Index Methodology Guide for the FactSet Global FinTech Index™

Version 1.0 – December 16, 2016

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Index Introduction and Objective

1.1 Index Overview

The FactSet Global FinTech Index is designed to provide an equity benchmark for investors to measure and track the performance of companies engaged in Financial Technologies, primarily in the areas of software and consulting, data and analytics, digital payment processing, money transfer, and payment transaction-related hardware.

The FactSet Global Fintech Index is an equal-weighted index rebalanced semi-annually.

The FactSet Global FinTech Index is calculated on a price and total return basis in U.S. Dollar (USD). Both the price return values and the total return values of the Index are calculated on an end-of-day basis, from Monday to Friday at 5:30 AM CET. Both sets of values are distributed via NASDAQ GIDS (Global Index Data Service) to various data channels and market data vendors. End-of-day price and total return values of the index could also be obtained from FactSet upon request.

1.2 Inception Date and Base Value

The Index Inception Date is January 5, 2011 with a Base Value of 100. 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 is officially launched on December 9, 2016.

1.3 Index Valuation Days

Index Valuation Days are business days, Monday to Friday, where constituents of the Index are scheduled to be open for their regular trading session. Index will not be published on a day for which none of the constituents have scheduled trading session.

1.4 Commencement Date

The index commencement date is December 9, 2016. Commencement date refers to when the index is officially launched with end-of-day calculations.

1.5 Reconstitution and Rebalance Schedule

The index is reconstituted and rebalanced semi-annually after the close of business on the first Wednesday in January and July each year (“Reconstitution Day” and “Rebalance Day”). If the Reconstitution Day or Rebalance Day is a holiday, it will occur on the next immediately following business day.

The data used to reconstitute and rebalance the index is as of the close of business on the last Friday in December and June. 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

The following rules are used for the initial constituent selection and ongoing reconstitution and rebalance.

1. The securities are listed on one of the following 30 exchanges, including the New York Stock Exchange, NASDAQ, Australia Stock Exchange, Bombay Stock Exchange, Tokyo Stock Exchange, JASDAQ, Toronto Stock Exchange, Euronext Amsterdam, Euronext Brussels, Euronext Lisbon, Euronext Paris, Hong Kong Stock Exchange, Korea Stock Exchange, London Stock Exchange, OMX Nordic Copenhagen, OMX Nordic Helsinki, OMX Nordic Stockholm, Taiwan Stock Exchange, Oslo Stock Exchange, Deutsche Borse Xetra, BM&F Bovespa, New Zealand Stock Exchange, Singapore Exchange, SIX Swiss Exchange, Stock Exchange of Thailand, Tel Aviv Stock Exchange, Johannesburg Stock Exchange, Madrid Stock Exchange, Mexican Stock Exchange, and Borsa Italiana.
2. The securities are common stocks, ADR or GDR.
3. The securities have a minimum Market Capitalization of $US 300 Million or greater, and 3-month ADTV (Average Daily Trading Value) of $US 1 Million or greater on Selection Day. The length of time to evaluate the aforementioned liquidity criteria shall be reduced to the available trading period for IPOs and spin-off companies that do not have a 3 month trading history.
4. The securities have a minimum free float equivalent to 20% or greater of their shares outstanding.
5. The securities are classified to one of the 17 FinTech-related industries as defined by the FactSet RBICS (Revere Business & Industry Classification System).
    - Commercial Bank and Credit Union Industry Software
    - Credit Cards
    - Electronic Payment Processing
    - Finance Information and News Media and Sites
    - Financial and Compliance ERP Software
    - Financial Services IT Services
    - Institutional Financial and Research Content Sites
    - Insurance Software
    - Investment Management/Brokerage Software
    - Mixed Electronic Transaction Processing
    - Multi-Type Financial Data Content Providers/Sites
    - Other Finance Industry Software

- Payment Processing Software
- Peripheral and Other Commerce Equipment Makers
- Point-of-Sale (POS) Terminal Manufacturing
- Real Estate Classifieds and Directories Sites
- Trading Software

6. If a company has multiple share classes, only include the most liquid issue based on the highest 3-month ADTV on Selection Day.
7. Equal-weight the securities that remain after Steps 1 to 6.
8. Existing constituents could remain in the index if they have a minimum Market Capitalization of $US 225 Million or greater, and 3-Month ADTV of $US 0.75 Million or greater on Selection Day.
9. In the event that the total number of eligible constituents is less than 50, FactSet may elect to continue to hold previously selected constituents that would be ineligible related to size or liquidity ineligibility, or to expand the definition of FinTech to include additional eligible RBICS sub-industries, to ensure that the index has a minimum of 50 constituents on Rebalance Day.

