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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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Steel demand tracking: experience counts

Tracking and estimating actual steel consumption is both an art and science. Consider the following:

- Steel is a derived demand industry — i.e., steel is not consumed directly.
- Steel buyers and users at times are often unexpectedly adding to, or subtracting from, their steel inventory based on their perception of the availability of steel and the price outlook. The steel marketplace is neverending psychological warfare between buyers and steelmakers.
- Perhaps 60% of steel demand ties into construction activity, which is not reported on a unit basis. Hence, the construction figures, always reported in the home currency, need to be adjusted for inflation.
- Perhaps 25% of steel demand ties into capital spending, which is prone to violent swings over the business cycle.
- The pace of steel demand growth is in part a function of the overall increase in economic activity.

Once GDP growth expands more than 2–3% per year, a higher proportion of the economic expansion occurs in steel-intensive sectors of the economy.

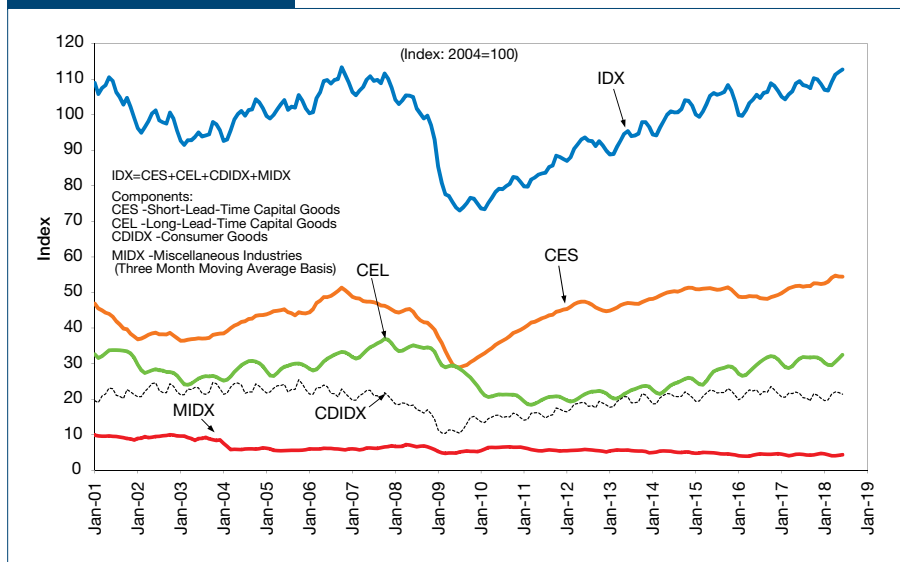
- High oil prices promote substantial spending on energy projects, with these tending to be highly steel-intensive.

In general, steel intensity — defined as steel consumption per point of GDP — tends to decline in periods of slow economic growth. Currently, in China so far in 2018, steel intensity has been far stronger than one would expect when assessing the weighted activity figures for steel-consuming industries.

Steel has one special feature that provides a strong insight into global steel demand — which is the World Steel Association's monthly report on steel production by country. Since much of the steel that's produced is based on the mills' orders, global steel production is a highly valuable indicator of underlying steel demand — after adjusting for seasonal factors.

Currently, the global steel industry is in the midst of a production boom,

Figure 1



Components of WSD Index of Steel Activity (USA).

