

Base metals forecasts



Methodology and price
specifications – March 2024

Mission statement

Fastmarkets Metals 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 with Fastmarkets MB and Fastmarkets AMM since 1913 and 1882 respectively. The research arm of Fastmarkets Metals and Mining provides forecasts and analysis based on price assessments from Fastmarkets MB and Fastmarkets AMM. Established in 1991, we have provided regular, insightful analysis and forecasts to businesses around the world to help them make informed and strategic decisions and recommendations. 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 methodologies is maintained. We do not have a vested interest in the markets on which we report. Within the research function of Fastmarkets, we stress our ability to operate independently of the rest of the Group, and the existence of formal rules of confidentiality that exist between the pricing and news providers within the Group and the research and consulting functions.

Introduction

Fastmarkets' reporters and analysts 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 teams for both metals and forest products. We have offices in London, New York, Boston, San Francisco, Eugene, Charlottesville, Atlanta, Pittsburgh, Beijing, Shanghai, Hong Kong, Singapore, Melbourne, Sao Paulo, Mumbai, Brussels, Helsinki, Dnipro and Istanbul. The aim of this document is to provide a clear overview of Fastmarkets' forecasting methodology and specifications for the prices forecast. If you have any questions, please contact Fastmarkets Executive VP Analytics Dan Klein at dan.klein@fastmarkets.com for metals, Fastmarkets Metals and Mining research leader, Kim Leppold, at kim.leppold@fastmarkets.com about our forecast products.

Fastmarkets' forecasting methodology

Base metals

Fastmarkets provides a dynamic, bottom-up and unbiased approach to short-term (<2-year) monthly and quarterly price forecasting.

The methodological model takes a three-way approach to account for:

1. supply-demand fundamentals
2. underlying costs & implied margins
3. market sentiment

This framework enables the analysts to determine the key but changing drivers of price movements in the past and future.

To source the information to prepare our price forecasts, forecasters conduct both extensive desk-based research as well as primary research; the latter being more heavily weighted toward our near-term (<3 month) view.

Fastmarkets' forecasting methodology includes drawing on expertise from our in-house analysts with forecasting experience of up to 20-25 years who rely heavily on the intelligence gathering and data analytics insight of our extensive editorial teams.

We supplement this valuable network with our proprietary databases, which focus on the underlying physical market movements that drive prices and the archive of spreads between price series that instruct and contextualize our understanding of margins.

These are supported by exhaustive third-party data and economic forecasting services, which help us to build the fundamental drivers of the future.

Our analysts access extensive existing relationships across the industry through face time and written interviews, and take into account the opinions provided to our price reporters and data analytics team. This cross-referencing approach helps us to value the intelligence, generate insight and help in our mission to illuminate markets.

Modeling Fastmarkets' forecasts

Generating our forecasts is an involved process that combines macroeconomic theory, market insight,

statistical modeling and machine learning. It is this combination of expert knowledge and cutting-edge data modeling which generates our trusted forecasts. They also allow deeper insight into the fundamental workings of a market and elicit data patterns that give insight and relative weighting of key market factors that drive price direction, such as the Chinese Purchasing Manager's Index. These insights and their statistical robustness allow our expert analysts to improve forecast accuracy and reliability and to inform their commentary along with traditional macro-economic and sentiment analysis.

Our data collection and process:

- Include price benchmarks - which refer to prices used in industrial contracts - and prices that are viewed as trendsetters for a particular region or a product group
- Bespoke approach to each price forecast
- Draw on a comprehensive set of macro-economic data
- Machine learning approach to find the best model candidate and predictions with rigorous checks on model approach and output
- Models undergo periodical review
- Rigorous approval process

Base metals price, premium and index forecasts

Crucial to the results of our base metals price forecasts is a detailed analysis of distinct product-specific factors:

- Fastmarkets' internal forecasts for Base metals production and consumption in individual countries or regions
- Estimated inventory levels in the supply chain
- Net trade flows and trade policy changes
- Projected performance of major base metals consuming sectors, such as construction, automotive, mechanical engineering, metal goods, domestic appliances and the energy sectors, taking into account the share of a particular sector
- Market sentiment, including technical analysis and analysis of news/data releases.
- Analysis of speculative positioning on metal exchanges and changes in speculative positioning.
- Seasonal trends and patterns.
- Correlation with other financial assets, including the other components of the base metals complex and the broader commodities asset class, currency markets and equity markets.

