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Introduction

This statement of methodology for IHS Markit’s iron ore price assessments reflects fundamental principles that form the foundation for IHS Markit’s price reporting service. This statement of methodology also includes detailed information on the formation of IHS Markit’s price assessments and the specifications for the various products assessed.

As iron ore markets change, IHS Markit’s methodology for assessing iron ore prices will continue to evolve. The IHS Markit iron ore price assessment services team is comprised of specialist reporters and analysts in London, Singapore, Melbourne, Sydney, New Delhi, and the United States. The IHS Markit team undertakes price discovery of the physical iron ore markets on a daily basis according to the specifications outlined in this statement of methodology.

For questions regarding the iron ore price assessments, please contact Cheng Zhang at Cheng.Zhang@ihsmarkit.com or Marian Hookham at Marian.Hookham@ihsmarkit.com

IHS Markit has a compliance team independent of the editorial group. For more information, please contact IHS Markit Regulatory Compliance Officer at IHSRegulatoryCompliance@ihsmarkit.com

IHS Markit publications

IHS Markit publishes weekly iron ore market price assessments and market commentary online through its market and business intelligence platform - Connect - and in the following publication.

Inside Coal & Steel Raw Materials
Daily intelligence and price updates focusing on the global metallurgical coal and steel raw materials markets.

Methodology overview

IHS Markit produces physical price assessments, termed “markers,” for the major traded global iron ore hub in China. These assessments are published on a Friday in Inside Coal & Steel Raw Materials, on the Connect platform.

Basis of IHS Markit Iron Ore methodology

IHS Markit assesses the iron ore markets using a methodology that has been designed to reflect the way these markets trade. The principle purpose of the methodology is to produce price markers that are fair, consistent and reliable indicators of standard market values in the markets being assessed. As a result, the assessment locations, standard traded units, and other particulars of a marker are determined by industry conventions.

Market reporters engage with the industry by proactively polling participants for market data. IHS Markit will accept market data from all credible market sources, including electronic trading platforms. IHS Markit will accept market data by telephone, instant messenger, email or other means.

IHS Markit encourages parties that submit market data to submit all of their data market for the relevant marker. IHS Markit encourages all sources of market data to submit transaction data from back office functions. IHS Markit will seek to ensure, so far as is able and is reasonable, that transaction data submitted are representative of all the submitter’s actual physical concluded transactions.

Throughout all markets, IHS Markit is constantly seeking to increase the number of companies willing to provide market data. Market reporters are mentored and encouraged to expand their pool of contacts. The number of entities providing market data can vary significantly from day to day based on market conditions.

Judgment guidelines

As part of the price reporting process, market reporters are required to use their professional judgment, to ensure the reliability of the data and marker compilation process. IHS Markit has set forth guidelines throughout this Methodology to ensure that the use of judgment is consistent and fair. These guidelines can be found in the following sections of this Methodology:

• Anomalous or suspicious transactions
• Additional checks and analysis
• Comparative markets
• Transactions and survey weightings

IHS Markit has developed a Global Price Reporting Manual that details the process for compiling
each specific marker. In addition, IHS Markit has developed a programme of training and oversight of market reporters that helps ensure uniformity in the application of judgment. The key elements of this programme include:

1. An initial course of training that explains and defines the parameters for the exercise of judgment
2. Suitably sourced staffing to ensure proper backup for sick days, vacations, etc.
3. Oversight of reporting teams by experienced market editors that are involved in daily mentoring and assisting in the application of judgment
4. A requirement that market editors sign-off on all markers

**Market data application and thresholds**
The specifications defined in the methodology and data used to compile each marker is deemed to be the most representative for that market. IHS Markit will utilize various types of market data in compiling its markers, including:

- Transactions
- Bids and offers
- Other market information

Transaction information is the preferred source of data for the markers. However, depending on the liquidity of the markets being assessed, other information can be and is used, such as bids and offers and other market information. This can be in combination with transactions, or can substitute transactions, depending on the market liquidity and specific market circumstances.

Consequently, in most markets there will be a relatively higher rank given to transactions over bids and offers and other market information in the compilation process.

