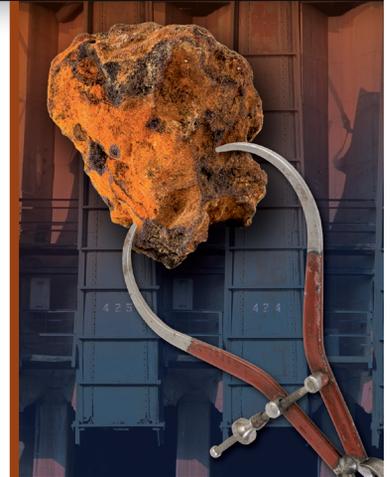


Steel's Challenge

Living with higher and more volatile iron-ore prices

Recent changes in the pricing system of iron ore are having a profound impact on the steel industry, as steelmakers must pay more for their prime raw material and adapt their pricing strategies—adjusting to quarterly iron-ore pricing instead of the annual pricing of before. Steel producers must vigilantly manage the steel price volume equation—working more closely with iron-ore suppliers and commercial customers to improve the steel value proposition, increase the agility of the supply chain, and contain costs.

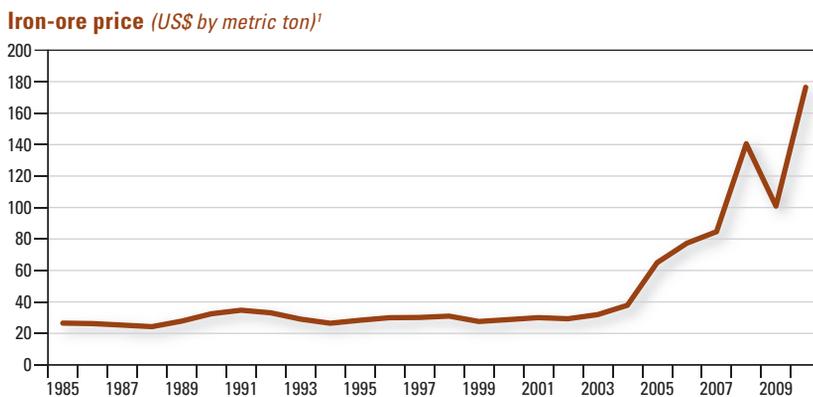


The price of iron ore—the main raw material in steel production—was relatively stable during the 1980s and 1990s, but has more than quadrupled from 2003 to 2008 (see figure 1). Yet even in the face of the global economic crisis, iron-ore prices fell just 30 percent in 2009, not even close to the significant declines that most other commodities suffered. What saved the

iron-ore market was the increasing demand from China, which now produces about half of the world's steel and accounts for more than 60 percent of the seaborne iron-ore trade (see figure 2 on the following page). In addition, an oligopoly of three global iron-ore companies—Australia's BHP Billiton, the U.K.'s Rio Tinto and Brazil's Vale—control

Steel producers must vigilantly manage the steel price-volume equation, while continuing to work closely with their ore suppliers and customers.

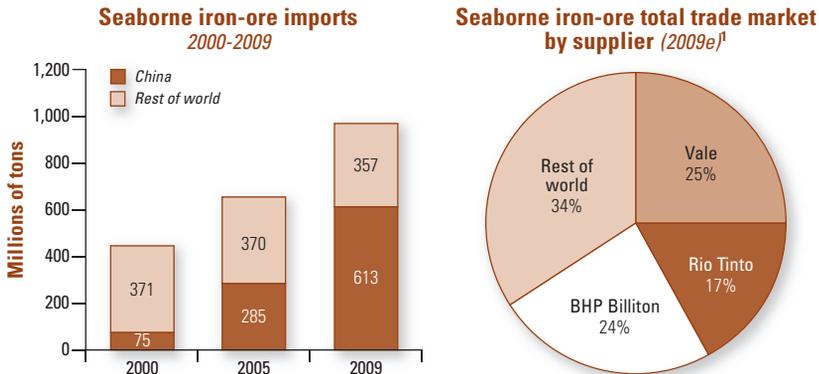
FIGURE 1: Iron-ore price from 1985 to 2010 (Q2)



¹Iron ore is 67.55% iron content, fine, contract price to Europe, freight-on-board Ponta da Madeira, \$US 0.01 per dry metric ton unit.

