

Copper Concentrates Index



Methodology and price
specifications – December 2023

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 and Random Lengths.

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 Global Head of Editorial & Pricing Perrine Faye at perrine.faye@fastmarkets.com for metals and minerals, 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

The primary role of the Fastmarkets MB Copper Concentrates Index is to provide market participants with a fair and robust representation of the physical copper concentrates spot market price. Fastmarkets MB's 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 copper concentrates market's requirement for a transparent pricing mechanism.

The aims of the index is to reflect fairly, accurately and transparently the prices recorded during the data collection window and for it to be a reliable indication of the value of the copper concentrates market to which they relate.

The copper concentrates market is constantly developing. Fastmarkets MB both reviews its methodology and the specifications of its index and engages in discussions with market participants on a regular basis to ensure that it remains as representative of the market as possible.

The Fastmarkets MB Copper Concentrates 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 a representative price for the market, we aim to collect as many representative data points as possible.

Any market participant involved in the physical copper concentrates spot market may contribute data to the indices following a review by Fastmarkets MB of their activities. The aim is to ensure submitters have sufficient visibility and understanding of the market to be able to provide reliable price data. Fastmarkets MB aims to engage a broad and balanced range of physical market participants in the provision of data.

Fastmarkets MB's Data Submitter Policy provides guidelines to ensure the high level of data quality and integrity that Fastmarkets MB expects from contributing

organisations providing pricing data. The policy can be found on Fastmarkets MB's website or is available upon request.

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

Fastmarkets MB uses multiple channels to collect data, including phone calls, email, website input and messenger services across our offices in Singapore, Shanghai, London and Sao Paulo. The deadline for data submission is 2pm London time. Any data received after this time will be included in the next publication of the index. All the reference units used in the index, including currencies and volumes, are in line with recognized copper market conventions and the reference units used in these markets. The index specification has a minimum volume size accepted.

The Fastmarkets MB Copper Concentrates Index is a tonnage-weighted calculation, based on actual transactions. Fastmarkets MB will also collect estimates, offers and bids from the market to supplement transaction data. If included, this non-transaction data will be weighted at 2,500 tonnes – the minimum volume accepted. 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. Fastmarkets MB aims to collect full details of each transaction including brand, commercial terms and other details relevant to value and pricing.

All data supplied to Fastmarkets MB Copper Concentrates Index is strictly confidential; access to it is restricted to our index analysts. Fastmarkets MB will sign Data Submitter Agreements (DSAs) upon request with any data provider. All data is stored on secure servers. If required, Fastmarkets MB can provide a single mailbox accessible only to our index analysts for the provision of your data to the Fastmarkets MB Copper Concentrate Index.

Index calculation

The Fastmarkets MB Copper Concentrates Index methodology is designed to provide market participants with a fair and robust reflection of the physical copper concentrates spot price. The methodology incorporates structures and mechanisms to ensure a balanced and consistent calculation that is able to resist possible undue influences.

Market balance

The Fastmarkets MB Copper Concentrates 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 two sub-indices, each of which contain data from one side of the market: buyers and sellers. 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 side of the market has a 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

The data is normalized using an in-house developed model based on price differences applied by the market to different chemistries, brands and counterparties to a single specification.

Fastmarkets MB has developed normalization coefficients using our historical data and our history of reporting prices in the copper market. Fastmarkets MB updates these normalization coefficients every two months to reflect the constantly changing value-in-use relationship.

Material is normalized first by copper content and second by brand/mine. Brand normalization takes into account all other factors that may affect the price but that cannot be observed or captured. These include chemistries, company reliability and so on.

Material is also normalized by the counterparty buyer. Treatment charges (TCs) are dependent on the counterparty buyer due to fundamental differences in the conditions between trader purchases and smelter purchases.

Payment terms are based on typical commercial practice in the market. Our base quotational period is M+3. Other terms, such as M+1 or M+4, are normalized using the futures forward curve.

