Index Methodology Guide for the FactSet Global Robotics & Automation Index™

Version 1.5 – January 27, 2025

Table of Contents

Index Introduction and Objective

1.1 Index Overview

The FactSet Global Robotics & Automation Index is an equity benchmark designed to track the performance of companies that are focused on developing and productizing hardware and software products related to robotics and automation. The index seeks to capture core players throughout the entire robotics and automation value chain, including technology component makers, AI software developers, industrial automation machineries, and robots and robotic equipment.

Furthermore, the index applies a profitability factor – Gross Profit-to-Assets (GPA) – to identify companies already generating positive returns on their assets, and minimizes exposure to companies that are early in their R&D spending cycle or in decline due to maturing technologies and products.

The FactSet Global Robotics & Automation Index is a float-adjusted modified market capitalization weighted index reconstituted annually, and rebalanced semi-annually.

The FactSet Global Robotics & Automation Index is calculated and maintained by Solactive AG based on a methodology developed by FactSet. It is calculated on a price and net total return basis in U.S. dollars (USD). Both price and net total returns of the index are calculated continuously and on an end-of-day basis, from Monday to Friday 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 net 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 May 22, 2015 with a base value of 100.00. 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 22, 2018.

1.3 Index Valuation Days

Index Valuation Days are business days, Monday to Friday.

1.4 Commencement Date

The index commencement date was August 22, 2018. 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 annually after the close of Friday three weeks from the second Friday of May each year (“Reconstitution Day”). Index constituent weights are rebalanced semi-annually after the close of Friday three weeks from the second Friday of May and November.

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 business day.

The data used to reconstitute and rebalance the index is as of the close of second Friday in May and November ("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. The securities are listed on one of the following 48 exchanges:

- Athens Exchange
- Australia Stock Exchange
- BM&F Bovespa*
- Bolsa de Valores de Lima
- Bombay Stock Exchange**
- Borsa Istanbul
- Borsa Italiana
- Budapest Stock Exchange
- Bursa Malaysia
- Colombia Stock Exchange
- Cyprus Stock Exchange
- Deutsche Borse Xetra
- Euronext Amsterdam
- Euronext Brussels
- Euronext Dublin
- Euronext Lisbon
- Euronext Paris
- Hong Kong Exchange
- Indonesia Stock Exchange
- JASDAQ
- Johannesburg Stock Exchange
- Korea Stock Exchange
- London Stock Exchange
- Madrid Stock Exchange
- Mexican Stock Exchange
- NASDAQ
- NASDAQ Dubai
- New York Stock Exchange
- New Zealand Stock Exchange
- NYSE American
- OMX Nordic Copenhagen
- OMX Nordic Helsinki
- OMX Nordic Stockholm
- Oslo Stock Exchange
- Philippine Stock Exchange
- Prague Stock Exchange
- Qatar Stock Exchange
- Santiago Stock Exchange
- Singapore Exchange
- SIX Swiss Exchange
- Stock Exchange of Thailand
- Taipei Exchange
- Taiwan Stock Exchange
- Tel Aviv Stock Exchange

- Tokyo Stock Exchange
- Toronto Stock Exchange
- Vienna Stock Exchange
- Warsaw Stock Exchange

*For BM&F Bovespa listed securities, only their ADR (American Depositary Receipt) or GDR (Global Depositary Receipt) listed in one of the aforementioned 48 exchanges would be eligible for index inclusion.

**Securities listed in Bombay Stock Exchange must also be listed in the National Stock Exchange of India (NSE) to be eligible. In addition, prices of the NSE listed securities would be used to calculate index returns.

2. The securities are common stocks, ADR, GDR.
3. The securities have a minimum float-adjusted market capitalization of U.S. $500 million or greater, and three-month Average Daily Trading Value (ADTV) of U.S. $1 million or greater.
4. Existing constituent may remain in the index if it has a minimum float-adjusted market capitalization of U.S. $375 million or greater, and three-month Average Daily Trading Value (ADTV) of U.S. $0.75 million or greater.
5. Securities that are Master Limited Partnership (MLP), royalty trust, or Business Development Company (BDC) are excluded.
6. The securities are classified as focused to one of the 52 following FactSet Revere Business Industry Classification System (RBICS) Level 6 Sub-industries:

- 3D Modeling/Rapid Prototyping Automation Providers
- Autonomous Control Ship Builders
- Autonomous Commercial/Transit Vehicle Production
- Building Components Automation Providers
- Business Intelligence Software
- Computer Aided Design (CAD) Software
- Diversified Customer Relationship Software
- General Factory Automation Makers
- Household Robot Makers
- IC-Level Electronic Design Software
- IC-Level Intellectual Property Software Libraries
- Image Sensor and Image Capture Semiconductors
- Industrial Robots and Robotic Assembly Line Makers
- Machine Vision and Quality Control Manufacturing
- Material Handling/Conveyor Equipment Manufacturing
- Mechanical Power Transmission (MPT) Manufacturing
- Microprocessor (MPU) Semiconductors
- Monitoring and Control Sensor/Instrument Products
- Motion Control and Precision Motors Manufacturing
- Multi-Industry-Specific Factory Machinery Makers
- Multimedia Design and Engineering Software
- Networking Semiconductors
- Other Automation Support Product Manufacturing
- Other Communications Semiconductors
- Other Design and Engineering Software
- Other Discrete Semiconductors
- Other Processor Semiconductors
- Other Programmable Logic andASIC Semiconductors
- Paper and Textile Automation Providers
- Plastics and Rubber Automation Providers
- Programmable Logic Device Semiconductors

