

Executive Summary

- ▶ Mainstream (62pc Fe)/Low-Grade (<60pc Fe) iron ore price relationship breaking down
- ▶ Bilateral negotiation of a discount to 62pc Fe fines removes benefits of indexation
- ▶ Marginal tonne's price not being accurately discovered in a 200 million tonne market.
- ▶ China portside pricing could offer a market-based solution.

In an iron ore market increasingly driven by environmental concerns and a push for productivity, the link between 58pc indices (and the price of related products) and the 62pc Fe benchmark is breaking down. Producers of sub-60pc Fe material are reported to be seeking alternative methods of valuing and pricing their products. Port stock prices in China may offer the solution.

Most producers of lower Fe (below 60pc) iron ore have historically tied their prices to the headline 62pc Fe benchmark. By and large, the price of premium 58pc Fe products from Australia with high loss-on-ignition (LOI) have also tracked the dmtu value of headline 62pc Fe indices, due to high calcined Fe content. As a result, there has – with a few exceptions - been limited incentive to seed a 58pc Fe spot market or support price discovery in the area.

A widening in the 58pc Fe vs 62pc Fe spread following a rapid expansion of output by Australia's Fortescue Metals Group in 2014, and subsequent launch of 58pc Fe price risk management tools at Singapore Exchange (SGX) and CME Group, spurred a brief period of interest in the market, but this quickly evaporated as basis risk abated and pricing returned to the 62pc Fe index

status quo. Open interest on the futures has since disappeared, whilst the last major miner to price off a 58pc Fe index is widely reported in the past year to have moved to using a 62pc Fe price for its lower-Fe offering.

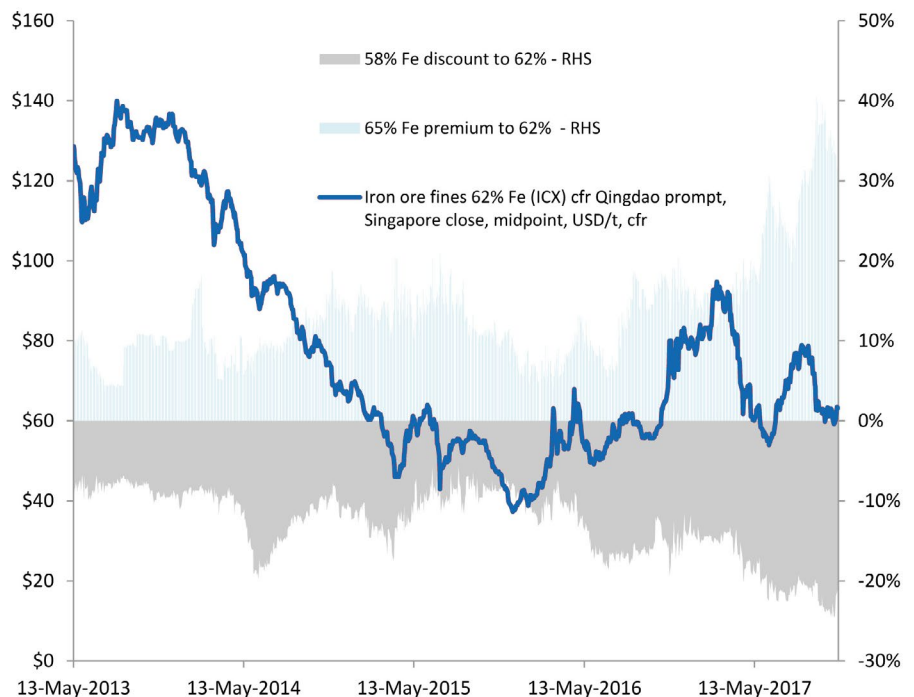
62pc Fe index link breaking down

However, several trends have over the past year driven a rise in premiums paid for higher iron, lower impurity ores. A series of spikes in coking coal prices prompted mills to reduce coking rates and saw sharply rising premiums for high Fe products such as Vale's IOCJ (65pc Fe) from Brazil and a corresponding slump in achieved prices for lower Fe grade fines, as well as a surge in silica penalties. China's recent environmental reforms and the improvement in "per tonne" margins for steel has exacerbated these trends as mills chase higher iron, lower impurity ores.

So, in 2017, some producers are now asking whether derivatives tools for high Fe ores might be possible, so that they can manage an increasing and volatile spread. Ironically, a sub 60pc Fe derivatives tool would again be useful today, yet the tools available are not really fit for purpose as the underlying indices cash-settling listed contracts aren't underpinned by much physical trade. 2017 has seen an almost complete evaporation of fixed-price trade in sub-60pc Fe products in the spot market.

