RAFIIndices™

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RAFI™ Multi-Factor Index Series:

RAFI™ Dynamic Multi-Factor Indices

RAFI™ Multi-Factor Indices

RAFI™ Factor Indices

This document contains the underlying principles and regulations regarding the structure and operation of the RAFI™ Multi-Factor Index Series (the "Index Series"). RAFI™ Indices, LLC ("RAFI Indices") has engaged Solactive AG as the administrator ("Benchmark Administrator"), under the Regulation (EU) 2016/1011 (the "Benchmark Regulation" or "BMR"). Solactive AG shall make every effort to implement regulations. RAFI Indices does not offer any explicit guarantee or assurance, either pertaining to the results from the use of any Index or the Index value at any point in time, or in any other respect. The Index is calculated and published for RAFI Indices by Solactive AG, and Solactive AG strives to ensure the correctness of the calculation. There is no obligation for RAFI Indices—irrespective of possible obligations to issuers—to advise third parties, including investors and/or financial intermediaries, of any errors in the Index. The publication of the Index by RAFI Indices is not a recommendation for capital investment and does not contain any assurance or opinion of RAFI Indices regarding a possible investment in a financial instrument based on the Index.

Introduction

This document is to be used as a guideline with regard to the composition, calculation, and management of the Index Series**.** Any changes made to the guideline are initiated by the Committee specified in section 1.5. The Index Series is calculated and published for RAFI Indices by Solactive AG.

1. INDEX SPECIFICATIONS

The Index Series is owned by RAFI Indices, a wholly owned subsidiary of Research Affiliates Global Holdings. Solactive AG is the index calculator and Benchmark Administrator.

The RAFI Multi-Factor Index suite aims to provide diversified exposures through allocations to value, low volatility, quality, momentum, and size. In addition, the Index Series uses the Research Affiliates' Fundamental Index™ methodology, which weights companies based on fundamental measures of company size (as measured by accounting variables) rather than their market capitalization.

See Appendix 5.1 for available indices and their return calculations (price, total return, and net return) and published currency. Each of the indices listed below may be referred to herein as "Index" and collectively as "Indices."

RAFI Dynamic Multi-Factor Indices:

- RAFI Dynamic Multi-Factor Developed ex US Index
  - RAFI Dynamic Multi-Factor Developed ex US Americas Index
  - RAFI Dynamic Multi-Factor Developed ex US Europe and Israel Index
  - RAFI Dynamic Multi-Factor Developed ex US APAC Index
- RAFI Dynamic Multi-Factor Emerging Markets Index
  - RAFI Dynamic Multi-Factor Emerging Markets Americas Index
  - RAFI Dynamic Multi-Factor Emerging Markets Europe & Middle East Index
  - RAFI Dynamic Multi-Factor Emerging Markets APAC Index
  - RAFI Dynamic Multi-Factor Emerging Markets South Africa Index
- RAFI Dynamic Multi-Factor US Index

RAFI Multi-Factor Indices:

- RAFI Multi-Factor Developed Index
- RAFI Multi-Factor Developed GBP Hedged Index Net Return
- RAFI Multi-Factor ex Low Volatility Developed Index
- RAFI Multi-Factor Emerging Markets Index
- RAFI Multi-Factor US Index

RAFI Value Factor Indices:

- RAFI Value Factor Developed Eurozone Carbon Neutral Index
- RAFI Value Factor US Index

RAFI Low Volatility Factor Indices:

- RAFI Low Volatility Factor US Index
- RAFI Low Volatility Factor Developed Index
- RAFI Low Volatility Factor Developed ex US Index

RAFI Quality Factor Indices:

- RAFI Quality Factor US Index

1.1 Short Name and Identifier

See Appendix 5.1 for Index Series name and identifiers.

1.2 Initial Value

All Indices are based on an index level of 1,000 at the close of trading on the base date. Please see Appendix 5 for a complete list of indices and base dates.

1.3 Distribution

The Index is published on the website of the Benchmark Administrator https://www.solactive.com and is, in addition, available via the price marketing services of Boerse Stuttgart GmbH and may be distributed to all of its affiliated vendors. Each vendor decides on an individual basis as to whether it will distribute or display the Index via its information systems.

Any publication in relation to the Index (e.g., notices, amendments to the Guideline) will be available at the website of the Index Administrator: https://www.solactive.com/news/announcements/.

1.4 Levels and Calculation Frequency

The levels of the Index Series is calculated on each Business Day during the market hours specified in Appendix 5.1 based on the Trading Prices on the Exchanges on which the Index Components are listed. Trading Prices of Index Components not listed in the Index Currency are converted using the current Intercontinental Exchange (ICE) spot foreign exchange rate. Should there be no current Trading Price for an Index Component, the later of: (i) the most recent Closing Price; or (ii) the last available Trading Price for the preceding Trading Day is used in the calculation. In addition to the intraday calculation, a closing level of the Index for each Business Day is also calculated. This closing level is based on the Closing Prices for the Index Components on the respective Exchanges on which the Index Components are listed. The Closing Prices of Index Components not listed in the Index Currency are converted using the 04:00 p.m. London time WM Fixing quoted by Reuters. If there is no 04:00 p.m. London time WM Fixing for the relevant Business Day, the last available 04:00 p.m. London time WM Fixing will be used for the closing level calculation.

1.5 Decision-Making Bodies

An oversight committee composed of staff from Solactive and its subsidiaries (the “Oversight Committee”) is responsible for decisions regarding any amendments to the rules of the Index, provided that the starting universe for the composition of the Index and its relevant specifications are established by RAFI Indices. Any such amendment, which may result in an amendment of the guideline, must be submitted to the Oversight Committee for prior approval and will be made in compliance with the Methodology Policy, which is available on the Solactive website: Methodology Policy.

Internal quality controls are performed in constructing the model portfolios used by RAFI Indices. In the event that it is determined that an alternative data source is required as a result of data integrity concerns, the Oversight Committee shall be informed to determine both the appropriateness of the data source and the materiality of the change. The Oversight Committee, in this regard, shall approve all changes.

1.6 Publication

All specifications and information relevant for calculating the Index are made available on the https://www.solactive.com web page and sub-pages.

1.7 Historical Data

Historical data prior to the index base date (outlined in Section 1.2) is based on simulated past performances derived using the index rules outlined in this manual. The backtested index levels have been calculated by reinvesting dividends paid by index components using the standard formula instead of the Laspeyres formula as stated in this index manual (the calculation formulas are explained on the Solactive website and can be found here). Simulated past performances rely on data by third party data vendors, which may have been adjusted, restated, or corrected ex post. The backtested index levels are not adjusted for any ex post adjustments.

2. CONSTRUCTION METHODOLOGY

2.1 Starting Universe

The model portfolio construction process starts with the RAFI Global Equity Investable Universe (GEIU). Constituents of this universe must meet and pass minimum liquidity and investability (capacity) requirements. The GEIU consists of all common equity securities traded on primary exchanges, and preferred shares in countries where preferred shares are economically equivalent to common, issued by companies that are assigned to countries classified by RAFI Indices as developed and emerging markets. Eligible developed and emerging market countries are assigned to one of seven regions as defined in Table 1.

Table 1

DEVELOPED MARKETS					EMERGING MARKETS	
United States	**Japan**	**United Kingdom**	**Developed Europe, ex UK**	**Other Developed Markets**	**China**	**Emerging Markets, ex China**
US	Japan	UK	Austria Belgium Denmark Finland France Germany Ireland Italy Netherlands Norway Portugal Spain Sweden Switzerland	Australia Canada ***Asia Pacific*** Israel Hong Kong New Zealand Singapore	China	Brazil India South Africa South Korea Taiwan ***Americas*** Chile Colombia Mexico Peru ***EMEA*** Czech Republic Egypt Greece Hungary Kuwait Poland Qatar Saudi Arabia Turkey UAE ***Asia Pacific*** Indonesia Malaysia Philippines Thailand

As of March 2023, there are 23 developed market countries and 24 emerging market countries eligible for inclusion.