Finally, material that is imported by routes other than by sea, for example by train or truck, will be normalized using our historical data.

Criteria to discard pricing data

The Fastmarkets MB Copper Concentrates Index has been specifically constructed to automatically exclude outlier data. Fastmarkets will apply a ± 1.96 standard deviation range filter, which accounts for about 95% of the normalized data. Any data outside that range will be excluded. The standard deviation is calculated with the last two weeks of data and is updated weekly. Outliers will be investigated – suspected attempts to influence the index unfairly may result in the data provider being warned or excluded.

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

Index calculation during periods of low liquidity

The Fastmarkets MB Copper Concentrates 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 MB aims to calculate each index based on a robust data set and will therefore, where necessary, look to utilise price data including estimates, offers and bids collected from the market. Data points that do not represent actual transactions will be entered into the Indices like transaction data but will be weighted 2,500 tonnes.

Where no transactions have been reported, Fastmarkets MB will roll deals from the prior calculation forward into the index, ascribing them the same weight as bids and offers, to ensure that the last-known transaction continues to contribute to the index if only bids and/or offers are reported. As soon as transactions are reported, the legacy transactions will be removed from the index.

Fastmarkets MB 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 copper concentrates spot market.

In the absence of any trades on a given day, Fastmarkets MB will roll over the last confirmed transaction for inclusion in that days copper concentrates index calculation.

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

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 being provided by a single entity.

Publication

The Copper Concentrates Index is published weekly every Friday at 4pm London time. If the date falls on an England and Wales public holiday, the indices will be published on the closest working day that precedes that date.

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 MB employs several procedures and measures to avoid delays in the publication of its indices. In the event of a delay, however, Fastmarkets MB 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 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 MB 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 copper concentrates industry.

Any change to the methodology and/or price specifications are implemented following a consultation process that starts with Fastmarkets MB 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.

Once a change has been confirmed Fastmarkets MB will issue an updated pricing notice to the market, notifying them of the decision and specifying the date from which any change will become effective.

