

Methodology Book for:

- MSCI EUR IG Select 1M-4Y CTB
Corporate Bond Index**
- MSCI EUR HY Select 1M-4Y
CTB Corporate Bond Index**

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1. Introduction

The MSCI EUR IG Select 1M-4Y CTB Corporate Bond Index and MSCI EUR HY Select 1M-4Y CTB Corporate Bond Index (the “Indexes”)¹ are constructed from the MSCI EUR IG Select 1M-4Y Corporate Bond Index and the MSCI EUR HY Select 1M-4Y Corporate Bond Index respectively (the “Parent Indexes”)² and are designed to represent the performance of an investment strategy that meets the minimum standards required of EU Climate Transition Benchmarks (CTB)³. The Indexes are constructed from their corresponding Parent Indexes using an optimization-based approach and aim to:

- Reduce the weighted average absolute greenhouse gas (GHG) emissions by 30% compared to the Parent Index.
- Reduce the weighted average absolute greenhouse gas (GHG) emissions by 7% on an annualized basis.
- Reduce the weighted average absolute Potential Emissions by 30% compared to the Parent Index.
- Achieve a weighted average Industry Adjusted ESG Score greater than or equal to 4.286⁴.

The Indexes exclude companies involved in Controversial Weapons businesses, Red Flag ESG Controversies, Red and Orange Flag Environmental Controversies, Tobacco Manufacturing and Thermal Coal. Additionally, the index also excludes companies with a Governance Pillar Score below the Industry Adjusted ESG Score threshold for BB⁵.

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 VI for more details.

² The Parent Indexes are defined in Section 2.1 and Appendix II.

³ On December 3, 2020, the European Commission has published the delegated acts in the Official Journal (<https://eurlex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32020R1818&from=EN>) which contain the minimum technical requirements for the EU Climate Transition Benchmarks. In case there are changes in the EU delegated acts and an update to the Index methodology is required, MSCI will issue an announcement prior to implementing the changes in the methodology. MSCI will not conduct a formal consultation for such an update.

⁴ The minimum Industry Adjusted ESG Score threshold for an ESG Rating of BBB is 4.286 as defined in the MSCI ESG Ratings Methodology available at <https://www.msci.com/documents/1296102/34424357/MSCI+ESG+Ratings+Methodology.pdf>.

⁵ The minimum Industry Adjusted ESG Score threshold for an ESG Rating of BB is 2.857 as defined in the MSCI ESG Ratings Methodology available at <https://www.msci.com/documents/1296102/34424357/MSCI+ESG+Ratings+Methodology.pdf>.

2. Constructing the Index

The Indexes use company ratings and research provided by MSCI ESG Research⁶ for the Index construction.

Constructing the Indexes involve the following steps:

- Defining the Applicable Universe
- Defining the Eligible Universe
- Defining the Optimizing Constraints
- Determining the Optimized Index

2.1 Defining the Applicable Universe

The Applicable Universe includes all the existing constituents of the Parent Indexes. The Parent Indexes are constructed using the methodology defined for MSCI EUR IG Corporate Bond Index and MSCI EUR HY Corporate Bond Index respectively defined within the MSCI Corporate Bond Indexes Methodology⁷ except for the below changes:

1. **Maturity:** Each Index constituent should be ranging between time to maturity of 1 month to 4 years (both inclusive). New additions to the Indexes must have a maturity greater than or equal to 1 month as measured from the Rebalancing Date.
2. **Credit Rating⁸:** Each Index constituent must be rated by either by S&P, Fitch or Moody's. For bonds that are rated by two Nationally Recognized Statistical Ratings Organizations (NRSRO), the lower rating will be used to determine the Index inclusion criteria. For bonds that are rated by all three NRSROs the median rating will be used to determine the Index inclusion criteria.

The table below summarizes higher and lower rating thresholds for MSCI EUR IG Select 1M-4Y Corporate Bond Index and MSCI EUR HY Select 1M-4Y Corporate Bond Index.

⁶ 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.

⁷ Refer to MSCI Corporate Bond Indexes Methodology available at: <https://www.msci.com/index-methodology>.

⁸ Prior to April 2024, each Index constituent was rated by either by S&P or Moody's. For bonds that were rated by both S&P and Moody's, the lower rating was used to determine the Index inclusion criteria.

Index	S&P Rating		Moody's Rating		Fitch Rating	
	Higher Rating Threshold	Lower Rating Threshold	Higher Rating Threshold	Lower Rating Threshold	Higher Rating Threshold	Lower Rating Threshold
MSCI EUR IG Select 1M-4Y Corporate Bond Index	AAA	BBB-	Aaa	Baa3	AAA	BBB-
MSCI EUR HY Select 1M-4Y Corporate Bond Index	BB+	CC	Ba1	Ca	BB+	CC

2.2 Defining the Eligible Universe

The Eligible Universe is constructed from the Applicable Universe by excluding securities of companies defined in Appendix IV.

