WSD WORLD STEEL DYNAMICS®

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.

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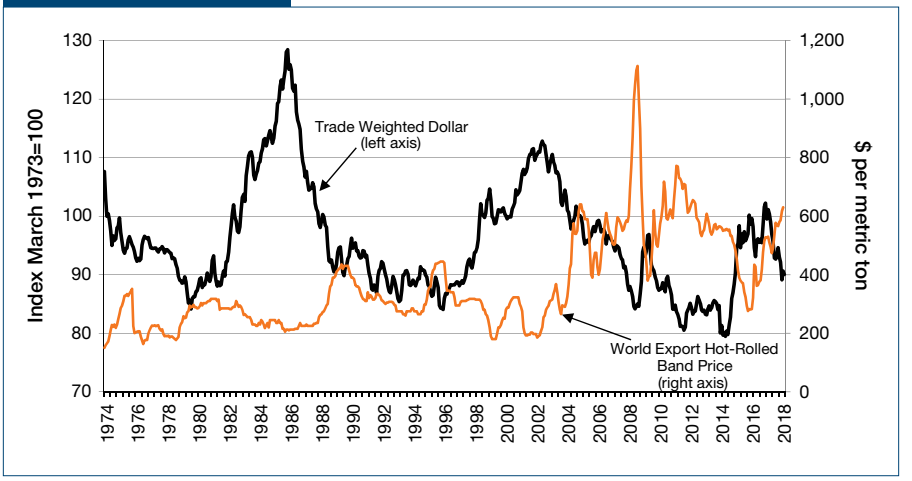
U.S currency value impacts world steel export price: stronger dollar = weaker export price

The U.S. dollar on a trade-weighted basis — i.e., calculated on the basis of the U.S.'s trade with about 26 other countries — has had amazing swings over the years (Fig. 1). From a weak point of just 0.85 in 1978, it peaked at about 1.28 in 1984. By 1995, it had fallen again to 0.85, followed by a strengthening to about 1.13 in 2002. In 2014, it was down again to only 0.80; but, it then rallied to 1.03 in 2016. Currently, it's about 0.90.

Regarding the impact on international steel prices, a stronger dollar brings down foreign mills' costs relative to those in the United States — and, as a result, all other things held the same, drives down the world steel export price (Fig. 2). (Note: The hot-rolled band export price is a good proxy for the steel price, rather than rebar, because it tends to be less impacted by swings in the price of highly volatile steel scrap.)

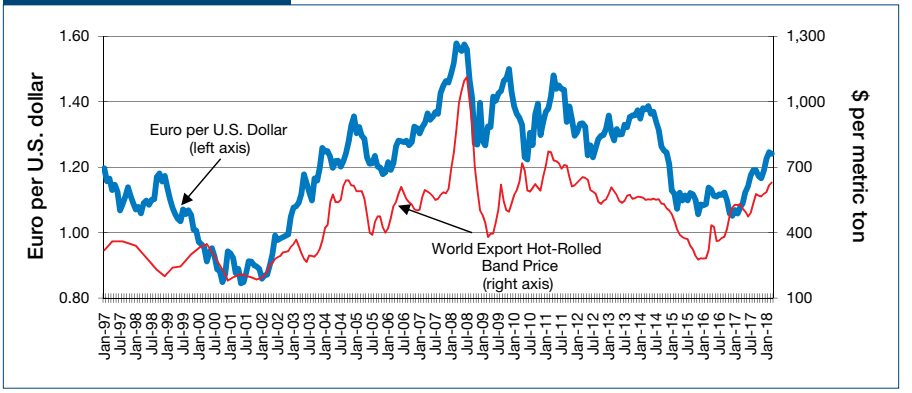
Currently, if a median-cost integrated steel mill's hot-rolled band operating cost is about US$500/metric ton, WSD estimates that roughly two-thirds

Figure 1



USA trade-weighted dollar value vs. world export hot-rolled band price. Source: Bloomberg, Reuters and WSD SteelBenchmarker™.

Figure 2



World export hot-rolled band price vs. euro per U.S. dollar. Source: Bloomberg, Reuters and WSD SteelBenchmarker™.

of this cost is largely for steelmakers' raw materials — i.e., in dollar-denominated items. Hence, the home-currency cost, at one-third of costs, is roughly US$150/metric ton.

Since the 2016 peak, the trade weighted U.S. dollar has fallen 13%. If one multiplies the non-USA mill's home-currency cost of US$150/metric ton by 13%, the result is US$20/metric ton — or, the estimate of how much the weakened dollar has benefited the cost position of a typical U.S. integrated steel plant.

China's unsustainable steel intensity: possible 100 million drop in Chinese steel demand by 2025

Is a sizable decline in China's steel demand inevitable in the next decade?

WSD's answer is a "strong yes" because: (a) the country's fixed asset investment (FAI) in the past two decades has grown at an unsustainable pace; and (b) the country's steel intensity — in terms of steel consumption per point of GDP — has been driven up to non-sustainable highs.

Fixed asset investment in China is now so massive that it probably accounts for at least 92% of Chinese steel demand. Household spending, that accounts for only about 8% of Chinese steel consumption, is about one-seventh as steel intensive as fixed asset investment per unit of spending on these items (Table 1).

As FAI declines as a share of GDP and as household spending advances as a share of GDP, and, as well, the per annum growth rate for GDP declines to 6% or less at some point in the future, this combination could lead to a 70- to 120-million-metric-ton decline in Chinese steel demand.

