

Manganese ore index



Methodology and price
specifications – May 2024

Mission statement

Fastmarkets Metals, Minerals And Mining is the leading global provider of pricing intelligence for the non-ferrous metal, steel, steelmaking raw materials, industrial minerals, ferrous and non-ferrous scrap markets, producing price assessments via Fastmarkets MB and Fastmarkets AMM since 1913 and 1882 respectively.

Fastmarkets Forest Products is the leading global provider of pricing intelligence for the global forest products industry, incorporating Fastmarkets RISI, Fastmarkets FOEX, Random Lengths and Hardwood Market Report.

And Fastmarkets Agriculture Products has delivered pricing transparency to opaque agriculture and energy markets in the form of market-moving reporting and commentary, trusted pricing and price forecasting since 1865.

Our mission is to meet our markets' data requirements honestly and independently, acting with integrity and care to ensure that the trust and confidence placed in the reliability of our pricing methodologies is maintained. We do not have a vested interest in the markets on which we report.

Introduction

Fastmarkets' reporters are required to abide by a **code of conduct** and clear pricing procedures during their market reporting and pricing activities. Fastmarkets is completely independent and has no vested commercial interest in any of the markets it prices.

We are the world's largest dedicated price-reporting team for metals and minerals, agricultural products and forest products. We have hubs in London, New York, Boston, San Francisco, Eugene, Charlottesville, Atlanta, Pittsburgh, Memphis, Sao Paulo, Beijing, Shanghai, Hong Kong, Singapore, Malaysia, Melbourne, Mumbai, Istanbul, Brussels and Helsinki.

The aim of this document is to provide a clear overview of Fastmarkets' methodology and specifications for the prices it assesses. If you have any questions, please contact Editorial & Pricing Director for Non-Ferrous Metals & Mining Fleur Ritzema at fleur.ritzema@fastmarkets.com, Editorial & Pricing Director for Ferrous Metals & Mining Andrew Wells at andrew.wells@fastmarkets.com, Forest Products Senior VP of Indices Matt Graves at mgraves@fastmarkets.com for forest products or Editorial Director Tim Worledge at tim.worledge@fastmarkets.com for agricultural products.

Price discovery and methodology

Methodology rationale

The primary role of the Fastmarkets manganese ore Indices is to provide market participants with a fair and robust representation of the physical manganese ore spot market price. Fastmarkets' rationale for adopting the price-discovery process described in this methodology document is to produce a consistent and representative indicator of market value to suit the manganese ore market's requirement for a transparent pricing mechanism.

The aim of the indices is both to be reflective of the prices seen during the data collection window; and to be a reliable indicator of the value of the manganese ore market to which they relate. Fastmarkets chose a data collection window of seven days after considering the number of data points it could reasonably expect to collect on a consistent basis to support the index calculation process.

The manganese ore market is constantly developing. Fastmarkets reviews its methodology and specifications, and engages in discussions with market participants on a regular basis to ensure they remain as representative of the market as possible.

The Fastmarkets manganese ore Index methodology has been designed to meet the requirements of the financial market as well as the physical market.

Data collection

Data collection and quality

The basis of all our indices is the data provided by the market. To provide the most representative pricing for the market, it is essential we are able to collect as many representative data points as possible.

Any market participant involved in the physical manganese ore market may be able to contribute data to the index following a review by Fastmarkets of their activities. The aim is to make sure that submitters have sufficient visibility and understanding of the market to be able to provide reliable price data. Fastmarkets aims to engage a broad and balanced range of physical market participants in the provision of data. Fastmarkets's Data Submitter Policy provides guidelines to ensure the high level of data quality and integrity that

Fastmarkets expects from contributing organisations providing pricing data. The policy can be found on [fastmarkets.com](https://www.fastmarkets.com) or is available upon request.

Fastmarkets encourages data sources to provide data on all concluded transactions and welcomes provision of data from employees in back-office functions.

Fastmarkets uses multiple channels to collect data, including phone calls, email, and digital messenger services across our offices in London, Shanghai, Singapore and Sao Paulo.

The deadline for data submission is 2pm London time each Friday. Data received after this time will not be included in the calculation of the index. The data collection window runs for the seven days prior to the 2pm data submission deadline. Only price data submitted and communicated to Fastmarkets within the seven-day window will be included in the calculation of the index. The index is reflective of the prices gathered during this window.

All the reference units used in the index, including currencies and volumes, are in line with recognized manganese ore market conventions and the reference units used in these markets. The index specification has a minimum volume size. The minimum volume was set to avoid small deals having an undue effect on the index. Fastmarkets analysis and market feedback showed that, below a certain threshold, a deal's volume starts to attract a premium and that would distort the index.