2.2 Country Assignment & Size Classification

Country assignment and size classifications are determined based on the GEIU guideline. RAFI Indices assigns companies to countries and promulgates that assignment to securities. Eligible securities are assigned to one of three size classifications; large company, mid company and small company based on fundamental weight.

2.3 Region, Country Groups and Size Groups

Table 2 outlines the 14 region and size classifications used to construct the single factor indices for value, low volatility, quality, momentum and size.

Country groups as outlined in Table 1 consist of major nations or small-country groups within each of the seven regions. This definition does not determine universe selection, but is utilized in RAFI Low Volatility Factor Index Construction and RA Momentum Factor Index Construction described in Sections 2.7 and 2.9, respectively.

Table 2	
Region & Size Groups	**RAFI Single Factor Construction**
US Large/Mid	RAFI Factor Developed, & US for Value, Low Volatility, Quality, and Momentum
Japan Large/Mid	RAFI Factor Developed, & Developed ex US for Value, Low Volatility, Quality, and Momentum
UK Large/Mid	RAFI Factor Developed & Developed ex US for Value, Low Volatility, Quality, and Momentum
Developed Europe, excluding UK Large/Mid	RAFI Factor Developed & Developed ex US for Value, Low Volatility, Quality, and Momentum
Other Developed Markets Large/Mid	RAFI Factor Developed, & Developed ex US for Value, Low Volatility, Quality, and Momentum
China Large/Mid	RAFI Factor EM for Value, Low Volatility, Quality and Momentum
Emerging Markets excluding China Large/Mid*	RAFI Factor EM for Value, Low Volatility, Quality, and Momentum
US Small	RAFI Size Factor Developed & US
Japan Small	RAFI Size Factor Developed & Developed ex US
UK Small	RAFI Size Factor Developed & Developed ex US
Developed Europe, excluding UK Small	RAFI Size Factor Developed & Developed ex US
Other Developed Markets Small	RAFI Size Factor Developed & Developed ex US
China Small	None
Emerging Markets excluding China Small	None

2.4 Fundamental Weights

Fundamental weights are calculated using four accounting measures from company financial statements.

1. Adjusted sales is calculated as company sales multiplied by company equity to assets ratio averaged over the past five years.

2. Cash flow is calculated as company operating cash flow averaged over the past five years plus company R&D expenses averaged over the past five years.

3. Dividend plus buybacks are calculated using the average dividends paid and share buybacks over the past five years.

4. Book value plus intangibles is calculated as the most recent company book value plus research capital, with research capital defined as the accumulation of depreciated R&D expenses over the past six years.

Each of the four accounting measures is normalized with respect to their region and size groups as specified in Table 2. An aggregate fundamental weight is calculated for each company by averaging the normalized accounting measures for each of the four accounting measures. This is the fundamental weight of the company. Similarly, company market- capitalization weight is calculated by renormalizing the full market capitalization of companies.

2.4.1 Free-Float Adjustment

The entire stock in any given company is not always available to equity investors. Therefore, a company free-float factor is calculated. The company free-float factor is defined as the ratio of the total market capitalization of the shares of the company in free float to the total market capitalization of the company. This measure of free float is equivalent to the aggregation of the security level free-float factors across all the security lines of the company's stock. The company level free-float factor is applied as an adjustment to the company's fundamental weight. Adjusted fundamental weight is calculated by renormalizing the free-float adjusted fundamental weight. Adjusted market-capitalization weight is calculated by renormalizing the free-float adjusted market capitalization of companies.

2.5 RAFI Value Factor Index Construction

The RAFI Value Factor Index consists of companies with a high ratio of company fundamental weight to its market-capitalization weight. For each of the 12 region and size groups in Table 2, the ratio of fundamental weight to market- capitalization weight for each stock is calculated as defined in Section 2.4. Stocks are then ranked in

descending order by the ratio, the top 25% by cumulative adjusted fundamental weight as defined in Section 2.4.1 are selected for inclusion, subject to a minimum of 15 stocks. Selected companies are then re-weighted by their adjusted fundamental weight subject to the application of liquidity limit Rule 2.15 and maximum stock weight of 5% for all regions, except for the UK region at 15%. The minimum stock weight is 0.05%. Stocks below the minimum weight are removed and the excess weights are distributed across the remaining stocks in the index.

The RAFI Value Factor Index is rebalanced quarterly using a quarterly staggered process described in Section 2.16.1. At each staggered quarterly rebalance, the processes as defined in Sections 2.13 and 2.14 are applied to limit turnover.

2.6 RAFI Value Factor Developed Eurozone Carbon Neutral Index Construction

The RAFI Value Factor Developed Eurozone Carbon Neutral Index consists of companies with a high ratio of company fundamental weight to its market-capitalization weight, and tilts index constituent weights in order to reduce the overall index carbon intensity to roughly match the carbon intensity of the market.

Eligible securities are Large/Mid securities as defined in Section 2.2 from the following eligible countries, which are a subset of the Developed Europe ex-UK country group defined in Section 2.3.

Developed Eurozone
Austria
Belgium
Finland
France
Germany
Ireland
Italy
Netherland
Portugal
Spain

For the Developed Eurozone Large/Mid region/size group the ratio of fundamental weight to market-capitalization weight for each stock is calculated as defined in Section 2.4. Stocks are then ranked in descending order by the ratio, the top 25% by cumulative adjusted fundamental weight as defined in Section 2.4.1 are selected for inclusion, subject to a minimum of 15 stocks. Selected companies are then re-weighted by their adjusted fundamental weight subject to the application of liquidity limit Rule 2.15 and maximum stock weight of 10%. The minimum stock weight is 0.05%. Stocks below the minimum weight are removed and the excess weights are distributed across the remaining stocks in the index.

The RAFI Value Factor Index is rebalanced quarterly using a quarterly staggered approach described in Section 2.16.1. At each staggered quarterly rebalance, the processes as defined in Sections 2.13 and 2.14 are applied to limit turnover.

2.6.1 Carbon Intensity Reduction Methodology

The following methodology is applied to the underlying RAFI Value Factor Developed Eurozone Carbon Neutral strategy described in Section 2.6.

1. Determining Company Level Carbon Intensity:
   For the purpose of index construction, company level carbon intensity is calculated as follows:

   Carbon Intensity (CI):

$$Carbon\ Intensity_i = \frac{GHG_i}{Sales_i}$$

   with:

   GHG_i = Green House Gas Emissions Scope 1 and Scope 2 in tons CO2 equivalent

   If a company's GHG emissions data are estimated by the provider rather than reported, that company is assigned a 5% penalty such that

$GHG, Estimated_i = GHG_i \times 1.05$

$Sales_i$ = Sales represents a company's most recent reported sales in millions of dollars.

2. Baseline and Index Carbon Intensity:
Baseline carbon intensity is the weighted average carbon intensity of a market-capitalization-weighted portfolio defined in step 3.

$$Baseline\ CI = \sum_{i=1}^{N_{MCap}} CI_i \times w_i^{MCap}$$

The carbon intensity of the Underlying Index is the average carbon intensity of the Index constituents weighted by their corresponding portfolio weight such as

$$Underlying\ Index\ CI = \sum_{i=1}^{N_{Index}} CI_i \times w_i^{index}$$

3. Construction of Market-Capitalization-Weighted Strategy for Determining Baseline Carbon Intensity:
For the purposes of determining Baseline CI, a market capitalization portfolio is constructed. Eligible companies classified as large/mid company by market-capitalization weight within the Developed Eurozone country group make up the constituents of this portfolio. Selected constituents are weighted by free-float adjusted market-capitalization weight as described in Section 2.4.1.

