

MSCI FIXED INCOME QUALITY INDEXES METHODOLOGY

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Contents

- 1 Introduction..... 3
- 2 Index Construction Methodology..... 4
 - 2.1 Applicable Universe..... 4
 - 2.2 Determination of Quality Score..... 4
 - 2.3 Security Selection..... 5
 - 2.4 Weighting Scheme 5
- 3 Maintaining the Indexes..... 6
- Appendix: Rules to Determine Minimum Number of Issuers at Initial Construction and in Ongoing Rebalancing for high exposure indexes 7

1 Introduction

The MSCI Fixed Income Quality Indexes are designed to represent the performance of a set of companies that exhibit relatively higher Quality characteristics within the parent universe of bonds.

The MSCI Fixed Income Quality Indexes are part of the MSCI Fixed Income Factor Indexes, which are designed to reflect the systematic elements of particular investment styles or strategies. While issuance weighted indexes aim to represent the performance of the broad market beta, these alternatively weighted indexes aim to represent additional sources of systematic return associated with particular investment styles and strategies, such as Carry, Size, Volatility, etc.

2 Index Construction Methodology

2.1 Applicable Universe

The applicable universe includes all the existing constituents of an underlying MSCI parent index (herein, a “Parent Index”). This approach aims to provide an opportunity set with sufficient liquidity and capacity.

2.2 Determination of Quality Score

The Quality score for each constituent is computed using bond level descriptor, namely lower credit rating between S&P and Moody’s.

2.3 Calculating the Quality Z-score

Convert alphabetical credit ratings to numerical ratings using the mapping –

Moody’s	S&P	Score	MSCI
Aaa	AAA	0	AAA
Aa1	AA+	1	AA1
Aa2	AA	2	AA2
Aa3	AA-	3	AA3
A1	A+	4	A1
A2	A	5	A2
A3	A-	6	A3
Baa1	BBB+	7	BBB1
Baa2	BBB	8	BBB2
Baa3	BBB-	9	BBB3
Ba1	BB+	10	BB1
Ba2	BB	11	BB2
Ba3	BB-	12	BB3
B1	B+	13	B1
B2	B	14	B2
B3	B-	15	B3
Caa1	CCC+	16	CCC1
Caa2	CCC	17	CCC2
Caa3	CCC-	18	CCC3
Ca	CC	19	CC
C	C	20	C

After computing Quality descriptor as numerical ratings, a Quality z-score for each constituent is computed using **sector relative** z-score. A sector relative score is derived by standardizing the quality descriptor within each sector. A sector relative score is winsorized at +/- 3.

2.3.1 Calculating the final Quality score

The final Quality score is computed as follows:

$$Final\ Quality\ Score = \begin{cases} (1 + Z_{relT}^j)^{-1} Z_T^j & Z_T^j \geq 0 \\ (1 - Z_{relT}^j) & Z_T^j < 0 \end{cases}$$

Where: Z_T^j is a Quality z-score computed for each rebalancing as highlighted in previous step for each constituent

2.4 Security Selection

The MSCI Fixed Income Quality Indexes are constructed in the following variants:

- 1) Tilted exposures – taking all constituents of parent index
- 2) High exposures – selecting a subset of constituents within parent index and constructed with a fixed number of securities approach

For high exposure variant, all the existing constituents of the relevant Parent Index are ranked based on their Final Quality Scores. If multiple securities have the same Final Quality Scores, then the security having a higher weight in the Parent Index is given a higher rank. A minimum number of securities with the highest positive Final Quality Scores are predetermined for every MSCI Quality Index at initial construction with an aim to attain a greater weight in the Quality factor while maintaining sufficient index issuance outstanding notional amount and number of securities' coverage. Rules for arriving at a minimum number of securities at initial construction are explained in Appendix I. The minimum number for issuer selection determined at initial construction is evaluated at every Quarterly Index Review. Rules for evaluating the minimum number of securities at index review is also explained in Appendix.

2.5 Weighting Scheme

The securities selected in the previous step are assigned weights in the proportion of Issuance weight* Final Quality Score and normalized to sum to 1.

