

MSCI GLIDEPATH CORPORATE BOND INDEXES METHODOLOGY

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1. Introduction

The MSCI Glidepath Corporate Bond Indexes¹ (the 'Indexes'), employs a combination of target factors to gradually transition the Index from a replica of a Parent Index towards one with characteristics based on the factors described below. The transition process involves the reallocation of cash into securities that are aligned to the target factors. The target factors may encompass a variety of elements such as Environmental, Social, and Governance (ESG) Score, GHG Emissions or a blend of ESG and GHG Emissions.

Within any fixed income index, a cash component is generated on an ongoing basis. This cash component is typically reallocated back into the entire index pro-rata. The MSCI Glidepath Corporate Bond Indexes methodology will allocate this cash component to the issuers that are more aligned with the respective target characteristics.

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 I for more details.

2. Constructing the Index

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

Constructing the Index involves the following steps:

- Defining the Parent Index
- Defining the Factor Score
- Defining the Time to Maturity Score
- Defining the Composite Score
- Defining the Cash Component
- Reinvestment of Cash Component
- Treatment of New Additions
- Defining the Index Weights

2.1 Defining the Parent Index

The Parent Index is represented by the suite of MSCI’s corporate bond indexes. The MSCI Glidepath Corporate Bond Index is identical to the Parent Index as of the base date (defined below) and gradually transitions away from the Parent Index based on the methodology defined in below Sections.

The MSCI Glidepath Corporate Bond Index - Emissions and the MSCI Glidepath Corporate Bond Index – Emissions & ESG index variants have a base date of December 31, 2020, while the MSCI Glidepath Corporate Bond Index - ESG index variant has a base date of December 31, 2014. All three index variants subsequently have a common Base Date of December 29, 2023.

2.2 Defining the Factor Score

- A security-level Factor Score is calculated using a weighted combination of ESG Z-score and Emissions Z-score as follows:

$$FS_i = (ESG\ Z\text{-score}_i \times (wgt_{esg})) + (Emissions\ Z\text{-score}_i \times (wgt_{emissions}))$$

Where:

FS_i :	Factor Score of security i
$ESG\ Z\text{-score}_i$:	ESG Z-score of security i (defined below)

² 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.

$Emissions\ Z\text{-}score_i$: Emissions Z-score of security i (defined below)

wgt_{esg} : Weight³ assigned to ESG Z-score

$wgt_{emissions}$: Weight⁴ assigned to Emissions Z-score

- A security-level ESG Z-score is calculated by z-scoring the industry-adjusted Environmental, Social, and Governance (ESG) Score of all securities in the Parent Index. The ESG Z-score is winsorized at +/- 3 standard deviations.
- A security-level Emissions Z-score is calculated by z-scoring the Scope 1+2+3 Absolute GHG Emissions of all securities in the Parent Index. The Emissions Z-score is winsorized at +/- 3 standard deviations and further multiplied by -1 such that securities with higher Emissions have lower Emissions Z-scores.
- For Parent Index constituents where the ESG Score / Scope 1+2+3 Absolute GHG Emissions are not available, the average of worst quartile (lowest ESG Scores / highest emitters) of all constituents within each GICS⁵ Industry Group to which the constituent belongs, is used. The average of worst quartile ESG Score / Scope 1+2+3 Absolute GHG Emissions within corresponding GICS Sector is subsequently used if a security still has missing data.
- The Factor Score is further z-scored and winsorized at +/- 3 standard deviations.

2.3 Defining the Time to Maturity Score

- A security-level Time to Maturity Score is calculated for each security in the Parent Index by subtracting the security-level weighted average time to maturity of the Current Index⁶ from the security-level weighted average time to maturity of the Parent Index. The calculation is as follows:

$$TMS_i = (Parent\ Weight_i \times ToM_i) - (Current\ Weight_i \times ToM_i)$$

Where:

TMS_i : Time to Maturity Score of security i

$Parent\ Weight_i$: Parent Index weight of security i

$Current\ Weight_i$: Current Index weight of security i

ToM_i : Time to maturity of security i

³ For ESG considerations only, the wgt_{esg} is 100% and $wgt_{emissions} = 0\%$. For Emissions considerations only, the wgt_{esg} is 0% and $wgt_{emissions} = 100\%$. For combined ESG and Emissions considerations, the wgt_{esg} is 50% and $wgt_{emissions} = 50\%$.

⁴ For ESG considerations only, the wgt_{esg} is 100% and $wgt_{emissions} = 0\%$. For Emissions considerations only, the wgt_{esg} is 0% and $wgt_{emissions} = 100\%$. For combined ESG and Emissions considerations, the wgt_{esg} is 50% and $wgt_{emissions} = 50\%$.