4. Target Carbon Intensity:
The target carbon intensity is calculated as follows each quarter:

$$Target\ CI_t = \min(Baseline\ CI_t, Underlying\ Index\ CI_t)$$

5. Index Tilt Methodology:
If the Underlying Index carbon intensity is higher than the baseline carbon intensity as defined in Section 3.1.2, a tilt toward lower carbon intensity companies is applied as follows:

$$w_i^{Index} = \begin{cases} w_i^{Index} \times (1 + mZ_i)^{\lambda} & if\ mZ_i \geq 0 \\ w_i^{Index} \times \dfrac{1}{(1 - mZ_i)^{\lambda}} & if\ mZ_i < 0 \end{cases}$$

Where:

mZ_i = modified *z*-score, which is the standardized log of carbon intensity after taking into account its distribution and net zero alignment status as defined in step 6 below.

w_i^{Index} = weight in the index of component *i, and*

λ = tilting parameter.

6. Net Zero Alignment
Modified z-scores for each company are adjusted to reflect commitments to achieving Net Zero by 2050. Companies are rated as; "Aligned", "Aligning", "Committed to Aligning" or "Not Aligned" based on factors such as a published 2050 Net Zero target, interim targets, material GHG disclosures and decarbonization strategy. Modified z-scores are adjusted as follows:

$$mZ_i = \begin{cases} mZ_i \times 1.10 & if\ alginment\ status = "Aligning"\ or\ "Aligned" \\ mZ_i \times 1.05 & if\ alginment\ status = "Commited\ to\ Aligning" \\ mZ_i & otherwise \end{cases}$$

7. Maximum Weight and Liquidity Constraint
   After applying the Index Tilt methodology, a 10% security-level maximum weight constraint and liquidity limit rule as defined in Section 2.15 is applied to the Index.

8. Iteration Process
   After applying the carbon intensity reduction process, the carbon intensity of the Index is determined. If the Index carbon intensity exceeds the target carbon intensity we repeat the process until the target carbon intensity target is met or 100 iterations have occurred.

Note: As of the 2/11/2022 index selection date for the RAFI Value Factor Developed Eurozone Carbon Neutral Index the index methodology was changed to reflect a carbon neutral (relative to cap-weight) carbon intensity reduction approach. Prior to 2/11/2022 the index achieved carbon intensity reduction by capping fossil fuel companies at 80% of an equivalent cap-weighted index. The new carbon intensity reduction methodology will be phased in over four quarterly rebalances from 3/2022–12/2022.

2.7 RAFI Low Volatility Factor Index Construction

The RAFI Low Volatility Factor Index consists of companies with low risk measure calculated as the variance of a company's daily excess return over five years explained by global, local country groups, and global industry excess returns. For each of the 12 region and size groups in Table 2, a risk measure for each stock is calculated as defined in Section 2.7.1. Stocks are then ranked in ascending order of risk measure, the top 25% by cumulative adjusted fundamental weight as defined in Section 2.4.1 are selected for inclusion, subject to a minimum of 15 stocks. Selected companies are then re-weighted by their adjusted fundamental weight subject to the application of liquidity limit Rule 2.15 and maximum stock weight of 5%, except for the UK region at 15%. The minimum stock weight is 0.05%. Stocks below the minimum weight are removed and the excess weights are distributed across the remaining stocks in the index.

The RAFI Low Volatility Factor Index is rebalanced quarterly using a quarterly staggered approach described in Section 2.16.1. At each staggered quarterly rebalance, the processes as defined in Sections 2.13 and 2.14 are applied to limit turnover.

2.7.1 Risk Measure Calculation

Risk measure is calculated as the variance (Var) of a stock's excess return that is explained by a three-factor regression model using three market indices: Global Cap-Weighted Index, Country Group Cap-Weighted Index, and Global Industry Cap-Weighted Index. Country group is defined in Section 2.3.1.

$$er_{i,t} = \hat{\alpha}_i + \hat{\beta}_{i,Global}\left(er_t^{Global}\right) + \hat{\beta}_{i,Country\_group}\left(er_{i,t}^{Country\_group}\right) + \hat{\beta}_{i,Industry}\left(er_{i,t}^{Industry}\right) + \varepsilon_{i,t}$$

$$\text{Risk Measure}_i = \frac{R^2 \times Var_{er_{i,t}}}{Var_{er_t^{Global}}}$$

The three-factor model is a linear regression model of the company's stock excess return $er_{i,t} = (r_{i,t} - cr_{i,t})$. The excess return is the daily local currency return minus the return investing in local currency for the business days that are common to each component of regression. The three factors are currency hedged excess return of a cap-weighted global market index (er_t^{Global}), currency hedged excess return of a cap-weighted local country group index ($er_{i,t}^{Country\_group}$), and currency hedged excess return of a cap-weighted industry index ($r_{i,t}^{Industry}$). R^2 is the coefficient of determination from the linear regression specified above.

Excess return is defined as the total daily return of the security in local currency including dividend minus the cash rate of the currency of the security, which is either the short-term Treasury bill rate or the short-term interbank rate.

The linear regression is calculated over the five-year estimation period. A minimum of 510 daily return observations are required for the calculation of the company level risk metric and therefore for the company to be eligible for inclusion in the index.

2.8 RAFI Quality Factor Index Construction

The RAFI Quality Factor Index consists of companies that are high in Profitability and low in Investment Spending. For each of the 12 region and size groups in Table 2, a quality measure for each stock is calculated as defined in Section 2.8.1 below. Stocks are then ranked in descending order by quality measure, the top 25% by cumulative adjusted fundamental weight as defined in Section 2.4.1 are selected for inclusion, subject to a minimum of 15 stocks. Selected companies are then re-weighted by their adjusted fundamental weight subject to the application

of liquidity limit Rule 2.15 and maximum stock weight of 5% for all regions, except for UK region at 15%. The minimum stock weight is 0.05%. Stocks below the minimum weight are removed and the excess weights are distributed across the remaining stocks in the index.

The RAFI Quality Factor Index is rebalanced quarterly using a quarterly staggered approach described in Section 2.16.1. At each staggered quarterly rebalance the processes as defined in Sections 2.13 and 2.14 are applied to limit turnover.

2.8.1 Quality Measure Calculation

Quality measure is the average of Profitability minus the average of Investment. Profitability is the average of the *z*-scores of ROA, ROE, and operating profitability. Investment is the average of the *z*-scores of asset growth and book growth. The outliers of the variables are winsorized prior to the *z*-score calculation described in Appendix 5.2. The five variable definitions are described below. To avoid foreign exchange impact during the security selection process, the below variables are calculated using the fundamental data in the company's reporting currency.

1. ROA is calculated as the ratio of net income before extraordinary items to assets.

2. ROE is calculated as the ratio of net income before extraordinary items to equity book value.

3. Operating profitability is the ratio of operating income minus interest to equity book value.

4. Asset growth is the ratio of current year assets minus previous year assets to previous year assets.

5. Book growth is the ratio of current book value minus previous year book value to previous year book value.

2.9 RA Momentum Factor Index Construction

The RA Momentum Factor Index consists of companies with high momentum. For each of the 12 region and size groups in Table 2, a momentum measure for each stock is calculated as defined in Section 2.9.1 below. Stocks are then ranked in descending order by momentum measure, the top 50% by cumulative adjusted capitalization weights as defined in Section 2.4.1 are selected for inclusion, subject to a minimum of 15 stocks. Selected companies are then re-weighted by their adjusted capitalization weight subject to the application of liquidity limit Rule 2.15 and maximum stock weight of 5% for all regions, except for the UK region at 15%. The minimum stock weight is 0.05%. Stocks below the minimum weight are removed and the excess weights are distributed across the remaining stocks in the index.

The RA Momentum Factor index is rebalanced fully each quarter as defined in Section 2.16.2. At each quarterly rebalance, the process as defined in Section 2.13 is applied to limit turnover.

2.9.1 Momentum Measure Calculation

Momentum measure is the average of the *z*-scores for standard momentum, idiosyncratic momentum, and fresh momentum. A company's stock excess return $er_{i,t} = (r_{i,t} - cr_{i,t})$ is used in calculating momentum. The excess return is the company's daily local currency return minus the return investing in cash for the day. The outliers of the calculated momentums are winsorized prior to the *z*-score calculation described in Appendix 5.2.