Forecast list

MB-AL-0004 Aluminium P1020A premium, in-whs dp Rotterdam, \$/tonne

Quality: P1020A or 99.7 % Minimum Al purity (Si 0.10% max, Fe 0.20% max). Ingot

Quantity: Min 100 tonnes

Location: In-warehouse Rotterdam duty-paid, premium on top of LME cash prices

Unit: USD/tonne

Timing: Within 4 weeks

Payment terms: Cash against documents (7 days after bill of lading date); other terms normalized

Publication: Twice weekly. Tuesday and Friday 4pm London

MB-AL-0020 Aluminium P1020A premium, ddp Midwest US, US cents/lb

Quality: London Metal Exchange specification P1020A or 99.7% minimum Al purity (silicon 0.10% max, iron 0.20% max, zinc 0.03%, gallium 0.04%, vanadium 0.03%)

Location: Delivered consumer works Midwest

Unit: US cents per pound

Quantity: 100 tonnes Delivery: Within four weeks Form: Ingot, T-bar, Sow

Payment terms: 30 days, other payment terms normalized

Publication: Twice a week, every Tuesday and Friday between 3pm and 4pm London time

MB-AL-0343 Aluminium P1020A (MJP) spot premium, cif Japan, \$/tonne

Quality: P1020A or 99.7 % Minimum Al purity (Si 0.10% max, Fe 0.20% max) in line with LME specifications. Ingot, T-bar, sow

Quantity: Min 100 tonnes

Location: cif in main Japanese ports at Yokohama, Nagoya and Osaka, premium on top of LME cash prices

Timing: Within 6 weeks

Unit: USD/tonne

Payment terms: Cash against documents (2 days after Bill of lading date)

Publication: Twice weekly. Tuesday and Friday by 4pm London time

Notes: Excluding metal from LME warehouses and metal subject to international sanctions. Assessed by Fastmarkets' Singapore office

MB-AL-0345 Aluminium P1020A premium, cif Shanghai, \$/tonne

Quality: P1020A or 99.7 % Minimum Al purity (Si 0.10% max, Fe 0.20% max). Ingot

Quantity: Min 100 tonnes

Location: cif Shanghai, premium on top of LME cash prices

Unit: USD/tonne

Timing: Within 4 weeks

Payment terms: Letter of Credit or Telegraphic Transfer, other payment terms normalized

Publication: Monthly, last Tuesday of the month 3-4pm London time

MB-ALU-0002 Alumina index, fob Australia, \$/tonne

Quality: Smelter-grade alumina, minimum purity of 98.5% Al₂O₃

Quantity: 5,000 tonnes

Location: fob Bunbury/Kwinana, Australia (other Pacific origins normalized)

Timing: Within 2 months

Unit: US\$ per dry metric tonne (dmt)

Payment Terms: 30 days after loading

Publication: Daily at 4pm London time

Notes: Bulk carrier. Data history from Augusts 2010. Full methodology available here:

MB-CU-0310 Copper grade 1 cathode premium, ddp Midwest US, \$/tonne

Quality: Delivered premium over cost of Grade 1 Electrolytic Copper Cathode as adopted by the American Society for Testing and Materials (B115-00)

Location: Delivered Midwest

Unit: US cents per pound

Quantity: Min 20 tonnes

Delivery: Within 4 weeks

Form: Cathode

Payment terms: 30-day payment, other payments terms normalized

Publication: Weekly, every Tuesday between 3pm and 4pm London time

MB-CU-0287 Copper concentrates TC index, cif Asia Pacific, \$/dmtu

Quality: Concentrate. Copper content 26%; Au 1.1g/dmt; Ag 75g/dmt; S 32%; Fe 28%; Pb 0.07%; Zn 1%; As 0.17%; Sb 0.018%; Hg 2.5ppm; Bi 145ppm

Quantity: Min 5,000 tonnes

Location: cif Asia Pacific

Unit: USD/tonne

Timing: Within 13 weeks

Payment terms: Letter of credit, quotation period M+3

Publication: Weekly. Friday at 4pm London time

Notes: Full methodology available here.

