

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 Indexes¹.

¹ The Indexes are governed by a set of methodology and policy documents ("Methodology Set"), including the present index methodology document. Please refer to Appendix III for more details.

2. Constructing the Indexes

The Indexes uses company ratings and research provided by MSCI ESG Research² for the Index construction.

Constructing the Indexes involves the following steps:

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

2.1 Defining the Parent Index

The starting security universe for 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
MSCI World Extended ESG Focus Index	MSCI World Index
MSCI ACWI ex Canada Extended ESG Focus Index	MSCI ACWI ex Canada Index
MSCI USA Value Extended ESG Focus Index	MSCI USA Value Index
MSCI USA Growth Extended ESG Focus Index	MSCI USA Growth Index
MSCI ACWI Extended ESG Focus Index	MSCI ACWI Index

2.2 Defining the Exclusion Criteria

2.2.1 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.

² See section 4 for further information regarding ESG and climate data used in the Indexes that MSCI Limited and MSCI Deutschland GmbH source from MSCI ESG Research LLC, a separate subsidiary of MSCI Inc. MSCI ESG Research is solely responsible for the creation, determination and management of such data as a provider to MSCI Limited and MSCI Deutschland GmbH. MSCI Limited and MSCI Deutschland GmbH are the benchmark administrators for the MSCI indexes.

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, MSCI World Extended ESG Focus Index and MSCI ACWI ex Canada Extended ESG Focus Index.

2.2.2 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.

2.2.2 Other Exclusion Criteria

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

2.3 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%
6	MSCI World Extended ESG Focus Index	0.5%
7	MSCI ACWI ex Canada Extended ESG Focus Index	0.5%
8	MSCI USA Value Extended ESG Focus Index	0.75%
9	MSCI USA Growth Extended ESG Focus Index	0.75%
10	MSCI ACWI Extended ESG Focus Index	0.50%

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 II for the Optimization constraints.

2.4 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.

2.5 Treatment of Unrated Companies

Companies not assessed by MSCI ESG Research on data for any of the following MSCI ESG Research products are not eligible for inclusion in the Indexes.

- MSCI ESG Controversies

3. Maintaining Indexes

3.1 Quarterly Index Reviews

The Indexes are rebalanced on a quarterly basis to coincide with the regular Index Reviews 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 2 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, for the rebalancing of the Indexes.

3.2 Monthly Review of Controversies

Index constituents are reviewed on a monthly basis for the involvement in ESG controversies. Existing constituents³ will be deleted if they are assessed as having involvement in ESG controversies that are classified as Red Flags (MSCI ESG Controversies Score of 0)⁴. A Red Flag indicates an ongoing, Very Severe ESG controversy implicating a company directly through its actions, products, or operations.

MSCI uses MSCI ESG Controversies data as of the end of the month preceding the review (e.g., end of June data for the July monthly review). For some securities, such data may not be published by MSCI ESG Research by the end of the month preceding the review. For such securities, MSCI will use ESG data published after the end of month, when available, for the monthly review of the Index.

The pro forma indexes are generally announced nine business days before the effective date.

3.2 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.

³ The Monthly Review of Controversies is not applied for the MSCI World Extended ESG Focus Index and MSCI ACWI ex Canada Extended ESG Focus Index.

⁴ Existing constituents not assessed by MSCI ESG Research on MSCI ESG Controversies are not considered for deletion.

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.

The MSCI Corporate Events methodology book is available at:

<https://www.msci.com/index/methodology/latest/CE>

4. MSCI ESG Research

The Indexes are products of MSCI Inc. that utilize information such as company ratings and research produced and provided by MSCI ESG Research LLC (MSCI ESG Research), a subsidiary of MSCI Inc. In particular, the Indexes use the following MSCI ESG Research products: MSCI ESG Controversies, MSCI ESG Business Involvement Screening Research and MSCI Climate Change Metrics. MSCI Indexes are administered by MSCI Limited and MSCI Deutschland GmbH.