2.3 Defining the Optimization Constraints

At each Monthly Index Review, the Indexes are constructed using an optimization process that aims to achieve replicability and investability as well as minimize active share relative to the Parent Index subject to the following constraints:

1. Transition and ESG objectives – constraints detailed in Table 1
2. Diversification objectives – constraints detailed in Table 2

The definitions of the target metrics for the optimization are detailed in Appendix I.

Table 1: Constraints imposed to meet Transition and ESG objectives-

No.	Transition and ESG Objectives	MSCI Select 1M-4Y CTB Corporate Bond Indexes
1.	Minimum reduction in absolute Greenhouse Gas (GHG) Emissions ⁹ (Scope 1+2+3 ¹⁰) relative to Parent Index	30%

⁹ Based on EU delegated acts, absolute GHG Emissions may be used as a measure of carbon exposure for fixed income indexes.

¹⁰ Prior to the June 2020, the absolute Weighted Average GHG Emissions were calculated based on Scope 1+2 Emissions.

No.	Transition and ESG Objectives	MSCI Select 1M-4Y CTB Corporate Bond Indexes
2.	Minimum average reduction (per annum) in absolute GHG Emissions relative to absolute GHG Emissions of the Index at the Base Date ¹¹	7%
3.	Minimum reduction in Weighted Average Potential Emissions relative to Parent Index	30%
4.	Minimum weighted average Industry Adjusted ESG Score ¹² of the Index	≥ 4.286 ¹³

Table 2: Constraints imposed to meet diversification objectives

No.	Diversification Objective	MSCI Select 1M-4Y CTB Corporate Bond Indexes
1.	Constituent Active Weight	+/- 2%
2.	Issuer capping ¹⁴	3%
3.	Security Weight as a multiple of its weight in the Parent Index	10x
4.	Active Sector Weights (the Energy GICS Sector is not constrained) ¹⁵	+/-5%
5.	Active Country Weights ¹⁶	+/-5%
6.	One Way Turnover	4%
7.	Active Effective Duration of Index ¹⁷	+/-0.25
8.	Active Credit Rating of Index ¹⁸	+/-0.25
9.	Active Yield to Worst of Index ¹⁹	+/-0.25

¹¹ Prior to the June 2020, the reduction in absolute Weighted Average GHG Emissions were calculated using Scope 1+2 Emissions since Inception.

¹² Securities with missing Industry Adjusted ESG Score are assumed to have a value of zero.

¹³ The minimum Industry Adjusted ESG Score threshold for an ESG Rating of BBB is 4.286 as defined in the MSCI ESG Ratings Methodology available at <https://www.msci.com/documents/1296102/34424357/MSCI+ESG+Ratings+Methodology.pdf>.

¹⁴ The issuer capping is applied at 4% in the MSCI EUR HY Select 1M-4Y CTB Corporate Bond Index.

¹⁵ The constraint is defined as a soft constraint in the MSCI EUR HY Select 1M-4Y CTB Corporate Bond Index.

¹⁶ Based on country of domicile. 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. The constraint is defined as a soft constraint in the MSCI EUR HY Select 1M-4Y CTB Corporate Bond Index.

¹⁷ Defined in the MSCI Fixed Income Index Calculation Methodology available at: <https://www.msci.com/index-methodology>. The constraint is defined as a soft constraint.

¹⁸ Defined in the MSCI Fixed Income Index Calculation Methodology available at: <https://www.msci.com/index-methodology>. The constraint is defined as a soft constraint.

¹⁹ Defined in the MSCI Fixed Income Index Calculation Methodology available at: <https://www.msci.com/index-methodology>. The constraint is defined as a soft constraint.

During the Monthly Index Review, in the event that there is no optimal solution that satisfies all the optimization constraints, the following constraints will be relaxed, until an optimal solution is found:

- Relax the one-way Index turnover constraint in steps of 1% up to 15%
- Relax the maximum security weight multiple constraint in steps of 2 up to 20
- The one-way Index turnover constraint and the maximum security weight multiple constraint are alternately relaxed until a feasible solution is achieved

In the event that no optimal solution is found after the above constraint relaxations are exhausted, MSCI can further relax the other optimization constraints to successfully rebalance the Index. In case no optimal solution is found after all the above relaxations the relevant Index will not be rebalanced for that Monthly Index Review.