Source: International Monetary Fund

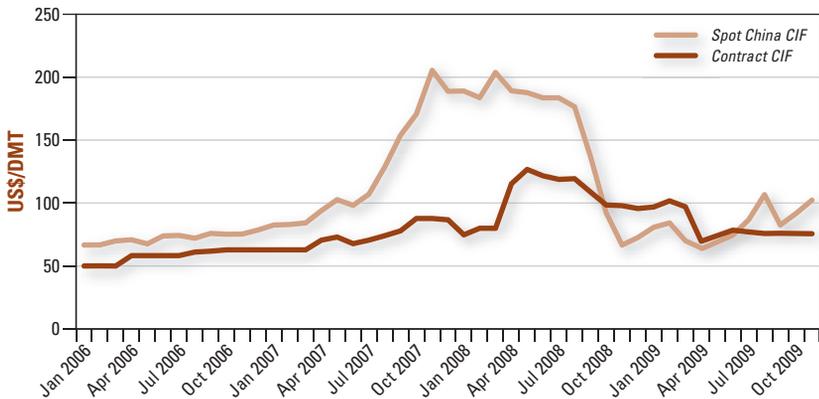
FIGURE 2: China and a three-company oligopoly saved the iron-ore market



Sources: WorldSteel Association, Paris, June 2009 presentation to OECD Steel Committee, Rio Tinto; Shaw Research, sector report, 3 December 2009; A.T. Kearney analysis

FIGURE 3: Iron-ore spot price versus contract price (2006-2009)

Iron-ore price: CIF China (63.5% Fe fines)



Abbreviations: CIF is cost, insurance and freight; Fe is iron (Ferrum, Ferrite); DMT is dry metric tonnes.

Source: CRU, OneSteel, November 2009 presentation

almost 70 percent of the seaborne and high-quality iron-ore trade. Despite the entry of junior miners attracted by high prices, the three leading iron-ore producers have retained their tight control on the market in the past decade.

Today, iron-ore prices are shooting up again, rising by as much as 90 percent year over year in the second quarter of 2010. Prices are at an all-time high and are expected to continue their upward trend. Five main

factors are influencing the rise: Asia's insatiable demand, investments in new mining capacity, reduced bottlenecks in the logistics infrastructure, a continual decline in ore grade, and expectations that governments of resource-rich countries may increase taxes and royalties.

Price volatility is also becoming an issue as the major steel companies accepted (albeit reluctantly) a new pricing system for iron-ore deliveries

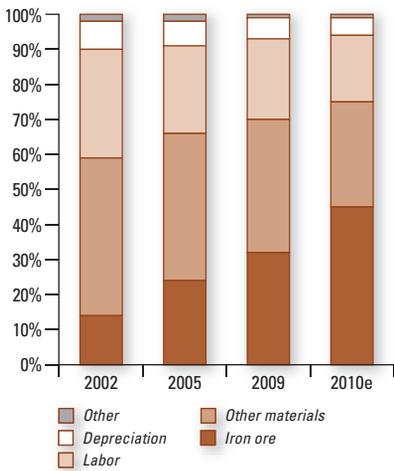
from the three main producers. The annual benchmark price is being replaced with a quarterly pricing system more closely linked to the spot price of iron ore. With such a pricing system, iron-ore producers aim to reap the full benefits of the upper spot price of iron ore rather than being constrained by annual contracts (see figure 3). Iron-ore prices will become more dynamically influenced by shorter-term changes to supply-demand situations, and possibly by financial speculators.

Consequences for the Steel Industry

The rising prices of iron ore and the increased price volatility will have a three-pronged impact on the steel industry:

- High-priced iron ore will reduce the relative importance of the fixed part of steel's cost of goods sold (COGS), and steel producers will be less inclined to push volume at all prices.
- High-priced iron ore will reduce the relative importance of labor costs in the overall cost structure of producing steel in Western Europe and North America versus the lower-cost labor regions such as Russia and China. This will reduce the incentive to shutdown steel plants in mature markets and move production of semi-finished products to overseas locations (see figure 4).
- Increased price volatility will affect the entire steel-production value chain and fundamentally change commercial relationships between steel producers and their customers. Quarterly iron-ore pricing may eventually lead to quarterly price adjustments of finished consumer products such as cars and white goods.

FIGURE 4: Steel production cost breakdown in Western Europe (2002-2010e)



Sources: World Steel Dynamics, World Steel Association; A.T. Kearney analysis

How Will the Steel Industry Respond?