1. Standard momentum is momentum investing based on a stock's recent excess return, which is the past 12 month excess return excluding the most recent month return. The time period for excess return is from trading day –365 calendar days to trading –30 calendar days.

$$Mom_i = er_{t-365D,t-30D}$$

2. Idiosyncratic momentum accounts for a stock's market exposure by comparing its standard momentum to the beta-forecasted value. Note that market returns are hedged market returns on the cap-weighted market index, defined in Section 2.3.3, for the given company, and β_i is the corresponding factor sensitivity on that market. The time period for local excess return and the regression calculation for β_i is from trading day –365 calendar days to trading –30 calendar days. Country group is defined in Section 2.3.1.

$$iMom_i = \frac{1 + Mom_i}{1 + \beta_{i,Country\_group}(er_{i,t}^{Country\_group})} - 1$$

3. Fresh momentum is the reversal adjusted measure that indicates if the momentum of a stock is building or diminishing by comparing standard momentum to the previous year's momentum.

$$fMom_i = \frac{Momentum}{Previous\ Year's\ Performance} = \frac{1 + Mom_i}{1 + er_{t-2Y,t-1Y}} - 1$$

2.10 RAFI Size Factor Index Construction

The construction methodology is defined in Sections 2.5 through 2.8 above. After the aggregation, liquidity limit Rules 2.15 is applied to the stock weights. The minimum stock weight is 0.05%. Stocks below the minimum weight are removed and the excess weights are distributed across the remaining stocks in the index.

The RAFI Size Factor Index follows the rebalance schedule of the single factor construction in Sections 2.5 through 2.9, wherein the Index is set to equal weight of the individual factor sleeves at each quarter.

2.11 RAFI Multi-Factor Index Construction

The RAFI Multi-Factor Index takes an equally weighted allocation to value, low volatility, quality, momentum, and size factor indices for all regions, except for China and Emerging Markets ex-China where the size factor is excluded. Individual factor construction methodology is defined in Sections 2.5 through 2.9. Multi-factor Indices comprised of multiple regions (for example, RAFI Multi-Factor Developed Index) are the aggregation of the respective single factor sleeves from each region, (defined in Table 2), determined by multiplying the single factor equal weight to its region weight determined in Section 2.3. After the aggregation, liquidity limit Rules 2.15 is applied to the stock weights. The minimum stock weight is 0.002%. For indices that do not include the size factor, the minimum stock weight is 0.01%. Stocks below the minimum weight are removed and the excess weights are distributed across the remaining stocks in the index.

At each quarterly rebalance, the factor allocation is rebalanced back to 20% for all regions, except for Emerging Markets, which is 25% due to the exclusion of the size factor index. The RAFI Multi-Factor Index follows the same rebalance timeline as that of its underlying factor indices described in Section 2.16.

2.11.1 RAFI Multi-Factor Developed GBP Hedged Index Net Return Construction

The RAFI Multi-Factor Developed GBP Hedged Index Net Return is designed to earn the returns of the RAFI Multi-Factor Developed Index while shielding investors from changes in the British pound exchange rate relative to other currencies in the index. Weights for the currency hedge are determined and currency exposures are hedged on a monthly basis on the last business day of each month. Foreign exchange forward contracts are sold to eliminate the risk of currency fluctuations. Forward spot rates are calculated using WM/Reuters closing spot rates from 4:00pm London time. A complete description of the hedging methodology can be found here: RAFI Indices Hedging Methodology.

2.11.2 RAFI Multi-Factor ex-Low Volatility Developed Index Construction

The RAFI Multi-Factor ex-Low Volatility Developed Index takes an equally weighted allocation to value, quality, momentum and size factor indices for the Developed Markets region. Individual factor construction methodology is defined in Sections 2.5, 2.7, 2.8 and 2.9. Single factor indices in the Developed Markets region are equally weighted and liquidity limit Rules 2.15 is applied to the stock weights. The minimum stock weight is 0.002%. Stocks below the minimum weight are removed and the excess weights are distributed across the remaining stocks in the index.

At each quarterly rebalance, the factor allocation for value, quality, momentum and size is rebalanced back to equal weight, for the Developed Markets region. The RAFI Multi-Factor ex-Low Volatility Developed Index follows the same rebalance timeline as that of its underlying factor indices described in Section 2.16.

2.12 RAFI Dynamic Multi-Factor Index Construction

The RAFI Dynamic Multi-Factor Index dynamically allocates to value, low volatility, quality, momentum, and size factor indices for all regions, except for China and Emerging Markets ex-China where the size factor is excluded. The dynamic allocation is calculated in Section 2.12.1 below. Dynamic multi-factor Indices comprised of multiple regions (for example, RAFI Dynamic Multi-Factor Developed ex-US Index) are the aggregation of the respective single factor sleeves from each region, (defined in Table 2), determined by multiplying the single factor Dynamic Allocation to its region weight determined in Section 2.3. After the aggregation, liquidity limit Rules 2.15 is applied to the stock weights. The minimum stock weight is 0.002%. For indices that do not include the size factor, the

minimum stock weight is 0.01%.Stocks below the minimum weight are removed and the excess weights are distributed across the remaining stocks in the index.

At each quarterly rebalance, the dynamic allocation is determined for each individual factor component. The RAFI Dynamic Multi-Factor follows the rebalance timeline as that of its underlying factor indices described in Section 2.16.

2.12.1 Dynamic Allocation

Dynamic allocation starts with the equal weight defined in Section 2.11 above plus an active weight, which is based on that factor's momentum and long-term reversal signal relative to the other four factors.

$$Dynamic\ Allocation = Equal\_Weight + \frac{Average(factor\ momentum\ z\text{-}score, factor\ reversal\ z\text{-}score)}{scaler}$$

Where the factor momentum is the factor's recent total return, which is the past twelve month return minus most recent month return. The time period for total return is from trading day –365 calendar days to trading –30 calendar days.

$$Mom_f = R_{t-365D,t-30D}$$

Where factor reversal is calculated as the factor's past five year cumulative return minus past one year return.

$$Reversal_f = R_{t-5Y,t-1Y}$$

Z-scores of factor momentum and reversal are calculated as standardization across the five factors with a floor to the standard deviation to limit active bets when signals are very similar across factors. See Appendix 5.2 for *z*-score calculation. The computed *z*-scores are averaged and adjusted by a scaler. The scaler converts the average *z*-scores to active weights. Active weights are capped at maximum of 15% and minimum of -15%.

2.12.2 Regional Sub-Indices

Regional sub-indices for RAFI Dynamic Multi-Factor Developed ex US and RAFI Dynamic Multi-Factor Emerging Markets separate the headline index into sub-regions based on a company's country of primary exchange. A complete list of regional indices available is in Appendix 5.1.

2.13 Turnover Control Mechanism

The turnover control mechanism is applied to the RAFI Value Factor indices, RAFI Low Volatility Factor indices, RAFI Quality Factor indices, and RA Momentum Factor indices.

For the RAFI Value, Low Volatility, and Quality Factor indices, at each quarterly staggered rebalance described in Section 2.16.1, calculate the respective signal (value, low volatility, and quality) using the construction methodology described in Sections 2.5, 2.6, 2.7 and 2.8. Within each region and size group, categorize the eligible securities by a preferred set and non-preferred set of companies. The preferred set of companies is identified by taking the drifted tranche, which is being rebalanced, sorting those companies by their respective signal (value, low volatility, and quality) and taking the cumulative 90% of the tranche's weight. The non-preferred set of companies consists of all other securities within each region and size group sorted by their respective signal (value, low volatility, and quality). Using their adjusted fundamental weight as determined in Section 2.4.1, first select the eligible securities in the preferred set and then select from the non-preferred set until 25% of adjusted fundamental weight has been selected from each region and size group. The selected companies are then weighted by the adjusted fundamental weight.

