

US Midwest HRC Index



Methodology and price
specifications – June 2019

Mission statement

Fastmarkets is a leading commodity price reporting agency (PRA) covering the metals, mining, minerals and forest products industries. Our products include Fastmarkets MB, Fastmarkets AMM, Fastmarkets IM, Fastmarkets RISI, Fastmarkets FOEX and Random Lengths. For more than 100 years we have been providing commodities price reporting services for use by market participants in their day-to-day commercial activities. These services include assessments and indices of commodity prices as well as news, research and commentary on the underlying markets.

Our mission is to meet the market's 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 AMM is the leading independent supplier of market intelligence, pricing, assessments, analysis and commentary to the North American metals industries. Fastmarkets AMM publishes widely used reference prices for non-ferrous metals, steel and scrap markets.

Fastmarkets AMM is completely independent and has no vested commercial interest in any of the markets it prices.

Fastmarkets AMM's reporters are required to follow a Code of Conduct.

Fastmarkets AMM reporters are required to follow robust pricing procedures during their market reporting and pricing activities.

All work by Fastmarkets AMM reporters is peer-reviewed and approved prior publication by senior reporters.

All prices and assessments are based on regular contact with a wide variety of market participants. This group is reviewed periodically by senior editors to ensure a balance of participants, buyers, sellers and others legitimately and actively involved in the marketplace.

Fastmarkets AMM treats all communications of price, assessments, contract details and all other information as confidential. Details are never shared with third parties.

If you have any questions, please contact the pricing administrator, pricing@fastmarkets.com.

Price discovery and methodology

Methodology rationale

The primary role of Fastmarkets AMM's Hot-Rolled Coil Index is to provide market participants with a fair and robust representation of the physical hot-rolled coil spot market price. Fastmarkets AMM's rationale to adopt and develop the price discovery process and the methodology described in this guide is to produce a consistent and representative indicator of market value to suit the hot-rolled coil market's requirement for a transparent pricing mechanism.

The intention is that the index is reflective of the price levels recorded during the period - or window - in which data is collected; and that it is a reliable indicator of the hot-rolled coil market to which it relates. The data collection period taken into consideration to calculate the index is determined by Fastmarkets AMM after considering the number of data points that can reasonably be expected to be collected on a consistent basis over the selected period to support the index calculation process.

Fastmarkets AMM supports the process of price discovery through its established and independent position in the metals market. The hot-rolled coil market is constantly developing. Fastmarkets AMM reviews its methodology and specifications, and engages in discussions with market participants at least every six months to ensure that it remains as representative of the market as possible.

Data collection and quality

Fastmarkets AMM's Hot-Rolled Coil Index is based on the data provided by the market, and to provide a representative price for the market, we aim to collect as many representative data points as possible.

Any market participant involved in the physical hot-rolled coil spot market may contribute data to the index following a review by Fastmarkets AMM of their activities. The aim is to ensure that submitters have sufficient visibility and understanding of the market to be able to provide reliable price data. Fastmarkets AMM aims to engage a broad and balanced range of physical market participants in the provision of data.

Fastmarkets AMM's Data Submitter Policy provides guidelines to ensure the high level of data quality and

integrity that we expect from contributing organizations providing pricing data. The Policy can be found on Fastmarkets AMM's website or is available upon request.

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

Our price reporters utilize multiple methods to collect data, including phone calls, email, and digital messenger services across our US offices in New York and Chicago.

The deadline for data submission is 4pm New York time. Data received after this time will not be included in the calculation of the index. Only trades concluded, and bids and offers submitted and market participants' own assessment communicated to Fastmarkets AMM prior to the deadline will be included in the calculation of the index. The index is reflective of the price levels seen since the publication of the previous index.

All reference units, such as currencies and volumes units used in the index, are in line with recognized hot-rolled coil market conventions and the reference units used for transactions in these markets. The minimum volume size for the Hot-Rolled Coil Index is 50 tons in line with typical market transactions. "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 Fastmarkets AMM's Hot-Rolled Coil Index is kept strictly confidential. Fastmarkets AMM may sign Data Submitter Agreements (DSAs) with any data provider, if requested to do so.

Index calculation

The Fastmarkets AMM Hot-Rolled Coil 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 assessment of the market are weighted at the specified minimum tonnage. In the event that the same deal is reported by multiple sources, it will be treated as independent full-tonnage data points.