Table 1

Components of IDX (2004=100) as of June 2018 and 2017

Indicator	Index figure		Weighted index		Y-o-y % chg	Share of index (%)	Share of index June 2018 (%)	Y-o-y first 6 months % chg
	June 2018	June 2017	June 2018	June 2017	June			
CES: Short-lead-time capital goods								
Oil and gas well drilling	73.1	65.6	2.19	1.97	11.4	3.0	1.9	
Railroad rail and miscellaneous	156.3	146.3	4.69	4.39	6.8	3.0	4.1	
Business equipment	172.8	169.0	8.64	8.45	2.2	5.0	7.6	
Trucks (not seas. adj.)	93.2	89.9	6.52	6.29	3.6	7.0	5.7	
Fabricated metals	126.1	119.2	15.13	14.31	5.7	12.0	13.2	
Non-electrical machinery	146.4	139.8	17.57	16.77	4.8	12.0	15.4	
Total			54.74	52.18	4.9	42.0	47.9	5.3
CEL: Long-lead-time capital goods								
Ships and boats construction	102.6	101.8	1.03	1.02	0.8	1.0	0.9	
Electrical equipment	135.1	132.7	6.75	6.64	1.8	5.0	5.9	
Non-residential construction (NSA)	111.9	106.4	25.73	24.47	5.1	23.0	22.5	
Total			33.51	32.13	4.3	29.0	29.3	3.1
CDIDX: Consumer goods								
Residential housing (not seas. adj.)	73.7	69.4	2.21	2.08	6.2	3.0	1.9	
Household appliance	98.9	101.4	3.96	4.06	-2.4	4.0	3.5	
Automobiles (not seas. adj.)	96.2	99.7	15.39	15.95	-3.5	16.0	13.5	
Total			21.56	22.09	-2.4	23.0	18.9	-1.0
MIDX: Miscellaneous industries								
Defense and space equipment	130.0	127.6	1.30	1.28	1.9	1.0	1.1	
Farm equipment	94.3	85.7	1.89	1.71	10.0	2.0	1.6	
Metal cans	41.6	43.7	1.25	1.31	-4.7	3.0	1.1	
Total			4.43	4.30	3.1	6.0	3.9	-2.0
Total			114.25	110.70	3.2	100.0	100.0	3.1

reflecting high prices. In June 2018, WSD is estimating that global steel production may be up 12% year on year.

For the U.S., WSD generates each month a weighted index of activity in 15 steel-consuming industries (IDX). These items are aggregated into four sectors: (a) capital equipment short-lead-time (CES); (b) capital equipment

long-lead time (CEL); (c) consumer goods (CDIDX); and (d) Miscellaneous (MIDX).

As of May 2018, for the first five months of the year, the IDX is up 3.4%, the CES is up 5.8%, the CEL is up 3.2%, the CDIDX is down 1.2% and the MIXD is unchanged (see Fig. 1 and Table 1).

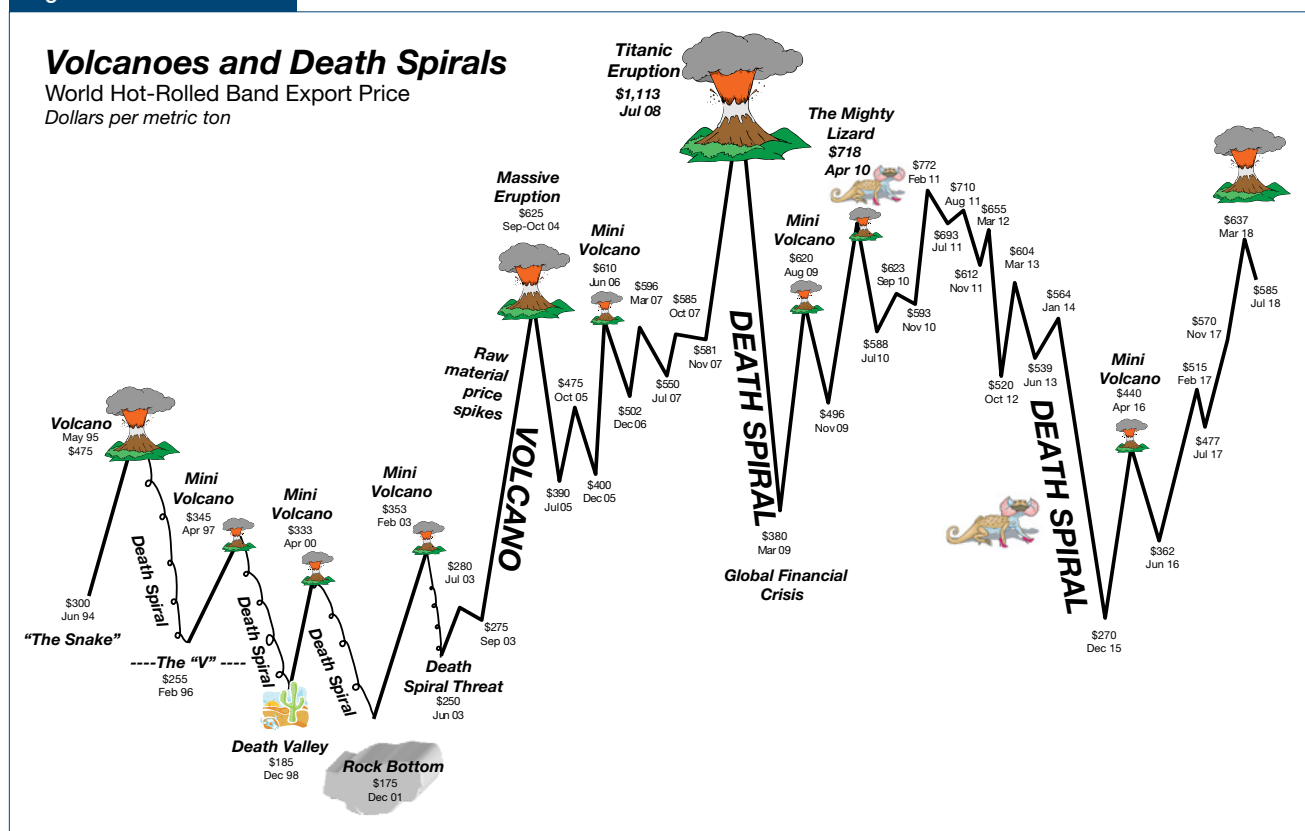
Steel pricing “death spirals”: Good news?