2.4 Determining the Optimized Index

The Index is constructed using the Barra Open Optimizer²⁰. The optimization uses universe of eligible securities and the specified optimization objectives and constraints to determine the constituents of the Indexes. The decarbonization trajectory of the Indexes are defined in Appendix III.

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
- MSCI ESG Business Involvement Screening Research
- MSCI ESG Governance Pillar Score

Companies not assessed by MSCI ESG Research on data for MSCI Industry Adjusted ESG Score are assumed to have a value of zero.

For the treatment of unrated companies in the calculation of target metrics for the optimization, please refer to Appendix I.

²⁰ Please refer to Appendix V for more details.

3. Maintaining the Indexes

3.1 Monthly Index Review

- The Indexes undergo a monthly review, with the rebalancing impact taking effect on the first business day of each month (“Rebalancing Date”). To elaborate, bonds are incorporated into the Index at the close of the last business day of every month, but the impact on returns is observed on the first business day of the subsequent month.
- The rebalanced Index composition is determined by the most recent data available three days prior to the Rebalancing Date (“Cut-Off Date”). If a security in the universe satisfies any inclusion or exclusion criteria after the Cut-Off Date, it will typically become effective at the next monthly rebalancing, provided conditions remain constant. In extraordinary circumstances, such as cases of input data correction, MSCI has the discretion to shorten the Cut-Off Date for Index rebalancing from T-3 to T-2, T-1, or T. In such scenarios, MSCI will inform Index clients of these changes through an announcement.
- MSCI will disclose proforma Index rebalancing results starting the second business day of each month. MSCI will freeze the pro forma Index rebalancing results as of the Cut-Off Date.
- Bonds are either added to or removed from the Index solely on the monthly Rebalancing Date. For existing Index components, any changes to Index eligibility will only be reflected in the subsequent monthly rebalancing.
- Any cash that accumulates within the Index each month is re-invested on the Rebalancing Date according to Section 2 of the Methodology.
- Specific variants of the total return calculation of the Index on the Rebalancing Date may be adjusted for transaction costs²¹ as securities are added to the Index at the offer price.

For additional information on the Index total return calculation and corporate events handling, please refer to the MSCI Fixed Income Index Calculation Methodology²². For the holiday calendar used in the Indexes, please refer to the MSCI Fixed Income Data Methodology²³.

²¹ Refer to the MSCI Fixed Income Index Calculation Methodology for detail. Available at <https://www.msci.com/index-methodology>.

²² Refer to the MSCI Fixed Income Index Calculation Methodology for detail. Available at <https://www.msci.com/index-methodology>.

²³ The methodologies are 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 Climate Change Metrics, MSCI ESG Ratings, MSCI ESG Controversies and MSCI ESG Business Involvement Screening Research. 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 use a weighted average key issue calculation that is normalized by industry to arrive at an industry-adjusted ESG score (0-10), which is then translated to 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 Climate Change Metrics

MSCI Climate Change Metrics provides 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/legal/disclosures/esg-disclosures>

4.3 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>.

4.4 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>.

Appendix I: Calculation of Target Metrics

Calculation of Weighted Average Absolute GHG Emissions

For Parent Index constituents where the Scope 1+2+3 Absolute GHG Emissions is not available, the average of Scope 1+2+3 Absolute GHG Emissions based on top quartile (highest emitters) of all the constituents of the Parent Index, within corresponding GICS Industry Group in which the constituent belongs, is used. The average of top quartile Scope 1+2+3 Absolute GHG Emissions within corresponding GICS Sector is used if all securities within the GICS Industry Group have missing data. The average of top quartile Scope 1+2+3 Absolute GHG Emissions within the Parent Index is used if all securities in both the corresponding GICS Industry Group and GICS Sector have missing data.

Security Level Absolute GHG Emissions =

$$\text{Scope 1 + 2 + 3 Absolute GHG Emissions}$$

Weighted Average Absolute GHG Emissions of Parent Index =

$$\sum (\text{Weight in Parent Index} * \text{Security Level Absolute GHG Emission})$$

Weighted Average Absolute GHG Emissions of Derived Index =

$$\sum (\text{Index Weight} * \text{Security Level Absolute GHG Emission})$$

Calculation of Potential Carbon Emissions

For newly added companies to the Index where data is not available yet, MSCI uses zero fossil fuel reserves.

