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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 scrap futures trading: An amazing volume surge not far-fetched

WSD believes there will be an incredible surge in futures trading in steel and in steelmakers' raw material contracts over the next five years on exchanges outside of China (where they already rank among the most heavily traded commodity futures contracts in the world). This surge will be fueled by the needs of raw material providers, mills, and middlemen companies that have experienced a devastating erosion of their inventory values and profit margins over the last 18 months. It can be argued that nearly every tonne of non-ferrous metal production is hedged with futures, and WSD believes the recent "death spiral" in steel prices will provide the

impetus for the steel industry to follow this same practice.

The consumption of home, old and new steel scrap in 2014, outside of China, amounted to 495 million metric tons according to WSD's Global Metallics Balances System. However, the scrap price directly impacts 1.33 billion metric tons of transactions, when including the tonnage sold by: (a) scrap gatherers/peddlers to scrap processors; (b) the processors to the steel mills after taking yield loss into account; and (c) the steel mills in the form of finished steel products to their customers for which the spot price of the product is pegged to the price of the steel scrap (Table 1).

Table 1

Non-Chinese Unleveraged Potential Hedging Activity

Hedger group	Gross supply pool (million metric tons)	Potential hedge ratio	Possible hedged tons (million metric tons)	Equiv. futures contracts [†] (million)
Obsolete scrap sold to scrap processors (demolition, auto junk yards*)	300	0.5	150	7.5
New (prime) steel scrap (Note: 30% sent to processors and 70% to mills)	110	0.7	77	3.9
Mills' home scrap (not included in subtotal)	125	0.2	25	0.0
Subtotal	410	—	—	—
Scrap processor deliveries to steel mills and foundries	330	0.8	264	13.2
EAF-based steel mill product deliveries to end users (100% sensitive to the steel scrap price)	290	0.6	174	8.7
BF/BOF-based steel mill product deliveries to end users (amount sensitive to the steel scrap price)	100	0.5	50	2.5
Deliveries by steelmakers to middleman companies, service centers and traders (products sensitive to the steel scrap price)	150	0.8	120	6.0
Chinese exports of scrap-price-sensitive steel mill products	50	0.5	25	1.3
Total (excluding home scrap)	1,330	—	885	44.3

[†]NASDAQ OMX U.S. shredded futures are 20 gt/contract.

*It takes about 1.1 metric ton of unprocessed obsolete scrap to produce 1.0 metric ton of processed scrap. Non-China obsolete and new scrap consumption in 2014, excluding home scrap, was about 410 million metric tons (equal to 20 million shredded steel scrap futures contracts). LME non-ferrous metals futures trading in 2014 equaled the following multiples of physical consumption: 20x (tin), 30x (lead), 34x (aluminum), 50x (copper) and 58x (nickel). If the steel scrap futures realize a 15x multiple of steel scrap consumption, excluding home scrap, this is equal to 6.15 billion gross tons, or 308 million futures contracts.

Next, if we make an estimate of the proportion of the scrap and/or steel producers' product that might be sought to be hedged on a steel scrap futures exchange, the figure drops to 885 million metric tons.

Given that steel scrap is a true global commodity, WSD believes that trading in various grades of this product

and/or products tied to it outside of China could rise to a 20x multiple of 885 million metric tons by 2021. This amounts to 17.7 billion metric tons of futures trading in steel scrap. On a 20-gross-tons-per-contract basis, this is about 850 million contracts.

Reduced U.S. steel consumption and shipment prospect for 2016

WSD is cutting its outlook for 2016 U.S. steel consumption and deliveries. Its new consumption figure is 109 million net tons versus a previous 119 million tons (Table 2). WSD's new steel shipment estimate is 91 million metric tons, compared to its previous estimate of 101 million tons.

Why the drastic reductions?

1. Actual steel demand in 2015 fell an estimated 4.0% versus the prior estimate of a 0.2% drop.

2. Strong U.S. dollar seems likely to slow the growth of the U.S. economy. Already, some observers think that the net shifting of manufacturing activity to the U.S. has turned negative.
3. Feedback on steel service center, oil field and other inventories seems to be consistent with WSD's estimate of a drop of 3 million tons in 2015 compared to the prior estimate of 3.5 million tons.

