

# **Index Methodology Guide for the FactSet Metaverse Industries Index™**

Version 1.0 – April 19, 2022

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# Index Introduction and Objective

## 1.1 Index Overview

The FactSet Metaverse Industries Index is an equity benchmark designed to track companies that are involved in the creation and enabling of digital environments such as virtual reality, augmented reality, computing hardware, software and other associated front-end user applications.

The FactSet Metaverse Industries Index is calculated and maintained by Solactive AG based on a methodology developed by FactSet. It is calculated on a price and total return basis in U.S. dollars (USD). Both the price and total returns of the index are calculated on an end-of-day basis, from Monday to Friday at 10:50 pm CET. 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.

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

## 1.2 Inception Date and Base Value

The Index Inception Date was June 8, 2018 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 April 19, 2022.

## 1.3 Index Valuation Days

Index Valuation Days are business days, Monday to Friday.

## 1.4 Commencement Date

The index commencement date was April 19, 2022. Commencement date refers to when the index was officially launched with end-of-day calculations.

## 1.5 Reconstitution and Rebalance Schedule

The index is reconstituted semi-annually after the close of business on the second Friday in June and December each year (“Reconstitution Day”). If the Reconstitution Day is a holiday, it will occur on the next immediately following business day.

The data used to reconstitute the index is as of the close of business on the last business day in May and November each year (“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. If

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

# Index Construction

## 2.1 Constituent Selection and Weighting Schema

1. The securities are primarily listed on one of the following 14 exchanges:
  - Australia Stock Exchange
  - New York Stock Exchange (NYSE)
  - Deutsche Borse Xetra
  - NYSE American
  - Euronext Paris
  - OMX Nordic Helsinki
  - Hong Kong Exchange
  - Singapore Exchange
  - Korea Exchange
  - Taiwan Stock Exchange (TWSE)
  - London Stock Exchange
  - Tokyo Stock Exchange\*
  - NASDAQ
  - Toronto Stock Exchange

\*Includes Prime, Standard, Growth segments; prior to April 4, 2022, JASDAQ was also included.

2. Securities are common stocks, ADR, GDR. Securities with a Russian Federation Country of Risk (“Russia Securities”) as determined by FactSet, regardless of listing exchange or sanctioned status, would no longer be eligible for index inclusion beginning on March 1, 2022.
3. The securities have a minimum total market capitalization of U.S. \$300 million and a 3-month Average Daily Trading Value (ADTV) of U.S. \$1 million or greater.
4. The securities have 50% or more revenues from one or more of the 27 below Metaverse-related industries (Table 1) as defined by FactSet Reverse Business Industry Classification System (RBICS) Level 6 industries:

**Table 1.**

RBICS Level 6 ID	RBICS Level 6 Name	Metaverse Category
552015252015	Home and Office Virtual Reality Software	Computing Hardware & Software
551020251510	Other Memory Semiconductors	Computing Hardware & Software

551020351510	Programmable Logic Device Semiconductors	Computing Hardware & Software
551030151010	Semiconductor Foundry Services	Computing Hardware & Software
551020401525	Video Multimedia Semiconductors	Computing Hardware & Software
552015102525	Virtual Reality Design and Engineering Software	Computing Hardware & Software
551525451010	Virtual Reality Equipment	Computing Hardware & Software
551020401520	Multimedia Semiconductors	Computing Hardware & Software
552015201010	Console Games Software	Gaming & Entertainment
552015201510	Handheld and Smart Phone Games Software	Gaming & Entertainment
552015202010	Online Game Websites and Software	Gaming & Entertainment
101010101535	Online Marketing and Advertising Support Services	Gaming & Entertainment
552015202510	Other Games Software	Gaming & Entertainment
552015251515	Other Handheld and Smart Phone Software	Gaming & Entertainment
552015352010	Diversified IT Infrastructure Software	Network & Commerce Infrastructure
552010251015	E-Commerce Service Providers	Network & Commerce Infrastructure
552015353020	Network Security Software	Network & Commerce Infrastructure
551020401015	Other Communications Semiconductors	Network & Commerce Infrastructure

551515351510	Customer Premises Network Security Equipment	Network & Commerce Infrastructure
552010351515	Web Portal Sites and Software	Network & Commerce Infrastructure
552010351015	Communication and Collaboration Content Sites	Social & Apps Platforms
501015103010	Internet Department Stores	Social & Apps Platforms
552015251510	Mobile Platform Applications Software	Social & Apps Platforms
552015253010	Productivity Software	Social & Apps Platforms
551515453010	Smart Phone Manufacturing	Social & Apps Platforms
551525501010	Wearable Technology	Social & Apps Platforms
552010351520	Web Search Sites and Software	Social & Apps Platforms

5. If a company has multiple share classes, only include the most liquid issue based on the highest three-month ADTV on Selection Day.
6. Each security is assigned to one of the 4 Metaverse Categories based on their RBICS Focus Level 6 industries as outlined in Table 1; for securities with diversified Metaverse industries exposure such that their RBICS Focus Level 6 industries are not captured in Table 1, they are assigned to the “Mixed” Category.
7. Rank securities within each of the 5 Metaverse Categories by their total market capitalization in descending order, from largest to smallest. Select the top 10 ranked securities from each Category. In addition, for the “Mixed” Category, securities that have total market capitalization less than \$1 Billion are excluded from the ranking.
8. The index shall have a minimum of 40 and a maximum of 50 constituents. If the index contains less than 40 constituents, fill it with next largest total market capitalization securities ranked top 11<sup>th</sup> and below from any of the 4 Metaverse Categories excluding “Mixed” until the index reaches 40 constituents.
9. 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 6.0% with excess weights redistributed proportionally among remaining uncapped securities.

## 2.2 Index Return Formulas

The price and 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)

$D_{(t)}$  = 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)

$FX_{i(t)}$  = 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

$FX_{i(t)}$  = WM Reuters FX rate published at 4:00 p.m. London time on Index Valuation Day (t) 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.

## 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:

- $D_{(t+1)}$  = 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:

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

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

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

- 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<sub>i,t</sub>** = Dividend amount corresponding to stock (i) with ex-date (t).

**FX<sub>d,t-1</sub>** = WM Reuters FX rate published at 4:00 p.m. London time 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.

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

Where

**P<sub>f,t-1</sub>** = Closing price of Spin-off stock on Index Valuation Date (t-1).

**FX<sub>j,t-1</sub>** = WM Reuters FX rate published at 4:00 p.m. London time on Index Valuation Day (t) required to convert price of spun-off company to constituent stock currency, USD.

### Rights Issue Adjustment

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

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

Where

**C<sub>j,t</sub>** = 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 total return values for the FactSet Metaverse Industries Index are calculated by Solactive AG. The price and total return values are calculated on an 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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## 5.2 Version History

Version	Release Date	Notes
Version 1.0	April 19, 2022	First release.