

MSCI ESG UNIVERSAL INDEXES METHODOLOGY

May 2018

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1 INTRODUCTION

The MSCI ESG Universal Indexes (the 'Indexes') aim to represent the performance of an investment strategy that by re-weighting free-float market cap weights based upon certain ESG metrics seeks to increase exposure to those companies demonstrating both a robust ESG profile as well as a positive trend in improving that profile, while seeking to minimize exclusions from the parent index.

Institutional investors are increasingly looking for ways to integrate ESG into their investment decision-making process. By doing so, they mainly aim to mitigate long-term risks, generate higher risk-adjusted performance and/or align investments with the broader societal objectives. Historically, ESG integration index strategies have relied on an exclusionary approach whereby poor ESG performers would be screened out from an investment opportunity set. However, such approaches may be challenging for large asset owners to reconcile with their 'universal owner' position.

The MSCI ESG Universal Indexes are constructed in following steps. First, we exclude the stocks with the weakest ESG profile from an MSCI Index (the 'Parent Index'). Second, we define an ESG re-weighting factor that reflects an assessment of both the current ESG profile (based on the current MSCI ESG Rating – see section 3.3.1) as well as the trend in that profile (based on the MSCI ESG Rating Trend – see section 3.3.2). Finally, we re-weight securities from the free-float market cap weights of the Parent Index using this combined ESG score to construct the MSCI ESG Universal Index.

2 MSCI ESG RESEARCH

MSCI ESG Research provides in-depth research, ratings and analysis of the environmental, social and governance-related business practices of thousands of companies worldwide. It consists of an integrated suite of tools and products to efficiently manage research, analysis and compliance tasks across the spectrum of ESG factors.

The Index uses company ratings and research provided by MSCI ESG Research. In particular, this index uses the following three MSCI ESG Research products: MSCI ESG Ratings, MSCI ESG Controversies Score, and MSCI ESG Business Involvement Screening Research.

For details on MSCI ESG Research’s full suite of ESG products, please refer to: <https://www.msci.com/esg-integration>

2.1 MSCI ESG RATINGS

MSCI ESG Ratings provides research, analysis and ratings of how well companies manage environmental, social and governance risks and opportunities.

MSCI ESG Ratings provides an overall company ESG rating - a seven point scale from ‘AAA’ to ‘CCC’. In addition, the product provides scores and percentiles indicating how well a company manages each key issue relative to industry peers.

For more details on MSCI ESG Ratings, please refer to: <https://www.msci.com/esg-ratings>

2.2 MSCI ESG CONTROVERSIES

MSCI ESG Controversies (previously known as MSCI ESG Impact Monitor) provides assessments of controversies concerning the negative environmental, social, and/or governance impact of company operations, products and services. The evaluation framework used in MSCI ESG Controversies is designed to be consistent with international norms represented by the UN Declaration of Human Rights, the ILO Declaration on Fundamental Principles and Rights at Work, and the UN Global Compact. MSCI ESG Controversies Score falls on a 0-10 scale, with “0” being the most severe controversy.

For more details on MSCI ESG Controversies Score, please refer to: <https://www.msci.com/esg-integration>

2.3 MSCI ESG BUSINESS INVOLVEMENT SCREENING RESEARCH

MSCI ESG Business Involvement Screening Research (BISR) aims to enable institutional investors to manage environmental, social and governance (ESG) standards and restrictions reliably and efficiently.

For more details on MSCI ESG Business Involvement Screening Research, please refer to http://www.msci.com/resources/factsheets/MSCI_ESG_BISR.pdf

3 INDEX CONSTRUCTION METHODOLOGY

3.1 APPLICABLE UNIVERSE

The applicable universe includes all the existing constituents of the Parent Index. This approach aims to provide an opportunity set with sufficient liquidity and capacity.

3.2 ELIGIBLE UNIVERSE

The eligible universe is constructed by excluding securities based on the following criteria:

3.2.1 UNRATED COMPANIES

- Missing Controversy Score – Companies not assessed by MSCI ESG Research on MSCI ESG Controversies.
- Missing ESG Rating – Companies not rated by MSCI ESG Research for an ESG assessment.

3.2.2 COMPANIES HAVING FACED VERY SEVERE ESG CONTROVERSIES

Companies having faced very severe controversies pertaining to ESG issues in the last three years– Defined as companies with an ESG Controversy Score of 0.