Fastmarkets AMM aims to collect full details of each transaction including brand, commercial terms and any other details relevant to value and pricing. If tonnage is not reported, the minimum published tonnage for the index will be used.

Market balance

The Fastmarkets AMM Hot-Rolled Coil Index methodology is designed to provide market participants with a fair and robust reflection of the physical hot-rolled coil price level. The methodology incorporates structures and mechanisms to ensure a balanced and consistent calculation that is able to resist possible undue influences.

The Fastmarkets AMM Hot-Rolled Coil Index is structured to balance the influence of all sides of the market. 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 three sub-indices, each of which contain data from a single part of the market: 1) producers; 2) distributors or traders; and 3) end users. Each sub-index is a tonnage-weighted calculation of normalized price data. Only the final index is published. The use of three sub-indices means that each part of the market has a maximum of 33% weighting in the final index. This removes the possibility of bias or any single data provider having an overbearing influence on the final index.

Criteria for discarding pricing data and removal of outlier data

Fastmarkets AMM uses its expert judgment to exclude unrepresentative numbers prior to inclusion in the model and discard prices that it believes may otherwise be questionable and unreliable and/or when deciding to use fall-back procedures. In exercising expert judgment, the following guidelines factors must be considered:

- Is the information received credible? If questionable: have we seen signed contracts (preferable), or has it been confirmed on both sides of the deal?
- If credible: were all the prices in a similar range?
- Were all the deals reported of a similar size?
- Do the reported deals all have the same terms and specifications?
- Did all the sources indicate the market was headed in the same direction? If not, why not?
- It is not unusual for different sources to report slightly different numbers but it is important, as far as possible, to understand why they are different.
- In the absence of trade, what are the prevailing bids/offers in the market? Did the source provide firm bids/offers or indicative numbers?
- What are the positions of the contributors?
- Are we confident about the freight or free-on-charge costs?

- Has an adequate sample been obtained that correctly represents the market?

Additionally, the Fastmarkets AMM Hot-Rolled Coil Index has been specifically constructed to automatically exclude outlier data. All data points that fall greater than 10% away from an initial calculated index are automatically excluded; the index is then recalculated. Outliers will be investigated, and suspected attempts to unfairly influence the index may result in the data provider being warned or excluded.

Fastmarkets AMM 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 AMM reserves the right to exclude data that is not fairly presented or is believed may be an effort to distort the index.

Index calculation in periods of low data liquidity

The Fastmarkets AMM Hot-Rolled Coil 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.

Fastmarkets AMM aims to calculate the index based on a robust data set and as such will, where necessary, look to utilize price data including assessments, offers and bids collected from the market. Data points that do not represent actual transactions will be entered into the index like transaction data but will be weighted according to the lowest tonnage permissible (50 tons).

Fastmarkets AMM does not specify a minimum amount of transaction data, or a transaction data threshold, required for the publication of its index.

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 AMM will implement the following fall-back procedures (1-7) in any order 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 then the index price will be carried over.

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 a day is provided by a single source, Fastmarkets AMM will use the fall back procedures 3-7 (see above) to ensure that there is not dependency on a significant proportion of data being provided by a single entity. A significant proportion of market data would be 50%.

Publication

The daily index is published by 5pm New York local time and is not published on the following US public holidays:

2019

Tuesday, January 1:	New Year's Day
Monday, January 21:	Martin Luther King's Birthday
Monday, February 18:	President's Day
Friday, April 19:	Good Friday
Monday May 27:	Memorial Day
Thursday, July 4:	Independence Day
Monday, September 2:	Labor Day
Thursday, November 28:	Thanksgiving Day
Friday, November 29:	Thanksgiving Friday
Wednesday, December 25:	Christmas Day

Where public holidays occur, the index will be published on the following working day and will reflect price data from the previous two working days.

Corrections and delays

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

Fastmarkets AMM employs several procedures and measures to avoid delays in the publication of its index. In the event of a delay, however, Fastmarkets AMM will inform subscribers as soon as possible.

In the event of late publication, only data that has been received within the correct standard timeframe will be included in the calculation. The index will not 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 AMM aims to continually develop and periodically revise its methodologies in consultation with industry participants, with the objective of adopting product specifications and trading terms and conditions that reflect and are representative of typical working practices in the hot-rolled coil industry.

Fastmarkets AMM reviews methodologies every six months. If market changes necessitate more frequent changes, Fastmarkets AMM will implement its formal review process in line with its published consultation process.

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

Changes to the existing methodology will either be classed as 'material' or 'immaterial.'

