

# **BETA ADVANTAGE SUSTAINABLE INTERNATIONAL EQUITY INCOME 100 INDEX**

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**1 INTRODUCTION**

MSCI Indexes are constructed and maintained in accordance with the MSCI Global Investable Market Indexes Methodology and calculated as per the MSCI Index Calculation Methodology. This methodology book provides a description of the rules and guidelines followed by MSCI for the construction and maintenance of the Beta Advantage Sustainable International Equity Income 100 Index, which aims to reflect the performance of a Columbia Investment Advisers, LLC. strategy.

The Beta Advantage Sustainable International Equity Income 100 Index (herein, “Index”) is designed to represent the performance of companies in all developed markets excluding US that historically have demonstrated relatively higher as well as sustainable levels of income within the Parent Index universe of securities.

## 2 INDEX CONSTRUCTION METHODOLOGY

### 2.1 DEFINING THE ELIGIBLE UNIVERSE

The Parent Index includes all securities belonging to the MSCI World ex USA Index, excluding securities classified in the Equity Real Estate Investment Trusts Industry and Mortgage Real Estate Investment Trusts Sub-Industry as per the Global Industry Classification Standard (GICS®). Real Estate Investment Trusts (REITs) have structurally very high dividend yield and, if included, would represent a disproportionate share of the Index. All securities belonging to the Parent Index are eligible for inclusion in the Beta Advantage Sustainable International Equity Income 100 Index.

Beta Advantage Sustainable International Equity Income 100 Index also considers the following screens: -

- Dividend Yield screen: Include all the securities with an annualized dividend yield greater than or equal to 1%

For more details on Dividend Yield calculation, please refer to

[https://www.msci.com/eqb/methodology/meth\\_docs/MSCI\\_Fundamental\\_Data.pdf](https://www.msci.com/eqb/methodology/meth_docs/MSCI_Fundamental_Data.pdf)

- ESG Screen: Exclude securities with MSCI ESG Rating of BB or below

For more details on MSCI ESG Ratings, please refer to

[www.msci.com/resources/factsheets/MSCI\\_ESG\\_IVA.pdf](http://www.msci.com/resources/factsheets/MSCI_ESG_IVA.pdf)

In addition, securities with no coverage for the underlying factor descriptor variables as defined in section 2.2.1 are excluded from the eligible universe.

### 2.2 DETERMINATION OF THE FACTOR SCORE

#### 2.2.1 CALCULATING PERCENTILE SCORE FOR EACH INDIVIDUAL FACTOR

The percentile score for each factor is defined as a sector relative percentile score; it is computed by standardizing the region relative percentile scores within each sector group as per the existing Global Industry Classification Standard (GICS) structure.

In the first step, a region relative percentile score for each security is calculated as described below

$$P_{reg\_rel} = \frac{\text{Number of values below or equal to } x}{\text{Number of securities in a region universe}}$$

Where:

- $P_{reg\_rel}$  is the region relative percentile score for a factor descriptor
- $x$  is the individual descriptor value for a given security within a region group

The regions selected to compute region relative percentile scores within the eligible universe are:

- a.) Europe & Middle East ex UK
- b.) Pacific ex Japan
- c.) UK & Canada
- d.) Japan

For definitions of each region, please refer to Appendix I.

A sector relative percentile score is then computed for a factor descriptor as described below

$$P_{\text{sec\_rel}} = \frac{\text{Number of values below or equal to } P_{\text{reg\_rel}}}{\text{Number of securities in a sector universe}}$$

Where:

- $P_{\text{sec\_rel}}$  is the sector relative percentile score for a factor descriptor
- $P_{\text{reg\_rel}}$  is the region relative percentile score for a factor descriptor calculated in the previous step

The descriptors defining each of the four factors are as follows:-

**(i) Dividend Yield Factor**

Annualized Dividend per Share/Price of Security

**(ii) 1 Year Dividend per Share (DPS) Growth**

The 1 Year DPS growth rate is the ratio of difference between the current and previous annual DPS divided by previous annual DPS

$$1Y \text{ DPS Growth} = \frac{DPS_t - DPS_{t-12}}{DPS_{t-12}}$$

Where:

- $t$  is the year expressed in number of months.

For more details on DPS, please refer to

[https://www.msci.com/eqb/methodology/meth\\_docs/MSCI\\_Fundamental\\_Data.pdf](https://www.msci.com/eqb/methodology/meth_docs/MSCI_Fundamental_Data.pdf)

**(iii) Cash-based Dividend Coverage Ratio**

For all the securities classified in the Financials, Real Estate and Utilities Sectors of the Global Industry Classification Standard (GICS®), the Cash-based Dividend Coverage Ratio is defined as the last 12 months Net Income per share divided by the annualized Dividend per share.