3.2.3 COMPANIES INVOLVED IN CONTROVERSIAL WEAPONS BUSINESSES

Companies involved in Controversial Weapons (i.e. cluster munitions, landmines, depleted uranium weapons, biological/chemical weapons, blinding lasers, non-detectable fragments and incendiary weapons), as defined by the methodology of the MSCI Ex-Controversial Weapons Indexes. For more details on the controversial weapons exclusion, please refer to Appendix I.

3.3 DETERMINATION OF COMBINED ESG SCORE

Each company in the eligible universe is assigned a Combined ESG score, which is calculated by taking into account a company’s MSCI ESG Rating and its MSCI ESG Rating Trend.

3.3.1 ESG RATING SCORE

Using the MSCI ESG Rating, we group companies so as to assign an ESG Rating score to each company in the eligible universe as illustrated in the table below

Rating Group	ESG Rating	ESG Category	ESG Rating Score
1	AAA	Leaders	2
2	AA		2
3	A	Neutral	1
4	BBB		1
5	BB		1
6	B	Laggards	0.5
7	CCC		0.5

3.3.2 ESG RATING TREND SCORE

MSCI ESG Rating Trend shows the ESG rating change from prior to current: it is expressed as the number of levels between the current rating and the previous rating. The rating trend is positive for a ratings upgrade (for example, the company's ESG rating changed from BBB to AAA), negative for ratings downgrade (for example company's ESG rating changed from AA to A) and zero for no change in the rating.

An 'ESG Rating Trend Score' is assigned to each company based on its ESG Rating Trend as per the following table

Trend group	ESG Rating Trend*	ESG Rating Trend Score
1	Upgrade	1.25
2	Neutral	1
3	Downgrade	0.75

* ESG Rating Trend

- Upgrade – Company's latest ESG Rating has increased by at least one level compared to previous assessment.
- Neutral – Company's latest ESG Rating has stayed the same as its ESG Rating from previous assessment or MSCI ESG Research has initiated coverage on the company.

- Downgrade – Company’s latest ESG Rating has decreased by at least one level compared to its previous assessment.

3.3.3 COMBINED ESG SCORE

The Combined ESG Score is calculated for each company as follows:

Combined ESG Score = ESG Rating Score * ESG Trend Score.

3.3.3.1 COMBINED ESG SCORE CAPPING

In order to reduce reverse turnover in the index, the Combined ESG Score of a security is capped between the ESG Rating Scores corresponding to MSCI ESG Rating of ‘AAA’ (best rating) and ‘CCC’ (worst rating).

For example – If in year 1 a company is upgraded to AAA from BBB, then the weight of the company in the index will increase in year 1. However, if the company maintains its rating at AAA in year 2 then since the rating cannot improve beyond AAA, the index would otherwise need to decrease the weight of that company (as the company’s un-capped Combined ESG Score in year 2 will be less than the Combined ESG Score in year 1).

Similarly, in year 2, the index would otherwise need to increase the weight of a company in year 2 which was downgraded to CCC rating (the worst possible rating) in year 1 and then maintained its rating at CCC in year 2.

3.4 WEIGHTING SCHEME

At each rebalancing, all the securities from the eligible universe are weighted by the product of their market capitalization weight in the Parent Index and the Combined ESG Score.

Security Weight = Combined ESG Score * Market Capitalization Weight in the Parent Index

The above weights are then normalized to 100%.

Additionally, constituent weights are capped at the issuer level to mitigate concentration risk:

1. Issuers in the Indexes based on broad Parent Indexes (e.g. MSCI World Index) will be capped at 5%
2. Issuers in the Index based on narrow Parent Indexes will be capped at the maximum weight in the Parent Index.

Narrow Parent Indexes are defined as those indexes for which the maximum market capitalization weight in the Parent Index is more than 10%.

Note that the capping of the issuer weight is done for the pro forma index as of the effective date, based on the closing prices as of the index review announcement date. In cases where the issuer weight breaches the cap as a result of market price movements or corporate events between the announcement date and the effective date, the capping is not applied

again. Similarly, even if any issuer weight breaches the cap as a result of market price movements or corporate events between two Semi-Annual Index Reviews, no capping is applied.

4 MAINTAINING THE MSCI ESG UNIVERSAL INDEXES

4.1 SEMI-ANNUAL INDEX REVIEWS

The Indexes are rebalanced on a semi-annual basis, as of the close of the last business day of May and November, coinciding with the May and November semi-annual Index Review of the MSCI Global Investable Market Indexes. The pro forma Indexes are in general announced nine business days before the effective date.