MB-CU-0288 Copper concentrates RC index, cif Asia Pacific, \$/dmtu

Quality: Concentrate. Copper content 26%; Au 1.1g/dmt; Ag 75g/dmt; S 32%; Fe 28%; Pb 0.07%; Zn 1%; As 0.17%; Sb 0.018%; Hg 2.5ppm; Bi 145ppm

Quantity: Min 5,000 tonnes

Location: cif Asia Pacific

Unit: US cents/lb

Timing: Within 13 weeks

Payment terms: Letter of credit, quotation period M+3

Publication: Weekly. Friday at 4pm London time

Notes: Full methodology available here

MB-CU-0369 Copper grade A cathode premium, cif Rotterdam, \$/tonne

Quality: Grade A cathode 99.9935% min copper conforming to LME specifications BS EN 1978:1998 – Cu-CATH-1

Quantity: Min 25 tonnes

Location: cif delivery in Rotterdam, duty unpaid premium on top of LME cash prices

Timing: Within 4 weeks

Unit: USD/tonne

Payment terms: Cash, other payment terms normalized

Publication: Once every two weeks. Tuesday 3-4pm London time

MB-CU-0403 Copper grade A cathode premium, cif Shanghai, \$/tonne

Quality: Grade A cathode 99.9935% min copper conforming to LME specifications BS EN 1978:1998 – Cu CATH-1

Quantity: Min 25 tonnes

Location: CIF Shanghai port, duty-unpaid premium on top of LME cash prices

Timing: Within 6 weeks

Unit: USD/tonne

Payment terms: Letter of credit, telegraphic transfer or documents against payment, other payment terms normalized

Publication: Daily. 3-4pm London time

Notes: Full methodology available here:

MB-PB-0103 Lead spot concentrate TC, low silver, cif China, \$/tonne

Quality: 55-65% lead content concentrate, low silver below 1kg, arsenic below 0.7%, mercury below 0.05%

Quantity: 2,000 tonnes

Location: Treatment Charge on cif basis delivery to Chinese ports

Timing: Within 13 weeks

Unit: USD/tonne

Payment terms: Letter of Credit, quotation period M+3

Publication: Monthly. Last Friday of the month, 3-4pm London time

MB-PB-0006 **Lead 99.97% ingot premium, ddp Midwest US, US cents/lb**

Quality: Delivered premium over cost of lead ingot of 99.97% purity conforming to BS EN 12659:1999, GB/T 469/2005 or ASTM B29-03 (2009)

Location: Delivered consumer works, Midwest

Unit: US cents per pound

Publication: Daily

Notes: Calculated formula: London Metal Exchange official cash AM bid lead price plus AMM lead premium

MB-PB-0107 **Lead 99.97% ingot premium, cif Southeast Asia, \$/tonne**

Quality: Lead ingot of 99.97-99.99% purity conforming to LME specification BS EN 12659:1999, GB/T 469/2005 or ASTM B29-03 (2009)

Quantity: 25 tonnes

Location: cif to ports of Vietnam (Ho Chi Minh/Haiphong), Thailand (Bangkok, Laem Chabang), Malaysia (Johor, Port Klang), Indonesia (Jakarta), duty-unpaid premium on top of LME cash prices

Timing: Within 5 weeks

Unit: USD/tonne

Payment terms: Letter of credit, telegraphic transfer or cash against documents, other terms normalized

