

Index Methodology Guide for the FactSet Japan Metal Business Index™

Version 1.0 – August 11, 2021

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Index Introduction and Objective

1.1 Index Overview

The FactSet Japan Metal Business Index is an equity benchmark designed to track the performance of Japanese companies engaged in metal business such as metal mining, metal production, metal trading, and other related services.

The FactSet Japan Metal Business Index is a float-adjusted, modified market capitalization weighted index reconstituted and rebalanced semi-annually.

The FactSet Japan Metal Business Index is calculated and maintained by Solactive AG based on a methodology developed by FactSet. It is calculated on a price, total and net total return basis in Japanese Yen (JPY). The index is calculated continuously, and on an end-of-day basis, from Monday to Friday from 1:00 a.m. to 10:50 p.m. CET (Central European Time). Index values are distributed via various data channels and market data vendors, including the price marketing services of Boerse Stuttgart AG. End-of-day price and total return values of the index may also be obtained from FactSet upon request.

Whenever possible, constituent changes to the index are announced five business days before becoming effective.

1.2 Inception Date and Base Value

The Index Inception Date was January 29, 2016 with a base value of 1000.00. The inception date refers to when the first back-tested index value was calculated. The back test is based on a similar methodology used to calculate the index when it was officially launched on August 11, 2021.

1.3 Index Valuation Days

Index Valuation Days are business days, Monday to Friday where the Tokyo Stock Exchange is opened for trading.

1.4 Commencement Date

The index commencement date was August 11, 2021. Commencement date refers to when the index was officially launched with continuous and end-of-day calculations.

1.5 Reconstitution and Rebalance Schedule

The index is reconstituted and rebalanced semi-annually after the close of the last business day in January and July each year (“Reconstitution Day” and “Rebalance Day”).

If any of the existing or new index components is not trading on Reconstitution Day/Rebalance Day due to an exchange holiday, the reconstitution/rebalance is moved to the next Japan business day.

The data used to reconstitute and rebalance the index is as of the close of 2nd Friday of January and July (“Selection Day”). Subsequent adjustment to the index composition may be made to account for corporate actions that occur between the Selection Day and the Reconstitution Day or Rebalance Day.

Index Construction

2.1 Constituent Selection and Weighting Schema

1. Select all common stocks primarily listed in Tokyo Stock Exchange and JASDAQ.
2. Select securities with a minimum total market capitalization of \$20 Billion JPY and a minimum three-month Average Daily Trading Value (ADTV) of \$100 Million JPY.

Existing constituent may remain in the index if their total market capitalization is greater than \$16 Billion JPY and three-month ADTV is greater than \$80 Million JPY.

3. Select securities that are classified to one of the following forty-six (46) industries as defined by FactSet RBICS Focus* Level 6:

- Alumina Refineries
- Aluminum Manufacturing
- Ball and Roller Bearings Products
- Bauxite Ore Mining
- Carbon and Graphite Products Manufacturing
- Coal and Metals Distribution
- Cobalt Ore Mining
- Copper Ore Mining
- Copper-Derived Structural Shape Manufacturing
- Diversified Industrial Distribution**
- Diversified Materials**
- Diversified Metal Ore Mining
- Diversified Primary Metals Processors
- Fabricated Aluminum Structural Shape Manufacturing
- Fasteners Manufacturing
- General Metal and Mineral Products Manufacturing
- General Metal Parts and Components Makers
- Lead Ore Mining
- Lithium Ore Mining
- Locks and Deadbolts Manufacturing
- Machine Shops
- Metal Processing and Metal Service Centers
- Metal Recycling Providers
- Metal Treatment Technologies and Services
- Mixed Non-Ferrous and Ferrous Metals Ore Mining
- Molybdenum Ore Mining
- Multinational Gold Ore Mining
- Multiple Precious Metals Ore Mining
- Multi-Product Mining
- Multi-Type Alumina and Aluminum Product Makers
- Multi-Type Non-Ferrous Metal Products Makers
- Nickel Ore Mining
- Other Metal Processing and Recycling Providers
- Other Metal Products Makers
- Other Non-Ferrous Metal Products Manufacturing
- Other Non-Ferrous Metals Ore Mining
- Pan-Asia Gold Ore Mining
- Platinum and Palladium Metals Ore Mining
- Rare Earth Elements Ore Mining
- Rest of Asia Gold Ore Mining
- Silver Ore Mining
- Stamping and Forging Shops
- Titanium Sponges and Structural Shape Products
- Tungsten Ore Mining
- Zinc Metal Products Manufacturing
- Zinc Ore Mining

*RBICS Focus classifies a company to its primary line of business that generally generates 50% or more of its revenues.

** Security must have 25% or more aggregated revenue from one or more of the other 45 RBICS L6 excluding Diversified Industrial Distribution and Diversified Materials.