4.1 MSCI ESG Ratings

MSCI ESG Ratings aim to measure entities' management of environmental, social and governance risks and opportunities. MSCI ESG Ratings are based on a seven-point scale from 'AAA' to 'CCC', indicating how an entity manages relevant key issues relative to industry peers.

The MSCI ESG Ratings methodology can be found at: <https://www.msci.com/legal/disclosures/esg-disclosures>.

4.2 MSCI ESG Controversies

MSCI ESG Controversies provide assessments of controversies concerning the potential 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.

The MSCI ESG Controversies methodology can be found at: <https://www.msci.com/legal/disclosures/esg-disclosures>.

4.3 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.

The MSCI Business Involvement Screening Research methodology can be found at: <https://www.msci.com/legal/disclosures/esg-disclosures>.

4.4 MSCI Climate Change Metrics

MSCI Climate Change Metrics provide climate data & tools to support institutional investors seeking to integrate climate risk & opportunities into their investment strategy and processes. This includes investors seeking to achieve a range of objectives, including measuring and reporting on climate risk exposure, implementing low carbon and fossil fuel-free strategies, alignment with temperature pathways and factoring climate change research into their risk management processes, in particular through climate scenario analysis for both transition and physical risks.

The dataset spans across the four dimensions of a climate strategy: transition risks, green opportunities, physical risks and 1.5° alignment.

4.4.1 Fossil Fuels and Power Generation Metrics

MSCI ESG Research identifies companies involved in fossil fuel-related assets and activities including fossil fuel reserves, resource extraction, power generation and generation capacity, revenue from such assets and activities and capital investments in such assets and activities. The metrics are based on disclosed activities, disclosed revenue and estimates of revenue that are extrapolated from company disclosures and eligible third-party sources (such as NGOs).

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

Appendix I: ESG Exclusion Criteria

Value Based Exclusions:

- **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/latest/XCW>.

- **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.

Climate-Change Based Exclusions

Climate Change based Exclusions are not applicable for MSCI Canada IMI Extended ESG Focus Index, MSCI World Extended ESG Focus Index and MSCI ACWI ex Canada Extended ESG Focus Index.

- **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 II: Optimization Constraints

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

Optimization Constraints

No.	Parameter	ACWI, EAFE	EM	USA	USA Small Cap	Canada IMI	World	ACWI ex Canada	USA Value	USA Growth
1	Predicted Tracking Error	0.5%	1.0%	0.5%	0.5%	1.0%	0.5%	0.5%	0.75%	0.75%
2	Min Constituent Weight	0.1%	0.1%	0.1%	0.05%	0.05%	0.1%	0.1%	0.1%	0.1%
3	Constituent Active Weight	+/-2%	+/-2%	+/-2%	+/-2%	+/-2%	+/-2%	+/-2%	+/-2%	+/-2%
4	Security Weight as a Multiple of its weight in Parent Index	20	20	20	20	20	20	20	20	20
5	Active Sector Weights	+/-5%	+/-5%	+/-5%	+/-5%	+/-5%	+/-5%	+/-5%	+/-5%	+/-5%
6	Active Country Weights*	+/-5%	+/-5%	NA	NA	NA	+/-5%	+/-5%	NA	NA
7	One Way Turnover during May and November Index Review	10%	10%	10%	10%	10%	10%	10%	10%	10%
8	One Way Turnover during Feb and Aug	5%	5%	5%	5%	5%	5%	5%	5%	5%

	Index Review									
9	Specific Risk Aversion	0.075	0.075	0.075	0.075	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	0.0075	0.0075	0.0075	0.0075
11	Optimization Currency	USD	USD	USD	USD	USD	USD	USD	USD	USD

* 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 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, in the event that there is no optimal solution that satisfies all the optimization constraints the following process is followed:

1. First, the turnover constraint is relaxed up to a maximum level of 30% in steps of 1% until an optimal solution is found.
2. If a feasible solution is not found in step 1, then the turnover constraint is reset to its original level and the predicted tracking error is relaxed by 0.1%.
3. If a feasible solution is not found in step 2, then the predicted tracking error is maintained at its level from step 2 and the turnover constraint is relaxed up to a maximum level of 30% in steps of 1% until an optimal solution is found.
4. If a feasible solution is not found in step 3, then steps 2 and 3 are repeated iteratively until an optimal solution is found. The predicted tracking error cannot exceed a maximum of 5 times of the original predicated tracking error.
5. In the event that a feasible solution is not found at the maximum predicted tracking error and turnover levels, the Index will not be rebalanced for that index review.