For all the securities classified in a GICS Sector except those in the Financials, Real Estate and Utilities Sectors the Cash-based Dividend Coverage Ratio is defined as the annual free Cash Flow divided by the annualized dividend

**(iv) 3 Year Average of Cash-based Dividend Coverage Ratio**

Calculated as the average percentile rank for the past 12 quarters (calculated at each Quarter end) using the Factor defined in **Cash-based Dividend Coverage Ratio**.

**2.2.2 CALCULATING THE COMPOSITE FACTOR SCORE**

The Composite Factor Score is computed by combining the sector relative percentile scores for each factor as described below.

$$P_{\text{Comp}} = 0.30 * P_{\text{Div\_Yield}} + 0.20 * P_{\text{DPS Growth}} + 0.25 * P_{\text{Coverage Ratio}} + 0.25 * P_{\text{Avg. Coverage Ratio}}$$

Where:

- $P_{\text{Comp}}$  is the Composite Factor Score
- $P_{\text{Div\_Yield}}$  is the sector relative percentile score for Dividend Yield as calculated in the previous section
- $P_{\text{DPS Growth}}$  is the sector relative percentile score for Dividend per Share (DPS) Growth as calculated in the previous section
- $P_{\text{Coverage Ratio}}$  is the sector relative percentile score for Cash-based Dividend Coverage Ratio as calculated in the previous section
- $P_{\text{Avg. Coverage Ratio}}$  is the sector relative percentile score for 3 Year Average of Cash-based Dividend Coverage Ratio as calculated in the previous section

### **2.3 SECURITY SELECTION AND WEIGHTING SCHEME**

The Beta Advantage Sustainable International Equity Income 100 Index is constructed using a fixed number of securities approach. All the constituents of the eligible universe are ranked based on their Composite Factor Score and the 100 securities with the highest Composite Factor Scores are selected. In case there are multiple securities with the same Composite Factor Score, the security having higher value of Dividend Yield Factor Score is selected.

The top 100 selected securities are ranked based on the Composite Factor Score to compute Composite Factor Score rank and on the Dividend Yield Factor Score to compute Dividend Yield Factor Score rank. A final weighting rank is then computed based on the average of Composite Factor Score rank and the Dividend Yield Factor Score rank. The top 100 securities are then given weights according to its weighting rank; distributed linearly from 1.495% for weighting rank one to 0.505% for the weighting rank 100 at the time of rebalancing.

### 3 MAINTAINING THE INDEX

#### 3.1 QUARTERLY AND SEMI-ANNUAL INDEX REVIEWS

The Beta Advantage Sustainable International Equity Income 100 Index is reviewed on a quarterly basis coinciding with the May and November Semi-Annual Index Reviews and the February and August Quarterly Index Reviews of the Parent Index. The pro forma Index typically is announced nine business days before the effective date.

At each rebalancing, a constraint factor (CF) is calculated for each constituent in the Index. The constraint factor is defined as the weight in the Index at the time of the rebalancing divided by the weight in the Parent Index. The constraint factor as well as the constituents in the Index remains constant between index reviews except in case of corporate events as described in the Appendix II.

##### 3.1.1 BUFFER RULES

To reduce index turnover and enhance index stability, buffer rules are applied as follows:

###### Security Selection Buffer

A security selection buffer of 50% is applied during the on-going Index Reviews. The Index targets 100 securities and the buffers are applied between rank 51 and 150.

- First, securities in the Parent Index with a final factor score rank at or above 50 will be added to the Index on a priority basis.
- Second, all current constituents of the Index that have a final factor score rank between 51 and 150 are successively added until the number of securities reaches 100.
- Third, if the number of securities is below 100 after this step, the remaining securities in the Parent Index with the highest final factor score rank are added until the number of securities in the Index reaches 100.

#### 3.2 ONGOING EVENT RELATED CHANGES

In general, the Index follows the event maintenance of the MSCI Parent Index.

##### 3.2.1 IPOs AND OTHER EARLY INCLUSIONS

IPOs and other newly listed securities will only be considered for inclusion at the next Index Review, even if they qualify for early inclusion in the Parent Index.

##### 3.2.2 ADDITIONS AND DELETIONS DUE TO CORPORATE EVENTS

A constituent deleted from the Parent Index following a corporate event will be simultaneously deleted from the Index. Please refer to Appendix II for more details on the treatment of corporate events.



## APPENDIX I: REGION DEFINITIONS

| Europe & Middle East | Pacific ex Japan |
|----------------------|------------------|
| AUSTRIA              | AUSTRALIA        |
| BELGIUM              | HONG KONG        |
| DENMARK              | NEW ZEALAND      |
| FINLAND              | SINGAPORE        |
| FRANCE               |                  |
| GERMANY              |                  |
| IRELAND              |                  |
| ISRAEL               |                  |
| ITALY                |                  |
| NETHERLANDS          |                  |
| NORWAY               |                  |
| PORTUGAL             |                  |
| SPAIN                |                  |
| SWEDEN               |                  |
| SWITZERLAND          |                  |
| UNITED KINGDOM       |                  |

Whenever MSCI changes the country constituents of the Parent Index, the constituent countries of this Index will change accordingly. The changes in the constituent companies of the MSCI Standard Country Indexes that comprise this Index will also be reflected in this Index.