Instead, the majority of this material is being sold on long-term contracts or index-linked against a 62c Fe index, as producers try to achieve the best possible price against a benchmark derived off higher grade fines. And the absence of a liquid spot market outside of mainstream products has in turn meant fewer reference points off which to either mark an index or assess the

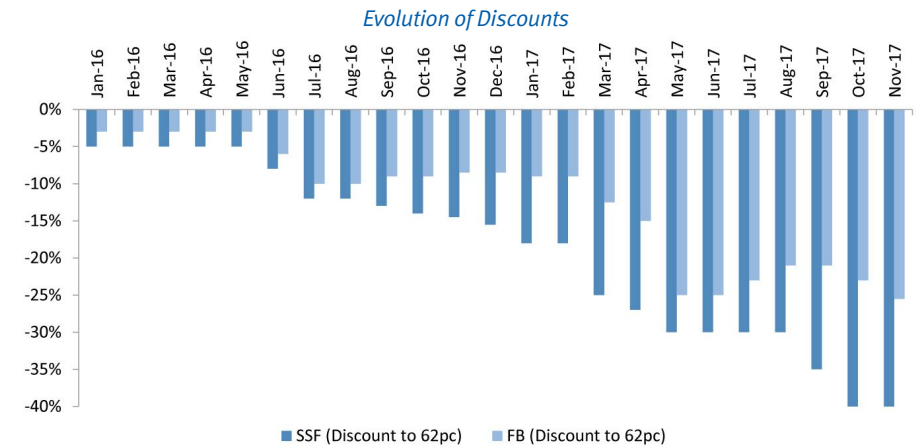
The Chase for Quality (US\$/dmt)



value of lower Fe brands, and a loss of clarity around value. Instead, prices have been reflected in ever steeper discounts to the 62pc Fe index – usually negotiated bilaterally.

Argus tracks the discounts to the 62pc Fe index which FMG reportedly applies to its Super Special Fines (SSF) and Fortescue Blend (FB) Fines on a monthly basis. Whilst based on third party reports, the below chart based on the information available gives an indication of how rapidly discounts against the 62pc Fe index have been widening – particularly for the lower Fe SSF product. It is harder to obtain information on discounts for other lower grade products, though many high LOI products are reportedly in high demand outside of China.

It is therefore unsurprising that the spread between the 58pc and 62pc indices has continued to expand as discounts for lower grade material widen. Many are beginning to ask: if the relationship is so weak, why continue to tie the price of these products to what is now a very different market? The pain and basis risk which indexation is



supposed to remove is still prevalent. For high grade fines such as Vale’s 65pc Fe price, most material is traded against a 65pc index which reflects the distinct supply and demand for that product group. Why not do the same for the 56-59pc Fe range?

Index linking and derivatives tied to 58pc indices have been tried before, and could work. But this requires a major liquidity provider to provide enough reference points on which an index could be based. This may be tough without a commercial incentive. Further complexities are added due to the different chemical compositions of products in the 56-59pc Fe range, with

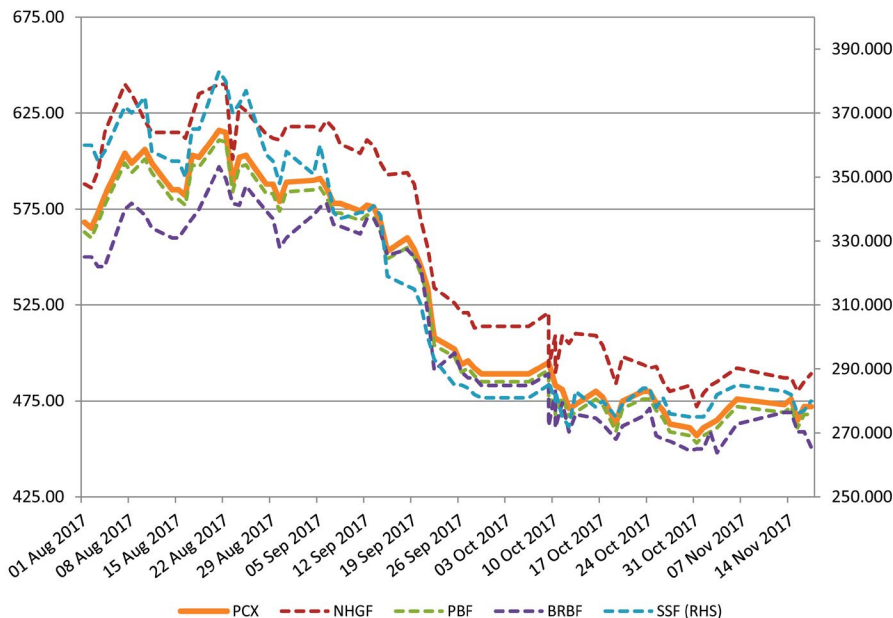
highly variable prices to match. Another option is to look at an already liquid secondary market which already exists, and in which smaller parcels make possible the assessment on a brand-by-brand basis.