Steel pricing “death spirals” may have surprising consequences

For steel buyers, a pricing “death spiral” is positive because they can purchase the steel at a much lower price. However, if the buyer is carrying substantial inventory and/or has placed sizable orders in advance at a high price, the consequence can become a financial calamity.

For steel mills, a price collapse adds to financial stress, especially when the plummeting price is accompanied by a sizable reduction in the operating rate. However, the price collapse promotes changes in the industry’s “industrial structure,” including capacity rationalization.

Figure 2



World hot-rolled band export price (dollars per metric ton). Note: SteelBenchmarker™ prices since 2007.

Pricing “death spirals” accelerate the pace of change. Here’s a past and a forecast example:

- The past — In December 2015, hot-rolled band (HRB) on the world market on the world market fell to US\$270/metric ton, FOB the port of export, versus the high of US\$494 in January of that year (Fig. 2). At US\$270/metric ton, the price was US\$40 and US\$75/metric ton below the marginal cost of the median-cost non-Chinese and Chinese steel mill, respectively. It was, by far, the lowest in history relative to the steel mills’ cost. Adding to the mills’ alarm, underlying global steel demand was little changed. Unlike the past, the non-Chinese steel companies were not able to consolidate sufficiently in order to regain “pricing power” — there were far too many sellers on the world market.

The non-Chinese steel mills’ solution to this crisis was twofold: First, file an avalanche of steel trade suits against the Chinese steel mills and others; and, second, convince government policymakers that trade protection was essential if they were to turn in a satisfactory financial performance. What was the consequence? In the fall of 2016, the steel industry entered an “Age of Protectionism.”

- The future — An HRB pricing “death spiral” is forecast in China in 2019 when there’s sizable over-capacity for this product. When combined with a reduced operating rate, in part because governmental actions will likely be restraining steel exports, steel mills’ profits will be plummeting. At that point, WSD expects more of the country’s municipalities and provinces, as well as the Central Government, to assist the companies in their capacity reduction efforts. Governmental funds will be provided for worker re-training. In some cases, steel company debt will be swapped for equity. Short-term steel company bonds will be sold to the public, as was the case in 2016 when perhaps US\$30 billion was raised to help carry the companies through the trough. Steel plants in city centers will be closed because the land is too valuable to be occupied by poor-performing and highly polluting steel mills — since the land can be exploited for commercial, industrial and residential purposes.

The steel industry’s “industrial structure” at times responds quite rapidly to the “power of the invisible hand” — i.e., price allocates resource. This is one of those times, with two developments apparently augmenting the financial prospects for many non-Chinese

steelmakers looking ahead to about 2025. These developments are, first, the current “Age of Protectionism” in the industry in response to the disastrous price declines on the world market in late 2015; and, second, the changing nature of the Chinese steel industry as it’s

facing the prospect of declining domestic steel demand once the current boom comes to an end and ever more governmental action to limit steel production because it creates such substantial air pollution.

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. ♦



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