Developments in the ferrous market across paper, port and physical aspects

Metals special report
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Two decades ago, global seaborne iron ore prices were set on a fixed price basis, after closed door negotiations between a large Chinese mill and an iron ore major producer.

Today, the ferrous market has evolved significantly towards greater transparency and efficiency, with growth in the derivatives sector. This development is particularly evident in the iron ore market, as seen from notable volatility, both inter- and intra-day, and a bustling secondary port stock market.

S&P Global Platts tracks the recent evolution across the derivatives, physical and port stock markets, to understand both its development so far and potential for growth in the future.

FERROUS DERIVATIVES COMPLEX TAKES SHAPE

Blast furnace raw materials see liquidity take root
Iron ore derivatives have been part of the ferrous landscape for the best part of a decade. But more recently, transactions of coking coal futures contracts have been growing at an exponential rate on the Singapore Exchange — which is widely seen as the home of ferrous derivatives in Asia. On the other side of the world, a recently launched scrap futures contract on the London Metal Exchange has been gaining traction. Together, these for the first time offer the opportunity to manage price risk across the entire steelmaking raw materials complex. Steel is the next link in the chain.

Various names have been bandied around for the idea of hedging steelmaking costs and margins, including the “Virtual Steel Mill” and the “Paper Steel Mill” — none particularly palatable. But the principle is simple, and not a new one. Most businesses with variable costs tend to use some form of risk management mechanism to deal with them and secure steady margins. And even steel mills use futures to lock in energy prices and foreign exchange, even if they do not for arguably their most expensive and volatile inputs. In oil markets, a crack spread is traded to lock in margins.

IRON ORE FUTURES AND OTC DERIVATIVES CONTRACTS - VOLUME CLEARED (million mt)

Volumes of iron ore derivatives have now grown so large that they have exceeded the size of the underlying physical market on which they are based, making hedging easier with less liquidity risk. Volumes of US$ cash-settled options, futures and swaps now routinely come in at around 200 million mt each month globally. Put in context, China — the world’s largest importer of iron ore — has never taken in more than 100 million mt in any single month. In China, a highly liquid retail contract on the Dalian Commodity Exchange that is physically settled trades multiples of this. While liquidity is high, usefulness for hedging is less so due to concentration of that liquidity in a single month contract.

The story is slightly different in the more nascent ferrous paper markets. But that is changing fast. Until late last year, liquidity on both the Platts-linked CME Group contract and the TSI-linked SGX contract were struggling to reach a critical mass. The entry of a large market maker on the SGX contract in October 2016 was the catalyst for transformative growth in volumes. In March, a record 1.7 million mt of coking coal futures were cleared by SGX. While that is equivalent to less than a day’s worth of trading on iron ore paper on SGX, it nonetheless represents exponential growth on a year-on-year basis. That single month of trading was the fifth consecutive month of growth in SGX coking coal volumes and made up 30% of full-year 2016 coking coal volumes. By April 11, 2017, year-to-date volumes had eclipsed the 5.5 million mt traded in the entire 2016.

And the success of iron ore has additional benefits for coking coal too. The exchange of institutional expertise between iron ore and coking coal teams has meant an accelerated learning curve compared with the slow and steady ramp-up of iron ore since 2009. For example, Japanese trading houses, which are traditionally conservative companies who took years to start trading iron ore paper, are already setting up hedging desks. The added benefits of margin offsets and credits between coking coal, iron ore, thermal coal and freight on SGX has offered a further fillip to trade, while external factors have further catalyzed growth. The recent spike in both thermal and metallurgical coal prices after Tropical Cyclone Debbie struck Australia’s east coast resulting in force majeure declarations, showcase the need for an ability to protect margins and manage price risk.

As liquidity and participation grows, the forward curve can start to become a tool for pricing longer-dated physical cargoes, allowing market participants to better anticipate their hedging needs. This is particularly important for the steel industry, where finished products are generally sold on longer-dated contracts.

Electric arc furnaces see scrap liquidity rising as well
Scrap is the third leg of the major steel raw material trifecta and generally makes up about 10% of the pig iron
mix for a blast furnace: hedging all three inputs allow steel mills to better control their margins, which is important in a highly volatile pricing environment. In 2015, LME launched a scrap futures contract against the TSI index for Turkish scrap imports. Turkish bulk scrap prices have global relevance, as Turkish imports pull in supply from Europe and North America. This domestic versus export competition for material sets up supply side correlations, while competition for scrap from other importers sets up high demand side correlations — even for containerized markets such as India or Taiwan.

While volumes remain small compared with its bigger brothers in view of just over 1 million mt having been cleared cumulatively to date, the introduction of a paid market maker system and use of small-lot sizes to encourage new participants have helped improve liquidity. And unlike its previous physically settled billet contract that was officially discontinued as of April 11, the LME scrap contract can become a more relevant and valuable tool. As liquidity builds, price discovery becomes more representative of physical pricing. Steel mills are already starting to take part directly, even though most of the liquidity currently is being provided by banks. Like coking coal, the speed of growth in the contract has been clear over the course of 2017 to date. The first quarter of 2017 saw more volumes traded than the prior 14 months. Part of the issue is the lack — outside of the US — of indexation in steel markets. These are still very much spot-based such as in China, or set on longer term fixed contracts as seen in Japan and South Korea.