Appendix III: Methodology Set

The Indexes are governed by a set of methodology and policy documents (“Methodology Set”), including the present index methodology document as mentioned below:

- Description of methodology set – www.msci.com/index/methodology/latest/ReadMe
- MSCI Corporate Events Methodology – www.msci.com/index/methodology/latest/CE
- MSCI Fundamental Data Methodology – www.msci.com/index/methodology/latest/FundData
- MSCI Index Calculation Methodology – www.msci.com/index/methodology/latest/IndexCalc
- MSCI Index Glossary of Terms – www.msci.com/index/methodology/latest/IndexGlossary
- MSCI Index Policies – www.msci.com/index/methodology/latest/IndexPolicy
- MSCI Global Industry Classification Standard (GICS) Methodology – www.msci.com/index/methodology/latest/GICS
- MSCI Global Investable Market Indexes Methodology – www.msci.com/index/methodology/latest/GIMI
- MSCI Global ex Controversial Weapons Indexes Methodology – www.msci.com/index/methodology/latest/XCW
- ESG Factors In Methodology*

The Methodology Set for the Indexes can also be accessed from MSCI’s webpage <https://www.msci.com/index-methodology> in the section ‘Search Methodology by Index Name or Index Code’.

* ‘ESG Factors in Methodology’ contains the list of environmental, social, and governance factors considered, and how they are applied in the methodology (e.g., selection, weighting or exclusion). It can be accessed in the Methodology Set as described above.

Appendix IV: Changes to this Document

The following sections have been modified as of February 2020:

- Update to include the index construction parameters for the MSCI World Extended ESG Focus Index and MSCI ACWI ex Canada Extended ESG Focus Index.

The following sections have been modified as of September 2022:

- Update to include the index construction parameters for the MSCI USA Value Extended ESG Focus Index and MSCI USA Growth Extended ESG Focus Index.

The following sections have been modified as of February 2023:

- Methodology book was updated to reflect the transition of the MSCI Global Investable Market Indexes (GIMI) to Quarterly Comprehensive Index Reviews.
- All references to “Semi-Annual Index Reviews” and “Quarterly Index Reviews” of the MSCI GIMI were replaced with “Index Reviews”.

The following sections have been modified as of September 2023:

Section 3: Maintaining the MSCI Extended ESG Focus Indexes

- The monthly review of ESG controversies is applied within the index effective October 2, 2023 and is not applicable historically prior to that date.

The following sections have been modified as of December 2023:

Section 2: Constructing the Indexes

- The MSCI ACWI Extended ESG Focus Index was added to Section 2.1 and 2.3.

Section 3: Maintaining the Indexes

- The MSCI ESG Extended Focus Indexes that do not apply the Monthly Review of Controversies was added in Section 3.2.

Appendix II: Optimization Constraints

- Added the optimization constraints for the MSCI ACWI Extended ESG Focus Index.

Appendix III: Methodology Set

- Added details on the Methodology Set for the Indexes.

The following sections have been modified as of February 2024:

Section 2.5: Treatment of Unrated Companies

- New section detailing the treatment of companies with ratings and research not available from MSCI ESG Research

Appendix II: Optimization Constraints

- Steps clarification for Infeasible Solution

The following section has been modified as of May 2024

Section 3.2: Ongoing Event-Related Maintenance



- Clarification of the Spin-Off Treatment

The following section has been modified as of December 2024

Section 4.4: MSCI Climate Change Metrics

- Added a sub-section under Climate Change Metrics to provide additional details on Fossil Fuels related activities.

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