Publication: Once every two weeks. Tuesday 3-4pm London time

MB-NI-0240 **Nickel 4x4 cathode premium, delivered Midwest US, US cents/lb**

Quality: 4x4 cut cathode. 99.8% minimum primary nickel conforming to LME specification: ASTM B39-79 (2013) or GB/T 6516-2010 - Ni9990 grade specification: ASTM B39-79 (2013) or GB/T 6516-2010 - Ni9990 grade

Quantity: Min 20 tonnes

Location: Delivered consumer works US

Timing: Within four weeks

Unit: US cents per lb

Payment terms: 30 days, other payment terms normalized

Publication: Weekly. Tuesday 3-4pm London time

MB-NI-0002 **Nickel briquette premium, in-whs Rotterdam, \$/tonne**

Quality: Briquette. 99.80% min primary nickel conforming to LME specification: ASTM B39-79 (2013) or GB/T 6516-2010 - Ni9990 grade

Quantity: 20 tonnes

Location: In-warehouse Rotterdam, premium on top of LME cash prices

Timing: Within one week

Unit: USD/tonne

Payment terms: Cash, other payment terms normalized

Publication: Weekly. Tuesday 3-4pm London time

MB-NI-0142 **Nickel min 99.8% full plate premium, cif Shanghai, \$/tonne**

Type: Assessed range and single number

Quality: Full plate. 99.80% min primary nickel conforming to LME specification: ASTM B39-79 (2013) or GB/T 6516-2010 - Ni9990 grade

Quantity: Min 10 tonnes (under consultation to increase to 60 tonnes)

Location: cif delivery basis Shanghai port, premium on top of LME cash prices

Timing: With 6 weeks

Unit: USD/tonne

Payment terms: Cash against document, Letter of credit, telegraphic transfer, and other terms normalized

Publication: Weekly. Tuesday 3-4pm London time

MB-NI-0247 **Nickel sulfate premium, cif Japan, and Korea, \$/tonne**

Quality: Accepted by buyer for use in battery applications with chemical composition: Ni content, base 22.3% max, min 22%, cobalt 50ppm max

Quantity: Min 1 tonne

Location: cif major ports Japan, and Korea, on top of monthly average LME nickel cash price

Timing: Within 60 days

Unit: USD/tonne

Payment terms: Cash against document, Letter of credit, telegraphic transfer, and other terms normalized

Publication: Weekly. Friday, 4pm London time

MB-SN-0002
Tin 99.9% ingot premium, in-whs Rotterdam, \$ per tonne

Quality: Ingot. 99.9% tin purity conforming to LME specification: BS EN 610:1996 with 100-300 ppm lead content

Quantity: Min 20 tonnes

Location: In-warehouse Rotterdam, premium on top of LME cash prices

Timing: Within 2 weeks

Unit: USD/tonne

Payment terms: Cash against conditional release, other payment terms normalized

Publication: Once every two weeks. Tuesday 3-4pm London time

MB-SN-0011
Tin grade A min 99.85% ingot premium, ddp Midwest US, \$/ tonne

Quality: Delivered premium over cost of tin of 99.85% purity (min) conforming to BS EN 610:1996

Quantity: Min 20 tonnes

Location: ddp US Midwest

Timing: Within 2 weeks

Unit: US dollars per tonne

Payment terms: 30-days, other terms normalized

Publication: Once every two weeks. Tuesday 3-4pm London time

MB-ZN-0001
Zinc SHG min 99.995% ingot premium, dp fca Rotterdam, \$/ tonne

Quality: Special High Grade zinc ingot of minimum 99.995% purity, conforming to LME specifications and relevant standards: BS EN 1179:2003, ISO 752:2004 - ZN-1 grade, ASTM B6-12 - LME grade or GB/T 470- 2008

Quantity: Min 100 tonnes

Location: Free-carrier basis delivery in Rotterdam, duty-paid premium on top of LME cash prices

