

MSCI MarketAxess Tradable Corporate Bond Indexes Methodology

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1 Introduction

The MSCI MarketAxess Tradable Corporate Bond Indexes (‘the Tradable Bond Indexes’) are designed to measure the performance of a selection of relatively liquid fixed income securities from the universe of corporate bonds defined by the underlying MSCI Corporate Bond Indexes (‘the Parent Indexes’).

The methodology uses the MarketAxess’ Relative Liquidity Scores (“RLS”) in conjunction with Size and Maturity criteria to identify and select liquid fixed income securities. The index methodology further incorporates appropriate buffers in index construction and rebalancing to limit monthly turnover. In addition, index methodology incorporates sector and credit rating allocation constraints, to capture credit market beta with limited basis risk vis-à-vis the Parent Indexes.

2 Index Construction Rules

2.1 Selection Universe

The Selection Universe for the MSCI MarketAxess Tradable Corporate Bond Indexes are defined by the constituents of the underlying MSCI Corporate Bond Indexes.

| Tradable Bond Index | Selection Universe |
|---|----------------------------------|
| MSCI MarketAxess USD IG Tradable Corporate Bond Index | MSCI USD IG Corporate Bond Index |
| MSCI MarketAxess EUR IG Tradable Corporate Bond Index | MSCI EUR IG Corporate Bond Index |
| MSCI MarketAxess USD HY Tradable Corporate Bond Index | MSCI USD HY Corporate Bond Index |
| MSCI MarketAxess EUR HY Tradable Corporate Bond Index | MSCI EUR HY Corporate Bond Index |

2.2 Eligibility Criteria

2.2.1 Liquidity Score Eligibility

To be eligible for inclusion in the Tradable Bond Index, a security must have a current MarketAxess Relative Liquidity Score (see section 4 – “MarketAxess Data” for more information) of greater than or equal to 3 as of the rebalancing date. In addition to having a minimum current RLS, a security must also have a minimum Monthly Relative Liquidity Score (“MRLS”).

The MRLS of a security is calculated as the simple average of MarketAxess RLS over a rolling 21-day window¹. MRLS is calculated only if the security has at least 11 valid observations² in the defined window. Each Tradable Bond Index constituent must have a MRLS greater than or equal to a threshold value defined for each of the Tradable Bond Indexes as tabulated below. The minimum MRLS threshold is defined differently for new additions vis-à-vis already existing Tradable Bond Index constituents, where new additions have a relatively higher MRLS threshold.

| Tradable Bond Index | Minimum MRLS for New Additions | Minimum MRLS for Existing Constituents |
|---|--------------------------------|--|
| MSCI MarketAxess USD IG Tradable Corporate Bond Index | 6.0 | 5.0 |
| MSCI MarketAxess EUR IG Tradable Corporate Bond Index | 6.0 | 5.0 |
| MSCI MarketAxess USD HY Tradable Corporate Bond Index | 5.5 | 4.5 |
| MSCI MarketAxess EUR HY Tradable Corporate Bond Index | 5.5 | 4.5 |

¹ 21-day window is defined by using weekdays.

² The observation is considered valid if the bond is scored by MarketAxess and belongs to the corresponding MarketAxess liquidity group, relative to which the RLS is computed. For example, for MSCI MarketAxess USD IG Tradable Corporate Bond Index the bond should belong to the MarketAxess USHG liquidity group.

2.2.2 Size Eligibility

At a security level, size is defined by its notional amount outstanding, whereas at an issuer ticker level, it is defined by issuer ticker’s total amount outstanding³

At rebalancing, each security included in the MSCI MarketAxess Tradable Corporate Bond Indexes should have security size and issuer size greater than or equal to thresholds as tabulated below.

| Tradable Bond Index | Minimum Security Size | Minimum Issuer Size |
|---|-----------------------|---------------------|
| MSCI MarketAxess USD IG Tradable Corporate Bond Index | USD 500 million | USD 10 billion |
| MSCI MarketAxess EUR IG Tradable Corporate Bond Index | EUR 500 million | EUR 10 billion |
| MSCI MarketAxess USD HY Tradable Corporate Bond Index | USD 300 million | USD 2 billion |
| MSCI MarketAxess EUR HY Tradable Corporate Bond Index | EUR 300 million | EUR 2 billion |

2.2.3 Maturity Eligibility

Each Tradable Bond Index constituent at issuance must have had a time to maturity greater than or equal to 3 years.