For the RA Momentum Index, at each quarterly rebalance described in Section 2.16.2, calculate the momentum signal using the construction methodology described in Section 2.9. Within each region and size group, categorize the eligible securities by a preferred set and non-preferred set of companies. The preferred set of companies is identified by taking the drifted portfolio, which is being rebalanced, sorting those companies by their momentum signal, and taking the cumulative the 80% weight. The non-preferred set of companies consists of all other securities within each region and size group sorted by their momentum signal. Using their adjusted market-capitalization weight as determined in Section 2.4.1, first select the eligible securities in the preferred set and then select from the non-preferred set until 50% of adjusted market-capitalization weight has been selected from each region and size group. The selected companies are then weighted by the adjusted market-capitalization weight.

2.14 Momentum Trade Filtering

Momentum trade filtering reduces turnover by not trading against stocks' momentum.

Momentum trade filtering is applied only to RAFI Value, Low Volatility, and Quality indices. During each quarterly staggered rebalance defined in Section 2.16.1, securities constituting the new and current tranches of each factor portfolio are ranked by standard momentum calculated in Section 2.9.1. Stocks in the top 25% by adjusted fundamental weight as defined in Section 2.4.1 will keep the higher of either their price-drifted weights or the new target weights (no selling of high momentum stocks). Similarly, the bottom 25% by adjusted fundamental weight are assigned the lower of either their price-drifted weights or the new target weights (no buying of low momentum stocks). All other securities are rebalanced back to their adjusted fundamental weight as determined in Section 2.4.1.

2.15 Application of Liquidity Limit

The following liquidity limits are applied to the eligible securities.

Let FV_i be the RAFI fundamental value of the i^{th} company. The free-float adjusted fundamental weight, as defined in Section 2.4.1, FW_i for company i is:

$$FW_i = (FV_i * Free\_Float_i) \Big/ \sum_{i=1}^{N} (FV_i * Free\_Float_i)$$

Let $ADTV_i$ be the maximum of the 30-day and 90-day median daily traded value in USD at each quarterly rebalance. The liquidity weight LW_i for company i is:

$$LW_i = ADTV_i \Big/ \sum_{i=1}^{N} ADTV_i$$

The 30-day median traded value will be used where there is less than 90 days of historical data. Where there is less than 30 days of historical data, the stock will have a RAFI fundamental value of zero. Where there are multiple lines of equity capital in a company, the traded value will be the aggregation of all lines in the aforementioned company.

The liquidity ratio (LR) is defined as the ratio of adjusted fundamental weight to liquidity weight. The liquidity ratio for company i is:

$$LR_i = FW_i / LW_i$$

Where the liquidity ratio is more than four, the new fundamental value is calculated as:

$$\widehat{FV_i} = 4 \times LW_i \times \sum_{i=1}^{N} FV_i$$

After the fundamental values are updated for all companies using the above formula, new adjusted fundamental weights and liquidity ratios are calculated. The process is repeated until all liquidity ratios attain a value not exceeding four. Note that this process will only modify the fundamental values of stocks that exceed the liquidity limit.

2.16 Rebalance

Within the RAFI Multi-Factor Indices, value, low volatility, and quality are reconstituted annually and rebalanced on a quarterly staggered basis. Momentum is reconstituted and fully rebalanced quarterly. Rebalance effective date is subject to change due to holidays, natural disaster, etc., in which a notice will be distributed to subscribers.

2.16.1 Quarterly Staggered Rebalance

For all indices except for the RA Momentum Factor indices, the model portfolio is split into four equal parts (tranches) and each tranche has equal weight at the March rebalance. Each tranche is a full-fledged model portfolio and is rebalanced once a year to target weights determined for that

quarter. Per the schedule below, a single tranche is rebalanced on the 3rd Friday day of March, June, September and December, and effective on the next corresponding trading day. Tranche weights are set to equal (25% each) in the March rebalance.

For example, for the RAFI Value factor portfolio, in the initial launch, the four tranches (A, B, C, and D tranches) are identical portfolios. The headline portfolio will consist of 25% of each of the four tranches and, as such, the headline portfolio is the same as the underlying tranches in the initial launch. At the first quarter rebalance, tranche A is replaced, but tranches B, C, and D are not rebalanced and are drifted till the next rebalance. The headline portfolio will change reflecting the update to the rebalanced tranche A. Then, at the next quarter rebalance, tranche B is replaced and the other three tranches are not and are drifted until the next rebalance.

Through this method of staggered rebalance, the quarterly rebalance diversifies risk and decreases market impact. Instead of concentrating contra-trading into one single market event, staggered rebalance diversifies rebalance points and increases investment capacity in a meaningful way.

Index	Rebalance Announcement	Distribution of Preliminary Files	Rebalance Schedule	Effective Date
RAFI March Tranche	Provide to subscribers	Five trading days prior to effective date	3rd Friday of March quarterly rebalance	FTD‡ after 3rd Friday of March
RAFI June Tranche			3rd Friday of June quarterly rebalance	FTD‡ after 3rd Friday of June
RAFI September Tranche			3rd Friday of September quarterly rebalance	FTD‡ after 3rd Friday of September
RAFI December Tranche			3rd Friday of December quarterly rebalance	FTD‡ after 3rd Friday of December

‡FTD=First Trading Day.

The Index Committee may adjust a scheduled rebalancing date, including in cases where market holidays fall on or near the planned timing. When feasible, any such adjustment will be communicated in advance.

2.16.2 Quarterly Rebalance

For RA Momentum Factor indices, the model portfolio is fully rebalanced at the end of the third Friday of March, June, September, and December, and effective on the next corresponding trading day. The strategy is not available for license as a standalone index, but is used in the construction of the RAFI Dynamic Multi-Factor and RAFI Multi-Factor indices.

2.17 Extraordinary Adjustment

An extraordinary adjustment, if applicable, is triggered and applied in compliance with the rules set forth in the Solactive Equity Index Methodology, (except for rules outlined in Sections 3.4 and 3.5), which can be found here: Equity Index Methodology.

3. CALCULATION OF THE INDEX

3.1 Index Formula

The Index Value on a Business Day at the relevant time is calculated in accordance with the following formula:

$$\text{Index}_t = \sum_{i=1}^{n} \frac{(x_{i,t} \times p_{i,t} \times f_{i,t})}{D_t}$$

with:

$x_{i,t}$ = Number of Index Shares of the Index Component *i* on Trading Day *t*

$p_{i,t}$ = Price of Index Component *i* on Trading Day *t*

$f_{i,t}$ = Foreign exchange rate to convert the Price of Index Component *i* on Trading Day *t* into the Index Currency

D_t = Divisor on Trading Day *t*

The initial Divisor on the Base Date is calculated according to the following formula:

$$D_t = \frac{\sum_{i=1}^{n}(p_{i,t} \times f_{i,t} \times x_{i,t})}{100}$$

After the close of trading on each Rebalancing Day *t* the new Divisor is calculated as follows:

$$D_{t+1} = \frac{\sum_{i=1}^{n}(p_{i,t} \times f_{i,t} \times x_{i,t+1})}{\text{Index}_t}$$

This Divisor is valid starting the immediately following Business Day.

3.2 Accuracy

The value of the Index will be rounded to 12 decimal places.

Trading Prices and foreign exchange rates will be rounded to 6 decimal places.

Divisors will be rounded to 6 decimal places

3.3 Adjustments

Under certain circumstances, an adjustment of the Index may be necessary between two regular Rebalance Days. Such adjustment has to be made if a corporate action (as specified in Section 3.5 below) in relation of an Index Component occurs. Such adjustment may have to be done in relation to an Index Component and/or may also affect the number of Index Components and/or the weighting of certain Index Components.

Solactive will announce the Index adjustment giving a notice period of at least two Trading Days (with respect to the affected Index Component) on the Solactive website under the Section “Announcements”, which is available at https://www.solactive.com/news/announcements/. The Index adjustments will be implemented on the effective day specified in the respective notice.