Timing: Within 4 weeks

Unit: USD/tonne

Payment terms: Cash, other payment terms normalized

Publication: Weekly. Tuesday 3-4pm London time

MB-ZN-0005
Zinc SHG min 99.995% ingot premium, ddp Midwest US, US cents/lb

Quality: Min 99.995% special high grade zinc ingot, conforming to LME specifications and relevant BS EN standards

Quantity: Min 25 tonnes

Location: Delivered consumer works Midwest US

Timing: Within 4 weeks

Unit: US cents per pound

Payment terms: 30 days, other payment terms normalized

Publication: Weekly. Tuesday 3-4pm London time

MB-ZN-0106
Zinc SHG min 99.995% ingot premium, cif Shanghai, \$/per tonne

Quality: Special High Grade zinc ingot of minimum 99.995% purity, conforming to LME specifications and relevant standards: BS EN 1179:2003, ISO 752:2004 - ZN-1 grade, ASTM B6-12 - LME grade or GB/T 470- 2008

Quantity: Min 25 tonnes Location: cif Shanghai port, premium on top of LME cash prices

Timing: Within 4 weeks

Unit: USD/tonne

Payment terms: Letter of credit, telegraphic transfer or documents against payment, other payment terms normalized

Publication: Once every two weeks. Tuesday 3-4pm London time

MB-ZN-0110
Zinc spot concentrate TC, cif China, \$/per tonne

Quality:	45-55% zinc content, low silver (0-170g/t), silica 3.5-4.5%, copper below 3% (high copper 4-5%), lead below 3.5% (total copper, lead, silica at max 6-7%), arsenic below 0.6%, cadmium below 0.33% and mercury below 0.06%
Quantity:	Min 2,000 tonnes
Location:	cif Chinese ports
Timing:	Within 13 weeks
Unit:	USD/tonne
Payment terms:	Letter of Credit, quotation period M+3
Publication:	Second and last Friday of each month

XL-AL-FRC.O
LME aluminium cash official prices, \$/tonne

Quality:	LME specifications P1020A or 99.7% min Al purity (Si 0.10% max, Fe 0.20% max)
Quantity:	25 tonnes lot size
Unit:	USD/tonne
Publication:	LME official settlement: 12.30-1.25pm London time

XL-CA-FRC.O
LME copper cash official price, \$/tonne

Quality:	LME specifications: Grade A cathode 99.9935% min Cu conforming to BS EN 1978:1998 – Cu-CATH-1, GB/T 467-2010 - Cu-CATH-1 or ASTM B115-10 - cathode Grade 1
Quantity:	25 tonnes lot size
Unit:	USD/tonne
Publication:	LME official settlement: 12.30-1.25pm London time

XL-PB-FRC.O
LME lead cash official price, \$/tonne

Quality:	LME specifications: Lead ingot of 99.97-99.99% purity conforming to BS EN 12659:1999, GB/T 469/2013 or ASTM B29 2019
Quantity:	25 tonnes lot size
Unit:	USD/tonne
Publication:	LME official settlement: 12.30-1.25pm London time

XL-NI-FRC.O
LME nickel cash official price, \$/tonne

Quality:	LME specifications: Primary Ni 99.80% min purity conforming to ASTM B39-79 (2018) or GB/T 6516-2010 - Ni9990 grade
Quantity:	6 tonnes lot size
Unit:	USD/tonne
Publication:	LME official settlement: 12.30-1.25pm London time

XL-SN-FRC.O
LME tin cash official price, \$/tonne

Quality:	LME specifications: 99.85% min purity conforming to BS EN 610:1996
Quantity:	5 tonnes lot size
Unit:	USD/tonne
Publication:	LME official settlement: 12.30-1.25pm London time

XL-ZS-FRC.O
LME zinc cash official price, \$/tonne

Quality:	LME specifications: Special high-grade of 99.995% min purity conforming to BS EN 1179:2003, ISO 752:2004 - ZN-1 grade, ASTM B6-18 or GB/T 470-2008
Quantity:	25 tonnes lot size
Unit:	USD/tonne
Publication:	LME official settlement: 12.30-1.25pm London time

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