Additionally, each Index constituent within the two Investment Grade (IG) Tradable Bond Indexes – USD IG and EUR IG – must have a remaining time to maturity less than or equal to 30 years. There are no time to maturity capping for the two High Yield (HY) Tradable Bond Indexes – USD HY and EUR HY.

³ Computed as sum of issuer amount outstanding of all the unique issuer ids mapped to an issuer ticker. Please refer to MSCI Fixed Income Data Methodology document (<https://www.msci.com/index-methodology>) for details on the calculation of Issuer amount outstanding.

2.3 Index Construction

2.3.1 Updating the Eligible Universe

The Eligible Universe for index construction is derived from the Selection Universe and is updated by applying the eligibility screens described in Section 2.2.

2.3.2 Selection of Eligible Bonds

The two largest bonds by size are selected for each issuer ticker in the updated Eligible Universe. If there is only one bond for the issuer ticker in the universe, then only that one is included. Please refer to Appendix 1 for details on the bond selection algorithm.

2.4 Weighting Scheme

The Tradable Bond Index constituents are weighted in proportion of their market values. Additionally, constituent weights are sequentially constrained. First the weights are capped at the issuer ticker level, followed by application of constraints on the sector weights and finally constraints are applied on the credit rating weights.

2.4.1 Issuer Capping

Constituent weights are capped at 3% at the issuer ticker level to mitigate concentration risk. The excess weight after capping is redistributed across the remaining Index issuers in proportion of their market value. Within each issuer, the bonds are still weighted in proportion of their market values.

2.4.2 Sector Constraints

Within the Tradable Bond Index, Global Industry Classification Standard (GICS®)⁴ sector weights are capped/floored within ± 5 percentage points relative to the corresponding Parent Index sector weights, to reduce sector bias. For example, if we assume a sector weight in the Parent Index to be 12%, then that sector weight in the Tradable Bond Index should lie between 7% (12%-5%) to 17% (12%+5%). The excess (or lack of) weight after capping is redistributed across (or taken from) the remaining Tradable Bond Index sectors in proportion of their market value.

2.4.3 Credit Rating Constraints

Similar to the sector constraints, the Tradable Bond Index credit rating weights are also capped/floored within ± 5 percentage points relative to the corresponding Parent Index credit rating weights, to mitigate any credit rating bias. To achieve the credit rating constraints, we first convert the MSCI Average Rating⁵ to a broad credit rating bucket and then apply the constraints on those credit rating buckets. Please refer to Appendix 2 for details. The excess (or lack of) weight after application of the constraints is redistributed across (or taken from) the remaining Tradable Bond Index credit rating buckets in proportion of their market value.

⁴ GICS, the global industry classification standard jointly developed by MSCI Inc. and S&P Dow Jones Indices. The GICS methodology is available at: <https://www.msci.com/gics>

⁵ MSCI sources credit ratings from Standard and Poor's Rating Services (S&P) or Moody's Investor Service (Moody's). The MSCI Average Rating is the average rating of S&P and Moody's, rounded up to the nearest integer, if a half value occurs. The MSCI average rating is based on the mappings and scores tabulated in Appendix Section 12.1.1 of the [MSCI Fixed Income Data Methodology](#).

Note that the constraints on the issuer ticker weight, sector weight and credit rating weight are calculated for the pro forma Index as of the effective date, based on the closing prices as of the Index review announcement date.

Please note that, since the constraints are applied sequentially, the issuer capping and sector weight constraints could be partially reversed (e.g. in case of narrower indexes) and only the credit weight constraints may apply fully at rebalance.

Also, in cases where the pro-forma weight at issuer ticker level, sector level or credit rating level, breaches the set constraints, because of market price movements or corporate events between the announcement date and the effective date, the constraints are not applied again. Similarly, even if weight breaches the constraints because of market price movements or corporate events between two monthly reviews, the constraints are not re-applied.

3 Index Maintenance

3.1 Monthly Index Review

The Index is reviewed monthly to coincide with the Monthly Index Review of the MSCI Corporate Bond Indexes.

In general, the pro forma Indexes are announced three business days before the effective date of rebalancing.

MSCI uses the latest available MarketAxess Relative Liquidity Score for the rebalancing of the MSCI MarketAxess Tradable Corporate Bond Indexes.