All data supplied to the Fastmarkets manganese ore indices is strictly confidential. The Fastmarkets index team may sign Data Submitter Agreements (DSAs) upon request with any data provider.

Index calculation

The Fastmarkets manganese ore index Index is a tonnage-weighted calculation, where actual transactions carry full weight, as reflected by the reported volume, while offers, bids and market participants' own estimates of the market are weighted at the specified minimum tonnage for the index. Fastmarkets aims to collect full details of each transaction including brand, commercial terms and any other details relevant to value and pricing.

Market balance

The Fastmarkets manganese ore index methodology is designed to provide market participants with a fair and robust reflection of the physical manganese ore spot price. The methodology incorporates structures and mechanisms to ensure a balanced and consistent calculation that is able to resist possible undue influences.

The Fastmarkets manganese ore index is structured to balance the influence of both sides of the market: sellers and buyers. This reduces the potential risk of market distortions and bias in the data and ensures that all parts of the market have the same influence on the final index calculation.

The published index figure is the straight average of two sub-indices, each of which contains data from either the buy side or sell side of the market. Each sub-index is a tonnage-weighted calculation of normalized price data. Only the final index is published. The use of two sub-indices means that each part of the market has a maximum 50% weighting in the final index. This removes the possibility of bias or any single data provider having an overbearing influence on the final index.

Normalization

Some material traded on the manganese ore spot market differs from the base specification of the indices. This price data requires normalization to determine the equivalent price for the respective index base specification.

Material that falls within the target specification range is normalized to the index base specification and port of delivery or origin. The base specifications and ranges have been chosen following consultation with the market to reflect the reality of the physical spot market.

Data is normalized to the base specifications using in-house models based on regression analysis of the collected data points. The analysis allows Fastmarkets to capture the value-in-use applied by the market to different materials, and to normalize to a single specification. This normalization process also allows Fastmarkets to capture and normalize variables outside of the chemical and physical properties such as values associated with regional origin and product-specific factors.

The normalization coefficients for the manganese ore indices are updated every month to reflect the constantly changing value-in-use relationship of different products and grades. This reflects the level of data liquidity in the market and balances the requirement to keep the value-in-use calculations

reflective of the market while also providing a statistically robust data set for analysis.

Finally, material that is transacted on a different pricing basis can be normalized to the index pricing terms using relevant variables. Where deemed necessary to provide a robust data set for calculation, Fastmarkets may normalize CIF-basis transactions to an FOB-basis using a freight rate netback. The freight rate is updated weekly based on a survey of market participants, and the netback incorporates the ore moisture level of the transaction in question. Where the moisture level is unknown, the index base of 4% is used. Deals loading from or delivered to ports other than the index base will be normalized to the specified base port using freight differentials from broker or market participant estimates.

FOT (free on truck) Chinese ports data will not be used in the CIF or FOB indices.

Specification payment terms are based on typical commercial practice in the manganese ore spot market. Transactions that are conducted on different payment or credit terms can be normalized, taking into account discounts, interest rates and standard commercial terms.

Criteria for discarding pricing data and the removal of outlier data

Fastmarkets uses its expert judgment to exclude prior to inclusion in the model unrepresentative numbers and discard prices that it believes may otherwise be questionable and unreliable.

Fastmarkets has constructed its Manganese Ore Index to exclude outlier data automatically. All data points that fall more than 10% away from the initial calculated index are automatically excluded - the index is then recalculated. Outliers will be investigated; suspected attempts to influence the index unfairly may result in the data provider being warned or excluded.

Fastmarkets reserves the right to see contracts and signed paperwork before inclusion of the data in the calculation. If this is refused, the data supplied may be excluded from the calculation process. Fastmarkets reserves the right to exclude data that is not fairly presented or is believed to be an effort to distort the Index.

Index calculation in periods of low data liquidity

The Fastmarkets manganese ore index is calculated based on price data collected from the market. The index is set up so that actual transactions have the greatest effect on the final calculated price. Since

Fastmarkets aims to calculate each index using a robust data set, it will therefore where necessary look to use price data including estimates, offers and bids collected from the market. Data points that do not reflect actual transactions will be entered into the indices in the same way as transaction data but will be weighted according to the lowest tonnage permissible for the index.

Fastmarkets does not specify a minimum amount of transaction data, or a transaction data threshold, required for the publication of its indices because liquidity varies across the manganese ore spot market.