- Sales Force Automation (SFA) Software
- Surgical Robotic Systems
- Vehicle Autonomous ControlElectronics Makers
- Vehicle Autonomous ControlSoftware
- Video Multimedia Semiconductors
- Virtual Reality Equipment
- Volatile Memory Semiconductors
- Wearable Technology
- Battery Production Equipment Manufacturing
- Alt. Energy Autonomous Transit Vehicle Production
- Conventional Autonomous Transit Vehicles Makers
- Quantum Processor Semiconductors
- 3D Printing Services
- Mixed Electric Motors and Motion Control Products
- Photovoltaic Production Equipment Manufacturing
- A.I./Large Scale Processing Graphics Controller
- Computer/Gaming Graphics Accelerator/Controller
- Data Center Graphics Accelerator/Controller
- Handheld Graphics Accelerator/Controller
- Diversified Hosting Services
- General Graphics Accelerator/Controller
- Artificial Intelligence Productivity Software

7. If a company has multiple share classes, only include the most liquid issue based on the highest three-month ADTV on Selection Day.
8. Calculate GPA (Gross Profits-to-Assets) for all remaining securities, then select the top 50 GPA ranked securities. GPA is defined as:
    - **Gross Profits / Total Assets**
9. Apply the float-adjusted modified market capitalization weighting methodology to securities that remain after Steps 1 to 8 by dividing their individual float-adjusted market capitalization to the sum float-adjusted market capitalization of all securities.

    Individual security weights are capped at 5.0%, and excess weights are redistributed proportionally among remaining uncapped securities. If this redistribution leads to additional security weights exceeding 5.0%, the aforementioned redistribution process is repeated iteratively until no security weight exceeds 5.0%.

The index must have a minimum 20 securities. If Steps 1 to 7 result in less than 20 securities, FactSet may reduce the minimum float-adjusted market capitalization requirement to U.S. $250 million or greater, and three-month Average Daily Trading Value (ADTV) to U.S. $0.5 million or greater.

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. Any modifications shall be announced 60 days prior to annual Reconstitution Day.

2.2 Index Return Formulas

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

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

where:

$I_{(t)}$ = Index value on Index Valuation Day (t)
$D_{(t)}$ = Divisoron 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)
$FX_{i(t)}$ = Spot FX rate published at 4:30 p.m. EST time on Index Valuation Day (t) required to convert closing price of stock (i) in index currency, USD.

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

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

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
$FX_{i(t)}$ = Spot FX rate published at 4:30 p.m. EST time on Index Inception Date required to convert closing price of stock (i) in index currency, USD.

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:

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

where:

$\boldsymbol{D_{(t+1)}}$ = Divisor for Index Valuation Day (t+1) after CA and rebal adjustment

$\boldsymbol{D_{(t)}}$ = Divisor for Index Valuation Day (t)

$\boldsymbol{AP_{i(t+1)}}$ = Adjusted price of stock (i) calculated for open on Index Valuation Day (t+1) after CA adjustment

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

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

$\boldsymbol{AS_{i(t+1)}}$ = 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.

$\boldsymbol{AP_{i(t)}}$ = 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

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

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

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

$\boldsymbol{AS_{i(t)}}$ = 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:

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

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

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

- 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:

$$AP_{i,t} = P_{i,t-1} - D_{i,t} \times FX_{d,t-1}$$

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).

$FX_{d,t-1}$ = Spot FX rate published at 4:30 p.m. EST fixing on Index Valuation Day (t) required to convert dividend amount in underlying stock currency, USD.

Spin-off Adjustment

On effective date, the spun-off security will be added to Index with a Price of 0 and the price of the parent company will remain unchanged.

$$AP_{i,t,s} = P_{i,t-1} - P_{f,t-1} \times Share\ Ratio_{f,t} \times FX_{j,t-1}$$

Where

$P_{f,t-1}$ = Closing price of Spin-off stock on Index Valuation Date (t-1).

$FX_{j,t-1}$ = Spot FX rate published at 4:30 p.m. EST on Index Valuation Day (t) required to convert price of spun-off company to constituent stock currency, USD.

Rights Issue Adjustment

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

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

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 companies and the parent companies (with the highest market value relative to the spun-off companies) 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 and net total return values for the FactSet Global Robotics & Automation Index are calculated by Solactive AG. The price 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 Sanctions Affecting Index Inclusion

Sanctions policies may affect investors' ability to transact or hold securities of certain issuers. FactSet monitors and reviews these sanctions' impact on its indices and amends the index rules as appropriate.

The following exclusionary rule is currently in effect:

- Russian Federation: All companies sanctioned by the United States (OFAC)[1] do not qualify for inclusion in FactSet equity indices. In addition, all companies with a Russian Federation country of risk as defined by FactSet, do not qualify for inclusion in FactSet equity indices.

[1] https://home.treasury.gov/policy-issues/financial-sanctions/sanctions-programs-and-country-information/ukraine-russia-related-sanctions

https://home.treasury.gov/policy-issues/financial-sanctions/sanctions-programs-and-country-information/russian-harmful-foreign-activities-sanctions

https://home.treasury.gov/policy-issues/financial-sanctions/sanctions-programs-and-country-information/belarus-sanctions

5.2 Contact Information

FactSet Research Systems Inc.
One Sansome St. Floor 20
San Francisco, CA 94104
Email: GoIndexing@factset.com

5.3 Version History

Version	Release Date	Notes
Version 1.0	September 13, 2018	First release
Version 1.1	February 10, 2020	Second release
Version 1.2	August 17, 2020	Third release
Version 1.3	May 6, 2022	Fourth release
Version 1.4	October 3, 2022	Fifth release
Version 1.5	January 27, 2025	Sixth release