'Material' changes are those that may result in fundamental changes to the published price once implemented. These include specification changes or index structural changes.

'Immaterial' changes are those that will not result in a different price level once implemented. Typically a material change will require a three-month consultation period.

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 the Fastmarkets Methodology Review & Change Consultation Process,, which is available on Fastmarkets AMM's website.

Procedure to ensure consistency in the price discovery procedure

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

Prior to publication, the Hot-Rolled Coil Index is subject to peer-review and is signed-off by a senior member of the editorial team. 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 AMM's electronic database and may be accessed at any time for internal review and auditing purposes.

Index-related queries and complaints

Fastmarkets AMM 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 Hot-Rolled Coil Index team including email, telephone and instant messenger services.

If a subscriber has an issue with the published price, 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 AMM's Complaint Handling Policy available on our website.

Fastmarkets AMM 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.

Calculation of monthly average prices

Fastmarkets produces independent, fair and representative price assessments and indices of ferrous, non-ferrous and scrap metal prices on a daily, biweekly, weekly, bi-monthly or monthly basis.

Fastmarkets calculates and publishes monthly averages based on these independent, proprietary assessments and indices in two distinct ways: simple averages and rolling averages.

Simple average

Fastmarkets' simple monthly averages, traditionally published by Fastmarkets MB, are calculated by dividing the sum of the price quotations by the number of quotations published during the calendar month. For assessments, Fastmarkets derives both the monthly average high price and the Fastmarkets monthly average low price using this method. For indices, a single monthly average price point is calculated.

For example, there were five weekly price quotations for Chrome Ore South Africa UG2 concentrates index basis 42% cif China, \$ per tonne during the month of June 2018. Prices were published each Friday from June 1, 2018, with the assessments reading \$206 per tonne, \$208 per tonne, \$210 per tonne, \$211 per tonne and \$208 per tonne during the period. The simple monthly average is calculated by taking the sum of the five assessments and dividing that by the number of total assessments over the period - in this case, five. The simple monthly average for June 2018 was \$208.60 per tonne.

Most prices produced outside of the Americas are typically calculated on a simple-average basis.

Rolling average

Fastmarkets' rolling monthly averages, traditionally published by Fastmarkets AMM, are calculated by dividing the sum of the daily price quotations by the number of the quotations published during the calendar month. In a rolling average scenario, prices are published on a daily basis, regardless of how frequently they are updated. Daily price quotations are rolled for working days until the following price change, excluding holidays and weekends. No pricing input is published on holidays or weekends.

For example, there were five weekly price quotations for Chrome Ore South Africa UG2 concentrates index basis 42% cif China, \$ per tonne during the month of June 2018, with the first price update made on Friday, June 1. According to Fastmarkets' calculation, the price assessment from Friday is rolled over and republished on the Monday, Tuesday, Wednesday and Thursday of the following week, with the newly updated price published each Friday. The rolling monthly average is then calculated by taking the sum of all daily published prices and dividing it by the 21 total inputs over the period. The rolling monthly average price for June 2018 is therefore \$208.71 per tonne.

Most prices produced from the Americas are typically calculated on a rolling-average basis.

AMM will not revise the index retroactively..

Hot-Rolled Coil Index specification

Fastmarkets AMM has defined clear specifications that detail the material's characteristics or quality, location, delivery and payment terms and the minimum volume accepted. These specifications have been determined in consultation with market participants and following industry convention. Currency and volume units are in line with recognized hot-rolled coil market trading conventions.