In the event that in a particular pricing session the dataset collected is not considered suitably robust (such as too few data points on the day) for the calculation of a particular index, Fastmarkets will implement its calculation fall-back procedures (above right) until a suitable number of data points is reached to calculate the index.

In the event that in a particular pricing session the dataset collected is not considered suitably robust (such as there being too few data points) for the calculation of an index, Fastmarkets will implement the following fall-back procedures (1-7) until a suitable number of data points is reached to calculate the index:

1. Carry over transaction data from other sub-indices in same calculation period
2. Carry over non-transaction data from other sub-indices in same calculation period
3. Carry over transaction data from the previous calculation in the appropriate sub-index
4. Carry over transaction data from the previous calculation from any sub-index
5. Carry over non-transaction data from the previous calculation in the appropriate sub-index
6. Carry over non-transaction data from the previous calculation from any sub-index
7. If no price data can be collected, the index price will be carried over

The implementation of fall-back procedures does not affect the tonnage weighting of the original data point. In the unlikely situation that more than half of the pricing data collected on one day is provided by a single source, Fastmarkets will use the fall-back procedures 3-7 (see above) to ensure there is not a dependency on a significant proportion of data (of 50% or more) being provided by a single entity.

Publication

The manganese ore index is published every Friday at 3pm London time with the data collection window closing at 2pm London time. Indices are not published on England and Wales public holidays.

Fastmarkets also publishes weekly pricing rationales to explain the data behind the index calculation and editorial judgments. These notes explain, for instance, why price reporters may conclude that anomalous or suspicious data should be excluded or when judgment has been applied when the dataset collected is not considered suitably robust and fallback procedures have been applied.

Where public holidays occur on a Friday, the indices will be published on the following working day.

Please refer to the [pricing holiday schedule](#) for this year's public holidays.

Corrections and delays

If an index is published incorrectly, it will be rectified and republished as soon as possible. A correction notice will be sent to all subscribers.

Fastmarkets employs several procedures and measures to avoid delays in the publication of its indices. In the event of a delay, however, Fastmarkets will inform subscribers as soon as possible. In the event of late publication only data that has been received within the correct standard time frame will be included in the calculations. No indices will be amended due to the emergence of new data or market activity after the initial publication. Retrospective changes to the published values will only be made in cases of administrative or calculation error.

Methodology and price specifications review process

Fastmarkets aims to continually develop and periodically revise its methodology in consultation with industry participants, with the objective to adopt product specifications, trading terms and conditions that reflect and are representative of typical working practices in the manganese ore industry.

Any change to the methodology and/or price specifications are implemented following a consultation process that starts with Fastmarkets posting on its website an advance pricing notice providing clear details and a timeframe for the proposed change. The objective of the consultation process is to give market participants sufficient time and opportunity to provide feedback and views about the change proposed.

For more details on the formal periodic review of the methodology and details of the consultation process to propose changes to the methodology, refer to Fastmarkets' Internal and External Review Process and Fastmarkets' Change to the Methodology Consultation process documents are available on fastmarkets.com.

Procedure to ensure consistency in the price discovery process

Fastmarkets aims to maintain the highest standards in the provision of prices to those involved in the global metals industry. All Fastmarkets pricing employees are required to adhere to Fastmarkets' Code of Conduct and Pricing Guidelines.

All indices are subject to peer review prior to publication and are signed off by a senior member of Fastmarkets' editorial or index teams. This peer-review process is in place to make sure that pricing procedures and methodologies are correctly and consistently applied and to ensure integrity and quality of the published prices.

Full details of data inputs and calculations are stored in Fastmarkets' electronic database, MIND, and may be accessed at any time for internal review and auditing purposes.

Index-related queries and complaints

Fastmarkets encourages engagement from the market on its pricing principles and methodology. The company promotes understanding of its calculation procedures

and is committed to responding to requests for further information and clarification on a timely basis. There are multiple channels for interaction with the Index department including email, telephone and instant messenger services.

If a subscriber has an issue with published prices, they may contact the Index team. In the event that the response is not satisfactory the issue may be escalated to the internal compliance department. For more details refer to Fastmarkets' Complaint Handling Policy available on our website. Fastmarkets takes all queries and complaints seriously and will seek to provide an explanation of the prices wherever possible. It is important to note, however, that calculation models and input data remain confidential and cannot be provided to third parties.

Price correction policy

Publication of price errors can occasionally happen for reasons that may include technical, input errors or incorrect application of the methodology.

To minimise as much as possible the inconvenience to our subscribers, Fastmarkets aims to investigate each error immediately as it becomes aware of it and to publish a correction promptly on its website through a pricing notice with an explanation of the reason for the correction.

