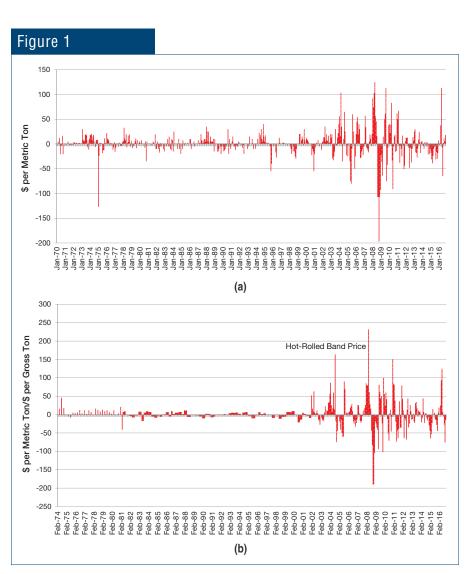
## Cardiac arrest for steel and metallics

As indicated in Figs. 1a and 1b, which compare the month-to-month changes of hot-rolled band prices on the world market and in the United States, the inherent price volatility in the system has risen exponentially, especially since 2002, when rising Chinese steel production began to "change the game" for international steelmakers. The "cardiac arrest" condition also applies to the prices of steelmakers' metallics (iron ore, pig iron, steel

scrap and steel scrap substitutes) and coking coal.

The recent US\$100+/metric ton rise in the price of coking coal, FOB Australia — with the Japanese steel mills paying US\$200/metric ton for the fourth quarter of 2016 — will add to the factors promoting near-term steel price volatility. Interestingly, perhaps the last thing that's driving prices on a near-term basis is changes in global steel demand. Huge swings in



Steel buyer/seller cardiac arrest: world export price for hot-rolled band (HRB) (monthto-month price change) (a) and USA HRB price (month-to-month price change) (b). Sources: Price Track and SteelBenchmarker.



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.





## Authors

Peter Marcus (left) managing partner, World Steel Dynamics pmarcus@worldsteeldynamics.com +1.201.503.0902

John Villa (right) research strategist, World Steel Dynamics jvilla@worldsteeldynamics.com +1.201.503.0911

## Strategic Insights From WSD

steel market psychology — with the marketplace being psychological warfare between buyers and sellers — are driven by fear and greed.

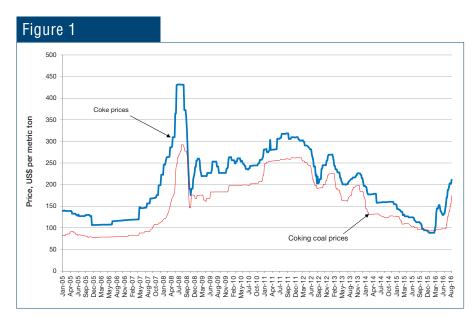
What's the solution for those who must buy and sell these products? First, learn to take advantage of these swings before and/or just when they are starting to happen. Second, look forward to the day when liquid steel futures curves permit all players to hedge the steel price risk

## Coke: Integrated steelmakers have to play defense

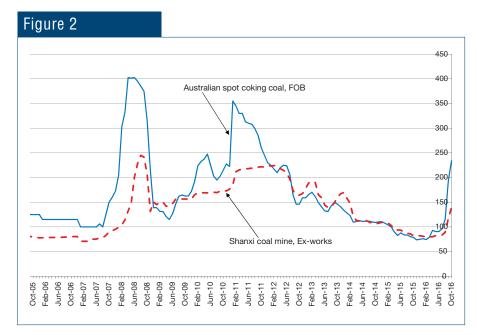
The world's integrated steel mills, with a few exceptions such as the Russian steel mills that own coking coal mines (with a delivered cost to their steel plants of perhaps US\$55/metric ton), are hemorrhaging. They're suffering a major rise in the operating cost because they use about 0.6 metric tons of coking coal per metric ton of finished product. At the same time, the price of steel scrap has plummeted, which is adding to the cost advantage of their EAFbased competitors when this is relevant.

When will the price recede to perhaps a "new normal" of US\$125/metric ton? This price would compare to: (a) the low Australian price, FOB port of export, earlier this year of just below US\$75/metric ton; (b) the US\$200/metric ton price that the Japanese steel mills agreed to pay for the fourth quarter of 2016, FOB Australia; and (c) the mid-October 2016 Australian spot price of about US\$235/metric ton according to some sources.

The coking coal price in China has lagged somewhat behind the international price. As of mid-October 2016, the coking coal price in China's Shanxi Province was US\$149/metric ton, with no value-added tax and not including perhaps US\$15/metric ton to deliver the product to the steel mill. Its low in February 2016 was US\$79/metric ton. The Chinese will export 10 million metric tons of metallurgical coke this year. Their coke export price has to rise to about US\$253/metric



Chinese coke vs. coking coal prices in Shanxi Province (U.S. dollar per metric ton). Source: MySteel.



Chinese Shanxi mine ex-works coking coal price vs. Australian FOB export spot price (U.S. dollar per metric ton). Source: MySteel.

ton, FOB the port of export for a brief low of about US\$105/metric ton.

WSD's thought is that the price in the first quarter of 2017 may be flat to down only slightly because it takes a while to restart closed coal mines and for buyers to

replenish inventory. Also, the coking coal producers in many cases were suffering such devastating losses when the price fell below the US\$90/metric ton that they may hold out for a while from agreeing to sharp price cuts because of good order backlogs.

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.

