Deutsche Bank Research

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Turbulence in the steel market

— **Radical changes in the iron ore market: shortening of contract periods and orientation to spot price as benchmark.**

— **The changes will result in greater planning uncertainty and increased volatility for all industries along the value chain.**

— **The steel industry feels it has no choice but to pass on the higher cost of raw materials to users and is seeking to boost steel prices.**

— **The order upswing in steel-processing industries will be curbed by the rising price of steel.**

— **Higher steel prices will be passed on to the end consumers of steel products.**

— **While the related raw material prices have already peaked, steel price hikes will hinge on the development of the global economy.**

New pricing system for iron ore has taken root

The two key raw material inputs for steel production are iron ore and coking coal. In the coking coal market, the establishment of quality standards and the development of an online trading platform have already led to the emergence of reliable indices that are the basis for brisk business in forward transactions. The iron ore market is currently witnessing similar developments. The aim is greater flexibility in iron ore trading. The idea is for a reliable benchmark price to develop that enables price fluctuations to be hedged using derivatives. The evolution of a new pricing system in the iron ore market will lead to changes along the entire value chain in the steel sector, for from now on the mining companies plan to conclude contracts with steelmakers on a quarterly basis instead of annually. The terms are to be geared to the spot price for iron ore.

Increasing demand for iron ore

As the global economic recovery gathers steam, iron ore demand and prices are generally resuming their upward climb. Not only the mining companies' strong negotiating position but also growing demand from China is boosting the price. In 2008, China imported 48% of the world's iron ore exports, with the EU-27 countries following at 20% and Japan at 15%. In 2000, Chinese imports absorbed only about 13% of worldwide exports (EU-27: 33%). While China does have iron ore deposits, according to the Raw Materials Group Chinese production peaked in 2008 at around 366 million tonnes. Because the iron content of the ore produced in China is some 20% lower than that of output elsewhere in the world, the rising demand for high-grade iron ore cannot be met from domestic sources. Moreover, the mainly small-scale mining operations there do not have the facilities for extracting the iron ore still to be found in deeper strata of the Earth's crust.

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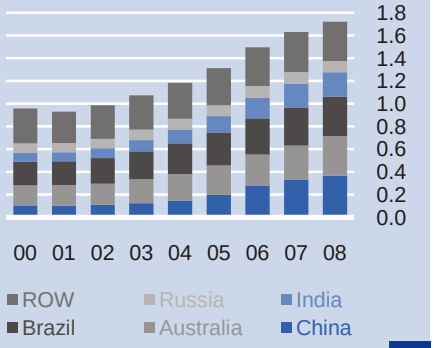
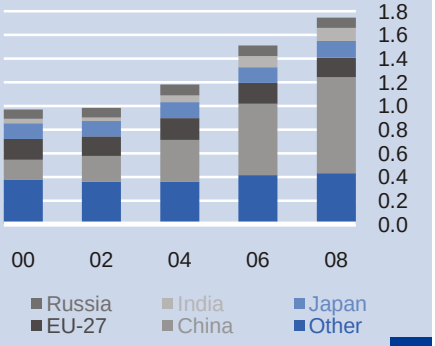
Iron ore output increasing
Tonnes (bn)



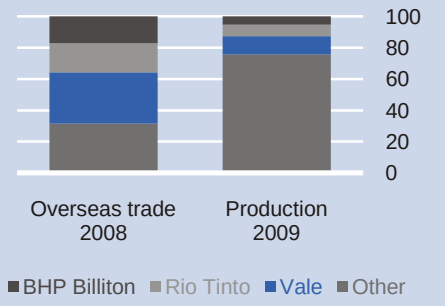
Source: WSA **1**

China dominates demand for iron ore
Tonnes (bn)



