

# **BETA ADVANTAGE SUSTAINABLE US 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 U.S. Equity Income 100 Index, which aims to reflect the performance of a Columbia Investment Advisers, LLC. strategy.

The Beta Advantage Sustainable U.S. Equity Income 100 Index (herein, “Index”) is designed to represent the performance of companies in all developed markets 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 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 U.S. Equity Income 100 Index.

Beta Advantage Sustainable U.S. Equity Income 100 Index also considers the following screens: -

- Dividend Yield screen: Include all the securities with a current 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 sector relative percentile score; it is computed by standardizing the factor descriptor values within each sector group as per the existing Global Industry Classification Standard (GICS) structure.

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

Where:

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

In case there are multiple securities with same individual factor value within a sector group, the security with higher free float-adjusted market capitalization is assigned the higher percentile score.

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

**(i) Dividend Yield Factor**

Current 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 as per 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 current 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 current 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 the **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.

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

Where:

- $P_{Comp}$  is the Composite Factor Score
- $P_{Div Yield}$  is the sector relative percentile score for Dividend Yield as calculated in the previous section
- $P_{DPS Growth}$  is the sector relative percentile score for Dividend per Share (DPS) Growth as calculated in the previous section
- $P_{Coverage Ratio}$  is the sector relative percentile score for Cash-based Dividend Coverage Ratio as calculated in the previous section
- $P_{Avg. Coverage Ratio}$  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 U.S. 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 Score 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 U.S. 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 I.

##### 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 I for more details on the treatment of corporate events.

## APPENDIX I: CORPORATE EVENTS TREATMENT

This appendix describes the treatment of the corporate events in the Beta Advantage Sustainable U.S. 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 U.S. Equity Income 100 Index constituent acquires another Beta Advantage Sustainable U.S. 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 U.S. 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 U.S. 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 U.S. 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 U.S. Equity Income 100 Index constituent merges with another Beta Advantage Sustainable U.S. 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 U.S. 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 U.S. 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 U.S. 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 U.S. 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 U.S. Equity Income 100 Index at the next Index Review.
Spin-off	Beta Advantage Sustainable U.S. 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 August 2016:**

- Section 2.2.1: Clarification regarding security selection in cases of same factor scores

**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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