

Iron ore is a posterchild for commoditisation of a previously archaic market. The move to transparency from annual deals done behind closed doors, to quarterly, then monthly and spot pricing heralded a new era of financialisation driven by rising volatility. Price indexes were fundamental to this process and are now so embedded it is difficult to imagine long-term deals, or a world without liquid iron ore futures.

But perhaps the industry needs to seriously consider this hypothetical. The incumbent pricing mechanism around 62pc Fe indexes is fragmenting at a rapid pace. New developments over the past 12 months have only exacerbated the situation. In this white paper Argus explores the most recent pull and push factors behind the splintering of the market, and suggests how to support and strengthen the structure.

### Three floors of ores and zombie indices

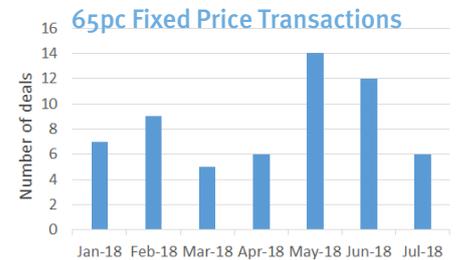
Unlike base metals, there is no standard grade of iron ore. Physically settled futures are a challenge for a bulky, relatively low value commodity. Contract pricing and futures are instead based on indexes that reflect a range of grades, loosely representing three tiers of the market: 58pc, 62pc and 65pc for low, medium and high grade ores respectively. Yet spot liquidity underpinning each of these indices is drastically variable (see chart, right). As previously written, the 58pc market has ceased to have a functioning index. Not a single fixed price spot trade has been recorded in over a year. What remains are unused, unloved, and ultimately ungrounded 'zombie' indices and a series of illiquid futures contracts. This index grave site should serve as a cautionary tale about how indices can degrade in liquidity and utility when not used or supported.

The 65pc index, because of geology, is largely a Brazilian affair based on one product, which trades on average around once every three days. While illiquid, at least there are data points as a reference. Attempts to price high grade off 62pc have also been unsuccessful. 65pc rightly sits in its own high grade tier.

But this means that of three tiers, only one grade – 62pc – is backed by a liquid pool of different brands, drawn from more than one producer. On average 40 fixed and floating trades per month go into the Argus ICX 62pc Fe index, with around 40 companies contributing. Argus in July recorded 76 deals encompassing seven brands behind the ICX 62pc index. Adding bids, offers and indicative values meant every day's price was backed by an average of 14 data points.

### The 62pc market: never so crucial, never so pressured.

It is hard to overstate the importance of a robust, well-supported index. More than 90pc of iron ore sales today are index-linked, with the majority to the 62pc Fe benchmark. Indexes for 62pc fines are used to settle the most liquid futures contracts, worth around \$5bn monthly. Structurally, futures are crucial for both hedging and supporting the



wider ecosystem by allowing floating, such as index linked, trades to be utilised in the index. Given annual pricing is unlikely to return, the most efficient way to manage the pricing of the 1.4bn t/yr of iron ore traded remains a robust index coupled with a liquid and reliable hedging mechanism.

That mechanism exists today but looks increasingly endangered. There is a real risk of accidentally entering a state where it is difficult to mark-to-market; where basis risk reigns on most transactions; where the financial market diminishes further; and where liquidity underlying individual indices is reduced to a level which severely tests user comfort. None of this is necessary, let alone desirable. Yet a number of trends are pushing in this direction:

- ▶ A fragmented physical benchmark
- ▶ A disappearing secondary market.
- ▶ Volatility around brands and impurities

### A year in mainstream fines spot liquidity: by grade, both fixed and floating



In isolation, any of these would be cause for concern. Taken together, they represent a serious challenge to useful indexation within the sector.

► **A fractured physical benchmark**

Until recently, anyone selling or buying iron ore against a 62pc index could take out an equal ‘paper’ position on futures markets to hedge their exposure. Since 2010, physical and financial markets operated on different indexes, incurring limited basis risk, yet still grew at a rapid pace. The convergence between physical and financial settlement prices in January this year was supposed to have accelerated futures market trading but did not. Volumes on the main exchanges are today half of what they were during their heyday. Nearly every month this year has seen year-on-year declines in traded volume of around 30%. A steadily falling share of physical trade being priced off the financial settlement index today risks further eroding the utility of the seaborne index pricing system.

A rightful demand to choose the physical settlement index based on merit has morphed into a de-facto call for averages of a group of indices. If implemented, that could nullify the accountability or transparency benefits of any single index and reintroduce basis risk into financial market hedging. The knock-on effect would be floating prices becoming harder to utilize in index formation and fewer deals supporting the index.