4. Securities that remain after Step 1 to 3 are ranked by their float-adjusted market capitalization, in descending order. Select up to top 30 securities.
5. Apply the float-adjusted modified market capitalization weighting methodology to securities that remain by dividing their individual float-adjusted market capitalization to the sum float-adjusted market capitalization of all securities.

Individual security weights are capped at 10% with excess weights redistributed proportionally among remaining uncapped securities. If this redistribution leads to additional security weights exceeding 10%, the aforementioned redistribution process is repeated iteratively until no security weight exceeds 10%.

Aggregate weight of "Diversified Industrial Distribution" and "Coal and Metals Distribution" should not exceed 30%.

In addition to the above selection schema, FactSet may at its discretion and in consultation with index licensee, modify one or more selection criterion to ensure relevant and timely capture of the theme. Whenever possible, any modifications shall be announced 60 days prior to annual Reconstitution Day.

2.2 Index Return Formulas

The price, total and net total returns levels of the index are calculated using the following formulas.

$$I_{(t)} = \frac{\sum_{i=1}^n S_{i(t)} \times P_{i(t)}}{D_{(t)}}$$

where:

$I_{(t)}$ = Index value on Index Valuation Day (t)

$D_{(t)}$ = Divisor on Index Valuation Day (t)

n = Number of stocks in the index

$P_{i(t)}$ = Closing price of stock (i) on Index Valuation Day (t)

$S_{i(t)}$ = Number of allocated shares of stock (i) on Index Valuation Day (t)

and on Inception Date, where (t) = 0, the initial divisor is calculated as follows:

$$D_{(0)} = \frac{\sum_{i=1}^n S_{i(0)} \times P_{i(0)}}{I_{(0)}}$$

where:

$I_{(0)}$ = Price Returns Index value on Index Inception Date

$D_{(0)}$ = Divisor on Index Inception Date

n = Number of stocks in the index on Index Inception Date

$P_{i(0)}$ = Price of stock (i) on Index Inception Date

$S_{i(0)}$ = Number of allocated shares of stock (i) on Index Inception Date

Allocated shares (“S”) are the number of shares required for each constituent such that all constituents are float-adjusted modified market capitalization weighted. Allocated shares (“S”) would be adjusted accordingly to account for Corporate Actions.

Net total return is calculated to account for the effect of tax withholding on dividends by adjusting dividend taken out due to tax payment.

2.3 Index Divisor Adjustments

From time to time, the index divisor is adjusted to account for corporate actions that could distort index value and continuity using the following formula:

$$D_{(t+1)} = D_{(t)} \times \frac{\sum_{i=1}^n AS_{i(t+1)} \times AP_{i(t+1)}}{\sum_{i=1}^n S_{i(t)} \times P_{i(t)}}$$

where:

- $D_{(t+1)}$ = Divisor for Index Valuation Day (t+1) after CA and rebal adjustment
- $D_{(t)}$ = Divisor for Index Valuation Day (t)
- $AP_{i(t+1)}$ = Adjusted price of stock (i) calculated for open on Index Valuation Day (t+1) after CA adjustment
- $P_{i(t)}$ = Closing price of stock (i) on Index Valuation Day (t)
- $S_{i(t)}$ = Number of allocated shares of stock (i) on Index Valuation Day (t)
- $AS_{i(t+1)}$ = Adjusted number of allocated shares of stock (i) for open on Index Valuation Day (t+1) after CA adjustment.

Divisor adjustments are generally implemented on the date the corporate action becomes effective, such that for example, the ex-dividend date rather than the payment date is used to time the divisor adjustment.

Find below a detailed calculation for AP, AS, and S in case of corporate actions and rebalancing.

$AP_{i(t)}$ = Adjusted price of stock (i) is determined for the open on Index Valuation Day (t) shall mean:

- If index constituent opens ex-date in respect of the corporate action, then $AP_{i(t)}$ is determined as per Corporate Action Adjustment Section.
- Otherwise

$$AP_{i(t)} = P_{i(t-1)}$$

$S_{i(t)}$ = Number of allocated shares of stock (i) on Index Valuation date (t) is determined as

$$S_{i(t)} = AS_{i(t)}$$

$AS_{i(t)}$ = Adjusted number of allocated shares of stock (i) for open on Index Valuation Day (t) after CA adjustment is determined as:

- If such day opens immediately following the Rebalancing Day (t-1) and if:

- index constituent opens ex-date in respect to corporate action, then $AS_{i(t)}$ is determined as per Corporate Action Adjustment Section with $S_{i(t-1)}$ replace with:

$$S_{i(t-1)} = \frac{I_{(t-1)} \times Weight_{i(t-1)}}{P_{i(t-1)}}$$

- index constituent does not opens ex-date in respect to corporate action, then $AS_{i(t)}$ is determined as:

$$AS_{i(t)} = \frac{I_{(t-1)} \times Weight_{i(t-1)}}{P_{i(t-1)}}$$

- On any other day:

- index constituent opens ex-date in respect to corporate action, then $AS_{i(t)}$ is determined as per Corporate Action Adjustment Section
- Otherwise:

$$AS_{i(t)} = S_{i(t-1)}$$

where $Weight_{i(t-1)}$ is determined as per Section 2.1.

