



## **Metis: Metalshub Price Indices, Market Prices and Trading Metrics Methodology**

[Introduction](#)

[Metalshub Price Indices Methodology](#)

[Metis Market Prices Methodology](#)

[Trading Metrics Methodology](#)

## [INTRODUCTION]

Metis (Metalshub Intelligence Service) is a first-of-its-kind market intelligence provider that delivers information and price indices via a modern digital interface. Metis puts data into context and delivers market indicators and news to fully inform its users.

Metis policies, processes and methodologies have been designed to follow IOSCO Principles (International Organization of Securities Commissions).

Metis provides the following types of data:

**Metalshub Price Indices** – solely based on the transaction automatically captured from the Metalshub platform reflecting the real actual market prices. Data evaluation, selection and normalization are based on an algorithm minimizing price manipulation. No data manually collected from the market by our experts are used in Metalshub Indices.

**Metis Market Prices** – spot price assessments based on the various physical market sources data shared voluntarily. The data collection process is based on daily confidential interactions with a sufficient number of market participants. Anonymised Metalshub data support the team in validating information received from market participants.

**Trading Metrics** – various indices reflecting the market developments and sentiments (i.e. demanded volume, rounds of negotiations, offers per enquiry, price reduction, price competition and volatility etc.) based solely on the trading data from the Metalshub platform. The automated algorithm stands behind all trading metrics calculations.

## [METALSHUB PRICE INDICES METHODOLOGY]

The Metalshub Price Indices provided by Metis service are solely based on real transactions, bids and offers from the digital Metalshub platform.

The information is collected automatically without any journalistic work, e.g. telephone calls to market participants. This methodology minimises the risk of price manipulation and ensures a more robust picture of real market prices.

The raw data generated on the platform include all parameters of the transaction/negotiation, including the quantity, full chemical specification, payment terms, packaging and transportation cost. This enables Metis to normalise each data point correctly and to exclude data points, which do not meet the specifications for each price index.

The process of evaluation and selection of data is based on an algorithm. Consequently, the risk of error caused by human interaction is minimised.

The confidentiality of Metalshub users' price data is of utmost importance to Metis. We will never share individual data points and even employees of Metalshub only have restricted access to raw data. It will never be possible to traceback price indices to individual transactions or negotiations.

### ***Data evaluation and selection process***

Price data points originate from negotiations on listings. A listing (Request for Quotation) can have several parties submitting a negotiation (quotation) on a listing.

As the negotiating parties on Metalshub can update their quotations only the latest proposal is part of the evaluation process (i.e. the last

offer by a seller on a “buy-listing” and the last bid by a buyer on a “sell-listing”).

The process of price data collection, evaluation and selection for the Metalshub Price Indices is fully automated.

1. Every Friday, the automated algorithm analyses the data from the past week and determines the index price for the week by following a series of predefined steps.

2. The data collected from trading activities on Metalshub include quantity, chemical specification, dimensions, packaging, storage and delivery locations, payment terms and price.

3. From all activities on Metalshub for the respective product the algorithm excludes data points which do not meet the index specifications stated below (for example, FeSi 65% Si, 3-10mm).

4. The remaining price points have to fulfil the following requirements to find their way into the index:

The data point may not be a trader to trader transaction (anonymous term sheet mode)

A confirmed negotiation (transaction) will be considered (as long as point 3 is fulfilled).

For listings without a confirmed transaction the two best negotiations will be considered (i.e. the two lowest offers on a buy listing, the two highest bids on a sell listing).

5. Metis guarantees that for the weekly price index at least five datapoints from independent companies for every particular product were considered.

In case of a smaller number of datapoints or their absence during the reporting week, Metis continues the price trend of the previous week and makes a corresponding note on the Metalshub platform near the product’s price index chart.

6. In order to have comparable data forming the index the price points are first normalised to cash payment terms and FCA a warehouse in a major European sea port.

In order to normalise the price data relative to the payment terms, the interest rate of the respective central bank is used. For Europe, it is the base rate of the European central bank+3%.

Actual transport rates are used to normalise price data in relation to logistics: E.g. from DDP/DAP based prices, shipping costs to the nearest major European seaport are deducted.

7. The considered and normalised data points will be weighted by Volume (transactions with volume exceeding 100 mt are considered as 100 mt), Transaction (100%) and negotiation (10%). Thus, the difference in prices for different batch volumes is taken into account.

8. The calculated price indices are immediately and automatically published on the Metalshub platform and via Metis interface.

## [METIS MARKET PRICES METHODOLOGY]

Metis market price discovery is based on regular contact with a wide network of market participants. This network is constantly reviewed and expanded to ensure a balance of buyers and sellers, and reflect actual activity in the market.

All price assessments are carried out by experienced analysts with deep knowledge of the industry, and all dialogues with the market sources are treated in a strictly confidential way with no information shared with third parties or Metalshub team.

### ***Data collection***

Metis team executes daily price discovery for bulk and noble ferroalloys market in Europe by reaching out to the wide network of market participants, including producers, consumers, and traders. The conversations can be done via telephone, email, private one-to-one instant messenger services or any other private means of communication. All price data and additional information is confidential and stored securely.

Metis collects deal prices, offer prices, bids, price sentiments and assessments, talking to market participants. Deals prices, however, have the highest priority during the final market price range calculation.

Metis seeks to verify each deal price with both parties but when it is not possible, deals will be accepted by one party of a transaction. Metis also collects the information about chemical composition, delivery date, volume and payment terms.

Admissible price data is limited to transactions concluded at arms-length. This means a trade must be between companies who are unrelated in ownership and/or where the transaction is not part of any other arrangement. This therefore necessarily excludes intra-company transfers.