► **A disappearing secondary market**

As trading firms shift to Chinese ports, a decline in secondary market “churn” has already reduced the number of data points available for index formation and created momentum behind portside pricing as an alternative to seaborne indices. Portside cargo is sold in Chinese yuan – trades which do not contribute to seaborne indices. Hedging is also done in yuan, rather than on the international exchanges, further diminishing international

futures volumes. The market needs liquid hedging opportunities for dollar-denominated trade as well as off the yuan.

And if seaborne prices lose trust, something will replace it. Both onshore futures and portside prices are liquid, but this is an area which is not yet as transparent or mature as its seaborne counterpart. And both are in yuan: what works in China may not be a fit for Japan, Europe, India or Korea, who will remain exposed to USD denominated indices for the foreseeable future.

This is not a zero-sum game. Robust pricing is required for both portside and seaborne markets, as are futures markets. The addition of yuan-based futures in 2013 was a boon to offshore volumes. But the seaborne pricing system, which has been built up over a decade, is by virtue of longevity, more mature. It is also truly international. If it regresses there is a risk of neither having cake, nor eating it.

► **Volatility around brands and impurities**

The final, and most recent, pull factor centres on varying pricing outcomes for different iron ore brands. This should not be a cause for concern, but

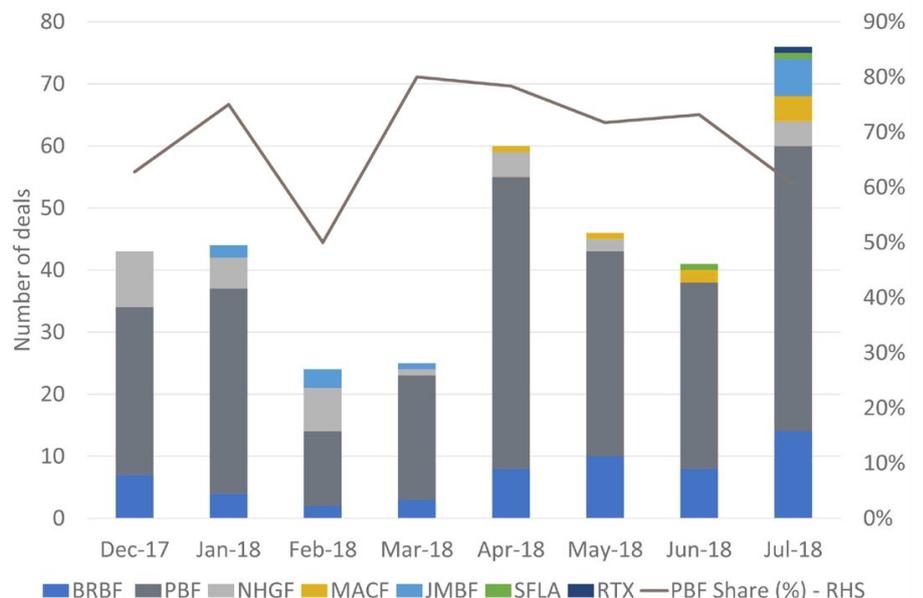
Argus ICX - published Alumina VIM



price reporting agencies (PRAs) have themselves contributed to making it one by failing to be clear about the utility or mechanism behind published values for impurities. Recently published alumina normalization differentials have spiked, largely driven by rising premiums for one brand. Different PRAs operating with different methodologies have published vastly different values for this impurity adjustment.

And as the normalization adjustments are published, they can lead the market’s perception of the worth of impurities. But this is generally not what they are meant for. Argus publishes normalization values (called value-in-market, or ViM) to show the workings behind the index not as a guideline discount or premium value for buyers and sellers (a common

Transactions underpinning Argus ICX 62pc index



misconception). Having market average adjustments such as ViM allows the index to incorporate the broadest swathe of products through like-for-like comparison of price outcomes using the tightest possible normalisation. They are published to demonstrate how a spot deal relates to the index and how it compares with 62pc peer brands.