2.2 Index Return Formulas

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

Price Returns Formula:

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

where:

$I_{(t)}$ = Price Returns Index value at on Index Valuation Day (t)
$D_{(t)}$ = Divisor at 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)
$FX_{i(t)}$ = FX rate published by W/M Reuters with respect to 4:00 pm London time fixing 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

$FX_{i(t)}$ = FX rate published by W/M Reuters with respect to 4:00 pm London time fixing 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 equal-dollar weighted in the index on the preceding rebalance day. Allocated shares ("***S***") keeps on getting adjusted to take into account Corporate Actions.

Total Returns Formula:

$$TI_{(t)} = TI_{(t-1)} \times (1 + IR_{(t)})$$

where:

$TI_{(t)}$ = Total Returns Index value on Index Valuation Day (t)
$TI_{(t-1)}$ = Total Returns Index value on Index Valuation Day (t-1)
$IR_{(t)}$ = Index Daily Total Return on Index Valuation Day (t)

$IR_{(t)}$ is calculated by incorporating the dividend (income) effect into the index's price returns as follows:

$$IR_{(t)} = \frac{I_{(t)} + \left(\frac{\sum_{i=1}^{n} V_{i(t)} \times S_{i(t)}}{D_{(t)}} \right)}{I_{(t-1)}} - 1$$

where:

$I_{(t)}$ = Price Returns Index value on Index Valuation Day (t)
$I_{(t-1)}$ = Price Returns Index value on Index Valuation Day (t-1)
$D_{(t)}$ = Price Returns Index Divisor on Index Valuation Day (t)
$V_{i(t)}$ = Dividends paid by stock (i) on Index Valuation Day (t) , adjusted for FX conversion into Index Currency
$S_{i(t)}$ = Number of allocated shares of stock (i) on Index Valuation Day (t)

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 date (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 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) shal 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:

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

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.

$FX_{d,t-1}$ = FX rate published by W/M Reuters with respect to 4:00 pm London time fixing on Index Valuation Day (t) required to convert Dividend amount in underlying stock currency.

Spin-off Adjustment

$$AP_{i,t,s}=P_{i,t-1} - P_{f,t-1} \text{ x } ShareRatio_{f,t} x\ FX_{j,t-1}$$

Where

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

$FX_{j,t-1}$ = FX rate published by W/M Reuters with respect to 4:00 pm London time fixing on Index Valuation Day (t) required to convert Price of Spunoff company to constituent Stock currency.

Rights Issue Adjustment

$$AP_{j,t}=\frac{P_{j,t-1} + C_{j,t} \text{ x } ShareRatio_{j,t}}{1+ ShareRatio_{j,t}}$$

$$AS_{j,t}=S_{j,t-1} \text{ x } \left(1+ ShareRatio_{j,t}\right)$$

Where

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

Stock Splits Adjustment

$$AP_{j,t}=\frac{P_{j,t-1}}{ShareRatio_{j,t}}$$

$$AS_{j,t}=S_{j,t-1} \text{ x } ShareRatio_{j,t}$$

Stock distribution

$$AP_{j,t}=P_{j,t-1} \times \frac{1}{1+ShareRatio_{j,t}}$$

$$AN_{j,t}=N_{j,t-1} \times \left(1+ShareRatio_{j,t}\right)$$

Index Maintenance

Constituent changes may occur between review periods due to corporate events that disqualify their eligibility for index inclusion. Adjustments to be made for each category of 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, the spun-off companies will be removed from the index immediately, and evaluated for index inclusion eligibility in the next semi-annual rebalance. The parent constituent (with the highest market value relative to the spun-off companies) will remain a constituent.

3.4 Corporate Actions – Bankruptcy

A constituent will generally be removed immediately after bankruptcy filing. Exceptions could be made to keep the constituent when the bankruptcy involves reorganization, and not an asset liquidation or cease of operation. Index divisor will be adjusted accordingly to prevent distortion that could affect the share capital of the index constituents.

Adjustment for Stock removal from constituents:

$$AN_{j,t} = 0$$

Index Calculation and Data Correction

4.1 Index Calculation

Price and total return values for the FactSet Global FinTech Index are calculated by using the official close prices from the primary listing market or exchange for each constituent. 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 the respective exchange for that stock will be used for all subsequent Index calculations until trading resumes. Index values are rounded to 10 decimal places and divisors are rounded to 10 decimal places.

In case of exceptional market conditions disrupting normal closing auction, or causing official closing prices not being available, 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	December 16, 2016	First release.