Argus Port Stock Index (PCX) brings greater clarity to brand value

A lively secondary market has evolved at Chinese ports with its own dynamics, and far larger numbers of transactions at fixed prices taking place, making it possible to obtain a better grasp on brand relativities. Argus has tracked portside prices via its PCX port stock index since 2014. In August of this year, Argus added daily coverage for four major brands traded at the Chinese ports of Qingdao and Rizhao – including for 56.7pc Fe Super Special Fines (SSF), which is so far the only sub-60pc Fe product being tracked.

To provide an indication of the high liquidity at port: Argus records an average of seventeen portside fixed-price transactions on a daily basis. By contrast, the much larger tonnage seaborne market sees an average of two transactions per day: some of which are concluded on a floating, rather than fixed basis. It’s worth noting that almost all of these are of mainstream cargoes of around 61-63pc Fe. Transactions for lower-Fe ores have all but disappeared.

Argus PCX Portside Brand Prices: CNY/wet metric tonne, FOT Shandong Ports



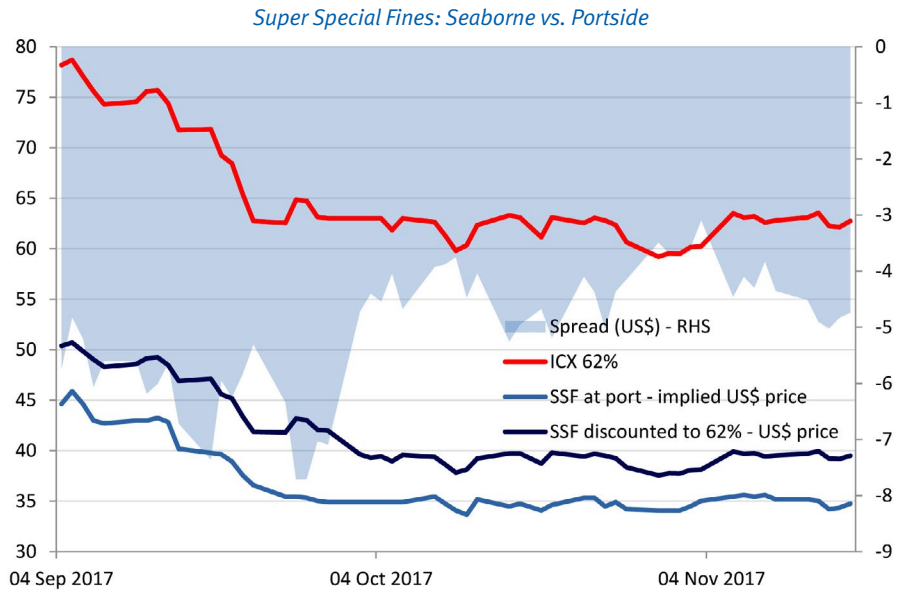
The differentials Argus track for SSF at ports in China's Shandong province allow for an easy back calculation to give an idea of their relative US dollar value on a like-for-like seaborne equivalent basis. Whilst the waters are muddied by port fees, VAT and the like which are applied to landed cargoes in mainland China, as well as freight adjustments in the seaborne index formula for SSF discounts, the below comparison suggests that once these have been stripped out, the value of SSF sold in the seaborne market with the present reported 40pc discount appears to still be achieving a premium to port sales.

Though the seaborne and portside prices appear to be slowly converging, the lack of a fixed tie to the 62pc index makes it difficult for buyers and sellers alike, and also limits the ability to hedge exposure in related paper markets.

Conclusions

Price discovery is vastly aided by a liquid spot market. Such a market has all but ceased to exist for lower grade material, which has led to rapidly escalating discounts against a 62pc index which largely tracks mainstream ores with 60-63.5pc Fe.

Linking prices of a diverse range of products to a 62pc index has succeeded thus far, but has always been a blunt



tool. But in a world of rapidly changing discounts, the entire premise for indexation – be it for hedging, for price stability or for avoiding regular, bruising negotiations – starts to fall apart.

Perhaps most importantly, the value of the marginal tonne for sub 60pc material is not being tested whilst it is being hitched to a 62pc number. However, in China's Shandong ports, where Fortescue Metals Group's SSF brand alone is seeing an average of six (recorded) trades per day, prices have stabilised since the end of September. For low grade ore priced on a 62 discount, stabilisation has taken longer, and may still come under pressure.

Argus's flagship Chinese portside price (PCX 62pc) is published each day, alongside daily price premiums/discounts for several brands, including FMG's super special fines.

The lower grade iron ore market is of great significance. We are talking about a market of hundreds of millions of tonnes, rather than tens of millions, however, it is a market that lacks a functioning pricing system. In the absence of a market maker in the seaborne market, the port price is the only and best indicator of value, and could offer the best solution for price discovery longer-term.

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