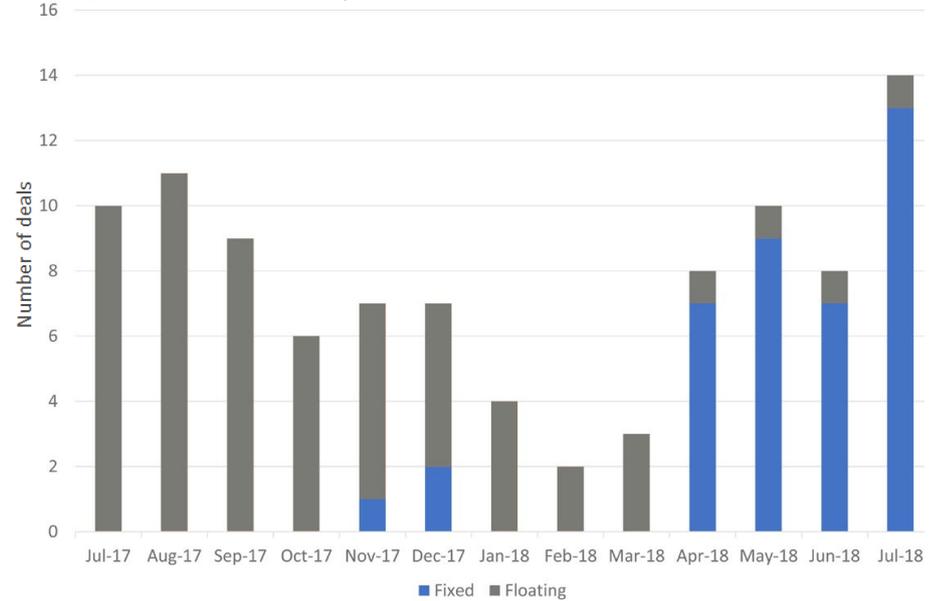
### Breaking the heart (of the furnace)

Proposed solutions to the third fault line – interbrand volatility – risk accelerating fragmentation. One recent proposal is that the 62pc market should be divided further, with the publication of new 62pc indices representing outright parts of the market - if not based on origin, then delineated so tightly that they are effectively origin-specific. The second is to publish brand differentials or outright prices.

The idea of fragmenting the market to individual brands is based on shaky ground. As the previous chart shows, PBF forms the heart of 62pc liquidity, with other brands playing supporting roles. An index composed of multiple products is a healthy index: it prevents any one producer or product having overt pricing power. For sellers, the risk and responsibility of supporting a benchmark is shared.

Whilst it is possible to produce a price for any product (every PRA, continues to produce a 58pc Fe number) and one-brand indices require less

### Floating turns to fixed: BRBF spot transactions



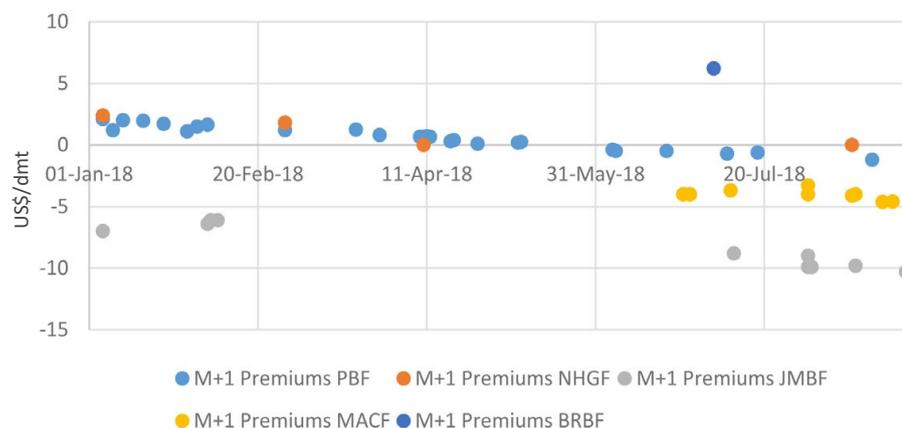
normalisation, with 65pc an example, this does not mean it is desirable. A benchmark is a benchmark precisely because it reflects value across a broad range of products. This is why 62pc Fe indexes formed from multiple deposits in multiple origin countries are robust over the long term.

The alternative is a series of published prices for each product, for which the responsibility of setting that price would fall on the producer of that product. The absence of a parallel hedging mechanism would make the use of floating prices impossible. The seaborne pricing mechanism would, effectively, devolve.

### Premiums, discounts and unicorns

The second solution to this recent problem has been the publishing of brand relativities, either as outright values or floating premiums. As increasing numbers of sales take place on a floating price basis – i.e. relative to an index – there is naturally growing demand for transparency around the premiums and discounts achieved by each product, which have become prices in their own right. However, if they are to stand up to scrutiny, each of these numbers face the same challenges as any other index. I.e. how much liquidity underpins them, and what methodology is used to assess them? As the chart (left) shows, floating price data points are not always available and vary according to market conditions.

### Floating Premiums: linked to front month (M+1)



And there is a further paradox: supporting fixed price spot liquidity for new indices or brand assessments leads to fewer floating price trades off which to assess premiums. This is apparent in the ratio of fixed to floating deals seen for Brazilian Blend Fines (BRBF) in recent months (see chart above). This risks leading to the worst of both worlds: a fractured 62pc index supported by published floating premiums drawn from barren pools of illiquidity.

### What is Argus doing?

Argus believes that a sustainable seaborne pricing system requires a solid majority referenced index and a connected futures mechanism. The underlying index should capture as much data as possible, from a range of brands and producers, normalised to a representative specification. This should be done while being transparent about how that data is used.