3.4 Dividends and Other Distributions

Dividend payments and other distributions are included in the Index. They cause an adjustment of the Divisor. The new Divisor is calculated as follows:

$$D_{t+1} = D_t \times \frac{\sum_{i=1}^{n}(p_{i,t} \times f_{i,t} \times x_{i,t}) - (x_{i,t} \times y_{i,t} \times g_{i,t})}{\sum_{i=1}^{n}(p_{i,t} \times f_{i,t} \times x_{i,t})}$$

with:

$p_{i,t}$ = Price of Index Component *i* on Trading Day *t*

$f_{i,t}$ = Foreign exchange rate to convert the Price of Index Component *i* on Trading Day *t* into the Index Currency

$x_{i,t}$ = Number of Index Shares of the Index Component *i* on Trading Day *t*

$y_{i,t}$ = Distribution of Index Component *i* with ex-date *t*+1 multiplied by the Dividend Correction Factor

$g_{i,t}$ = Foreign exchange rate to convert the amount of the distribution of Index Component *i* on Trading Day *t* into the Index Currency

D_t = Divisor on Trading Day *t*

D_{t+1} = Divisor on Trading Day *t*+1

3.5 Corporate Actions

3.5.1 Principles

As part of the Index maintenance Solactive will consider various events – also referred to as corporate actions – which result in an adjustment to the Index between two regular Rebalance Days. Such events have a material impact on the price, weighting or overall integrity of Index Components. Therefore, they need to be accounted for in the calculation of the Index. Corporate actions will be implemented from the cum-day to the ex-day of the corporate action, so that the adjustment to the Index coincides with the occurrence of the price effect of the respective corporate action.

Adjustments to the Index to account for corporate actions are outlined in this section. Additional corporate action events not outlined below will be made in compliance with the Equity Index Methodology, which is available on the Solactive website. This document contains for each corporate action a brief definition and specifies the relevant adjustment to the Index variables.

While Solactive aims at creating and maintaining its methodology for treatment of corporate actions as generic and transparent as possible and in line with regulatory requirements, it retains the right in accordance with the Equity Index Methodology to deviate from these standard procedures in case of any unusual or complex corporate action or if such a deviation is made to preserve the comparability and representativeness of the Index over time.

3.5.2 Capital Increases

In the case of capital increases with ex-date *t*+1, the Index is adjusted as follows:

$$x_{i,t+1} = x_{i,t} \times \frac{p_{i,t}}{p_{i,t+1}}$$

with:

$x_{i,t+1}$ = Number of Index Shares of Index Component *i* on Trading Day *t*+1

$x_{i,t}$ = Number of Index Shares of Index Component *i* on Trading Day *t*

$$p_{i,t+1} = \frac{p_{i,t} + s \times B}{1 + \mathrm{B}}$$

with:

$p_{i,t+1}$ = Hypothetical Price of Index Component *i* on Trading Day *t*+1

$p_{i,t}$ = Price of Index Component *i* on Trading Day *t*

s = Subscription Price in the Index Component currency

B = Shares received for every share held

$$D_{t+1} = D_t \times \frac{\sum_{i=1}^{n}(p_{i,t} \times f_{i,t} \times x_{i,t}) + \sum_{i=1}^{n}[(x_{i,t+1} \times p_{i,t+1} \times f_{i,t}) - (x_{i,t} \times p_{i,t} \times f_{i,t})]}{\sum_{i=1}^{n}(p_{i,t} \times f_{i,t} \times x_{i,t})}$$

with:

D_{t+1} = Divisor on Trading Day *t*+1

D_t = Divisor on Trading Day *t*

$p_{i,t}$ = Price of Index Component *i* on Trading Day *t*

$f_{i,t}$ = Foreign exchange rate to convert the Price of Index Component *i* on Trading Day *t* into the Index Currency

$x_{i,t}$ = Number of Index Shares of the Index Component *i* on Trading Day *t*

$p_{i,t+1}$ = Hypothetical price of Index Component *i* on Trading Day *t*+1

$x_{i,t+1}$ = Number of Index Shares of the Index Component *i* on Trading Day *t*+1

3.5.3 Share Splits

In the case of share splits with ex-date on Trading Day *t*+1, it is assumed that the prices change in ratio of the terms of the split. The new Number of Index Shares is calculated as follows:

$$x_{i,t+1} = x_{i,t} \times \mathrm{B}$$

with:

$x_{i,t+1}$ = Number of Index Shares of the affected Index Component on Trading Day *t*+1

$x_{i,t}$ = Number of Index Shares of the affected Index Component on Trading Day *t*

B = Shares after the share split for every share held before the split

3.5.4 Stock Distributions

In the case of stock distributions with ex-date on Trading Day *t*+1, it is assumed that the prices change according to the terms of the distribution. The new Number of Index Shares is calculated as follows:

$$x_{i,t+1} = x_{i,t} \times (1 + \mathrm{B})$$

with:

$x_{i,t+1}$ = Number of Index Shares of the affected Index Component on Trading Day *t*+1

$x_{i,t}$ = Number of Index Shares of the affected Index Component on Trading Day *t*

B = Shares received for every share held

3.5.5 Spin-Off

A spun off company is eligible for inclusion if its security line is traded on the exchange of the parent company. The spun-off company is added, the market will adjust the price of the parent company such that the sum of the parent and spun-off company's weight is approximately equal to the weight of the parent prior to spin-off. Based on the transaction terms on the ex-date, the shares of the spun-off company is calculated as follows:

*Shares of Spun-off Company = Shares of Parent Company * Transaction Terms*

The parent company and spun-off company will remain in the Index with unchanged calculation parameters.

The spun-off company will be added to the Index file with a price of zero prior to the ex-date. If the spun-off company does not start to trade on the ex-date, a theoretical price for the spun-off company will be implemented as a fixed price until it commences trading, from which time official prices will be used. The price of the spun-off company is calculated as follows:

*Price of Spun-off Company = [(Close Price Parent Company Prior to Ex-Date) – (Open Price Parent Company on Ex-Date)] * Transaction Terms*

If the first trading day of the spun-off company is unknown on the ordinary rebalancing date, the spun-off company will be removed from the Index with a price of zero.

In case the spun-off company is already an index constituent, the additional shares demerged from the parent company will be added to the spun-off company (share increase of the index member) on the ex-date.

If a spun-off company is not eligible (for example, the spun-off company is traded OTC or on an ineligible country's exchange), that company's shares are not added to the Index but instead, the weight of the spun-off company is redistributed as a special cash distribution on the ex-date.

3.5.6 Mergers and Acquisitions

In case of an Index Component subject to mergers and acquisitions, the acquired entity will be removed from the Index on the ex-date. The Index is subject to further adjustments in accordance with the following cases:

1. Merger or Acquisition of an Index Component with/by another Index Component.

    - Cash Terms: The weight of the target company based on its last close price will be distributed pro-rata across the remaining Index Components.
    - Stock Terms: The shares of the acquiring/surviving company will be increased according to the stock terms.
    - Cash and Stock Terms: The cash portion will be reinvested pro-rata across the remaining Index Components. The shares of the acquiring/surviving company will be increased according to the stock terms.

2. Merger or Acquisition of an Index Component with/by a non-Index Component.

    - Cash Terms: The weight of the target company based on its last close price will be distributed pro-rata across the remaining Index Components.
    - Stock Terms: The weight of the target company based on its last close price will be distributed pro-rata across the remaining Index Components.
    - Cash and Stock Terms: The weight of the target company based on its last close price will be distributed pro-rata across the remaining Index Components.

3.6 Calculation of the Index in the Event of a Market Disruption

3.6.1 Recalculation

Solactive makes the greatest possible efforts to accurately calculate and maintain the indices. However, errors in the determination process may occur from time to time for variety reasons (internal or external) and therefore, cannot be completely ruled out. Solactive endeavours to correct

all errors that have been identified within a reasonable period of time. The understanding of "a reasonable period of time" as well as the general measures to be taken are generally depending on the underlying and is specified in the Correction Policy.

3.6.2 Changes in Calculation Method

The application by the Benchmark Administrator of the method described in this document is final and binding. The Benchmark Administrator shall apply the method described above for the composition and calculation of the Index. However, it cannot be excluded that the market environment, supervisory, legal and financial or tax reasons may require changes to be made to this method. The Benchmark Administrator may also make changes to the terms and conditions of the Index and the method applied to calculate the Index that it deems to be necessary and desirable in order to prevent obvious or demonstrable error or to remedy, correct or supplement incorrect terms and conditions. The Benchmark Administrator is not obliged to provide information on any such modifications or changes. Despite the modifications and changes, the Benchmark Administrator will take the appropriate steps to ensure a calculation method is applied that is consistent with the method described above.

