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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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# Weighted Activity in U.S. Steel-Consuming Industries

## Steel intensity — steel demand per unit of index — down 11% in 2019 vs. 2000

WSD for more than 30 years has been using a weighted index for the activity in 15 steel-consuming industries, called IDX. During this time, steel demand has lagged the index — i.e., there's been lessened steel intensity per point of IDX. For example:

- In 2000, given actual steel consumption at 133.9 million net tons and the IDX at 116.2, steel consumption per point of index was 1.153 million tons. See Table 1.
- In 2019, steel consumption was 112.0 million tons and the IDX was 108.6; consequently, steel consumption per point of index was 1.031 million tons.

Over the past 19 years, steel consumption per point of IDX fell by 0.199 million tons — for an average decline per year per point of index at 0.0064 million tons.

Looking ahead to 2050, if the same rate of decline in steel intensity were to occur, steel consumption per point of index would be 0.832. Hence, if, in 2050, IDX is 25% higher at 135.8, steel consumption would be 0.832 million tons per unit of IDX times IDX at 135.8 = 113 million tons.

In 2019, the short-lead-time capital goods segment of the index amounted to 49.3% of the total compared to 43.3% of the total in 2000. The long-lead-time capital goods segment in both cases was 28.1%. For the consumer durables segment, the 2019 figure at 18.4% was down from 19.8% in 2000.

For the first 8 months of 2020 and for August 2020, the short-lead-time capital goods segment had a share of the total at 49.0% and 47.0%, respectively. The consumer durable segment share was at 17.0% and 21.0%, respectively. The long-lead-time capital goods segment share was at 30.0% and 28.0%, respectively.

The largest year-to-year decline of components in the index in August 2020 were oil and gas well drilling at –71%, farm equipment at –40%, trucks at –25%, and ships and boat construction at –22%. The best performances for components of the index in August 2020, year to year, were metal cans at +29% and household appliances at +4%. Automobile production declined only 3% year to year.

Looking ahead to 2021, one of the factors restraining the rise in U.S. steel demand may be lagging capital spending by industrial companies — which would impact the short-lead-time index. As well, if the price of Brent oil remains low — it was US$43/barrel on 29 October — steel consumption tied to the energy market may not rebound much. Many municipalities seem to be encountering a revenue shortfall due to the lessened receipt of funds from their state government, and reduced income tax and sale tax receipts. Hence, municipalities' allocation of sizable additional funds for infrastructure spending may not occur; if so, this will restrain the gain in the long-lead-time capital goods segment of the index.

## Table 1

*U.S. Steel Consumption/Shipment Outlook. Source: AISI and WSD estimates, U.S. Federal Reserve*

| | 2000 | 2002 | 2004 | 2006 | 2008 | 2010 | 2012 | 2014 | 2016 | 2017 | 2018 | 2019 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| First quarter | 28.6 | 24.2 | 28.2 | 27.8 | 27.5 | 20.5 | 25.4 | 23.9 | 21.3 | 22.6 | 23.5 | 24.2 |
| Second quarter | 28.5 | 25.9 | 29.0 | 28.8 | 27.7 | 21.7 | 24.7 | 24.9 | 22.8 | 22.8 | 23.8 | 25.5 |
| Third quarter | 27.3 | 25.2 | 27.4 | 26.8 | 26.2 | 20.8 | 23.5 | 25.4 | 22.5 | 22.8 | 24.1 | 24.3 |
| Fourth quarter | 24.7 | 24.7 | 26.8 | 26.1 | 17.1 | 20.4 | 22.3 | 24.1 | 19.9 | 22.5 | 23.7 | 23.2 |
| Shipments | 109.1 | 100.0 | 111.4 | 109.5 | 98.5 | 83.4 | 96.0 | 98.2 | 86.5 | 90.8 | 95.1 | 97.2 |
| Crude Steel | 112.2 | 101.0 | 109.9 | 108.6 | 101.3 | 88.7 | 97.8 | 97.2 | 86.5 | 90.0 | 95.5 | 96.9 |
| Plus: Imports | 38.0 | 32.7 | 35.8 | 45.3 | 31.9 | 23.9 | 33.5 | 44.3 | 32.7 | 38.0 | 33.0 | 27.9 |
| Less: Imported semis converted to finished products by AISI-reporting companies | 8.6 | 8.8 | 7.4 | 9.3 | 5.9 | 5.1 | 7.6 | 10.6 | 6.5 | 8.3 | 8.1 | 6.7 |
| Less: Exports | 6.5 | 6.1 | 7.9 | 9.7 | 13.5 | 12.1 | 13.7 | 12.0 | 9.5 | 10.5 | 8.8 | 7.4 |
| Subtotal: Apparent steel demand | 131.9 | 117.8 | 131.9 | 135.8 | 111.0 | 90.1 | 108.0 | 120.0 | 103.2 | 110.0 | 111.2 | 111.0 |
| | | | | | | | | | | | | |
| Less: Est. user/buyer inventory build | (2.0) | 0 | 8.1 | 6.6 | (4.0) | 4.5 | 0.5 | 2.0 | (3.0) | 0 | (1.5) | (1.0) |
| Equals: Actual steel consumption | 133.9 | 117.8 | 123.8 | 129.2 | 115.0 | 85.6 | 107.5 | 118.0 | 106.2 | 110.0 | 112.7 | 112.0 |
| % change | 3.1 | (2.6) | 7.1 | 1.6 | (7.6) | 11.1 | 9.3 | 8.3 | (4.3) | 3.5 | 2.5 | (0.6) |
| | | | | | | | | | | | | |
| Index of activity (IDX) in 15 steel-consuming industries (2004 = 100) | 0.288 | 0.278 | 0.272 | 0.334 | 0.288 | 0.265 | 0.310 | 0.370 | 0.317 | 0.346 | 0.297 | 0.251 |
| | 116.2 | 97.7 | 100.0 | 108.3 | 100.2 | 79.0 | 0 | 100.3 | 105.1 | 107.8 | 110.8 | 108.6 |
| % change | 5.7 | (6.7) | 5.8 | 6.3 | (7.6) | 4.8 | (100) | 6.2 | 0.8 | 2.6 | 2.8 | (2.0) |
| | | | | | | | | | | | | |
| IDX short-lead-time capital goods | 50.3 | 37.9 | 42.0 | 49.0 | 42.6 | 36.7 | 0 | 50.3 | 48.8 | 51.8 | 54.1 | 53.6 |
| IDX long-lead-time capital goods | 32.6 | 27.5 | 29.0 | 31.3 | 34.1 | 20.9 | 0 | 24.0 | 29.9 | 30.8 | 31.3 | 30.5 |
| IDX consumer goods | 23.0 | 22.7 | 23.0 | 22.0 | 16.9 | 14.9 | 0 | 20.8 | 22.0 | 20.8 | 20.9 | 20.0 |
| IDX miscellaneous industries | 10.3 | 9.6 | 6.0 | 6.0 | 6.6 | 6.5 | 0 | 5.2 | 4.4 | 4.4 | 4.5 | 4.5 |
| | | | | | | | | | | | | |
| Steel consumption per point of activity index (million tons) | 1.153 | 1.205 | 1.238 | 1.193 | 1.147 | 1.084 | — | 1.176 | 1.011 | 1.020 | 1.017 | 1.031 |

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. ✦