

MSCI USA ESG Select Index Methodology

November 2021

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1 Introduction

The MSCI USA ESG Select Index is designed to maximize exposure to positive environmental, social and governance (ESG) factors while exhibiting risk and return characteristics similar to those of the MSCI USA Index. The Index is constructed by selecting constituents of the MSCI USA Index through an optimization process that aims to maximize exposure to ESG factors for a target tracking error budget under certain constraints.

The Index is sector-diversified and targets companies with high ESG ratings in each sector. Companies involved in a defined set of controversial businesses are not eligible for inclusion into the Index.

2 MSCI ESG Research

The MSCI USA ESG Select Index uses company ratings and research provided by MSCI ESG Research. The index uses the following MSCI ESG Research products: MSCI ESG Ratings, MSCI ESG Controversies, MSCI Business Involvement Screening Research and MSCI Climate Change Metrics.

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

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 (formerly 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, 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 such as Low Carbon Transition scores and categories.

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

3 Constructing the MSCI USA ESG Select Index

Constructing the MSCI USA ESG Select Index involves the following steps:

- Defining the underlying MSCI Parent Index (“Parent Index”);
- Defining the exclusion criteria;
- Defining the optimization constraints; and
- Determining the optimized portfolio

3.1 Defining the Parent Index

The Parent Index for the MSCI USA ESG Select Index is the MSCI USA Index.

3.2 Defining the Exclusion Criteria

The MSCI USA ESG Select Index uses company ratings and research provided by MSCI ESG Research to determine eligibility for index inclusion.

3.2.1 Controversial Business Involvement Criteria

The MSCI USA ESG Select Index uses MSCI ESG Business Involvement Screening Research and MSCI Climate Change Metrics to identify companies that are involved in the following business activities. Companies that meet the business involvement criteria are excluded from the MSCI USA ESG Select Index. Please refer to Appendix 4 for details on these criteria.

- Controversial Weapons
- Civilian Firearms
- Nuclear Weapons
- Tobacco
- Alcohol
- Conventional Weapons
- Gambling
- Nuclear Power
- Fossil Fuel Extraction
- Thermal Coal Power

3.2.2 ESG Controversies Score Eligibility

The MSCI USA ESG Select Index uses MSCI ESG Controversies Scores to identify companies that are involved in very serious controversies involving the environmental, social, or governance impact of their operations and/or products and services. Existing constituents of the MSCI USA ESG Select Index are required to have an MSCI ESG Controversies Score above 0 to remain in the index, while companies that are currently not constituents of the MSCI USA ESG Select Index are required to have an MSCI ESG Controversies Score above 2 to be eligible for inclusion.

3.3 Defining the Optimization Constraints

Constituents are selected to maximize exposure to industry adjusted ESG Scores, subject to maintaining risk and return characteristics similar to the MSCI USA Index. ESG Scores are normalized and factored into the optimization process. Optimization is a quantitative process that considers the market capitalization weights from the MSCI USA Index, ESG Scores and additional optimization constraints to select and weight the constituents in the Index.

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

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

- The predicted tracking error is restricted to 1.8%
- The maximum weight of an index constituent will be 5%;
- The minimum weight of an index constituent will be 0.1%;
- The number of index constituents is constrained to a maximum of 350;
- The sector weights of the MSCI USA ESG Select Index will not deviate by more than +/- 3% from the sector weights of the MSCI USA Index;
- The one way turnover of the MSCI USA ESG Select Index is constrained to a maximum of 10% at Semi-Annual Index Reviews and 5% at Quarterly Index Reviews;
- One way transaction cost is set to 0.5% which aims to achieve a balance between turnover and ESG Scores; and
- An AS/CF (Asset Selection/Common Factor) Risk Aversion Ratio of 10 is applied.

Please refer to the Appendix 2 for the description of the handling of infeasible optimizations.

3.4 Determining the Optimized Portfolio

The MSCI USA ESG Select Index is constructed using the most recent release of the Barra Open Optimizer in combination with the relevant Barra Equity Model. The optimization uses the MSCI USA Index after application of the exclusion criteria as described in section 3.2 above, as the universe of eligible securities and the specified optimization objective and constraints to determine the constituents of the MSCI USA ESG Select Index.