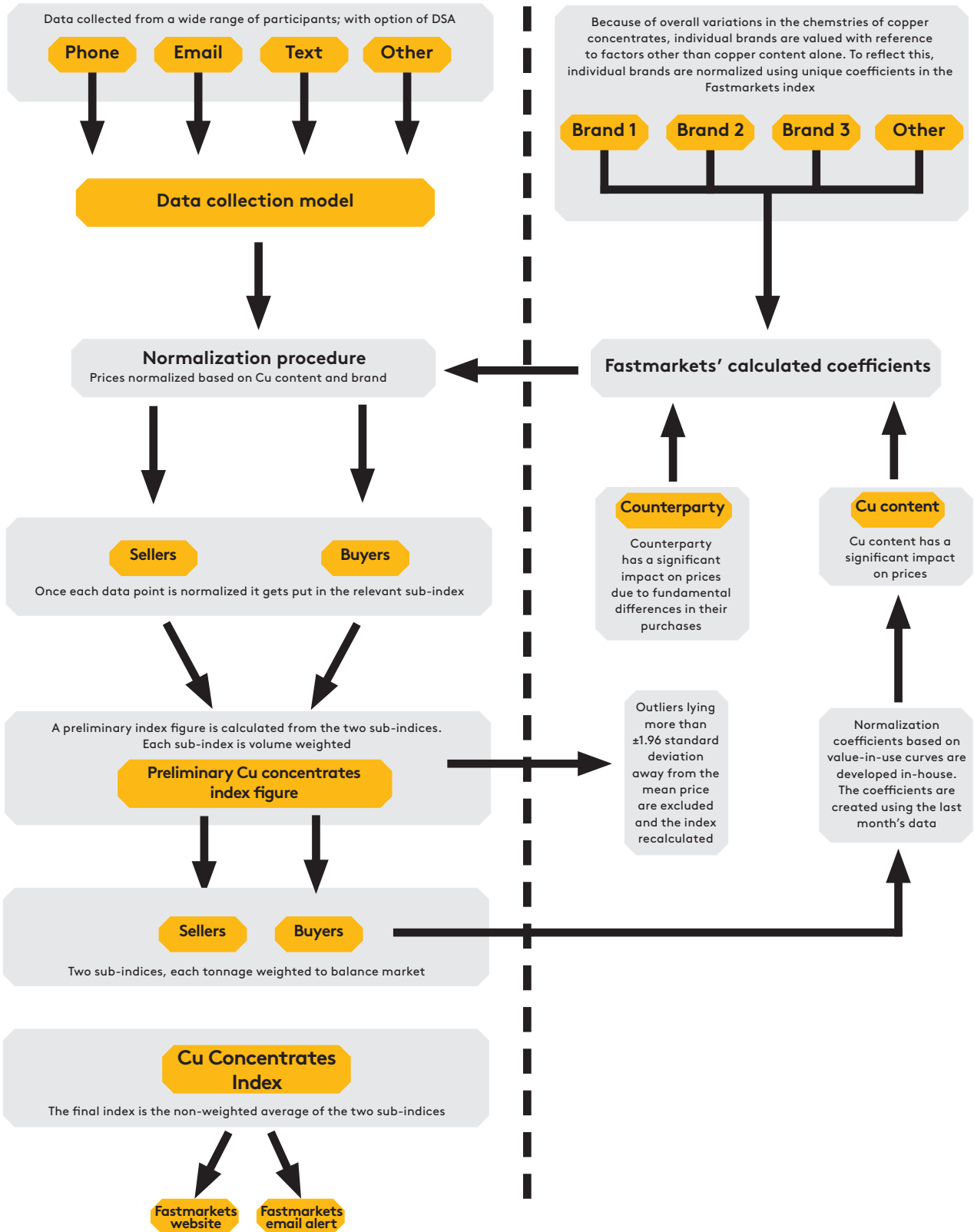
For more details on the formal periodic review of the methodology and details of the consultation process to propose changes to the methodology, refer to Fastmarkets MB's Internal and External Review Process and Fastmarkets MB's Change to the Methodology Consultation Process documents available on Fastmarkets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

Procedure to ensure consistency in the price discovery procedures

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

Prior to publication all indices are subject to peer review and are signed off by a senior member of Fastmarkets' editorial or index teams. This peer-review process is in place both to make sure that pricing procedures and methodologies are correctly and consistently applied

Capturing the relationship between different materials



and to ensure the integrity and quality of the published prices. Full details of data inputs and calculations are stored in Fastmarkets MB's electronic database and may be accessed at any time for internal review and auditing purposes.

Two coefficients (copper concentrates Co-VIU, copper concentrates counterparty spread) as well as four prices derived from the index are available on our various platforms (see page 8 for specifications).

Index-related queries and complaints

Fastmarkets MB 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 team including email, telephone and instant messenger services.

If a subscriber has an issue with the published prices, then 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 MB's Complaint Handling Policy available on Fastmarkets MB's website.

Fastmarkets MB 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.

Copper Concentrates Index

ASIA PACIFIC

MB-CU-0287

Copper concentrates TC index, cif Asia Pacific, \$/dmTU

Quality:	Base	Max	Min
Cu %	26	37	18
Au (g/dmt)	1.1	30	-
Ag (g/dmt)	75	350	-
S (%)	32	38	20
Fe (%)	28	35	15
Pb (%)	0.07	4	-
Zn (%)	1	4	-
As (%)	0.17	2	-
Sb (%)	0.018	0.2	-
Hg (ppm)	2.5	10	-
Bi (ppm)	145	2,000	-

