

MSCI ESG FILTERED MIN TE INDEXES

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Contents

1	Intr	oduction	3	
2 Constructing the Indexes				
	2.1	Applicable Universe	4	
	2.2	Eligible Universe	4	
	2.3	ESG Filtered Universe	4	
	2.4	Optimization Constraints	5	
	2.5	Determining the Optimized Portfolio	5	
	2.6	Treatment of Unrated Companies	5	
3	Mai	ntaining the Indexes	6	
	3.1	Quarterly Index Reviews	6	
	3.2	Ongoing Event Related Changes	6	
4	MS	CI ESG Research	8	
	4.1	MSCI ESG Ratings	8	
	4.2	MSCI ESG Controversies	8	
	4.3	MSCI ESG Business Involvement Screening Research	8	
	4.4	MSCI Climate Change Metrics	8	
A	ppendi	x I: Business Involvement Screening Criteria	10	
Appendix II: Barra Equity Model Used in The Optimization				
Appendix III: New release of Barra® Equity Model or Barra® Optimizer				
Appendix IV: Methodology Set				
Appendix V: Changes to this Document				



1 Introduction

The MSCI ESG Filtered Min TE Indexes¹ (the "Indexes") aim to represent the performance of a strategy that is designed to exclude companies based on ESG and climate change criteria. Further, based on the companies' ESG Scores, the index excludes 20% of the number of stocks in their corresponding Parent Indexes².

As a final step, the Indexes aim to minimize the tracking error relative to the respective parent indexes ("Parent Indexes") through an optimization process.

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 IV for more details.

² The corresponding Parent Indexes for the Indexes are defined in Section 2.1 of this methodology document.



2 Constructing the Indexes

The Index uses company ratings and research provided by MSCI ESG Research³ for the Index construction.

2.1 Applicable Universe

The Applicable Universe includes all the existing constituents of their respective Parent Indexes. This approach aims to provide an opportunity set with sufficient liquidity and investment capacity. The below table presents the Parent Indexes for the corresponding Indexes.

Index Name	Parent Index	
MSCI EMU ESG Filtered Min TE Index	MSCI EMU	
MSCI North America ESG Filtered Min TE Index	MSCI North America	
MSCI EM ESG Filtered Min TE Index	MSCI Emerging Markets Index	
MSCI Japan ESG Filtered Min TE Index	MSCI Japan	
MSCI Europe ESG Filtered Min TE Index	MSCI Europe	
MSCI Pacific ex Japan ESG Filtered Min TE Index	MSCI Pacific ex Japan	
MSCI World ESG Filtered Min TE Index	MSCI World	
MSCI ACWI ESG Filtered Min TE Index	MSCI ACWI	

2.2 Eligible Universe

The Eligible Universe is constructed from the Applicable Universe by excluding companies that are involved in the following businesses and meet the business involvement exclusion criteria as detailed in Appendix I:

- Controversial Weapons
- Fossil Fuel Extraction
- Thermal Coal Power
- Weapons and Firearms
- Tobacco Production

Additionally, companies are required to have an MSCI ESG Controversies Score of 1 or above to be eligible for inclusion.

2.3 ESG Filtered Universe

The ESG Filtered Universe is constructed from the Eligible Universe by excluding securities based on their ESG Score in the following steps:

1. Securities in the Applicable Universe are sorted in descending order of their ESG Score.

MSCI.COM | PAGE 4 OF 17

³ See section 4 for further information regarding ESG and climate data used in the Indexes that MSCI Limited sources 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. MSCI Limited and MSCI Deutschland GmbH are the benchmark administrators for the MSCI indexes.



2. Securities which are in the bottom 20% of the sorted list are excluded from the ESG Filtered Universe.

2.4 Optimization Constraints

At each Index Review, the indexes are constructed using an optimization process that aims to achieve replicability and investability as well as minimize ex-antetracking error relative to the Parent Index subject to the following constraints:

Table 1: Constraints imposed to meet diversification objectives

No.	Diversification Objective	MSCI ESG Filtered Min TE Index
1.	Constituent Active Weight	+/- 2%
2.	Minimum constituent weight	0.01%
3.	Security Weight as a multiple of its weight in the Parent Index	20x
4.	Active Sector Weights	+/-5%
5.	Active Country Weights ⁴	+/-5%
6.	One Way Turnover in Semi-Annual Index Reviews	10%
7.	One Way Turnover in Quarterly Index Reviews	5%
8.	Common Factor Risk Aversion	0.0075
9.	Specific Risk Aversion	0.075

During the Index Reviews, in the event that there is no optimal solution that satisfies all the optimization constraints, the one-way index turnover constraint is relaxed in steps of 1% up to 20%.

In the event that no optimal solution is found after the above constraint relaxations are exhausted, the relevant Index will not be rebalanced for that Index Review.

