

World Steel Dynamics (WSD) is a leading steel information service in Englewood Cliffs, N.J. 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.



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Q. World Steel Dynamics has forecast record levels of steel consumption driven by developing economies over the next decade. What are some factors that could work to potentially constrain this growth?

A. Japanese steel mills may not be able to sustain their exports on a longer-term basis. Exports in 2010 amounted to 37 million tonnes, or 12% of the global total. The steel mills' problems include increased competition in the South Korean steel market, which will be a far smaller outlet for Japanese steel in the future. Other threats include slow demand growth in the home country; massive investments by Chinese steel mills to make upgraded steel products that match the Japanese quality; a surging Indian steel industry that will be far lower cost and more export oriented; high costs due to lofty wage rates and an ultra-strong currency. With the yen's recent strength against the U.S. dollar, Japanese steel mills are among the higher-cost producers in the world.

The EU mills may not be able to sustain their exports, which in 2010 amounted to 117 million tonnes. Besides high costs due to high wage levels and a stronger currency, prospects are

only fair for sizable steel demand growth in the region in the future. The EU steel mills are also battling lower-cost steel mills in the CIS that in a number of cases have their own iron ore and coking coal. In addition, excess capacity to produce hot rolled band in Turkey, where four new hot strip mills have a combined capacity of more than 10 million tonnes, has led to increased offerings in Europe from that region. Environmental pressures also appear greater in the EU than in most other regions due to CO₂ emission taxes.

The Chinese steel mills may not be positioned to be sizable exporters of commodity-type steels in the future as a result of high costs due to a surging currency and the ongoing depletion of reserves at some of the lower-cost iron ore mines. Iron ore mines are rising in average cost, because of depletion of reserves, despite \$15 billion per year of capital expenditures in this sector. Also, within a few years, the steel demand growth rate in China seems sure to drop, perhaps to only about 3% per annum, as the ratio of consumption to GDP in the economy rises and the ratio of gross fixed capital investment to GDP

Table 1

WSD Brazilian Integrated Steel Mill (Through Slab) Cost Change Forecast, April 2011 vs. 2021
Assuming constant raw material prices and Brazilian real appreciation to 1.0 real/USD
(Production in metric tons, prices in \$ per tonne)

	April 2011			2021		
	Usage per tonne shipped	Market price of input	Production cost of input	Input price change	Market price of input	Production cost of input
<i>Iron ore (fines, lump, concentrate and pellets)</i>						
Purchased	1.18 tonnes	\$186	\$219	1.18 tonnes	\$186	\$219
Self-supplied	0.42 tonnes	\$64	\$27	0.42 tonnes	\$64	\$27
Subtotal	1.6 tonnes	\$153	\$246	1.6 tonnes	\$249	\$246
Iron ore cost per tonne of slab						
			\$246			\$245
<i>Coking coal</i>						
Purchased	1.43 tonnes	\$338	\$484	1.43 tonnes	\$338	\$484
Self-supplied	0.0 tonnes	\$0	\$0	0.0 tonnes	\$0	\$0
Subtotal	1.43 tonnes	\$338	\$484	1.43 tonnes	\$338	\$484
<i>Coking coal & PCI</i>						
Purchased	0.117 tonnes	\$386	\$42	0.117 tonnes	\$386	\$42
Self-supplied	0.373 tonnes	\$484	\$181	0.373 tonnes	\$484	\$181
Subtotal	0.49 tonnes	\$506	\$222	0.49 tonnes	—	\$222
Coke cost per tonne of slab						
			\$222			\$222
<i>Scrap</i>						
Purchased	0.134 tonnes	\$315	\$42	0.134 tonnes	\$315	\$42
Home scrap credit	0.03 tonnes	\$350	-\$11	0.03 tonnes	\$350	-\$11
Scrap cost per tonne of slab						
			\$32			\$32
Electricity	100 kWh	\$0.05	\$5	100 kWh	\$0.08	\$8
Other energy	4.38 mmBTU	\$8.6	\$38	4.38 mmBTU	\$13.5	\$59
Net labor	1.248 man-hours	\$16	\$20	1.248 man-hours	\$25	\$31
Freight (inbound)	2.4 tonnes	\$20	\$48	2.4 tonnes	\$31	\$75
Energy credit			-\$60			-\$95
All other costs			\$68			\$106
<i>Non-raw material costs</i>						
			\$118			\$185
Total						
			\$617			\$685
Brazilian real/USD						
			\$2			\$1
Inflation rate						
			—			1

declines – i.e., there will be less steel intensity per unit of GDP. Governmental policies may continue to discourage exports of commodity-grade steels because of the dependence on offshore iron ore. WSD expects the Chinese RMB in the next five to 10 years to appreciate to about 4.0 per U.S. dollar versus 6.5 at present.