## APPENDIX II: CORPORATE EVENTS TREATMENT

This appendix describes the treatment of the corporate events in the Beta Advantage Sustainable International Equity Income 100 Index. The details regarding the treatment of all other corporate events not covered in this appendix can be found in the MSCI Corporate Events Methodology book, available at [www.msci.com/index-methodology](http://www.msci.com/index-methodology).

In case of merger or acquisition aggregate CF (Constraint Factor) at Index level is calculated using the CF using the following formula:

$$CF = \frac{(CF_{a1} * W_{a1} + CF_{a2} * W_{a2})}{(W_{a1} + W_{a2})}$$

Where,  $CF_{a1}$  is the constraint factor of constituent 1 in the Index,  $W_{a1}$  is the weight of constituent 1 in the Parent Index,  $CF_{a2}$  is the constraint factor of the constituent 2 in the Index,  $W_{a2}$  is the weight of the constituent 2 in the Parent Index.

| Event       | Event details   | Action  |
|-------------|---|---|
| Acquisition | Beta Advantage Sustainable International Equity Income 100 Index constituent acquires another Beta Advantage Sustainable International Equity Income 100 Index constituent    | Maintain acquiring company with a constraint factor that is weighted average of the two constituents as mentioned above.  |
|             | Beta Advantage Sustainable International Equity Income 100 Index constituent acquires non constituent. Non constituent is in Parent Index.                                    | Maintain acquiring company with a constraint factor that is weighted average of the two constituents. Constraint factor of acquired non constituent company would be zero.                |
|             | Beta Advantage Sustainable International Equity Income 100 Index constituent acquires non constituent. Non constituent is not in the Parent Index.                            | Maintain acquiring company with a constraint factor that is weighted average of the two constituents. Constraint factor and weight of the acquired non constituent company would be zero. |
|             | Non Beta Advantage Sustainable International Equity Income 100 Index constituent acquires constituent   | Acquired constituent would be removed regardless of type of acquisition by non constituent. The acquiring company would not be added to the Index.  |
| Merger      | Beta Advantage Sustainable International Equity Income 100 Index constituent merges with another Beta Advantage Sustainable International Equity Income 100 Index constituent | Add new company with a constraint factor that is the weighted average of the two constituents.  |

| Event  | Event details   | Action  |
|--|---|---|
|  | Beta Advantage Sustainable International Equity Income 100 Index constituent merges with non constituent. Non constituent is in Parent Index. Price history is linked with constituent.             | Add new company with a constraint factor that is the weighted average of the two constituents. Constraint factor of non constituent company would be zero.            |
|  | Beta Advantage Sustainable International Equity Income 100 Index constituent merges with non constituent. Non constituent is not in the Parent Index. Price history is linked with constituent.     | Add new company with a constraint factor that is the weighted average of the two constituents. Constraint factor and weight of non constituent company would be zero. |
|  | Beta Advantage Sustainable International Equity Income 100 Index constituent merges with non constituent. Non constituent is not in the Parent Index. Price history is linked with non constituent. | New company will be considered for inclusion in the Beta Advantage Sustainable International Equity Income 100 Index at the next Index Review                         |
| IPO  | IPO added to the Parent Index   | Security will be considered for the inclusion in the Beta Advantage Sustainable International Equity Income 100 Index at the next Index Review.                       |
| Spin-off   | Beta Advantage Sustainable International Equity Income 100 Index constituent spins off security   | Add spun-off security to the Index with the constraint factor of the Parent security, if it is included in the Parent Index   |
| Conversion   | Security A converted to B, A deleted from Parent Index, B added   | B inherits constraint factors from A.   |
| Country Reclassification                                       | Domicile of company reviewed: Security A deleted from country A, security B added to country B  | B inherits constraint factors from A if it is added to the Parent Index.  |
| Stock exchange reclassification                                | Stock exchange (price source) of company reviewed: Security A deleted, security B added   | B inherits constraint factors from A if it is added to the Parent Index.  |
| Other Events Resulting in Changes in Number of Shares and FIFs | Changes in number of shares and subsequent FIF resulting from other events such as share placements and offerings, and debt-to-equity-swaps   | No change in constraint factor  |

**The following sections have been modified since June 2016:**

- Section 2.1: Excluded GICS Industry and Sub-Industry are updated to reflect the changes to the GICS structure effective September 01, 2016
- Section 2.2.1: Included GICS Real Estate Sector in methodology to reflect the changes to the GICS structure effective September 01, 2016

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