⁵ GICS® the global industry classification system jointly developed by MSCI Inc. and S&P Global Market Intelligence.

⁶ The market value of securities in the Index one day prior to rebalancing (excluding the deletions from the proforma Parent Index) and the market value of new additions in the Parent Index as of rebalancing date are combined and renormalized to determine the Current Index.

- The Time to Maturity Score is further z-scored and winsorized at +/- 3 standard deviations.

2.4 Defining the Composite Score

- A security-level Composite Score is calculated using a weighted combination of the Factor Score and Time to Maturity Score as follows:

$$CS_i = (FS_i \times 80\%) + (TMS_i \times 20\%)$$

Where:

CS_i : Weighted average Composite Score of security i

FS_i : Factor Score of security i

TMS_i : Time to Maturity Score of security i

- The Composite Score is subsequently z-scored.

2.5 Defining the Cash Component

The securities in the Index accrue Cash Balance from regular coupon payments and principal redemptions in between two index reviews. The Cash Balance along with the market value of Parent Deletions⁷ together determine the Total Cash available for redistribution in the Index. The Total Cash as a proportion of the total market value of the Index as of one day prior to the rebalancing date determine the Cash Component of the Index.

2.6 Reinvestment of the Cash Component

The constituents in the Parent Index are ranked⁸ and grouped into Deciles such that Decile 1 corresponds to securities with highest Composite Scores and Decile 10 corresponds to securities with lowest Composite Scores.

The Cash Component is reinvested equally into deciles 1 through 6. This is subsequently re-distributed among securities in the Current Index⁹ (excluding the new additions in Parent Index) in proportion of their weight within each decile. Reinvesting the Cash Component into deciles 1 through 6 effectively underweights the deciles corresponding to the lowest Composite Scores.

The weights of these securities are scaled such that total weight adds up to the weight of the Current Index (excluding the new additions in Parent Index) prior to redistribution of cash.

⁷ Parent Deletions are defined as securities from the Index (one day prior to rebalancing date) which are not part of the Parent Index as of rebalancing date.

⁸ If multiple securities have the same Composite Score, then the security with higher weight in the Current Index is assigned a better rank.

⁹ Current Index is defined in Section 2.3

2.7 Treatment of New Additions

New additions to the Parent Index on the rebalancing date are added to the Index at a multiple of their market values within the Parent Index. The multiples are based on the decile membership of these securities defined in below table:

Decile	Scalar Multiple	Decile	Scalar Multiple
1	1.5	6	1.0
2	1.4	7	0.9
3	1.3	8	0.8
4	1.2	9	0.7
5	1.1	10	0.6

2.8 Defining the Index Weights

The securities defined in Section 2.6 (Reinvestment of Cash component) and Section 2.7 (Treatment of New Additions) are combined and renormalized in proportion of their market values defined in each section to determine the Index Weights.

At any rebalance, if the weighted average score of the Index crosses the defined thresholds, the Index will maintain the Current Index weights applicable at that rebalance:

Weighted average thresholds:

MSCI Glidepath Corporate Bond Index - ESG: If the weighted average ESG Score of the Index reaches 95% of the Maximum possible ESG Score.

MSCI Glidepath Corporate Bond Index - Emissions: If the weighted average Absolute GHG Emission of the Index improves by 95% relative to the weighted average Absolute GHG Emission of the Index as of latest Base Date.

MSCI Glidepath Corporate Bond Index - Emissions & ESG: If either of the thresholds defined for MSCI Glidepath Corporate Bond Index - ESG or MSCI Glidepath Corporate Bond Index - Emissions are breached.

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 (termed as 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, termed as the 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 monthly rebalancing dates, barring an exchange event¹⁰. 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 2.6 of the Methodology.
- Specific variants of the total return calculation of the index on the Rebalancing Date may be adjusted for transaction costs¹¹ 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 Methodology¹². For the holiday calendar used in the indexes, please refer to the MSCI Fixed Income Data Methodology¹³.

¹⁰ Refer to the MSCI Fixed Income Index Calculation Methodology for detail. Available at <https://www.msci.com/index-methodology>

¹¹ Refer to the MSCI Fixed Income Index Calculation Methodology for detail. Available at <https://www.msci.com/index-methodology>

¹² Refer to the MSCI Fixed Income Index Calculation Methodology for detail. Available at <https://www.msci.com/index-methodology>

¹³ 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 ESG Ratings 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 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 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-change-solutions>.

Appendix I: 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.

- MSCI Fixed Income Data Methodology – [Link](#)
- MSCI Fixed Income Index Calculation Methodology – [Link](#)
- MSCI Fixed Income Index Glossary of Terms - [Link](#)
- MSCI Fixed Income Index Policies – [Link](#)
- MSCI Corporate Bond Indexes Methodology - [Link](#)
- 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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