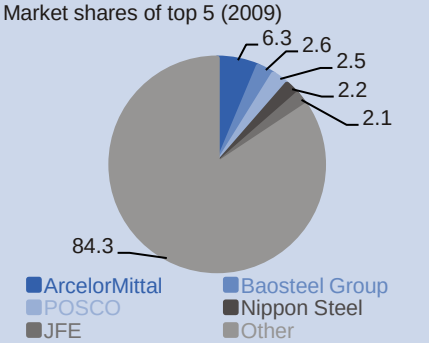
Source: WSA **2**

Oligopoly in overseas iron ore trade
Share (%)



Sources: UNCTAD, AME **3**

Polypoly in the steel market
Market shares of top 5 (2009)



Source: WSA **4**

Since 2000, the volumes of iron ore produced worldwide have increased in India and China in particular, while Russia's share in the total has halved. Contributions to world production in 2008 came to about 20% each from Brazil, Australia and China (2000: 20%, 20%, 10%). The EU-27's share of output is marginal. Taiwan, Japan and South Korea satisfy 100% of their demand via imports, while the EU-27 imports 84%. China's demand outstrips its own supply, which is why China's net imports absorb 55% of total demand (2000: 39%). By contrast, Australia, Brazil and South Africa export the bulk of their output. 70% of overseas trade in iron ore is conducted by Australia's BHP Billiton and Rio Tinto as well as Brazil's Vale. This concentration of the ore trade leads to pronounced import dependence for countries with robust demand for iron.

At present, the lion's share of iron ore is sold over the counter via bilateral agreements, so it only takes a few contracts on the spot market to influence the price. It is this price, in turn, to which the prices in the bilateral quarterly contracts are linked. The miners would like to see the market become more liquid and pricing more flexible; financial market participants see opportunities in the creation of derivatives and in spot market trading. Currently, only small volumes of iron ore derivatives are traded, but analysts expect these to increase and reliable price indices to be established. Steel companies now fear that iron ore prices might decouple from demand in the manufacturing industry. There are in fact indications of iron ore inventories being run up, with supply thus being withdrawn from the market as a result.[1]

Differing assessments of the supply situation

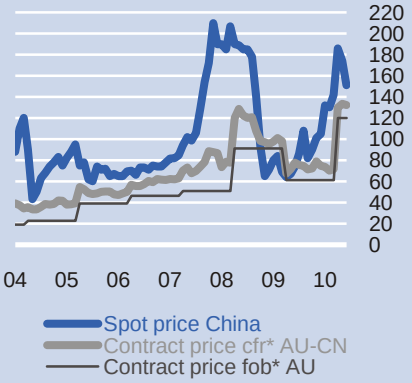
Mining operators claim that iron ore is currently scarcer than is being priced in and they use this as an argument to explain the price rise. However, 5% of the Earth's crust is composed of iron ore and there are still large untapped deposits around the world. Over the past few years, though, little has been invested in increasing the mines' output, a fact that is likely to change now given the soaring price of iron ore. The west coast of Africa still offers potential with several billion tonnes of deposits. The largest proven deposits are to be found in Australia.[2]

Impact on steelmakers

The steel producers have no choice but to accept the changes to the contract conditions pushed through by the iron ore oligopolists. The individual steel producers do not have a very strong negotiating position on import prices, the reason being the heavily fragmented market structure in comparison with iron ore trading. Both the spot market benchmarking of coke and iron ore contract prices as well as the shorter contract periods have a substantial impact on steel production: prices are now more volatile and the reliability of costing procedures has become very limited. Various approaches are being adopted by the steelmakers to tackle these problems: the trend towards vertical integration of raw materials suppliers and steel producers is unbroken. In 2009, ArcelorMittal procured 64% of its supplies itself and says it wants to further increase this share in order to reduce its dependence on major ore producers.

[1] Neue Erzfeinde. In Wirtschftswoche (2010), No. 21, p.154.
[2] Raw Materials Group estimates the iron ore projects for 2009-2011 in Oceania at about 230 m tonnes, with 110 m tonnes being considered proven deposits, in Africa about 50 m tonnes, of which some 20 m proven.