Fastmarkets will publish a correction of a price only where it has established that undeniably there has been an error. Fastmarkets price assessments are produced based on the best data available at the time of the assessment. It will not retroactively change a price based on new information or additional submission of data received after a respective pricing session has closed.

Become a contributor to the price discovery process

Fastmarkets continually seeks to increase the number of market sources willing to take part in the price-discovery process. The main condition Fastmarkets requires from contributors is to be active participants in the spot market. Fastmarkets' Data Submitter Policy provides guidelines defining the high level of data quality and integrity that Fastmarkets expects from a contributing organisation providing pricing data. The policy can be found on fastmarkets.com or upon request.

All data sources are subject to review before their submitted data is fully taken into account in the pricing process. The aim is to make sure that submitters are trustworthy and have sufficient visibility and understanding of the market to be able to provide viable price data.

If you want to become a contributor to Fastmarkets pricing, or have questions or comments about the methodology and price specifications, please contact Editorial & Pricing Director for Non-Ferrous Metals & Mining Fleur Ritzema at fleur.ritzema@fastmarkets.com

Specifications

SOUTH AFRICA

MB-MNO-0002	Manganese ore semi carbonate index, 36.5% Mn, fob Port Elizabeth, \$ per dmtu
Quality:	5.5-75mm lump. Manganese base 36.5%, range 35-38%; iron base 5%, range 3-10%; silica base 5.5%, max 12%; phosphorus base 0.02%, max 0.05%; alumina base 0.2%, max 1.5%; moisture base 2%, max 12%
Quantity:	Min 5,000 tonnes
Location:	fob Port Elizabeth (South Africa)
Timing:	Within nine weeks
Unit:	US\$ per dry metric tonne unit
Payment terms:	Cash or LC on sight
Publication:	Friday, 3pm London time

CHINA

MB-MNO-0001	Manganese ore 44% Mn, cif Tianjin, \$/dmtu
Quality:	5.5-75mm lump. Manganese base 44%, range 42-48%; iron base 5%, max 16%; silica base 10%, max 15%; phosphorous base 0.10%, max 0.16%; alumina base 5%, max 14%; moisture: base 4%, max 12%
Quantity:	Min 5,000 tonnes
Location:	cif Tianjin, China (normalized for any Chinese mainland sea port)
Timing:	Within nine weeks
Unit:	US\$ per dry metric tonne unit
Payment:	Cash or equivalent
Publication:	Friday, 3pm London time

MB-MNO-0003	Manganese ore semi carbonate index, 36.5% Mn, cif Tianjin, \$ per dmtu
Quality:	5.5-75mm lump. Manganese base 36.5%, range 35-38%; iron base 5%, range 3-10%; silica base 5.5%, max 12%; phosphorus base 0.02%, max 0.05%; alumina base 0.2%, max 1.5%; moisture base 2%, max 12%
Quantity:	Min 5,000 tonnes
Location:	cif Tianjin (other mainland seaports normalized)
Timing:	Within nine weeks
Unit:	US\$ per dry metric tonne unit
Payment term:	Cash or LC on sight
Publication:	Friday, 3pm London time

MB-MNO-0005	Manganese ore high grade port index, fot Tianjin China, yuan per dmtu
Quality:	5.5-75mm lump. Manganese base 43.5%, range 40-47%; iron base 4.5%, max 16%; silica base 11%, max 17%; phosphorus base 0.10%, max 0.16%; alumina base 6.5%, max 14%; moisture base 5.5%, max 12%
Quantity:	Min 1,000 tonnes
Location:	FOT Tianjin (China) - normalized for any Chinese mainland sea port
Timing:	Immediate
Unit:	CNY per dry metric tonne unit
Payment terms:	Cash or equivalent
Publication:	Friday 5-6pm, Shanghai time

MB-MNO-0004	Manganese ore semi carbonate port index, 36.5% Mn, fot Tianjin, China, yuan/dmtu
Quality:	5.5-75mm lump. Manganese base 36.5%, range 35-38%; iron base 5%, range 3-10%; silica base 5.5%, max 12%; phosphorus base 0.02%, max 0.05%; alumina base 0.2%, max 1.5%; moisture base 2%, max 12%
Quantity:	Min 1,000 tonnes
Location:	fot Tianjin (other mainland China seaports normalized)
Timing:	Immediate
Unit:	Yuan per dry metric tonne unit
Payment terms:	Cash or equivalent
Publication:	Friday, 3pm London time

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