But dynamics here are changing too. Rapid price moves are causing friction from defaults on scupper deals made at the peak or trough of large swings. Buyers in Southeast Asia see the merits of indexing part of their requirements in order to remove the need for constant renegotiation and secure volumes. Some mills in China too, as well as trading firms, report that they have set up index-linked deals. There is still some debate around the pricing point to use.

It is still very early days in terms of a fully hedgeable steel and raw materials global hedging market. China already has highly liquid steel, coking coal and iron ore futures, though these are inaccessible to outsiders and often diverge from the underlying physical.

But for those in the rest of the world, the pieces are slowly coming together. Locking in steelmaking margins in advance may soon be a real possibility.

— Oscar Tarneberg, Regional Manager Asia, The Steel Index

IRON ORE PORT STOCKS: A BUSTLING SECONDARY MARKET

Credit tightness and improvement in inland logistics have resulted in a bustling secondary market place for iron ore at Chinese ports. This phenomenon has grown over the last three years, starting at a time where mills were facing negative steel margins, and were procuring feedstock “hand-to-mouth” to manage cash flows.

The growth in the onshore market is complementary to the seaborne iron ore trade, especially since China remains the top global home for iron ore, accounting for 1.02 billion mt of imported tonnages in 2016. Most liquid and fungible trades at Chinese ports are of Australian and Brazilian origin, and these remain a strong indicator of demand on the ground.

The reasons for the exponential growth in iron ore port stocks are manifold.

Faced with negative steel margins, a tightening in credit lines and restricted cash flow in 2014, many mills started to restock, to hold lower iron ore inventories. Inventories held by coastal mills, which have easy access to port material, stood at around 15-20 days of production, compared to a month’s worth in 2010.
Improvement in rail lines across China also allowed mills to minimize the logistic bottlenecks, and bringing material from port to plant was more efficient over the past three years, inland mill sources have said.

Lower iron ore stocks in millers’ hands, coupled with higher imports from an expansion in global mining capacity, led to a build in feedstock inventory at ports to over 130 million mt so far in 2017, from around 80 million mt in 2015, according to industry reports.

Moreover, traders and millers also found that reselling their iron ore cargoes allowed them an avenue to manage cash flows. Seaborne iron ore trade participants who have built up solid relationships with banks can have favorable repayment terms, up to 30 to 60 days after bill of lading. Port stock trade, however, is cash and carry. This results in cash in hand, which can help to ease tight cash flows.

It is important to note that the growth in liquidity of iron ore futures on DCE has been a factor in the dynamism of physical port stock market prices.

Volatility seen in DCE early in 2016 showed a strong correlation to iron ore port stock prices. Sellers raised offers and mills, concerned over the rising offers, reacted with higher bids to secure cargoes. However, Platts notes a slight decoupling of this relationship further out in the same year.

Physical prices did not follow in direct like-for-like correlation with the paper market. Participants were unfazed by sudden shocks to iron ore futures, decidedly waiting for the sentiment-driven movements to ease, resulting in comparatively less volatile port stock movements over the past six months.

The onshore market will continue to show immediate demand for iron ore on the ground, representing an integral part of the global iron ore seaborne trade and supply chain.

— Sui Ling Phang, Team Leader, Steel Raw Materials

**PORT STOCK: PHYSICAL vs PAPER**

**PHYSICAL SEABORNE IRON ORE INTRA-DAY VOLATILITY**

Commodity prices can change at any time.

The value of these raw materials can be affected by geopolitics, government policy changes and acute supply or demand disruptions in the market itself, or in related markets.

The extent to which these factors affect prices depends in part on psychology or sentiment. This human element often causes prices to overshoot up and down before settling at a level of stability.

These changes can happen during the course of a single day: this intraday price movement has become increasingly visible in the seaborne iron ore market.

Liquid futures and swaps markets aid visibility into how value can change during the business day.

As index-linked trade becomes more common in pricing physical spot cargoes, the linkage to paper has strengthened. This means that the value of the cargo's price differential to the relevant swaps month can indicate a change in the outright value of the commodity.

The emergence of trading venues and real-time information portals has meant that market participants can track values of physical cargoes throughout the day as bids rise and offers fall, which in turn impacts the forward view of paper market participants.

**DAY ON DAY CHANGE IN IODEX**

**SWAPS INTRADAY MOVEMENT, APRIL 12, 2017**
Being able to track these price movements real-time during Platts Market on Close assessment process means that market participants can also react in real-time, adding their voice to the daily price discovery process.

In a market place where participants can observe and react to value changing by the minute, the time at which events occur becomes more important.

It is for this reason that Platts IODEX team seeks certainty in the time at which trades occur or bids and offers are valid; it is for this same reason that Platts timestamps its assessment at 5:30 pm Singapore time — a time of heightened activity in the physical iron ore market.

It is important to note that the iron ore fines market is still developing, and the Platts MOC process has shown that the physical market structure doesn’t mirror the persistent backwardation in the iron ore swaps market.

The movement of the seaborne iron ore trade towards a more efficient, transparent market place mirrors the development in other more high-frequency commodity markets. However, the apparent disconnect in structure between the paper and the physical market indicates that the iron ore market has some potential to develop further.

— Ciaran Roe, Global Markets Specialist, Methodology R&D, Metals

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