China's relatively huge steel intensity per capita is evident in this comparison:

- In China, apparent finished steel products consumption of about 720 million metric tons per annum, when divided by the population of 1.4 billion = 0.51 metric tons per capita.
- In the U.S., apparent steel consumption of 110 million metric tons, when divided by the population of 330 million = 0.33 metric tons per capita.

Chinese per capital steel consumption is more than 50% higher; yet, the U.S.'s average household income of

Table 1

*China GDP Forecast: 2018–2035** (billion RMB, %)*

Year	GFCF*	Chg (%)	Consumption expenditure				Inventory and net export	Total GDP** current	Chg (%)	Real GDP on 1990	GDP current less real	GFCF			Consumption		Inventory change and net export
			Gov't	Chg (%)	House.	Chg (%)						Total (%)	Infra.	Other	Gov't	House.	
2000	3,453		1,668		4,699		238	10,058				34.3	16.4	17.9	16.6	46.7	2.4
2005	7,753	11.7	2,622	16.5	7,523	13.0	1,021	18,919	16.3	10.4	5.9	41.0	16.8	24.2	13.9	39.8	5.4
2010	19,665	21.3	5,294	14.9	14,606	15.3	1,506	41,071	17.4	10.4	7.0	47.9	18.1	29.8	12.9	35.6	3.7
2015	31,307	3.4	9,476	10.5	26,475	9.2	2,401	69,659	7.6	6.9	0.7	44.9	18.5	26.4	13.6	38.0	3.4
2016	32,460	3.7	10,518	11.0	30,237	14.2	1,945	75,160	7.9	6.7	1.2	43.2	18.7	24.5	14.0	40.2	2.6
2017	33,960	4.6	11,900	10.6	35,102	16.1	1,750	82,712	10.0	6.9	3.1	41.1	18.7	22.4	14.4	42.4	2.1
2018e	35,360	4.1	13,090	10.0	39,320	12.0	1,490	89,260	7.9	6.7	1.2	39.6	18.9	20.7	14.7	44.1	1.7
2020e	38,000	3.7	15,710	9.5	48,390	10.5	1,000	103,100	7.4	6.3	1.1	36.9	19.2	17.7	15.2	46.9	1.0
2025e	44,301	3.0	23,729	7.8	76,388	9.0	320	144,737	6.8	5.8	1.0	30.6	17.2	13.4	16.4	52.8	0.2
2030e	51,356	3.0	32,724	6.0	114,172	8.0	50	198,302	6.3	5.3	1.0	25.9	15.1	10.8	16.5	57.6	0.0
2031e	52,897	3.0	34,589	5.7	123,060	7.8	50	210,597	6.2	5.2	1.0	25.1	14.8	10.3	16.4	58.4	0.0
2032e	54,484	3.0	36,457	5.4	132,452	7.6	50	223,443	6.1	5.1	1.0	24.4	14.5	9.9	16.3	59.3	0.0
2033e	56,119	3.0	38,316	5.1	142,365	7.5	50	236,850	6.0	5.0	1.0	23.7	14.2	9.5	16.2	60.1	0.0
2034e	57,802	3.0	40,155	4.8	152,816	7.3	50	250,824	5.9	4.9	1.0	23.0	13.8	9.2	16.0	60.9	0.0
2035e	59,536	3.0	42,002	4.6	163,783	7.2	50	265,371	5.8	4.8	1.0	22.4	13.5	8.9	15.8	61.7	0.0

*Gross fixed capital formation. **International GDP definition by Expenditure Approach, data available annually. House. = Household; Infra. = Infrastructure

US$59,500 per capita is about seven times China's US$8,600 per capita (Fig. 3).

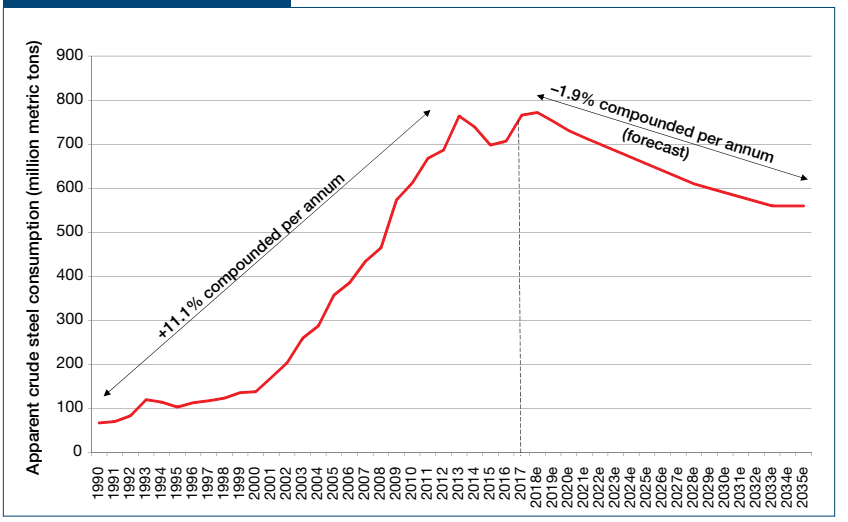
China's monumental economic growth the past two decades is a validation of the Capital Fundamentalism economic theory. The best foundation for an economy's long-term growth, it's postulated, is rising fixed asset investment as a share of GDP.

Here are WSD's Chinese 2025 forecast for some of these items:

- Fixed asset investment (GFCF) declines to 30.6% of GDP versus 41.1% in 2017.
- Household spending rises to 52.8% of GDP versus 42.4% in 2017.

Apparent steel demand by 2025 may decline to 600 to 650 million metric tons per annum versus 720 million metric tons in 2017.

Figure 3



China apparent crude steel consumption (million metric tons). Source: WSD estimates.

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. ✦