IHS Markit does not establish strict thresholds based on a count of completed transactions. IHS Markit does, however, use transaction levels to determine the weighting between weighted average of price transactions and other market information.

In many markets, IHS Markit has established minimum tonnage for transactions which will be accepted as market data. For those markers that are not used to settle derivatives, if the submitted data falls below the stated threshold for any reason, IHS Markit will follow the procedures outlined elsewhere in this document regarding the exercise of judgment in the price assessment process.

**Verification of transaction data**
Market reporters carefully evaluate all data gathered before it is used in the price compilation process. These data inputs include transactions, bids, offers, volumes, counterparties, specifications and any other information that contributes materially to the determination of a marker. Specific to transactions and bids and offers, market reporters seek to verify and validate the price, volume, specifications, and location basis, and with regard just to transactions, the counterparties. Market reporters examine all the reported transactions to avoid duplication.

**Scrutiny of transactions**
IHS Markit has created guidelines that control the exercise of judgment by its market reporters. Market reporters are trained to identify anomalous or suspicious transactional data that merit further investigation to verify if they are bona fide data for inclusion in the index compilation process. If a transaction has been identified by a market reporter as anomalous or suspicious, it will be escalated to the markets editor. Further checks and analysis will be conducted by the markets editor when an anomalous or suspicious transaction is identified for further examination.

**Anomalous or suspicious market data**
The following types of market data have been identified by IHS Markit as potentially anomalous or suspicious:

- Transactions not transacted at arm’s length, including deals between related parties or affiliates
- Transaction prices that fall outside of the generally observed bids and offers that operated throughout the trading period
- In the absence of observed bids and offers, transaction prices that deviate significantly from transactions seen for that trading period
Transactions that are suspected to be a leg of another transaction or in some way contingent on an unknown transaction

Transactions, bids and offers that deviate from the typical transaction volumes seen in that market

Any other transaction details that appear to stray from the usual trading behaviour seen in that market, including, but not limited to,

- repeated trading activity in periods or pools of potentially low liquidity, such as the margins of the defined trading window (such as very early or very late deals),
- counterparties not typically seen,
- divergent specifications and
- unusual delivery locations.

or specific delivery location in a port range that may have time specific issues affecting price

This will include transactions that are identified by other market participants as being, for any reason, potentially anomalous

Discrepancy in transaction details reported by counterparties

**Additional checks and analysis**

The markets editor and market reporter(s) will undertake the following transactional and source analysis when a potentially anomalous or suspicious transaction is identified for further examination.

They will assess the following transaction-based factors:

- The nature of the linkage of the perceived anomalous or suspicious transaction to other possible transactions
- The differences between counterparties on transactional details
- The impact of other factors on price and/or volume, including scheduling and logistic issues, demurrage issues and credit issues

The markets editor will also assess the following source-based factors:

- Whether the explanation provided by the source for the outlying nature of the transaction is plausible
- The credibility of the sources
- Whether the timing of the provision of information impacts the verification and validation process

Should this process determine that a transaction be excluded from the price assessment process, the markets editor will approve the exclusion and document the rationale. For markers used to settle derivatives, IHS Markit has established internal procedures that involve escalating review within IHS Markit management and, if necessary, notification and escalation of inquiry within the source’s company.

**Comparative markets**

There exist tight price correlations between certain iron ore markets and the premiums and discounts between these markets, which are constantly assessed and compared by market participants. By polling and entering into dialogue with the market, market reporters are able to quantify these relative values. Accordingly, in certain assessments when no relevant or insufficient market data exists, market reporters will make an assessment of market value using some or all of the following comparative metrics.

- Comparison to another market hub for the same quality of iron ore
- Comparison to a more actively traded, but slightly different specification or quality in the same market hub
- Other metrics, such as demand and supply data

**Corrections to markers**

If warranted by the circumstances, IHS Markit may publish corrections to markers after the publication date. IHS Markit will typically correct material errors.

