2020.
- EAF steelmaking capacity: 110 million metric tons in 2017; 125 million metric tons in 2018; 144 million metric tons in 2019; and 153 million metric tons in 2020.
- Wide hot strip mill capacity: 252 million metric tons in 2017; 263 million metric tons in 2018; 265 million metric tons in 2019; and 265 million metric tons in 2020. Approximately 70–80 wide hot strip mills are operating.

China's air pollution controls will be even more strained if the country's GDP in the years to 2025 grows 5.0% per year, compounded. If so, in six years, the economy would be one-third larger.

Figure 1



China 10-day annualized production rate (million metric tons). Source: CISA and WSD estimates.

About three months ago, WSD raised its Chinese steel production forecast for 2025 by 140 million metric tons to 900 million metric tons, which compares to estimated steel production in 2019 of 965 million metric tons (Fig. 1). WSD now thinks, in the period to 2025, rather than promoting gains in household spending, the Chinese government cannot let up greatly in

its promotion of fixed asset investment as the primary upside driver of its economy because: (a) it's difficult to promote household spending since it can't control consumer sentiment; and (b) it's also a challenge to promote merchandise exports when, in fact, the country is losing export competitiveness.

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