In general, MSCI uses MSCI ESG Research data (including MSCI ESG Ratings, MSCI ESG Controversies Scores and MSCI Business Involvement Screening Research) as of the end of the month preceding the Index Reviews for the rebalancing of MSCI ESG Universal indexes. For some securities, such data may not be published by MSCI ESG Research by the end of the month preceding the Index Review. For such securities, MSCI will use ESG data published after the end of month, when available, for the rebalancing of MSCI ESG Universal Indexes. This approach aims to capture timely updates to ESG Ratings of the constituents and coincides with the rebalancing of the relevant MSCI Parent Indexes.

4.2 QUARTERLY INDEX REVIEWS

The indexes are reviewed on a quarterly basis to coincide with the regular Quarterly Index Reviews of the MSCI Global Investable Market Indexes, as of the close of the last business day of February and August. At quarterly reviews, the indexes are not re-constituted, but an existing constituent may be deleted from the Indexes if they are involved in controversial weapons or have received a red flag based on MSCI ESG Research Controversies research. The ESG Controversy Score and controversial weapon are used as of January and July for the February and August Quarterly Index Reviews, respectively. For some securities, this data may not be published by MSCI ESG Research by the end of the month preceding the Index Review. For such securities, MSCI will use ESG data published after the end of month, when available, for the rebalancing of MSCI ESG Universal Indexes.

4.3 ONGOING EVENT RELATED CHANGES

The general treatment of corporate events in the MSCI ESG Universal Indexes 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 MSCI ESG Universal Index, the changes made to the Parent Index during intermediate Index Reviews will be neutralized in the MSCI ESG Universal Index.

The following section briefly describes the treatment of common corporate events within the MSCI ESG Universal Indexes.

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	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. 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.
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: COMPANIES INVOLVED IN CONTROVERSIAL WEAPONS BUSINESS

Companies which meet the following Controversial Weapons criteria are excluded from the Index

- **Cluster Bombs**

MSCI ESG Research’s cluster bomb research identifies public companies that are involved in the production of cluster bombs and munitions, or the essential components of these products.
- **Landmines**

MSCI ESG Research’s landmines research identifies public companies that are involved in the production of anti - personnel landmines, anti - vehicle landmines, or the essential components of these products.
- **Depleted Uranium Weapons**

MSCI ESG Research’s depleted uranium weapons research identifies public companies involved in the production of depleted uranium weapons and armor.
- **Chemical and Biological Weapons**

MSCI ESG Research’s chemical and biological weapons research identifies public companies that are involved in the production of chemical and biological weapons, or the essential components of these products.
- **Blinding Laser Weapons**

MSCI ESG Research’s blinding laser weapons research identifies public companies that are involved in the production of weapons utilizing laser technology to cause permanent blindness.
- **Non-Detectable Fragments**

MSCI ESG Research’s non-detectable fragments research identifies public companies that are involved in the production of weapons that use non-detectable fragments to inflict injury.
- **Incendiary Weapons (White Phosphorus)**

MSCI ESG Research’s incendiary weapons research identifies companies that are involved in the production of weapons using white phosphorus.

Involvement criteria:

- Producers of the weapons

- Producers of key components of the weapons (only applies to cluster bombs, landmines, depleted uranium weapons as well as chemical and biological weapons)
- Ownership of 20% or more of a weapons or components producer
 The minimum limit is raised to 50% for financial companies having an ownership in a company that manufactures controversial weapons or key components of controversial weapons
- Owned 50% or more by a company involved in weapons or components production

Revenue limits:

Any identifiable revenues, i.e., zero tolerance

For details please refer to MSCI Global ex Controversial Weapons Indexes Methodology at <https://www.msci.com/index-methodology>.

The following sections have been updated since February 2017:

Section 4: Maintaining the MSCI ESG Universal Indexes

- Clarification on use of ESG data for securities whose data were published later than at the end of the month preceding Index Review.

The following sections have been modified since May 2017:

- The details on the Corporate Events treatment are now included in Section 4.3.

The following sections have been modified since June 2017:

Appendix 1: Companies Involved in Controversial Weapons Business

- Updated to reflect the addition of new screens for blinding lasers, non-detectable fragments and incendiary weapons (white phosphorus)

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