

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

- 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

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

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

Where:

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

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

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

In case there are multiple securities with same region relative percentile score within a sector, 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

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

(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.

$$P_{Comp} = 0.30 * P_{Div_Yield} + 0.20 * P_{DPS_Growth} + 0.25 * P_{Coverage\ Ratio} + 0.25 * P_{Avg.\ Coverage\ Ratio}$$

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

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 section 3.2.

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

The general treatment of corporate events in the Beta Advantage Sustainable International Equity Income 100 Index aims to minimize turnover outside of Index Reviews. The methodology aims to appropriately represent an investor’s participation in an event based on relevant deal terms and pre-event weighting of the index constituents that are involved. Further, changes in index market capitalization that occur as a result of corporate event implementation will be offset by a corresponding change in the Variable Weighting Factor (VWF) of the constituent.

Additionally, if the frequency of Index Reviews in the Parent Index is greater than the frequency of Index Reviews in the Beta Advantage Sustainable International Equity Income

100 Index, the changes made to the Parent Index during intermediate Index Reviews will be neutralized in the Beta Advantage Sustainable International Equity Income 100 Index.

The following section briefly describes the treatment of common corporate events within the Beta Advantage Sustainable International Equity Income 100 Index.

No new securities will be added (except where noted below) to the Index between Index Reviews. Parent Index deletions will be reflected simultaneously.

EVENT TYPE	EVENT DETAILS
New additions to the Parent Index	A new security added to the parent index (such as IPO and other early inclusions) will not be added to the index.
Spin-Offs	All securities created as a result of the spin-off of an existing Index constituent will be added to the Index at the time of event implementation. Reevaluation for continued inclusion in the Index will occur at the subsequent Index Review.
Merger/Acquisition	<p>For Mergers and Acquisitions, the acquirer’s post event weight will account for the proportionate amount of shares involved in deal consideration, while cash proceeds will be invested across the Index.</p> <p>If an existing Index constituent is acquired by a non-Index constituent, the existing constituent will be deleted from the Index and the acquiring non-constituent will not be added to the Index.</p>
Changes in Security Characteristics	A security will continue to be an Index constituent if there are changes in characteristics (country, sector, size segment, etc.) Reevaluation for continued inclusion in the Index will occur at the subsequent Index Review.

Further detail and illustration regarding specific treatment of corporate events relevant to this Index can be found in the MSCI Corporate Events Methodology book under the sections detailing the treatment of events in Capped Weighted and Non-Market Capitalization Weighted indexes.

The MSCI Corporate Events methodology book is available at:
<https://www.msci.com/index-methodology>

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.

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

The following sections have been modified since February 2017:

- Appendix II in the previous version of the methodology book describing the Corporate Events treatment has been deleted. The details on the Corporate Events treatment are now included in Section 3.2.

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