At each Monthly Index Review, the Eligible Universe is updated, and the composition of the Index is reassessed based on methodology described in Section 2. In addition to this for each Tradable Bond Index rebalancing a buffer rule is applied to control for rebalancing turnover.

Securities that are deleted from the Tradable Bond Index are “locked out” and hence are not eligible to be re-added to the Index for a period of next 12 months. For example, if a bond is dropped from the Index as of rebalancing month T, it cannot re-enter the Index up until T+11 months and will be considered for inclusion for the T+12-month rebalancing.

Securities that enter the Tradable Bond Index and continue to qualify on current RLS, size and maturity eligibility criteria defined in Section 2.2.1, Section 2.2.2, and 2.2.3, respectively, are “locked in” i.e., remain in the Index for at least a period of 12 months.

3.2 Pricing

Historically, the Tradable Bond Index uses bid and offer prices from multiple data vendors with primary pricing source being Refinitiv. From January 2nd, 2023, onwards primary pricing source is transitioned from Refinitiv to MarketAxess Composite+™.

4 MarketAxess Data

The MSCI MarketAxess Tradable Corporate Bond Indexes use the security-level Relative Liquidity Score product provided by MarketAxess Holdings Inc.

For details on MarketAxess' full suite of products, please refer to: <https://www.marketaxess.com/>.

4.1 Relative Liquidity Score

The MarketAxess Relative Liquidity Score provides a defined measurement of the current liquidity for individual bonds and highlights the potential ease that a trader can expect to transact in that instrument. The score ranges from 10, meaning the highest level of liquidity, down to 1.

MarketAxess combines data points from multiple sources – Inventory data, MarketAxess platform data, TRACE⁶ data, and Trax⁷ data, to calculate multiple bond-specific factors on a relative basis over a 30-day look back period. The proprietary model then aggregates the individual factors to derive the final relative liquidity score.

For more details on Relative Liquidity score, please refer to: <https://www.marketaxess.com/price/relative-liquidity-score>.

⁶ TRACE, Trade Reporting and Compliance Engine, is the Financial Industry Regulatory Authority's (FINRA) fixed income market real-time price reporting and dissemination service.

⁷ Trax, a wholly owned subsidiary of MarketAxess Holdings, Inc., provides capital market data, trade matching and regulatory reporting services to the global securities market.

Appendix 1: Guidelines on bond selection algorithm

The Tradable Bond Index selects up to two bonds for each issuer ticker in the Eligible Universe as defined by rules in Section 2.2. The underlying principle for the selection algorithm is to seek to select the most liquid subset, while aiming to mitigate high turnover.

The following rules are used in selecting at most two bonds for each issuer ticker. The preference order for selection is as follows:

1. Select bonds that entered the Tradable Bond Index over the past 11 months and continue to qualify on current RLS, size and maturity criteria as defined in Section 2.2.1, Section 2.2.2, and Section 2.2.3, respectively.
2. In case we have less than two bonds for an issuer ticker selected from Step 1, then select remaining bonds with higher security size.
3. In case we have multiple bonds with same security size, then following parameters in the given order are used as tiebreakers for selection.
 - Higher MRLS score
 - Higher Time to Maturity
 - Higher Coupon

Appendix 2: Credit rating bucket mapping

MSCI sources credit ratings from Standard and Poor’s Rating Services (S&P) or Moody’s Investor Service (Moody’s). The MSCI Average Rating is the average rating of S&P and Moody’s, rounded up to the nearest integer, if a half value occurs. The MSCI average rating is converted to a broader credit rating bucket as per the table below.

| MSCI Average Rating | Credit Rating Bucket (used for capping) |
|---------------------|---|
| AAA | AAA |
| AA+, AA, AA- | AA |
| A+, A, A- | A |
| BBB+, BBB, BBB- | BBB |
| BB+, BB, BB- | BB |
| B+, B, B- | B |
| CCC+, CCC, CCC- | CCC |
| CC+, CC, CC- | CC |
| C+, C, C- | C |
| D | D |

Appendix 3: Changes to this Document

The following modifications have been since October 2023:

- Updated to reflect the launch of the: MSCI MarketAxess EUR IG Tradable Corporate Bond Index, MSCI MarketAxess USD IG Tradable Corporate Bond Index and MSCI MarketAxess EUR HY Tradable Corporate Bond Index.
- Modification to Section 2 to reflect the methodology changes, that resulted from the MSCI MarketAxess USD HY Tradable Corporate Bond Index Consultation.

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