The final security level inclusion factor is determined as the ratio of the final security level weight and the security level pro forma issuance weight in the relevant Parent Index.

3 Maintaining the Indexes

3.1 Quarterly Index Reviews

The MSCI Fixed Income Quality Indexes are rebalanced on a quarterly basis, usually as of the close of the last business day of a month, coinciding with monthly Index Reviews of the MSCI Parent Index. All variables are taken as of three days prior to the index rebalancing. This approach aims to capture timely updates to the Quality characteristics of the companies and coincide with the rebalancing frequency of the relevant Parent Index. The pro forma MSCI Quality Indexes are in general announced three business days before the effective date.

Buffer Rules for High Exposure Indexes:

To reduce Index turnover and enhance index stability for high exposure indexes, buffer rules are applied as follows:

3.1.1 Security Selection Buffer

A security selection buffer of 50% is applied during the on-going index review.

For example, if the existing MSCI Fixed Income Quality Index contains 400 securities then the buffers are applied between rank 201 and 600. The securities in the Parent Index with a Quality score rank at or above 200 will be added to the MSCI Fixed Income Quality Index on a priority basis. The existing constituents that have a Quality score rank between 201 and 600 are then successively added until the number of securities in the MSCI Fixed Income Quality Index reaches 400. If the number of securities is below 400 after this step, the remaining securities in the Parent Index with the highest Quality score rank are added until the number of securities in the MSCI Fixed Income Quality Index reaches 400. If the number of securities is below the minimum number of securities, the remaining securities in the Parent Index with the highest Quality score rank are added until the number of securities in the MSCI Fixed Income Quality Index reaches the Minimum Number of securities.

3.1.2 Turnover Buffer

A turnover buffer of 50% is applied during the on-going index review.

For example, if the on-going rebalancing results in changing the weight of a security from x% to y%, then the effective change in weight will be:

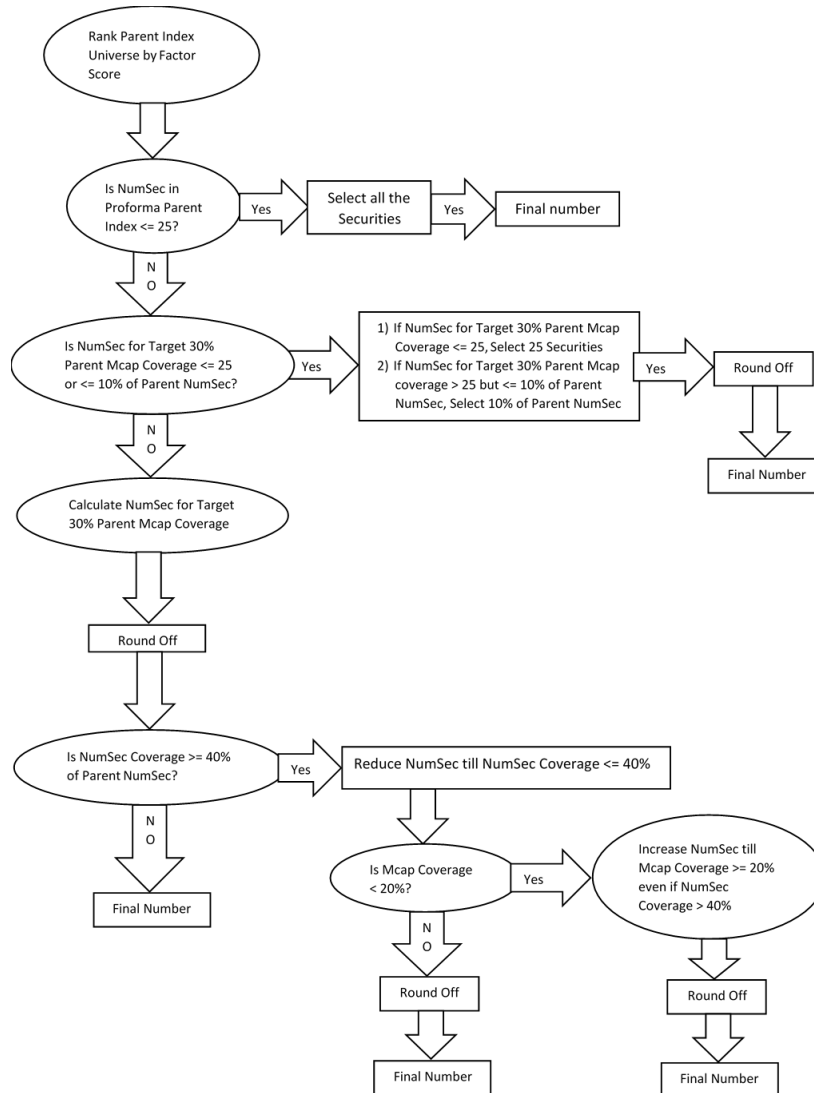
$$\text{Effective pro forma constituent weight} = x + (y-x)/2$$