Table 2

<i>U.S. Steel Consumption/Shipment Outlook (million tons) Source: AISI and WSD estimates, U.S. Federal Reserve</i>														
	1995	2000	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015e	2016e
First quarter	24.9	28.6	27.1	27.8	26.3	27.5	13.3	20.5	22.5	25.4	23.6	23.9	22.0	22.0
Second quarter	24.4	28.5	25.6	28.8	26.5	27.7	13.5	21.7	22.3	24.7	23.8	24.9	22.0	23.0
Third quarter	24.0	27.3	25.7	26.8	27.1	26.2	16.8	20.8	23.7	23.5	24.5	25.4	22.2	23.3
Fourth quarter	24.2	24.7	26.6	26.1	26.5	17.1	18.6	20.4	23.4	22.3	23.5	24.1	20.3	22.5
Shipments	97.5	109.1	105.0	109.5	106.4	98.5	62.2	83.4	91.9	96.0	95.4	98.2	86.5	90.8
Plus: Imports	24.4	38.0	32.1	45.3	33.2	31.9	16.2	23.9	28.5	33.5	32.2	39.0	39.0	35.0
Less: Imported semis converted to finished products by AISI-reporting companies	5.0	8.6	6.9	9.3	6.6	5.9	2.0	5.1	6.7	7.6	7.3	7.5	7.5	7.2
Less: Exports	7.1	6.5	9.4	9.7	11.2	13.5	9.3	12.1	13.5	13.7	12.7	12.2	10.0	9.3
Subtotal: Apparent steel demand	109.8	131.9	120.8	135.8	121.9	111.0	67.1	90.1	100.3	108.0	107.6	117.6	108.0	109.3
Less: Est. user/buyer inventory build	(2.0)	(2.0)	(6.4)	6.6	(2.5)	(4.0)	(10.0)	4.5	1.9	0.5	(1.3)	2.0	(3.0)	0.0
Equals: Actual steel consumption	111.8	133.9	127.2	129.2	124.4	115.0	77.1	85.6	98.4	107.5	108.9	115.6	111.0	109.3
% change	2.0	3.1	2.8	1.6	(3.7)	(7.6)	(33.0)	11.1	14.8	9.3	1.3	6.1	(4.0)	(1.5)
Index of activity (IDX) in 15 steel consuming industries (2004=100)	98.6	116.2	101.9	108.4	108.5	100.2	75.4	78.8	84.6	91.3	94.4	100.3	104.6	104.2
% change	4.3	5.8	1.9	6.3	0.1	(7.6)	(24.8)	4.5	7.4	7.9	3.4	6.2	4.3	(0.3)
IDX Short-Lead-Time Capital Goods	41	50	44	49	47	43	31	37	43	46.2	46.9	50.3	50.9	50.6
IDX Long-Lead-Time Capital Goods	26	33	29	31	35	34	27	21	20	21.2	22.2	24.0	27.3	27.0
IDX Consumer Goods	21	23	23	22	21	17	12	15	16	18.4	19.8	20.8	21.8	22.0
IDX Miscellaneous Industries	10	10	6	6	6	7	5	6	6	5.5	5.5	5.2	4.6	4.6
Steel consumption per point of activity index (million tons)	1.134	1.152	1.247	1.192	1.146	1.147	1.022	1.087	1.162	1.178	1.154	1.153	1.062	1.049

4. Based on preliminary trade case results for steel sheet products, it appears that the U.S. steelmakers will create a true “Fortress America” situation only with respect to Chinese deliveries. The final results will not be known until about May. Until then, WSD is maintaining its estimate that foreign steel product deliveries, apart from semi-finished steel, will amount to about 28 million tons.
5. The U.S.’s steel intensity, which is steel consumption per unit of economic activity, is declining. It’s a function of a slower growth rate for the economy, which means that non-steel-intensive services

account for a higher share of GDP growth, and the shifting mix of the economy including far less spending on oil and gas drilling and related items (such as barges and rail cars). The million tons of steel consumption per point of WSD’s weighted index of activity for 15 steel-consuming industries may fall to 1.049 in 2016 versus 1.153 in 2014.

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