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1. Sources will be deemed more credible if they (i) adhere to the reporting standards outlined in this Methodology; (ii) quickly respond to queries from market reporters; and (iii) have staff designated to respond to such queries.
that arise from the improper entry of information, the erroneous calculation of market data, misreported information or the incorrect application of the stated methodology. However, IHS Markit will not retroactively assess markets based solely on new information learned after the publication date of the relevant marker. Corrections to markers will be conducted in accordance with the Price Assessments Correction policy.

**Compliance and ethics**

IHS Markit has implemented extensive compliance policies and procedures in accordance with the best practices of the price reporting industry. These include a comprehensive ethics policy that applies to all the IHS Markit Coal and Iron Ore Price Reporting staff. The Code of Ethics and Insider Trading Manual (found here), which is an expression of IHS Markit’s intent to set out ideals for the ethical conduct of Coal and Iron Ore Price Reporting personnel in the performance of their coal price assessment activities. This Code of Ethics and Insider Trader Manual is supported by the IMBA Conflicts of Interest Statement, which can be found here.

**Review of methodology**

In order to ensure that they are representative of the market being assessed, IHS Markit conducts reviews of its methodologies on both an internal and external basis. Internally, IHS Markit methodologies are under continuous and on-going review. In addition, IHS Markit conducts a formal review of all of its methodologies and attendant documents on at least an annual basis. Externally, IHS Markit is in regular contact with market participants as such market participants are not only well-situated to know the particulars of the market, but have a vested interest in the implementation of accurate and relevant methodologies. When conducting its reviews, IHS Markit will consider a myriad of factors, including, but not limited to, activity in the market, visibility of market data and current and anticipated industry usage of the marker.

If the review process recommends a material change to, or termination of, an existing methodology or the creation of a new methodology, the markets editor will submit a proposal to IHS Markit management for review and approval. Should material changes to, or terminations of, existing markers be approved, then IHS Markit will commence with formal procedures for consultation with market participants.

**Changes to methodology**

If either an internal or external review of a methodology results in a potential material change to such methodology, IHS Markit will begin formal procedures for external consultation. Materiality is subject to professional judgment and takes into account the impact of the proposed change on the decision making of stakeholders. External consultation will commence with an announcement of the proposed change published in the relevant IHS Markit publication. This announcement will include:

- Details on the proposed change
- The basis for such a proposed change
- The method for providing comments to IHS Markit regarding the proposed change (including the deadline for such comments)
- For prices that are referenced by the terms of a derivative contract, a notice that all formal comments will be published following the given consultation period unless a submitter requests confidentiality

IHS Markit will balance the needs of stakeholders with the orderly functioning of the markets. IHS Markit cannot, however, guarantee unanimous acceptance and will act with the primary purpose of ensuring the continued integrity of its markers and the best interests of the market. Accordingly, IHS Markit will provide sufficient opportunity for stakeholders to assess and comment on proposed changes, but will adhere to a strict timeline so that a situation is not created (i) where the market stops functioning; (ii) which could result in erroneous prices being published; and/or (iii) where market participants are put at undue risk. IHS Markit will engage with market participants throughout this process in order to gain acceptance of proposed changes to the methodology. Following the consultation period, IHS Markit will decide on the final changes to the methodology. This will be followed by an announcement of the decision, which will be published in the relevant IHS Markit coal publications and include a date for implementation.

**The market**

To merit inclusion in the IHS Markit assessment process, transactional data and survey responses
must meet standard specification guidelines. All international traded prices are assessed in US dollars and US cents per metric tonne.

IHS Markit assesses iron ore markers on a weekly basis. The prices for physical deals for the IHS Markit weekly iron ore markers are averaged over the week.

**Markers components**

1. Transactional data: Fixed price trades which meet IHS Markit Iron Ore marker specifications and within the trade window will be normalized to Marker’s standard specification. Floating price trades which meet IHS Markit Iron Ore marker specifications and within the trade window will be converted to the current month fixed price trades, based on the forward price curve, then to be normalized to the Marker’s standard specification.