Security Level Potential Carbon Emissions (PCE) =

$$\text{Absolute Potential Emissions}$$

Weighted Average Potential Emissions of Parent Index =

$$\sum (\text{Weight in Parent Index} * \text{Security Level PCE})$$

Weighted Average Potential Emissions of Derived Index =

$$\sum (\text{Index Weight} * \text{Security Level PCE})$$

Calculation of Average Decarbonization

On average, the Indexes follow a 7% decarbonization trajectory since the Base Date. The Weighted Average absolute GHG Emissions at the Base Date (W_1) is used to compute the target Weighted Average absolute GHG Emissions at any given Monthly Index Review (W_t) as per the below formula.

$$W_t = W_1 * 0.93^{\frac{(t-1)}{12}}$$

Where 't' is the number of Monthly Index Reviews since the Base Date.

Thus, for the 13th Monthly Index Review since the Base Date (t=13), the target Weighted Average absolute GHG Emissions will be $W_1 * 0.93$.

Appendix II: Parent Index

No.	Index	Parent Index
1.	MSCI EUR IG Select 1M-4Y CTB Corporate Bond Index	MSCI EUR IG Select 1M-4Y Corporate Bond Index
2.	MSCI EUR HY Select 1M-4Y CTB Corporate Bond Index	MSCI EUR HY Select 1M-4Y Corporate Bond Index

Appendix III: Decarbonization Trajectory of Indexes

The Weighted Average absolute GHG Emissions on the Base Date (W_1) is used to compute the target Weighted Average absolute GHG Emissions at any given Monthly Index Review (W_t) as per the below formula.

$$W_t = W_1 * 0.93^{\frac{(t-1)}{12}}$$

Where 't' is the number of Monthly Index Reviews since the Base Date. The table below shows the Weighted Average absolute GHG Emissions on the Base Date (W_1) for each of the regions where the Indexes are constructed:

Index	Parent Index	Base Date ²⁴	W_1 (in mn tCO2e)
MSCI EUR IG Select 1M-4Y CTB Corporate Bond Index	MSCI EUR IG Select 1M-4Y Corporate Bond Index	June 01, 2020	45.00
MSCI EUR HY Select 1M-4Y CTB Corporate Bond Index	MSCI EUR HY Select 1M-4Y Corporate Bond Index	June 01, 2020	22.60

²⁴ The Base Date for the Indexes in the table is June 1, 2020. At a given Monthly Index Review, if there is significant change in the calculation methodology of absolute GHG emissions, the EU delegated acts allow for selection of a new base date.

Appendix IV: ESG-based Exclusion Criteria

1. Controversial Weapons:

All companies with any tie to Controversial Weapons as defined below:

- **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

Additionally, companies that have missing research status for BISR standard coverage screens are also excluded.

2. **ESG Controversies:** All companies assessed as having involvement in ESG controversies that are classified as Red Flags (MSCI ESG Controversy Score of 0). A Red Flag indicates an ongoing, Very Severe ESG controversy implicating a company directly through its actions, products, or operations. Companies not assessed by MSCI ESG Research on ESG Controversies are also excluded.
3. **Tobacco:** All companies classified as a “Producer” or deriving 5% or more aggregate revenue from the production, distribution, retail, supply and licensing of tobacco-related products.
4. **Environmental Harm:** All companies assessed as having involvement in environmental controversies that are classified as Red (MSCI Environmental Controversy Score of 0) or Orange Flags (score of 1). Companies not assessed by MSCI ESG Research on Environmental Controversy Score are also excluded.
 - A Red Flag indicates an ongoing, Very Severe ESG controversy implicating a company directly through its actions, products, or operations.
 - An Orange Flag indicates an ongoing Severe ESG controversy implicating a company directly, or a Very Severe ESG controversy that is either partially resolved or indirectly attributed to the company’s actions, products, or operations.
5. **Thermal Coal Mining:** All companies deriving 1% 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 (either reported or estimated).
6. **Governance Pillar Score:** Securities of companies having a Governance Pillar Score below the Industry Adjusted ESG Score threshold for BB (i.e. less than or equal to 2.857). Securities of companies having missing Governance Pillar Score.

Appendix V: New release of Barra® Optimizer

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

Appendix VI: 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 – <https://www.msci.com/index/methodology/latest/FIInfo>
- MSCI Fixed Income Data Methodology – <https://www.msci.com/index/methodology/latest/FIDATA>
- MSCI Fixed Income Calculation Methodology – <https://www.msci.com/index/methodology/latest/FIINDEXCALC>
- MSCI Fixed Income Glossary of Terms – <https://www.msci.com/index/methodology/latest/FIGLOSS>
- MSCI Fixed Income Index Policies – <https://www.msci.com/index/methodology/latest/FIINDEXPOLICY>
- MSCI Corporate Bond Indexes Methodology – <https://www.msci.com/index/methodology/latest/FIIGCORP>
- ESG Factors In Methodology*

The Methodology Set for the Indexes can 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.

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