

MSCI Extended ESG Focus Indexes Methodology

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1 Introduction

The MSCI Extended ESG Focus Indexes (the 'Indexes') are designed to maximize their exposure to positive environmental, social and governance (ESG) factors while exhibiting risk and return characteristics similar to those of the underlying market capitalization weighted index. The Indexes are constructed by selecting constituents of a market capitalization weighted index (the 'Parent Index') through an optimization process that aims to maximize exposure to ESG factors for a target tracking error budget under certain constraints.

The Indexes are sector-diversified and target companies with high ESG Ratings. Companies with exposure to Tobacco, Controversial Weapons, Civilian Firearms, Oil Sands and Thermal Coal are not eligible for inclusion in the Indexes.

2 ESG Research Framework

MSCI ESG Research LLC 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 MSCI Extended ESG Focus Indexes use company ratings and research provided by MSCI ESG Research LLC. These indexes use the following four MSCI ESG Research LLC products: MSCI ESG Ratings, MSCI ESG Controversies Score, MSCI ESG Business Involvement Screening Research and MSCI ESG Climate Change Metrics Data.

For details on MSCI ESG Research’s full suite of ESG products, please refer to: http://www.msci.com/products/esg/about_msci_esg_research.html

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 (earlier known as MSCI 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/documents/10199/acbe7c8a-a4e4-49de-9cf8-5e957245b86b>

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

2.4 MSCI CLIMATE CHANGE METRICS

MSCI Climate Change Metrics is designed to support investors seeking to achieve a range of objectives, including measuring and reporting on climate risk exposure, implementing low carbon and fossil fuel-free strategies, and factoring climate change research into their risk management processes. It provides Carbon Emissions, Fossil Fuel exposure, environmental impact (i.e., clean technology) data and screens, as well as climate-related risk exposure and management assessment on companies.

For more details on MSCI Climate Change Metrics, please refer to <https://www.msci.com/climate-change-solutions>

3 Constructing the MSCI Extended ESG Focus Indexes

Constructing the MSCI Extended ESG Focus Indexes involves the following steps:

- Defining the underlying Parent Index
- Defining the exclusion criteria
- Defining the optimization constraints
- Determining the optimized portfolio

3.1 DEFINING THE PARENT INDEX

The starting security universe for MSCI Extended ESG Focus Indexes includes all the constituents of their respective MSCI Parent index (the “Parent Index”), as shown in the table below

ESG Extended Focus Index	Parent Index
MSCI EAFE Extended ESG Focus Index	MSCI EAFE Index
MSCI EM (Emerging Markets) Extended ESG Focus Index	MSCI EM (Emerging Markets) Index
MSCI USA Extended ESG Focus Index	MSCI USA Index
MSCI USA Small Cap Extended ESG Focus Index	MSCI USA Small Cap Index
MSCI Canada IMI Extended ESG Focus Index	MSCI Canada IMI Index

3.2 DEFINING THE EXCLUSION CRITERIA

3.2.1 VALUES AND CLIMATE CHANGE BASED EXCLUSIONS

The Indexes use MSCI ESG Business Involvement Screening Research to identify companies that are involved in the following business activities.

Companies that meet the business involvement criteria are not eligible for inclusion in the Indexes.

Please refer to Appendix I for details on these criteria.

Values based Exclusions:

- Controversial Weapons
- Tobacco
- Civilian Firearms

Climate Change based Exclusions:

- Thermal Coal
- Oil Sands

Climate Change based Exclusions are not applicable for MSCI Canada IMI Extended ESG Focus Index.

3.2.2 ESG CONTROVERSIES SCORE ELIGIBILITY

The Indexes use MSCI ESG Controversies Scores to identify those companies that are involved in very serious controversies involving the environmental, social, or governance impact of their operations and/or products and services. Constituents of Parent Index with ESG Controversy Score = 0 ('Red Flag' companies) are excluded from the eligible universe.

3.2.3 OTHER EXCLUSION CRITERIA

- Missing Controversy Score – Companies not assessed by MSCI ESG Research LLC on ESG Controversies are not eligible for inclusion in the MSCI Extended ESG Focus Indexes.
- Missing ESG Rating or ESG Score – Companies not assessed by MSCI ESG Research LLC on ESG Rating or ESG Score are not eligible for inclusion in the MSCI Extended ESG Focus Indexes.

3.3 DEFINING THE OPTIMIZATION CONSTRAINTS

Constituents from the eligible universe are selected to maximize exposure to higher ESG scores, subject to maintaining risk and return characteristics similar to the Parent Index. ESG scores are normalized and used in the optimization process. Optimization maximizes the Index's exposure to ESG scores for a given predicted

tracking error. The following predicted tracking error targets are used for the construction of MSCI Extended ESG Focus Indexes:

No.	ESG Extended Focus Index	Predicted Tracking Error
1	MSCI EAFE Extended ESG Focus Index	0.5%
2	MSCI EM (Emerging Markets) Extended ESG Focus Index	1.0%
3	MSCI USA Extended ESG Focus Index	0.5%
4	MSCI USA Small Cap Extended ESG Focus Index	0.5%
5	MSCI Canada IMI Extended ESG Focus Index	1.0%

Optimization is a quantitative process that considers the market capitalization weights from the Parent Index, ESG scores and additional constraints to select and weight the constituents of the Index.