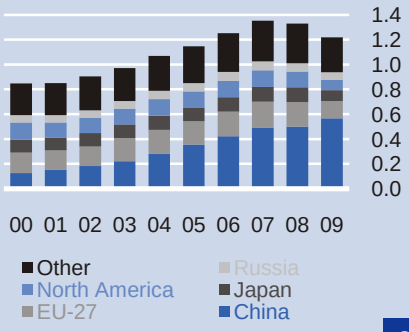
Iron ore: Spot vs. forward prices
Iron ore 63.5% Fe, USD/t



*cfr: cost & freight; fob: free on board

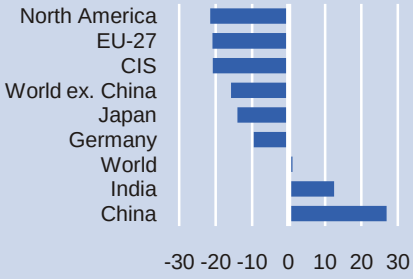
Sources: Metal Bulletin, The Steel Index 5

China driving global steel production
Tonnes (bn)



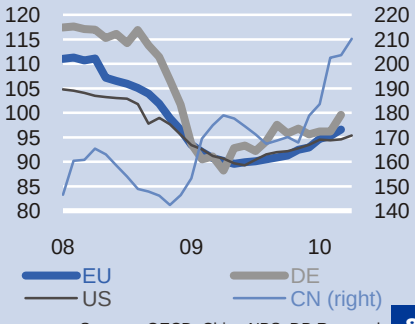
Source: WSA 6

Steel cycle not yet back to normal
Real output, change % yoy, Q1 2010 over Q1 2008



Sources: WSA, DB Research 7

Industrial production rising
2005=100, moving average



Sources: OECD, China NBS, DB Research 8

ThyssenKrupp has intensified cooperation with its main supplier, Vale, which holds stakes in ThyssenKrupp's steel plants.

To ensure that there is no increase in speculative pressures and that iron ore prices do not decouple from "real business", the iron ore market must become more liquid and more transparent. If a representative market price for iron ore were to emerge in this way, it would give steelmakers scope to guard against price risks via hedging.

Steel market development is unclear

Steel production is mainly concentrated in several countries: China, the EU-27, Japan, North America and Russia produced 77% of world output in 2009. China's share increased during the economic crisis in particular and came to 47% in 2009. Global steel production declined in 2008 and 2009 because of the crisis. However, China continued to boost output also during the crisis. By contrast, North America and Europe in particular were compelled to curtail production substantially, with it decreasing in 2009 by over 40% in North America versus 2007 and by 34% across Europe. Italy was the worst performer with a 37% drop, while Spain suffered a decline of "only" 24%. Since the first half of 2010, European crude steel output has rebounded. But since inventories are being run up again, it is difficult to interpret real demand correctly.

Two different trends are to be seen in global industrial production. Industrial activity in China and India is on a pronounced uptrend, while production in Europe has recently started to recover after plunging in 2008 and 2009. Evidence can be seen here of the close correlation between crude steel and industrial production.[3] European makers have benefited from the foreign exchange developments of the past few months. Taking the benchmark product hot-rolled wide strip as an example, it can be seen that 65% of the price increase is attributable to the falling EUR/USD exchange rate and merely 35% to an effective price hike.

The steelmakers are currently fighting a losing battle against the radical changes in the iron ore market such as the shift from bilateral contracts to exchange-based trading. They do not consider themselves to be in a position to shoulder the billions in expense triggered by the changes in iron ore prices alone and are responding by hiking steel prices and shortening contract periods with their customers.

Price hikes being passed on to manufacturing industry

As the higher prices and risks in the iron ore market are being passed on to users, the entire value chain is being impacted by the changes. Steel processors have to readjust their operations to shorter production runs and greater price fluctuations. As long as the euro is weak, steel user industries in the EU derive fewer benefits from imports. This intensifies the sector's dependence on domestic steelmakers. Germany's steelmakers thus increased their prices again as of July 1, after having already boosted them as of April 1. This has nearly returned the price of the benchmark product hot-rolled wide strip to the pre-crisis level.