4 Maintaining the MSCI USA ESG Select Index

4.1 Quarterly Index Reviews

The MSCI USA ESG Select Index is 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.

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 the MSCI USA ESG Select Index. 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 USA ESG Select Index.

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

4.2 Ongoing Event-Related Maintenance

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

The following section briefly describes the treatment of common corporate events within the MSCI USA ESG Select Index.

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

There are no deletions from the MSCI USA ESG Select Index between Index Reviews on account of a security becoming ineligible because of decrease in MSCI ESG Controversies Score and/or change in business involvement.

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 1: Handling Infeasible Optimizations

During the Quarterly Index Review, in the event that there is no optimal solution that satisfies all the optimization constraints defined in Section 3.3, the tracking error will be relaxed in steps of 0.2% until an optimal solution is found.

Appendix 2: Methodology Transition

May 2012 – May 2013

The MSCI USA ESG Select Index transitioned to the methodology described in the above document starting from the May 2012 Index Review. As part of the enhancements to the MSCI USA ESG Select Index Methodology, the annual turnover budget is reduced from 50% to 30% (10% at Semi-Annual Index Reviews and 5% at Quarterly Index Reviews). The lower annual turnover budget of 30% will be applied starting from the May 2012 Index Review.

June 2016

Effective at the May 2016 Index Review, the MSCI USA ESG Select Index reflected enhancements to the MSCI ESG Controversies (formerly known as MSCI Impact Monitor). The details of the changes are as given below.

The changes to MSCI ESG Controversies included adjusting the scoring model to align the scores with individual controversy case levels, including the introduction of an Orange flag, and the removal of specific controversial business involvement (CBI) criteria from the model to refocus the ESG Controversies scores on event-driven controversies.

MSCI implemented the following changes to the MSCI USA ESG Select Index methodology effective June 1, 2016 to maintain consistency with the existing index construction objectives:

1. As per the old MSCI ESG Impact Monitor methodology, securities which had an Impact Monitor score of 0 and 1 had a Red controversy flag. Under the new methodology, only securities with an ESG controversies score of 0 have a Red controversy flag. For indexes where constituents were ineligible to be included in the index if their Impact Monitor score was 0 or 1 (current Red controversy flag), the exclusion criteria was changed to ESG Controversies score = 0 in order to continue to only exclude securities with Red controversy flag in the MSCI USA ESG Select Index.
2. Additional exclusion rules based on the controversial business involvement criteria related to alcohol, gambling, nuclear power, conventional weapons and controversial weapons that were incorporated in the old MSCI Impact Monitor scores were introduced as part of the methodology of the MSCI USA ESG Select Index. Since, the rule for exclusion of securities with tobacco involvement was already more stringent in MSCI USA ESG Select methodology, it was not included. The details of the exclusion rules are mentioned in Appendix 3.

November 2017

In order to meet its objective, the MSCI USA ESG Select Index construction, since inception, made use of the Barra Global Equity Model (GEM2L) within the optimization setup. However, starting from the November 2017 Semi-Annual Index Review, the index construction used an optimization setup that used the Barra Global Equity Model for Long-Term Investors (GEMLTL). The change of optimization setup was completed without any change in the prevailing index methodology.

December 2021

Effective from the November 2021 Index Review, the controversial business involvement criteria have been enhanced to reflect the framework designed by MSCI ESG Research to define significant involvement in controversial activities. According to this framework, there are four restrictiveness levels: Most Restrictive, Highly Restrictive, Moderately Restrictive, Least Restrictive. Also, screens for Fossil Fuel Reserves, Fossil Fuel Extraction and Thermal Coal Power were added.

Appendix 3: Controversial Business Involvement Criteria

MSCI ESG Research has developed a framework designed to define significant involvement in controversial activities. According to this framework, there are four levels of restrictiveness: Most Restrictive, Highly Restrictive, Moderately Restrictive, Least Restrictive.

Each controversial activity screened by the MSCI USA ESG Select Index (except Tobacco, Fossil Fuel Extraction and Thermal Coal Power) is assigned to one of these restrictiveness levels.