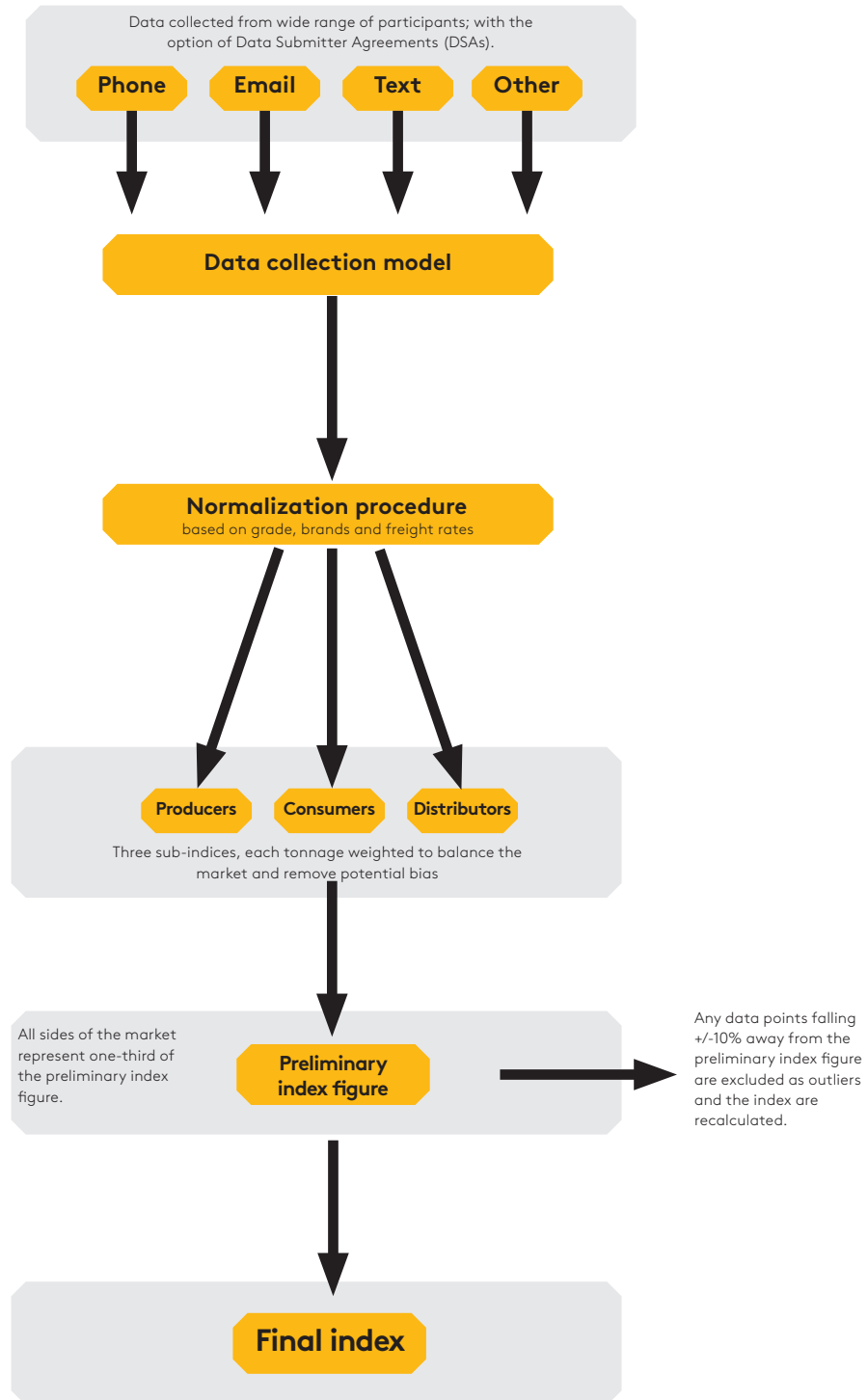
Fastmarkets AMM's reporters ensure that the information they receive matches the following specifications:

Index:	FOB US Midwest HRC Index
Gauge:	0.09 inch-0.38 inch thick x 48-72 inches wide.
Quality:	ASTM A1011 Commercial Steel and corresponding grades
Quantity:	Min 50 tons
Location:	FOB US Midwest mill. The US Midwest comprises Ohio, Indiana, Illinois, Wisconsin, Michigan, Missouri, Iowa, Minnesota, Kansas, Nebraska, South Dakota and North Dakota, according to the US Census Bureau.
Unit:	USD/hundredweight
Payment:	Typical commercial practice in the HRC market. Transactions that are conducted on different payment or credit terms will be adjusted back to the base specifications, taking into account discounts and standard commercial terms.
Publication:	Daily by 5pm New York time.
Notes:	Standard packaging, raw materials surcharges included

What happens if the material is downgraded on delivery?

The transaction is done on the expected delivery specifications, including grade and payment terms, and the price settled on this basis. Any difference that subsequently comes to light is an issue between the two parties who entered into the contract – Fastmarkets

HRC Index calculation process



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Evaluations or calculations of prices and price indices by us are based upon certain market assumptions and evaluation methodologies, and may not conform to prices or information available from third parties. There may be errors or defects in such assumptions or methodologies that cause resultant evaluations to be inappropriate for use.

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Your investment actions should be solely based upon your own decisions and research and appropriate independent advice should be obtained from a suitably qualified independent adviser before any such decision is made.