Brazilian steel mills may lose cost competitiveness due to an ever-strengthening currency – the Brazilian real. This problem from the Brazilian steel mills' point of view is not about to go away as the country turns in solid economic growth and oil production begins to rise sharply, reflecting the discovery in recent years of huge offshore oil reserves. Hence, the country's burgeoning slab-exporting plants, already existing and

planned, could face far higher costs than their owners had planned. The Brazilian real may appreciate to 1.0 real per dollar in the next five to 10 years (Table 1).

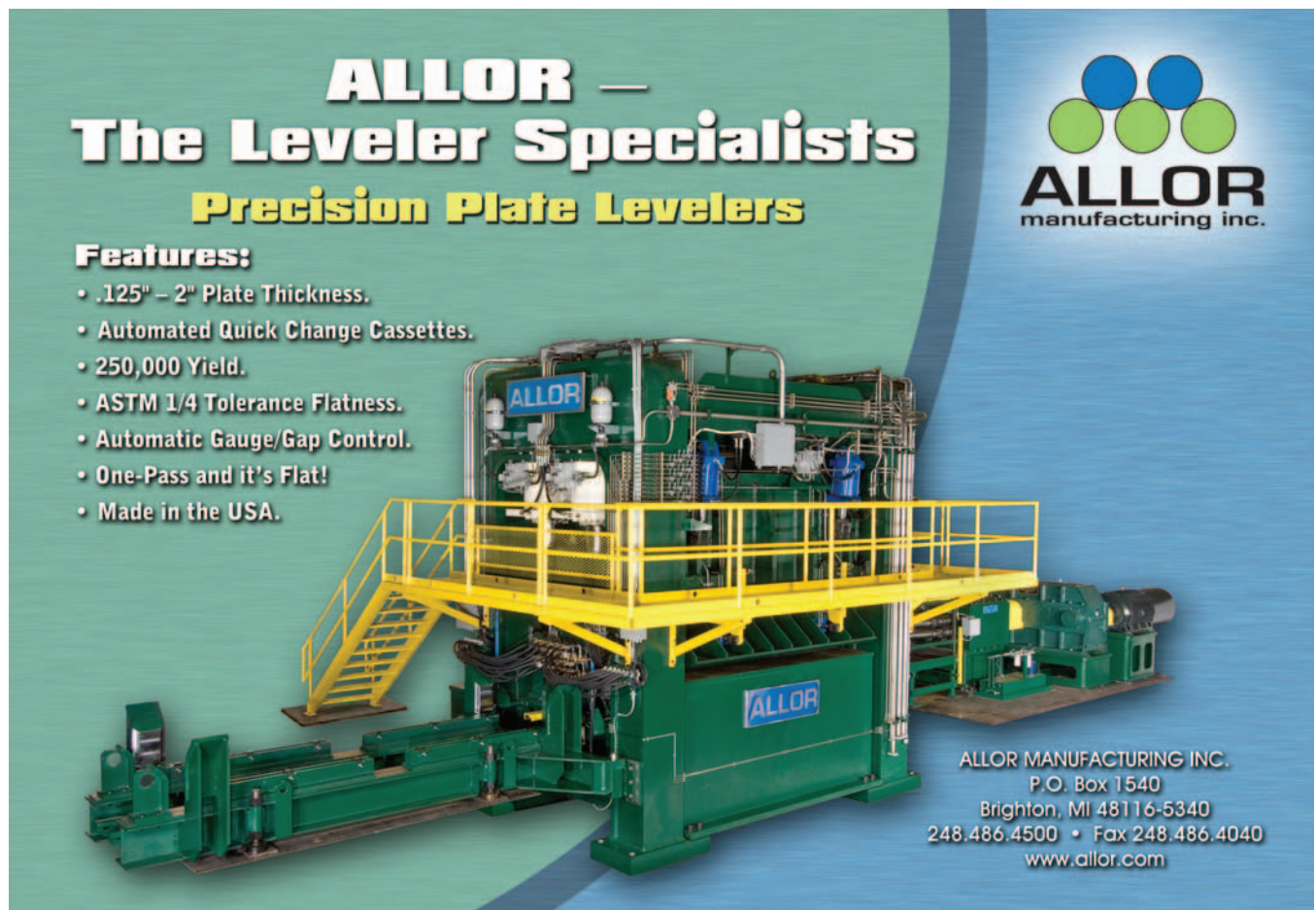
Our Interactive World Cost Curve System shows that, with keeping raw material costs constant, a significant appreciation of the Brazilian real will raise the cost to produce slab by 10.8%.

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