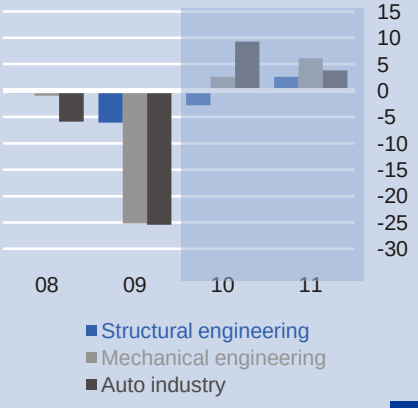
The steel-processing industry considers itself disadvantaged in contract negotiations with the major steel producers. First, these market participants are usually small and medium-sized enterprises

[3] See Perlitz (2009). EU steel industry. Deutsche Bank Research. EU Monitor 69. Frankfurt am Main.

Steel price
Hot-rolled wide strip, USD/t

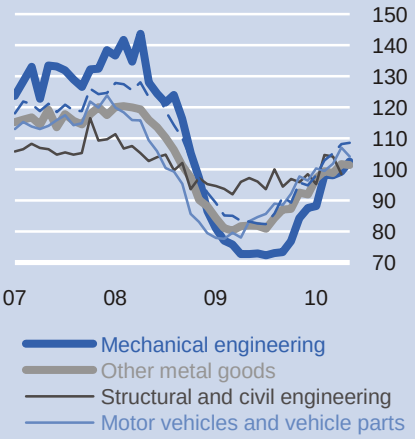
Source: The Steel Index 9

Slight recovery on the horizon
EU, % yoy, Steel Weighted Industrial Production Index



Source: Eurofer 10

Increased order intake
Germany, incoming orders, 2005=100



Source: German Federal Statistical Office 11

that are said to lack the bargaining power required to have their demands accommodated by the steelmakers. Second, they say there are not enough ways to shore up their operations. Most steel products are not sold on exchanges. The non-existence of indices for all types of steel and the small number of steel derivatives result in a dearth of price-hedging instruments. This is why the Wirtschaftsverband Stahl- und Metallverarbeitung (WSM), Germany's steel and metalworking trade association, has called for a hedging mechanism for price fluctuations at the beginning of the value chain, i.e. iron ore hedging. Long-term contracts with users and price escalator clauses are possible alternatives.

Steel-processing industries on an upswing

The key steel-processing sectors in Europe are the construction, mechanical engineering and automotive industries. Steel pipe, structural steel and metal products account for about 12% of the market. A look at the three most important European user industries shows the sharp fall in production in 2009. These industries are currently staging a recovery. The business climate index for steel processors has already nearly returned to the pre-crisis level.

The key steel processors say that order intake passed the trough of the crisis in 2009. Output in the mechanical engineering and auto industries is already on an upswing. If demand from abroad continues to pick up, it will probably be easier for the steel processors to pass on price hikes to their customers. However, ways to hedge against price fluctuations in the steel market are needed urgently so that the steel-processing industries can be guaranteed sustainable planning certainty in the long run.

Outlook and conclusion

Specialisation on customer-specific products with exclusive know-how slightly eases the pressure on Germany's steel-producing industry, since the user industries are not able to switch manufacturer just like that.

As a result of higher steel prices, consumer goods are also set to become more expensive. Since steel products are directly or indirectly used for many everyday objects, this will lead to an increasing price burden on consumers. Nonetheless, following the huge price hikes on iron ore and steel in the first four months of this year, the prices of iron ore and semi-finished and finished products have already started to decline. Even so, Europe's steel producers will seek to push through their envisioned price hikes again in the third quarter.

All in all, the European steel industry is poised to benefit from the recovery of the world economy. We expect Germany's steel industry to post 35% yoy growth in 2010. Steel prices follow a cyclical pattern, though. If the steel cycle turns downward, the pressure brought to bear by the iron ore producers will ease, allowing spot and forward steel prices to fall again.

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