Normalization of the ESG scores allows the optimization process to assess each score in the context of the overall distribution of the ESG scores.

Please refer to Appendix 2 for the Optimization constraints.

3.4 DETERMINING THE OPTIMIZED PORTFOLIO

The Indexes are constructed using the Barra Open Optimizer in combination with the relevant Barra Equity Model. The optimization uses universe of eligible securities and the specified optimization objective and constraints to determine the constituents of the MSCI Extended ESG Focus Indexes.

4 Maintaining the MSCI Extended ESG Focus Indexes

4.1 QUARTERLY INDEX REVIEWS

The Indexes are rebalanced on a quarterly basis to coincide with the regular Index Reviews (Semi-Annual Index Reviews in May and November and Quarterly Index Reviews in February and August) of the MSCI Global Investable Market Indexes. The changes are implemented at the end of February, May, August and November. The pro forma indexes are in general announced nine business days before the effective date.

ESG scores used for the Quarterly Index Reviews will be taken as of the end of the month preceding the Index Review, i.e., January, April, July and October.

At each Index Review, the optimization process outlined in Section 3 is implemented. Companies can only be added to the Indexes only at regular Index Reviews.

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 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.

4.2 ONGOING EVENT-RELATED MAINTENANCE

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

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

No new securities will be added (except where noted below) to the Indexes 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 1: Values and Climate Change Based Exclusion Criteria

- Tobacco Involvement

Companies which meet the following Tobacco involvement criteria are excluded from the Indexes

- All companies classified as “Producer” or “Licensor”
- All companies classified as “Distributor”, “Retailer”, or “Supplier” that earn 15% or more of revenues from tobacco products
- All companies classified as “Ownership by a Tobacco Company” or “Ownership of a Tobacco Company”

- Controversial Weapons Involvement

All companies with any tie to Controversial Weapons (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 Global Ex-Controversial Weapons Indexes available at <https://www.msci.com/index-methodology>.

- Civilian Firearms

- All companies classified as a “Producer”.
- All companies classified as a “Retailer” that earn 5% or more in revenue or more than \$ 20 million in revenue, from civilian firearms-related products.

- Thermal Coal

- All companies deriving 5% or more revenue (either reported or estimated) from the mining of thermal coal (including lignite, bituminous, anthracite and steam coal) and its sale to external parties. It excludes: revenue from metallurgical coal; coal mined for internal power generation (e.g. in the case of vertically integrated power producers); intra-company sales of mined thermal coal; and revenue from coal trading.
- All companies deriving 5% or more revenue (either reported or estimated) from the thermal coal based power generation.

- Oil Sands
 - This factor identifies the maximum percentage of revenue (either reported or estimated) greater than 5% that a company derives from oil sands extraction for a set of companies that own oil sands reserves and disclose evidence of deriving revenue from oil sands extraction. This factor does not include revenue from non-extraction activities (e.g. exploration, surveying, processing, refining); ownership of oil sands reserves with no associated extraction revenues; revenue from intra-company sales.

Appendix 2: Optimization Constraints

At each Quarterly Index Review, the following optimization constraints are used to ensure replicability and Investability:

Optimization Constraints

No.	Parameter	EAFE	EM	USA	USA Small Cap	Canada IMI
1	Predicted Tracking Error	0.5%	1.0%	0.5%	0.5%	1.0%
2	Min Constituent Weight	0.1%	0.1%	0.1%	0.05%	0.05%
3	Constituent Active Weight	+/-2%	+/-2%	+/-2%	+/-2%	+/-2%
4	Security Weight as a Multiple of its weight in the Parent Index	20	20	20	20	20
5	Active Sector Weights	+/-5%	+/-5%	+/-5%	+/-5%	+/-5%
6	Active Country Weights*	+/-5%	+/-5%	NA	NA	NA
7	One Way Turnover during May and November Index Review	10%	10%	10%	10%	10%
8	One Way Turnover during Feb and Aug Index Review	5%	5%	5%	5%	5%
9	Specific Risk Aversion	0.075	0.075	0.075	0.075	0.075
10	Common Factor Risk Aversion	0.0075	0.0075	0.0075	0.0075	0.0075

* Active Country Weights:

- In case there are countries in the parent index which weigh less than 2.5% in the parent index then for such countries the active country upper bound of +5% is not applicable. When a country weighs less than 2.5% in parent index then the upper

bound of country weight in the Extended ESG Focus Index is set at three times of the country's weight in parent index.

- In case the upper bound on country weight is less than the minimum constituent weight constraints, then the upper bound of country weight is relaxed till it is above the minimum constituent weight constraint.
- The country weight constraint also applies on China A Stock Connect listings as a group separately in addition to the usual country weight constraint on China.

Infeasible Solution - During the Quarterly and Semi-Annual Index Reviews, if there is no optimal solution that satisfies all the optimization constraints, first the turnover constraint will be relaxed up to a maximum turnover of 30% in steps of 1% until an optimal solution is found. If a feasible solution is not found at turnover of 30%, the predicted tracking error is relaxed up to a maximum of 5 times of the original predicted tracking error in steps on 0.1%. If feasible solution is not found for maximum predicted error, the Index will not be rebalanced for that index review.

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* = toll free

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