2. Bids/offers: evidential bids/offers which meet IHS Markit Iron Ore maker specifications and within the trade window will be normalized to the Marker’s standard specification. ‘Evidential’ bid/offer data is classified as offers lower than the previous day’s transactional data’s value in the week, or bids higher than the previous day’s transactional data’s value in the week.

3. Market survey: IHS Markit also undertakes a weekly survey of the market. IHS Markit enters into a dialogue with the survey participants using the information IHS Markit has built up in terms of deals done and bid and offer values over the week. Market participants are asked where they see the market in terms of deals done and bid/offer levels through the week and where they would assess the market.

4. Comparative markets will be considered in the absence of trades and bids/offers.

The relative value ascribed to trades, bids and offers (when present) and survey depends on levels of activity across the week with regard to the transactions. Judgment will be used to assign weightings to trades, bids/offers and survey depending on how representative each is for any given week.

**Marker timing**

The cut off point for trades and survey numbers being accepted for inclusion in the formation of the Asian markers is 18:00, Singapore time, on Friday. Deals done after this time will not be included in the weekly markers compilation.

On days before major holidays the index trade and survey deadlines may be brought forward in line with market participants working schedules. These days are usually over the Christmas/New Year period. Market participants will be informed of any such changes to assessment times.

**Trade window and monthly rollovers**

The active trade window is a rolling period covering delivery within the next 14-56 days for CFR trades.

**Monthly averages**

The monthly average of the weekly markers are compiled from markers published on each and every Friday within the calendar month or, in the event of a Singapore public holiday on the Friday, the weekly markers published on the preceding working day.

**Iron Ore Markers**

**62% Fe Fines CFR North China**

The 62% Fe Fines CFR North China marker is a weekly marker assessing the price of 62% Fe content Iron Ore fines basis Qingdao Port, North China. Prices are assessed in US dollar per dry metric tonne (dmt).

This marker reflects the following quality parameters:

- Fe content: 62% (60%-63.5%)
- Silica: 4% (Max 7%)
- Alumina: 2.25% (Max 4%)
- Phosphorus: 0.09% (Max 0.1%)
- Sulfur: 0.02% (Max 0.08%)
- Moisture: 8%

The minimum cargo size is 40,000 t
65% Fe Fines CFR North China
The 65% Fe Fines CFR North China marker is a weekly marker assessing the price of 65% Fe content Iron Ore fines basis Qingdao Port, North China. Prices are assessed in US dollar per dry metric tonne (dmt).

This marker reflects the following quality parameters:
- Fe content: 65% (Min 63.5%)
- Silica: 3.5% (Max 7%)
- Alumina: 1.5% (Max 4%)
- Phosphorus: 0.07% (Max 0.1%)
- Sulphur: 0.02% (Max 0.08%)
- Moisture: 8%

The minimum cargo size is 40,000 t

64% Fe Pellets CFR North China
The 64% Fe Pellets CFR North China marker is a weekly marker assessing the price of 64% Fe content Iron Ore Pellets basis Qingdao Port, North China. Prices are assessed in US dollar per dry metric tonne (dmt).

This marker reflects the following quality parameters:
- Fe content: 64% (63.5%-65%)
- Silica: 3.5% (Max 7%)
- Alumina: 1.5% (Max 4%)
- Phosphorus: 0.08% (Max 0.1%)
- Sulphur: 0.02% (Max 0.08%)
- Moisture: 4%
- Size: Max 15% <6.3mm, max 20%>31.5mm

The minimum cargo size is 40,000 t

62% Lump premium
The 62% Lump premium marker is a weekly marker assessing the Lump premium on the 62% Fe fines marker. Prices are assessed in US cent per dry metric tonne unit (¢/dmtu) and on CFR North China basis.

This marker reflects the following quality parameters:
- Fe content: 62% (60%-63.5%)
- Silica: 3.5% (Max 7%)
- Alumina: 1.5% (Max 4%)
- Phosphorus: 0.07% (Max 0.09%)
- Sulphur: 0.02% (Max 0.08%)
- Moisture: 4%
- Size: Max 15% <6.3mm, max 20%>31.5mm

The minimum cargo size is 40,000 t