2.5 Determining the Optimized Portfolio

The Indexes are constructed using the Barra Open Optimizer⁵ in combination with the relevant Barra Equity Model. The optimization uses the universe of eligible securities and the specified optimization objectives and constraints to determine the constituents of the Indexes.

2.6 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

⁴ 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 Index is set at three times of the country's weight in Parent Index.

⁵ Please refer to Appendix II and III for more details.



3 Maintaining the Indexes

3.1 Quarterly Index Reviews

The Indexes are reviewed on a quarterly basis, coinciding with the February, May, August and November Index Reviews of the Parent Index. 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, Climate Change Metrics, MSCI ESG Controversies and MSCI Business Involvement Screening Research) as of the end of the month preceding the Index Reviews for the rebalancing of the Indexes.

3.2 Ongoing Event Related Changes

The general treatment of corporate events in the 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 es is greater than the frequency of Index Reviews in the Index, the changes made to the Parent Indexes during intermediate Index Reviews will be neutralized in the Indexes.

The following section briefly describes the treatment of common corporate events within the 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	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 nonconstituent will not be added to the Indexes.

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



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/esg-and-climate-methodologies.

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/esg-and-climate-methodologies.

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.

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

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.



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



Appendix I: Business Involvement Screening Criteria

• Controversial Weapons

 All companies with any tie to Controversial Weapons (cluster munitions, landmines, depleted uranium weapons, biological/chemical weapons, blinding lasers, nondetectable 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.

Fossil Fuel Extraction

All companies deriving 5% or more aggregate revenue (either reported or estimated) from thermal coal mining and unconventional oil and gas extraction.

- Thermal Coal Mining: Revenue from the mining of thermal coal (including lignite, bituminous, anthracite and steam coal) and its sale to external parties. It does not cover 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.
- Unconventional Oil & Gas Extraction: Revenue from oil sands, oil shale (kerogen-rich deposits), shale gas, shale oil, coal seam gas, and coal bed methane. It does not cover all types of conventional oil and gas production including Arctic onshore/offshore, deep water, shallow water and other onshore/offshore.

• Thermal Coal Power

- All companies deriving 5% or more revenue (either reported or estimated) from thermal coal-based power generation.

Weapons and Firearms

All companies deriving 10% or more aggregate revenue from conventional, controversial, and nuclear weapons as well as from civilian firearms and ammunitions based on the following categories:

- Companies involved in the production of conventional weapons, components for such products or support systems and services for such products.
- Companies involved in the production of biological or chemical weapons as well as components of such products.
- Companies involved in the production of blinding laser, incendiary or non-detectable fragments weapons in their most recently completed fiscal year.
- Companies involved in the production of nuclear weapons, exclusive and dual-use delivery
 platforms capable to deliver such products, intended and dual-use components of such
 products, as well as services provided for such products.
- Companies involved in the manufacture and retail of civilian firearms and ammunition.

Tobacco Production







Appendix II: Barra Equity Model Used in The Optimization

The Indexes currently use an optimization setup using the MSCI Barra Global Equity Model for Long-Term Investors (GEMLTL).



Appendix III: New release of Barra® Equity Model or Barra® Optimizer

A major new release of the relevant Barra Equity Model or Barra Optimizer may replace the former version within a suitable timeframe.



Appendix IV: 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 <u>www.msci.com/index/methodology/latest/ReadMe</u>
- MSCI Corporate Events Methodology <u>www.msci.com/index/methodology/latest/CE</u>
- 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 <u>www.msci.com/index/methodology/latest/IndexGlossary</u>
- 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 V: Changes to this Document

The following sections have been modified as of October 2021:

Section 2.1: Applicable Universe

- The following Indexes have been added with their corresponding Parent Indexes:
 - MSCI North America ESG Filtered Min TE Index
 - o MSCI Pacific ex Japan ESG Filtered Min TE Index
 - MSCI EM ESG Filtered Min TE Index
 - MSCI Japan ESG Filtered Min TE Index
 - MSCI Europe ESG Filtered Min TE Index

The following sections have been modified as of June 2022:

Section 2.1: Applicable Universe

 The MSCI World ESG Filtered Min TE Index has been added with its corresponding Parent Index.

The following sections have been modified as of March 2024:

Section 2.1: Applicable Universe

 The MSCI ACWI ESG Filtered Min TE Index has been added with its corresponding Parent Index.

Section 2.6: Treatment of Unrated Companies:

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

Section 4: MSCI ESG Research

- Moved that section after Section 3 (Maintaining the Indexes)
- Updated the descriptions of MSCI ESG Research products.

Appendix I: Business Involvement Screening Criteria

• Updated the language for the Weapons and Firearms screens.

Appendix IV: Methodology Set

· Added details on the Methodology Set for the Indexes.



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