“Most Restrictive” screen applied

- Controversial Weapons
 - 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 with any tie to Civilian Firearms, covering the production and distribution (wholesale or retail) of firearms or small arms ammunitions intended for civilian use, as well as ownership of or by another company with involvement. It does not include companies that cater to the military, government, and law enforcement markets

“Highly Restrictive” screen applied

- **Nuclear Weapons**
 - All companies that manufacture nuclear warheads and/or whole nuclear missiles
 - All companies that manufacture components that were developed or are significantly modified for exclusive use in nuclear weapons (warheads and missiles)
 - All companies that manufacture or assemble delivery platforms that were developed or significantly modified for the exclusive delivery of nuclear weapons
 - All companies that provide auxiliary services related to nuclear weapons

- All companies that manufacture components that were not developed or not significantly modified for exclusive use in nuclear weapons (warheads and missiles) but can be used in nuclear weapons
- All companies that manufacture or assemble delivery platforms that were not developed or not significantly modified for the exclusive delivery of nuclear weapons but have the capability to deliver nuclear weapons
- All companies that manufacture components for nuclear-exclusive delivery platforms

“Least Restrictive” screen applied

- **Alcohol**
 - All companies deriving 10% or more revenue from the production of alcohol-related products
- **Conventional Weapons**
 - All companies deriving 10% or more revenue from the production of conventional weapons and components
- **Gambling**
 - All companies deriving 10% or more revenue from ownership or operation of gambling-related business activities
- **Nuclear Power**
 - All companies deriving 10% or more revenue from the ownership or operation of nuclear power plants

No specific restrictiveness level applied

- **Tobacco**
 - 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”

- **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.

Appendix 4: Methodology for MSCI USA Extended ESG Select Index

The MSCI USA Extended ESG Select Index follows the same index methodology as the MSCI USA ESG Select Index.

Prior to the November 2021 Semi-Annual Index Review, the MSCI USA Extended ESG Select Index applied stricter ineligibility criteria for civilian firearms, as described below:

- **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.

In addition, during the February 2018 Quarterly Index Review, the turnover of the MSCI USA Extended ESG Select Index was calculated with respect to the constituents of the MSCI USA ESG Select Index.

The following sections have been modified as of May 2016:

Section 3.2.1: Controversial Business Involvement Criteria

- Added section

Section 3.2.3: ESG Controversies Score Eligibility

- Updated the MSCI ESG Controversies Score eligibility requirements

Appendix 3: Methodology Transition

- Added details pertaining to the methodology changes effective as of May 2016

Appendix 4: Controversial Business Screening Criteria

The following sections have been modified as of June 2016:

Section 3.2.1: Controversial Business Involvement criteria

- Added Civilian Firearms to the list of controversial business involvement criteria

Appendix 4: Controversial Business Screening Criteria

- Addition of the controversial business screening criteria pertaining to Civilian Firearms

The following sections have been modified as of May 2017:

Section 4.1: Quarterly Index Reviews

- Clarification on the 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 as of June 2017:

- The details on the Corporate Events treatment are now included in Section 4.2.

The following sections have been modified as of November 2017:

- Updated Appendix 3 to add the information on transition of MSCI USA ESG Select Index to GEMTL

The following sections have been modified as of May 2018:

Appendix 4: Methodology for MSCI USA Extended ESG Select Index

- New Appendix

The following sections have been updated as of November 2021:

Section 2.4: MSCI Climate Change Metrics

- New section

Section 3.2.1: Controversial Business Involvement Criteria

- Added screens for 'Fossil Fuel Extraction' and 'Thermal Coal Power'

Appendix 2: Methodology Transition

- Added details which highlight the changes to the MSCI USA ESG Select Index effective December 2021

Appendix 3: Controversial Business Involvement Criteria

- Updated the controversial business involvement criteria for each activity according to the framework designed by ESG Research
- Added screens for 'Fossil Fuel Extraction' and 'Thermal Coal Power'

Appendix 4: Methodology for MSCI USA Extended ESG Select Index

- Updated to reflect alignment with MSCI USA ESG Select Index Methodology effective December 2021

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