3.6.3 Termination

Solactive makes the greatest possible efforts to ensure the resilience and continued integrity of the indices over time. Where necessary, Solactive follows a clearly defined and transparent procedure to adapt Index methodologies to changing underlying markets in order to maintain continued reliability and comparability of the indices. The methodology of the Index Series is subject to regular review, at least annually. In case a need of a change of the methodology has been identified within such review (e.g. if the underlying market or economic reality has changed since the launch of the Index Series, i.e. if the present methodology is based on obsolete assumptions and factors and no longer reflects the reality as accurately, reliably and appropriately as before), such change will be made in accordance with the Solactive Methodology Policy, which is incorporated by reference and available on the Solactive website: Methodology Policy .

Such change in the methodology will be announced on the Solactive website under the Section "Announcement", which is available at https://www.solactive.com/news/announcements/. The date of the last amendment of this Index Series is contained in this guideline.

Nevertheless, if no other options are available the orderly cessation of the Index may be indicated. This is usually the case when the underlying market or economic reality, which an index is set to measure or to reflect, changes substantially and in a way not foreseeable at the time of inception of the index, the index rules, and particularly the selection criteria, can no longer be applied coherently or the index is no longer used as the underlying value for financial instruments, investment funds and financial contracts.
Solactive has established and maintains clear guidelines on how to identify situations in which the cessation of an index is unavoidable, how stakeholders are to be informed and consulted and the procedures to be followed for a termination or the transition to an alternative index. Details are specified in the Solactive Termination Policy.

3.6.4 Market Disruption

In periods of market stress Solactive calculates the indices following predefined and exhaustive arrangements as described in the Disruption Policy. Such market stress can arise due to a variety of reasons, but generally results in inaccurate or delayed prices for one or more Index Components. The determination of the Index may be limited or impaired at times of illiquid or fragmented markets and market stress.

4. DEFINITIONS

"Index Universe" in respect of a Selection Day are companies that fulfill the criteria in Section 2, Construction Methodology.

"Index Component" is each share currently included in an Index.

"Number of Shares" is in respect of an Index Component and any given Business Day the number or fraction of shares included in the Index. It is calculated for any Index Component as the ratio of (A) the Percentage Weight of an Index Component multiplied by the Index value and the Divisor, and (B) its Trading Price (converted into the index currency according to the principles laid out in Section 1.4 of this document).

"Percentage Weight" of an Index Component is the ratio of its Trading Price multiplied by its Number of Shares divided by the Index value.

"Dividend Correction Factor" is calculated as 1 minus the applicable withholding tax rate and/or other applicable tax rate currently prevalent in the respective country.

In particular an **"Extraordinary Event"** is

- a merger
- a takeover bid
- a delisting
- the nationalisation of a company
- insolvency

The Trading Price for this Index Component on the day the event came into effect is the last available market price for this Index Component quoted on the Exchange on the day the event came into effect (or, if a market price is not available for the day the event came into effect, the last available market price quoted on the Exchange on a day specified as appropriate by the Index Calculator), as determined by the Index Calculator, and this price is used as the Trading Price of the particular Index Component until the end of the day on which the composition of the Index is next set.

In the event of the insolvency of an issuer of an Index Component the Index Component shall remain in the Index until the next Rebalancing Day. As long as a market price for the affected Index Component is available on a Business Day, this shall be applied as the Trading Price for this Index Component on the relevant Business Day, as determined in each case by the Index Calculator. If a market price is not available on a Business Day the Trading Price for this Index Component is set to zero. The Committee may also decide to eliminate the respective Index Component at an earlier point in time prior to the next Rebalancing Day. The procedure in this case is identical to an elimination due to and Extraordinary Event.

An Index Component is **"delisted"** if the Exchange announces pursuant to the Exchange regulations that the listing of, the trading in or the issuing of public quotes on the Index Component at the Exchange has ceased immediately or will cease at a later date, for whatever reason (provided delisting is not because of a Merger or a Takeover bid), and the Index Component is not immediately listed, traded or quoted again on an exchange, trading, or listing system, acceptable to the Index Calculator.

"Insolvency" occurs with regard to an Index Component if (A) all shares of the respective issuer must be transferred to a trustee, liquidator, insolvency administrator, or a similar public officer as result of a voluntary or compulsory liquidation, insolvency or winding-up proceedings, or comparable proceedings affecting the issuer of the Index Components, or (B) the holders of the shares of this issuer are legally enjoined from transferring the shares.

A "Takeover Bid" is a bid to acquire, an exchange offer or any other offer or act of a legal person that results in the related legal person acquiring as part of an exchange or otherwise more than 10% and less than 100% of the voting shares in circulation from the issuer of the Index Component or the right to acquire these shares, as determined by the Index Calculator based on notices submitted to public or self-regulatory authorities or other information considered by the Index Calculator to be relevant.

With regard to an Index Component a **"Merger"** is

1. a change in the security class or a conversion of this share class that results in a transfer or an ultimate definite obligation to transfer all the shares in circulation to another legal person;

2. a merger (either by acquisition or through forming a new structure) or a binding obligation on the part of the issuer to exchange shares with another legal person (except in a merger or share exchange under which the issuer of this Index Component is the acquiring or remaining company and which does not involve a change in security class or a conversion of all the shares in circulation);

3. a takeover offer, exchange offer, other offer or another act of a legal person for the purposes of acquiring or otherwise obtaining from the issuer 100% of the shares issued that entails a transfer or the irrevocable obligation to transfer all shares (with the exception of shares which are held and controlled by the legal person); or

4. a merger (either by acquisition or through forming a new structure) or a binding obligation on the part of the issuer of the share or its subsidiaries to exchange shares with another legal person, whereby the

issuer of the share is the acquiring or remaining company and it does not involve a change in the class or a conversion of the all shares issued, but the shares in circulation directly prior to such an event (except for shares held and controlled by the legal person) represent in total less than 50% of the shares in circulation directly subsequent to such an event.

The **"Merger Date"** is the date on which a Merger is concluded or the date specified by the Index Calculator if such a date cannot be determined under the law applicable to the Merger.

"Nationalisation" is a process whereby all shares or the majority of the assets of the issuer of the shares are nationalised or are expropriated or otherwise must be transferred to public bodies, authorities, or institutions.

"Exchange" is, in respect of Index and every Index Component, the respective primary exchange where the Index Component has its primary listing. The Committee may decide to declare a different stock exchange the "Exchange" for trading reasons, even if the company is only listed there via a Stock Substitute.

"Stock Substitute" includes in particular American Depository Receipts (ADR) and Global Depository Receipts (GDR).

With regard to an Index component (subject to the provisions given above under "Extraordinary Events") the **"Trading Price**" in respect of a Trading Day is the closing price on this Trading Day determined in accordance with the Exchange regulations. If the Exchange has no closing price for an Index Component, the Index Calculator shall determine the Trading Price and the time of the quote for the share in question in a manner that appears reasonable to him.

A **"Trading Day**" is in relation to the Index or an Index Component a Trading Day on the Exchange (or a day that would have been such a day if a market disruption had not occurred), excluding days on which trading may be ceased prior to the normal Exchange closing time. The Index Calculator is ultimately responsible as to whether a certain day is a Trading Day with regard to the Index or an Index Component or in any other connection relating to this document.

The "**Closing Price**" in respect of an Index Component and a Trading Day is a security's final regular-hours Trading Price published by the Exchange and determined in accordance with the Exchange regulations. If the Exchange has no or has not published a Closing Price in accordance with the Exchange rules for an Index Component, the last Trading Price will be used.

A **"Business Day"** is defined as Monday through Friday, including holidays.

The **"Index Calculator"** is Solactive AG or any other appropriately appointed successor in this function.