The steel industry is no stranger to volatile steel prices—it has been long plagued by oversupply when demand is low and an inability to produce sufficient volume quickly when demand is high. Yet with regional consolidation, such as in North America and Europe with the creation of Arcelor-Mittal, has come more responsible market behavior. In recent years, steel producers have demonstrated their eagerness to balance supply with demand better to support steel prices rather than pushing “deadly” volumes into the market. With this in mind, we expect the steel industry to meet this latest challenge head on, with a three-pronged strategy of its own:

Supply strategy: Further backward integrate. We expect steel companies to follow the lead of ArcelorMittal and Russian steel producers and further invest in iron-ore mining. Thanks to its mining acquisitions, ArcelorMittal is

already self-sufficient for approximately half of its ore needs and now aims to reach 75 percent self-sufficiency by 2015. Backward-integrated steel producers benefit from higher margins on their captive iron-ore production and have more flexibility in pricing their steel products.

Alternatively, steel producers could secure their margins by relying on iron-ore and steel hedging instruments to protect against volatile iron-ore prices. The impact of high iron-ore prices will also be seen in the price of substitute metallic products (such as for scrap and pig iron) that will follow the same trend. As competition by steel producers and miners to acquire key commodity assets intensifies, the price of these “scarce” assets will go up.

Production strategy: Become more agile. Agility and flexibility in the manufacturing and distribution network will gain importance over pure cost-related issues. Integrated production sites close to end-markets in high-cost labor regions could regain some attractiveness as their overall cost disadvantages are neutralized by proximity to end-customers. To cope with more volatile raw material prices and end-market demand, steel producers will have to minimize their inventories across the value chain—from iron-ore production to customer delivery—which will require adapting their structural networks to market demand. As raw material prices rise, it will also be necessary to improve operations to get the most from raw material usage by optimizing blend and improving yield.

Customer strategy: Adapt relationships and pricing tactics. Steel producers will aim to pass both the increased iron-ore price and the associated risks

of the quarterly pricing scheme onto their customers. They will try to adapt their longer contracts (currently one to two years in some customer segments, such as automotive) to long-term volume commitments linked to a quarterly price basis, thus allowing them to adapt their steel prices when iron-ore prices change. This could take

Steel producers are eager to balance supply with demand rather than push “deadly” volumes into the market

the form of a pricing formula with a fixed base price and a variable component based on an iron-ore price index. Such pricing formulas have long been in place for stainless steel and non-ferrous supply agreements. Steel companies could possibly improve their margins with more supply-market discipline, particularly in securing their margin percentage on higher raw-material prices in more consolidated regions. Also, they should aim to increase intimacy with their customers, integrate their supply chains, and develop higher-value steel products to better fulfill their customers’ needs.

Impact on the Steel Customer

Steel customers will find it difficult to fend off steel price increases. Benefiting from a relative consolidation of the

steel supply in most regions (except in China), steel producers will likely adapt volume-to-demand to sustain prices rather than selling products at a loss.

While some customers may try to pass the price burden on to their own customers—end-users—that strategy might be difficult to execute when prices become more volatile. As steel customers look for ways to protect themselves against these short-term steel price fluctuations, it could finally spark the development of the long-awaited steel trading markets and their hedging instruments, some of which might be linked to iron-ore prices instead of steel prices.

The high price of iron ore and subsequent steel could also trigger the substitution process. If ore and steel-product prices rise too much, steel

could be replaced in some applications with less expensive or better-value-for-the-money materials. To fend off this threat, steel producers must step up their efforts to develop more advanced products.

Long-Term Interest for the Steel Industry

In the foreseeable future, the iron-ore market is expected to be characterized by high and more volatile prices. Steel producers are likely to try to pass these prices and risks onto their end-customers. While the high price of iron ore might be beneficial in the short-term for steel producers, especially those that are backward integrated, ultimately, it could have a negative impact on the whole steel industry. Rising steel prices, along with

rising prices of other commodities, could help reignite inflation and undermine the rebound of steel demand in mature markets. This, in turn, could lead to further steel-production overcapacity in regions such as North America and Western Europe, triggering a new round of restructurings.

To avoid this scenario, steel producers must continue to manage the steel price-volume equation. They must do so vigilantly, while working closely with their ore suppliers and customers to improve the steel value proposition, increase agility of the steel value chain and contain costs. In particular, in collaboration with their customers, steel producers will need to innovate to further improve the value in use of steel for the different applications and justify a higher cost.

Authors

Wim Plaizier is a partner in the operations, energy and process industries practices. Based in the Amsterdam office, he can be reached at willem.plaizier@atkearney.com.

Benoit Nachtergaele is a principal in the energy and process industries practice. Based in the Brussels office, he can be reached at benoit.nachtergaele@atkearney.com

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A.T. Kearney, Inc.
Marketing & Communications
222 West Adams Street
Chicago, Illinois 60606 U.S.A.

1 312 648 0111
email: insight@atkearney.com
www.atkearney.com