Argus has since last year evolved its flagship ICX62pc Fe index to use the widest pool of data inputs and provide the greatest transparency possible. A clear mechanism to allow the integration of physical and financial markets has been deployed in a manner supportive of the existing ecosystem: formal recognition of physical trading platform data and an exchange-derived forward curve.

The next challenge is to close gaps on areas of iron ore pricing which have long required greater transparency. To counter the recent problems posed by volatile brands and quality adjustments, our goal is to be as clear as possible how these products relate to the underlying index. Argus will move quality adjustments (value-in-market, or ViM) to daily from September. In-line with this, we will shortly start publishing the resultant brand differentials driven by our data-driven adjustments for key brands, based on typical specification.

This not only shows how these brands normalise into the ICX62pc index, but also give an indication of products' relative value, based on adjustments derived from the full data set, rather than relying on individual brands alone, for which there may be limited trade, or limited appetite to provide the necessary liquidity to support a standalone number. We will begin pricing floating price premiums to index on a brand-by-brand basis, as floating price liquidity for each product improves.

But however these supplementary numbers are added, the system requires a robust underlying index to function. Currently this can only be done via quality normalisation to a common standard and being clear about how it is done.

### Rocky road

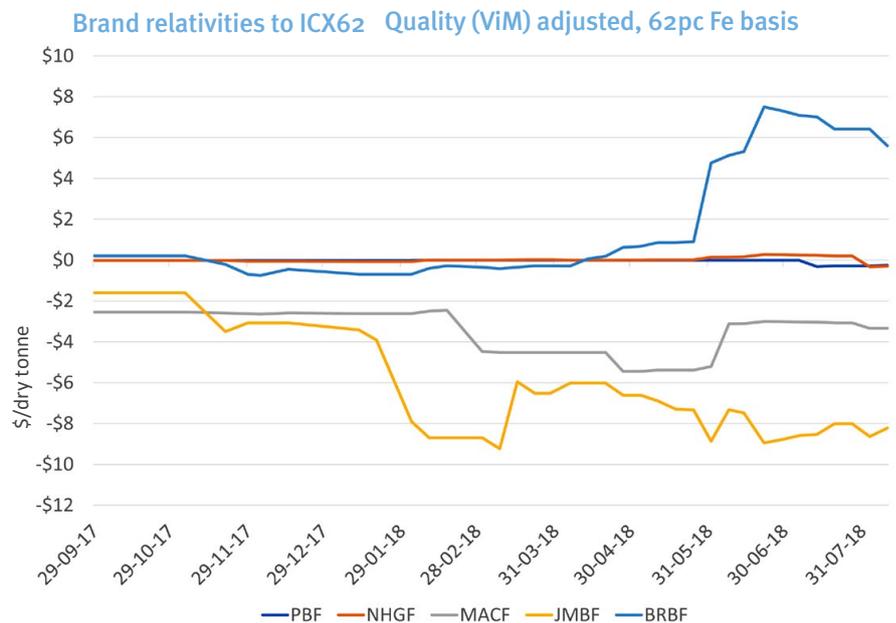
Systems do not suddenly collapse from one strike, but from the accumulated effects of many. The 62pc Fe market is well supported by spot data for now, and the futures market is still relatively liquid. But the market has been taking a series of blows in recent years. In Rocky Balboa's words "It's about how hard you can get hit and keep moving forward". For the modern iron ore market fragmentation to a brand-by-brand basis might just be a blow too many.

The industry cannot conceivably benefit from a collapse in the ability to price, link, or hedge effectively and efficiently, which is what will happen if the core of the 62pc Fe market splits further. The likelihood is that buyers will fare worse in a move to brand pricing.

Nor can this be good for producers longer term: shared responsibility in setting the index is vital for long-term sustainability.

With pricing mechanisms now more widely open to choice, market participants are able to highlight or choose indices they have confidence in. Choice is important, and the benchmark should be chosen in a competitive environment. But to link to a mish-mash of disparate indices or, worse, create new numbers for every different product, risks weakening the benchmark. No change is also a choice: the current road leads to greater fragmentation.

To shore up the current pricing system requires centering liquidity around a well-supported, transparent index drawing a clear link between physical and financial markets, and showing clearly how different brands relate to it. It is in this context Argus has evolved its benchmark 62pc index to provide a well-grounded reference for the bulk of iron ore liquidity with a reflective specification, supported





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by transparency about what data, from what type of source, underpins the numbers, in the belief a glass box approach encourages more confidence than a black box. This includes premiums and discounts for different

impurities evolving to shed light on Interbrand relativities. Crucially, a reference for such a crucial global commodity as iron ore must be open to scrutiny. A black box for each product would lead nowhere pleasant.

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