Quantity: Min 5,000 tonnes
 Location: cif Asia Pacific
 Timing: Within 13 weeks
 Unit: US\$ per dmt/US cents per lb
 Payment terms: Letter of credit on sight
 Publication: Weekly on Fridays at 4pm London time

MB-CU-0288

Copper concentrates RC index, cif Asia Pacific, \$/dmTU

Quality:	Base	Max	Min
Cu %	26	37	18
Au (g/dmt)	1.1	30	-
Ag (g/dmt)	75	350	-
S (%)	32	38	20
Fe (%)	28	35	15
Pb (%)	0.07	4	-
Zn (%)	1	4	-
As (%)	0.17	2	-
Sb (%)	0.018	0.2	-
Hg (ppm)	2.5	10	-
Bi (ppm)	145	2,000	-

Quantity: Min 5,000 tonnes
 Location: cif Asia Pacific
 Timing: Within 13 weeks
 Unit: US\$ per dmt/US cents per lb
 Payment terms: Letter of credit on sight
 Publication: Weekly on Fridays at 4pm London time

Four derived prices

- MB-CU-0508** Copper concentrates TC implied smelters purchase, \$/tonne
- MB-CU-0509** Copper concentrates TC implied traders purchase, \$/tonne
- MB-CU-0510** Copper concentrates RC implied smelters purchase, US cents per lb
- MB-CU-0511** Copper concentrates RC implied traders purchase, US cents per lb

Quality:		Base	Max	Min
	Cu %	26	37	18
	Au (g/dmt)	1.1	30	-
	Ag (g/dmt)	75	350	-
	S (%)	32	38	20
	Fe (%)	28	35	15
	Pb (%)	0.07	4	-
	Zn (%)	1	4	-
	As (%)	0.17	2	-
	Sb (%)	0.018	0.2	-
	Hg (ppm)	2.5	10	-
	Bi (ppm)	145	2,000	-
Quantity:	Min 5,000 tonnes			
Location:	cif Asia Pacific			
Timing:	Within 13 weeks			
Unit:	US\$ per dmt/US cents per lb			
Payment terms:	Letter of credit on sight			
Publication:	Weekly on Fridays at 4pm London time			

Two coefficients

MB-CU-0422 Copper concentrates counterparty spread, \$/tonne

Quality:		Base	Max	Min
	Cu %	26	37	18
	Au (g/dmt)	1.1	30	-
	Ag (g/dmt)	75	350	-
	S (%)	32	38	20
	Fe (%)	28	35	15
	Pb (%)	0.07	4	-
	Zn (%)	1	4	-
	As (%)	0.17	2	-
	Sb (%)	0.018	0.2	-
	Hg (ppm)	2.5	10	-
	Bi (ppm)	145	2,000	-
Quantity:	Minimum 5,000 dry metric tonnes cargo.			
Location:	cif Asia Pacific			
Unit:	\$/tonne			
Publication:	Monthly, first working Friday in UK, before 4pm UK time.			
Notes:	The counterparty spread price will measure, in \$/tonne, the net gap between the average smelters purchases price and the traders purchase price for copper concentrate TCs			

MB-CU-0423 Copper concentrates copper VIU, \$/tonne

Quality:		Base	Max	Min
	Cu %	26	37	18
	Au (g/dmt)	1.1	30	-
	Ag (g/dmt)	75	350	-
	S (%)	32	38	20
	Fe (%)	28	35	15
	Pb (%)	0.07	4	-
	Zn (%)	1	4	-
	As (%)	0.17	2	-
	Sb (%)	0.018	0.2	-
	Hg (ppm)	2.5	10	-
	Bi (ppm)	145	2,000	-
Quantity:	Minimum 5,000 dry metric tonnes cargo.			
Location:	cif Asia Pacific			
Unit:	\$/tonne			
Publication:	Monthly, first working Friday in UK, before 4pm UK time.			
Notes:	The copper VIU price measures the value-in-use in \$/tonne of one extra percentage point of copper in a parcel of concentrates.			

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