The turnover buffer is not applied on deletions.

Appendix: Rules to Determine Minimum Number of securities at Initial Construction and in Ongoing Rebalancing for high exposure indexes

Algorithm to Determine Minimum Number of securities at Initial Construction

Rank the securities in the proforma parent universe in the descending order of final Quality score

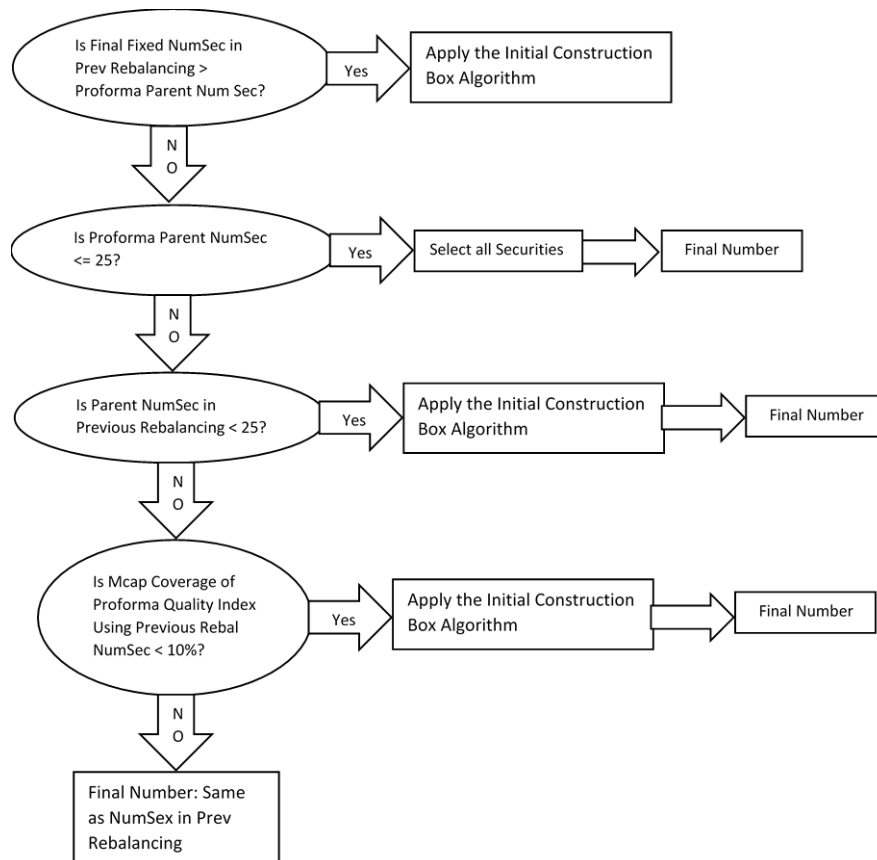


Rounding Off Rules:

Upward rounding off is done depending on Minimum Number of securities Obtained in the Previous Box Step

- If Minimum Number of securities in Previous Step < 100, Nearest Rounding = 10 securities
- If Minimum Number of securities in Previous Step >= 100 but < 300, Nearest Rounding = 25 securities
- If Minimum Number of securities in Previous Step >= 300, Nearest Rounding = 50 securities

Algorithm to reevaluate Minimum Number of securities at Quarterly Rebalancing



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* = toll free

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