

MSCI BUYBACK YIELD INDEXES METHODOLOGY

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1 INTRODUCTION

The MSCI Buyback Yield Indexes aim to reflect the performance of companies that return capital to shareholders through share buybacks.

MSCI categorizes the MSCI Buyback Yield Indexes as Factor Indexes (Risk Premia), which reflect the systematic elements of particular investment styles or strategies. While capitalization weighted indexes are designed to represent the broad market beta, the MSCI Factor Indexes are designed to reflect performance considering additional sources of systematic return associated with particular investment styles and strategies, such as value, momentum, volatility, etc., that could be represented through alternatively weighted indexes.

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”).

2.2 DETERMINING THE BUYBACK YIELD SCORE

The Buyback Yield is calculated at the issuer level using trailing 12 month (TTM) number of common shares (NOS) outstanding adjusted for the relevant corporate events and the current NOS outstanding. Issuer level buyback yield is calculated as market capitalization weighted average of buyback yield values of all the common share class securities belonging to an issuer in the Parent Index. Preferred stocks and other share types such as units, warrants etc. are excluded from the buyback yield calculation.

$$\text{Net Buyback Yield for an Issuer} = \sum_{i=1}^n W_i * Y_i$$

Where:

- W_i is the market capitalization weight of a common share class security in an issuer with n securities
- Y_i is the buyback yield of a common share class security calculated as change in TTM NOS/current NOS

All the common share type securities belonging to an issuer in the Parent Index are then assigned issuer level buyback yield calculated in the previous step. Buyback yield values for preferred and other share types such as units, warrants etc. are not computed.

2.2.1 DEFINING THE ELIGIBLE UNIVERSE

- Securities from the Parent Index that have a buyback yield value greater than 10 bps are included to form the eligible universe. A buyback yield cutoff of 10 bps is used in order to avoid including companies who are buying shares to offset other sources of issuance, for example, from an Employee Stock Options Program.
- Securities with extremely high buyback yield values are also excluded from the eligible universe to ensure that the average values used to standardize the variables are less affected by extreme values. To do this, the buyback yield values for all the securities are first ranked in ascending order within the eligible universe. Missing values are excluded from the ranking. Then, the securities with values that lie in the top 99th percentile rank are excluded

provided the buyback yield value is greater than 15%. Securities whose buyback yield value is less than 15% but still lie in top 99th percentile are not excluded.

2.2.2 CALCULATING THE Z-SCORES

The z-score for buyback yield value of each security is calculated using the mean and standard deviation of the buyback yield of all the securities within the eligible universe

$$Z = \frac{(x - \mu)}{\sigma}$$

Where:

- x is the buyback yield for a given security
- μ is the mean of the buyback yield values in the eligible universe, excluding missing values
- σ is the standard deviation of the buyback yield values in the eligible universe, excluding missing values

The z-scores are winsorized at +/-3.

2.2.3 CALCULATING THE BUYBACK YIELD SCORE

The Buyback Yield z-score is then translated into Buyback Yield Score. The Buyback Yield Score is computed from the z-score using the formula mentioned below:

$$\text{Buyback Yield Score} = \begin{cases} (1 + Z) & \text{for } Z > 0 \\ (1 - Z)^{-1} & \text{for } Z < 0 \end{cases}$$

where z is composite z-score calculated in the previous step.

2.3 WEIGHTING SCHEME

For a given rebalancing, all the securities eligible for the inclusion in the MSCI Buyback Yield Indexes are weighted by the product of their free float market capitalization weight and the Buyback Yield Score.

Buyback Yield Weight = Buyback Yield Score * Free Float Market Capitalization Weight in the Parent Index

The above weights are then normalized to 100%.

Additionally, constituent weights are capped at issuer level to mitigate concentration risk:

1. Issuers in the MSCI Buyback Yield Indexes based on broad parent MSCI Indexes (e.g. MSCI World Index, MSCI Emerging Markets Index etc.) will be capped at 5%.

2. Issuers in the MSCI Buyback Yield Indexes based on narrow parent MSCI Indexes will be capped at the maximum weight in the Parent Index.

Narrow MSCI Parent Indexes are defined as those indexes for which the maximum market capitalization weight in the Parent Index is more than 10%.

MSCI Equal Weighted Buyback Yield Indexes are constructed by including all the securities eligible for the inclusion in the MSCI Buyback Yield Indexes and giving an equal weight to each issuer. Please refer to Appendix I for further details on the MSCI Equal Weighted Buyback Yield Indexes.

3 MAINTAINING MSCI BUYBACK YIELD INDEXES

3.1 ANNUAL INDEX REVIEWS

The MSCI Buyback Yield Indexes are rebalanced on an annual basis, usually as of the close of the last business day of May, coinciding with May Semi Annual Index Review of the MSCI Global Investable Market Indexes. Buyback yield data as of the end of the April is used. The pro forma MSCI Buyback Yield Indexes are announced nine business days before the effective date.

3.2 ONGOING EVENT RELATED CHANGES

The general treatment of corporate events in the MSCI Buyback Yield Indexes 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 Buyback Yield Index, the changes made to the Parent Index during intermediate Index Reviews will be neutralized in the MSCI Buyback Yield Index.

The following section briefly describes the treatment of common corporate events within the MSCI Buyback Yield Indexes.

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

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 I: CONSTRUCTING THE MSCI EQUAL WEIGHTED BUYBACK YIELD INDEXES

The MSCI Equal Weighted Buyback Yield Indexes are created by including all the securities in the Parent Index with Buyback Yield greater than 10 bps similar to MSCI Buyback Yield Indexes. Each issuer in the eligible universe is given an equal weight (i.e. $1/N$, where N is the number of issuers in the eligible universe). If there are multiple securities of the same issuer in the index, the issuer would be equal weighted and the weight would be distributed within the securities in proportion to their free float market capitalization. The MSCI Equal Weighted Buyback Yield Indexes follows the same rebalancing schedule and corporate events treatment as the MSCI Buyback Yield Indexes.

The following sections have been modified since June 2015:

- Appendix II in the previous version of the methodology book describing the Corporate Events treatment has been deleted. The details on the Corporate Events treatment are now included in Section 3.2.

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