2.4 Corporate Action Adjustments

Special Cash Dividend:

$$AP_{i,t} = P_{i,t-1} - D_{i,t}$$

Where

t = Index Valuation Date (t) is ex-date for corporate action.

$D_{i,t}$ = Dividend amount corresponding to stock (i) with ex-date (t).

Spin-off Adjustment

If an index constituent (i.e. the parent company) distributes part of its business into a spun-off company, the spun-off company will be added to the Index according to the transaction terms on the ex-date.

The parent company will remain in the Index with unchanged calculation parameters. The spun-off company will remain in the Index until the next ordinary rebalancing.

The spun-off company will be added to the Index with an open price of zero on ex-date.

If the spun-off company does not start to trade on the effective date (i.e. ex-date), a theoretical price for the spun-off company will be implemented (**see the equation below**) as a fixed price until it commences trading, from which time official prices will be used.

$$P_{f(t)} = [P_{i(t-1)} - AP_{i(t)}] \times \text{Share Ratio}_{i(t)}$$

Where

$P_{i(t-1)}$ = Closing price of Parent Company on Index Valuation Date (t-1).

$AP_{i(t)}$ = Open price of Parent Company on Index Valuation Date (t).

$P_{f(t)}$ = Price of Spun-off Company on Index Valuation Date (t).

Rights Issue Adjustment

$$AP_{j,t} = \frac{P_{j,t-1} + C_{j,t} \times \text{Share Ratio}_{j,t}}{1 + \text{Share Ratio}_{j,t}}$$

$$AS_{j,t} = S_{j,t-1} \times (1 + \text{Share Ratio}_{j,t})$$

Where

$C_{j,t}$ = Official tender price.

Stock Splits Adjustment

$$AP_{j,t} = \frac{P_{j,t-1}}{\text{Share Ratio}_{j,t}}$$

$$AS_{j,t} = S_{j,t-1} \times \text{Share Ratio}_{j,t}$$

Stock distribution

$$AP_{j,t} = P_{j,t-1} \times \frac{1}{1 + \text{Share Ratio}_{j,t}}$$

$$AS_{j,t} = S_{j,t-1} \times (1 + \text{Share Ratio}_{j,t})$$

Index Maintenance

Constituent changes may occur between review periods due to corporate events that disqualify their eligibility for index inclusion. Adjustments to corporate events are described below:

3.1 Corporate Actions – Delisting

A constituent is removed immediately after being delisted from its primary markets.

3.2 Corporate Actions – Merger or Acquisition

If a merger or acquisition results in one constituent acquiring another, the acquiring company remains a constituent, and the acquired company is removed. If a non-constituent acquires a constituent, the acquired constituent is removed. If a constituent acquires a non-constituent, the acquiring constituent remains a constituent.

3.3 Corporate Actions – Spin-off

If a constituent spins or splits off a portion of its business, both the spun-off company and the parent company (the entity representing the existing constituent) will be kept in the index, and be considered for removal from the index at the next Reconstitution or Rebalance Day should they fail to meet the eligibility criteria in Section 2.1.

3.4 Corporate Actions – Bankruptcy

If a constituent is delisted after bankruptcy, it will be removed immediately with a price of 0 from the index.

Index Calculation and Data Correction

4.1 Index Calculation

Price, Total Return, and Net Total Return values for the FactSet Japan Metal Business Index are calculated by Solactive AG. The price, total and net total return values are calculated on a continuous and end-of-day basis by using the trading price for each component in the index from relevant exchanges and markets. Index values are rounded to 2 decimal places and divisors are rounded to 6 decimal places.

If trading in a stock is suspended prior to the market opening, the stock's adjusted closing price from the previous day will be used in the index calculation until trading commences. If trading in a stock is suspended while the relevant market is open, the official closing price published by relevant exchange for that stock will be used for all subsequent index calculations until trading resumes.

In case of exceptional market conditions disrupting normal closing auction, or causing official closing prices not being available, Solactive and FactSet reserve the right to utilize other prices in the calculation of the official closing level.

4.2 Data Correction

Incorrect index constituent data, corporate action data, or index divisors will be corrected upon detection. If such errors are discovered within five days of occurrence, they will be corrected retroactively on the day of discovery. If discovered after five days, corrective actions will be decided based on the errors' significance and feasibility of a correction.

4.3 Decision Making in Undocumented Events

A FactSet Index Committee consisting of select employees of FactSet Research Systems Inc. is responsible for amending rules as documented in the Index Methodology Guide due to undocumented or extraordinary events.

Additional Information

5.1 Contact Information

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