## ***Final Metis market price range calculation***

### *Standard process*

The high and low values of the published price range are established as follows:

1. All data points submitted are assessed against admissibility criteria in the relevant product specification and reliability of the data point provider.
  - a. Data points which meet the criteria without normalisation are determined as acceptable.
  - b. Data points that require normalisation and can be normalised are normalised, and the resulting data determined as acceptable.
  - c. All other data points are rejected and will not be used in subsequent price evaluation.
  
2. Expert judgement is used to establish the high and low values of the published price range. Metrics such as the standard deviation may be used as a guide to this process, but not as a sole determinant of the range.

### *Exclusion of outliers*

Metis experts may use expert judgement in the exclusion of a data point as an input to the calculation of the final price.

Any transaction that deviates from the collected price data for the trading period will receive extra scrutiny from Metis team. For example, if a transaction is considered to be a potential outlier, supporting documentation as a means of further authentication may be asked for.

Transactions verified by both buyer and seller or authenticated with supporting documentation will normally carry more weight in a final assessment than transactions reported without any supporting documentation.

### *Price determination in an illiquid market*

In the case that there are no data points that meet, or after normalisation can meet, the methodology pricing definition in any price assessment time period, the previous published price will be rolled over and used as the final assessment value for the published price.

### *Metalshub data usage*

Strictly anonymised Metalshub price and trade data are only supporting the Metis team to validate information received from market participants.

The Metalshub Price Indices are generated solely based on platform activity, such as transactions, bids, and offers. Metis Market Prices (price assessments) will not be included into the Metalshub index.

In turn, Metis Market Prices are based on the data collected through journalistic methods, and only validated by Metalshub data.

### ***Metalshub Data security***

Access to data on Metalshub is strictly limited to a minimal number of Metalshub employees. Therefore, the Metis team has only access to anonymized transaction data from the Metalshub platform. All this information from Metalshub will be only used to verify information received from market participants and will not be shared with anyone. Hence all information regarding individual negotiations remain confidential.



## [TRADING METRICS METHODOLOGY]

The Metalshub Trading Metrics provided by Metis service are solely based on real data from real transactions and trading activities from the digital Metalshub platform. The information is collected automatically without any manual work. This methodology minimises the risk of information manipulation.

The raw data generated on the platform include all parameters of the transaction/negotiation, including the quantity, full chemical specification, payment terms, packaging, and transportation cost. It also includes information on every round of negotiations (counter-proposals), including the mentioned above data for each of those rounds.

Every index from Trading metrics is based solely on the consumers listings (Request for Quotation), excluding intra-trade listings and "request for bids" listings.

All Trading metrics are provided on monthly basis.

The confidentiality of Metalshub users' price data is of utmost importance to Metis. We will never share individual data points and even employees of Metalshub only have restricted access to raw data.

***Metis provides the following trading metrics for the specific commodities:***

**Demand** – the total volume of certain material requested by the consumers on Metalshub during the reported month compared to the average volume over the last 12 months.

*Example:*

<i>Previous month</i>	<i>Volume</i>
<i>Month 1</i>	<i>400</i>
<i>Month 2</i>	<i>600</i>

Month 3	550
Month 4	320
Month 5	700
Month 6	600
Month 7	450
Month 8	613
Month 9	530
Month 10	400
Month 11	600
Month 12	650
Average	534,41

In the reporting month, the requested volume was 445. Then, the Demand trading metrics for the reporting month will be calculated as a percentage of the average of the last 12 months.

*Demand = 445/534.41 = 0.83, or 17% lower than the average of the last 12 months.*

**Rounds of negotiations** – the average number of proposals and counter-proposals submitted by seller and buyer within the negotiations, per listing.

*Example:* During the reporting period, there were 2 listings (requests for quotations) from European consumers on Metalshub. Listing 1 received 5 negotiations. Listing 2 received 3 negotiations. Under each negotiation of listing 1, the seller and buyer submitted 3 proposals until the negotiation was either accepted or rejected. Under negotiation 1 of the listing 2 there were 3 rounds of proposals, under negotiation 2 – 2 rounds. Under negotiation 3 – 1 round.

*Then, the average number of negotiations for Listing 1 is  $3 \cdot 5 / 5 = 3$ . The average number of negotiations for Listing 2 is  $(3+2+1) / 3 = 2$*

*The total Round of negotiations metric is  $(3+2) / 2 = 2.5$*

Listing 1					Listing 2		
Negotiation 1	Negotiation 2	Negotiation 3	Negotiation 4	Negotiation 5	Negotiation n1	Negotiation n2	Negotiation n3

3 proposals	3 proposals	3 proposals	3 proposals	3 proposals	3 proposals	2 proposals	1 proposal
-------------	-------------	-------------	-------------	-------------	-------------	-------------	------------

**Winner Price Reduction** – the average amount of price reduction of the winners of every listing from their initial price, in percentage terms.

*Example:* there were 5 listings during the reporting period. Every listing's winner reduced his initial price during rounds of negotiations before the final (winning) price was achieved.

Listing	Winner's initial price	Winner's final price	Winner's price reduction
Listing 1	200	195	-3%
Listing 2	230	215	-7%
Listing 3	190	185	-3%
Listing 4	190	189	-1%
Listing 5	192	187	-3%

*The Winner Price Reduction metrics over the month is the average of all price reductions of every listing's winners.  $(3+7+3+1+3)/5 = 3.4\%$*

**Volatility** – an index for indicating the average price volatility for a specific commodity traded on Metalshub during a month. The index is calculated as a standard deviation of price values of all price data points from the weighted average index.

*Example:*