The **"Benchmark Administrator"** is Solactive AG or any other appropriately appointed successor in this function.

The **"Index Currency"** is specified for each index in Table 5.1.

"Market Capitalization" is with regard to each of the shares in the Index Universe on a Selection Day or Rebalancing Day the value published as the Market Capitalization for this day.

As at the date of this document Market Capitalization is defined as the value of a company calculated by multiplying the number of shares outstanding of the company by its share price.

"Rebalancing Day" is the third Friday of March, June, September, and December.

"Selection Day" is the second Friday of February, May, August, and November.

"Index Sponsor" is RAFI Indices, LLC.

An **"Affiliated Exchange"** is, with respect to an Index Component, an exchange, trading or quotation system on which options and futures contracts on the Index Component in question are traded, as specified by the Index Calculator.

A **"Market Disruption Event"** occurs if

1. one of the following events occurs or exists on a Trading Day prior to the opening quotation time for an Index Component:

a. Trading is suspended or restricted (due to price movements that exceed the limits allowed by the Exchange or an Affiliated Exchange, or for other reasons):

   i. across the whole Exchange; or

   ii. in options or futures contracts on or with regard to an Index Component or an Index Component that is quoted on an Affiliated Exchange; or

   iii. on an Exchange or in a trading or quotation system (as determined by the Index Calculator) in which an Index Component is listed or quoted; or

b. An event that (in the assessment of the Index Calculator) generally disrupts and affects the opportunities of market participants to execute on the Exchange transactions in respect of a share included in the Index or to determine market values for a share included in the Index or to execute on an Affiliated Exchange transaction with regard to options and futures contracts on these shares or to determine market values for such options or futures contracts; or

2. trading on the Exchange or an Affiliated Exchange is ceased prior to the usual closing time (as defined below), unless the early cessation of trading is announced by the Exchange or Affiliated Exchange on this Trading Day at least one hour before

   a. the actual closing time for normal trading on the Exchange or Affiliated Exchange on the Trading Day in question or, if earlier.

   b. the closing time (if given) of the Exchange or Affiliated Exchange for the execution of orders at the time the quote is given.

   "Normal exchange closing time" is the time at which the Exchange or an Affiliated Exchange is normally closed on working days without taking into account after-hours trading or other trading activities carried out outside the normal trading hours; or

3. a general moratorium is imposed on banking transactions in the country in which the Exchange is resident if the above-mentioned events are material in the assessment of the Index Calculator, whereby the Index Calculator makes its decision based on those circumstances that it considers reasonable and appropriate.

5. APPENDIX

5.1 RAFI Multi-Factor Index Series Information

Index Name	Total Return Ticker	Price Return Ticker	Net Return Ticker	Market Hours	Currency	Base Date	Launch Date
Developed							
RAFI Multi-Factor Developed Index	RAQMFDLT	RAQMFDLP	RAQMFDLN	Global	USD	3/31/2017	3/31/2017
RAFI Multi-Factor Developed Index (GBP)	N/A	N/A	RAMDNGBP	Global	GBP	3/31/2017	3/31/2017
RAFI Multi-Factor Developed GBP Hedged Index NTR	N/A	N/A	RAMDGBPH	Global	GBP	3/31/2017	7/9/2018
RAFI Multi-Factor Developed Index (EUR)	N/A	RAMDPEUR	RAMDNEUR	Global	EUR	3/31/2017	3/31/2017
RAFI Multi-Factor Developed EUR Hedged Index NTR	N/A	N/A	RAMDNEUH	Global	EUR	3/31/2017	11/10/2021
RAFI Multi-Factor ex Low Volatility Developed Index	N/A	N/A	RAMDXLVN	Global	USD	3/31/2019	3/31/2019
RAFI Low Volatility Factor Developed Index	RADMFLDT	RADMFDLV	RADMFLDN	Global	USD	11/30/2016	12/4/2023
Developed ex-U.S.							
RAFI Dynamic Multi-Factor Developed ex US Index*	RADMFXUT	RADMFXUP*	RADMFXNT	Global	USD	11/30/2016	1/31/2017
RAFI Dynamic Multi-Factor Developed ex US Americas Index	RADMXNAT	N/A	RADMXNAN	Global	USD	9/30/2020	11/19/2020
RAFI Dynamic Multi-Factor Developed ex US Europe and Israel Index	RADMXEIT	N/A	RADMXEIN	Global	USD	9/30/2020	11/19/2020
RAFI Dynamic Multi-Factor Developed ex US APAC Index	RADMXAPT	N/A	RADMXAPN	Global	USD	9/30/2020	11/19/2020
RAFI Low Volatility Factor Developed ex US Index	RADMFXLT	RADMFXUL	RADMFXLN	Global	USD	12/19/2025	1/27/2026
Eurozone							
RAFI Value Factor Developed Eurozone Carbon Neutral Index	N/A	N/A	RAVEFFCN	Global	EUR	3/31/2019	3/31/2019
United States							
RAFI Dynamic Multi-Factor US Index*	RADMFUST	RADMFUSP*	RADMFUNT	Global	USD	11/30/2016	1/31/2017
RAFI Multi-Factor US Index	RAQMFUST	RAQMFUSP	RAQMFUNT	Global	USD	11/30/2016	1/31/2017
RAFI Value Factor US Index	RADMFUVT	RADMFUV	RADMFUVN	Global	USD	11/30/2016	1/31/2017
RAFI Low Volatility Factor US Index	RADMFULT	RADMFULV	RADMFULN	Global	USD	11/30/2016	1/31/2017
RAFI Quality Factor US Index	RADMFUQT	RADMFUQ	RADMFUQN	Global	USD	9/17/2021	9/17/2021
Emerging Markets							
RAFI Dynamic Multi-Factor Emerging Markets Index*	RADMFEMT	RADMFEMP*	RADMFENT	Global	USD	11/30/2016	1/31/2017
RAFI Dynamic Multi-Factor Emerging Markets Americas Index	RADMELAT	N/A	RADMELAN	Global	USD	9/30/2020	11/19/2020
RAFI Dynamic Multi-Factor Emerging Markets APAC Index	RADMEAPT	N/A	RADMEAPN	Global	USD	9/30/2020	11/19/2020
RAFI Dynamic Multi-Factor Emerging Markets Europe & Middle East Index	RADMEMET	N/A	RADMEMEN	Global	USD	12/17/2021	12/17/2021
RAFI Dynamic Multi-Factor Emerging Markets South Africa Index	RADMESAT	N/A	RADMESAN	Global	USD	12/17/2021	12/17/2021
RAFI Multi-Factor Emerging Markets Index	RAQMFEMT	RAQMFEMP	RAQMFENT	Global	USD	11/30/2016	1/31/2017

* Index is calculated on a real time basis

Global Hours: 01:00am – 10:50pm CET

5.2 Calculation of *Z*-score

Z-score is a commonly used method for normalizing data in order to combine it with other data. The calculation of the *Z*-score is shown below, where X_i is the variable, μ_i is the mean of the variable, and σ_i is the standard deviation of the variable.$Z_i = \frac{X_i - \mu_i}{\sigma_i}$

The variable calculated *z*-score is set to a maximum of 3 and minimum of –3.

5.3 Contact Data

For all questions relating to methodology and licensing and access, please contact RAFI Indices at info@rafi.com or call 1-866-695-9900 or 949-325-8700.

5.4 Calculation of the Index—Change in Calculation Method

The application by the Index Calculator of the method described in this document is final and binding. The Index Calculator shall apply the method described above for the composition and calculation of the Index. However it cannot be excluded that the market environment, supervisory, legal, financial, or tax reasons may require changes to be made to this method. The Index Calculator may also make changes to the terms and conditions of the Index and the method applied to calculate the Index, which it deems to be necessary and desirable in order to prevent obvious or demonstrable error or to remedy, correct or supplement incorrect terms and conditions. The Index Calculator is not obliged to provide information on any such modifications or changes. Despite the modifications and changes the Index Calculator will take the appropriate steps to ensure a calculation method is applied that is consistent with the method described above.

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