

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.

$$\text{Net Buyback Yield for an Issuer} = \sum_{i=0}^n W_i * Y_i$$

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

In general, the MSCI Buyback Yield Indexes follow the event maintenance of the Parent Index. Changes in the Parent Index are reflected simultaneously in the MSCI Buyback Yield Indexes.

3.2.1 IPOS AND OTHER EARLY INCLUSIONS

IPOs and other newly listed securities will only be considered for inclusion at the next annual index review in the MSCI Buyback Yield Index, even if they qualify for early inclusion in the Parent Index.

3.2.2 ADDITIONS AND DELETIONS DUE TO CORPORATE EVENTS

The general treatment of additions and deletions due to corporate events aims at minimizing the turnover in the MSCI Buyback Yield Indexes. A constituent deleted from the Parent Index following a corporate event or during the Quarterly Index Review of the Parent Index will be simultaneously deleted from the MSCI Buyback Yield Index.

Please refer to Appendix II for more details on the treatment of corporate events.

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.

APPENDIX II: CORPORATE EVENTS TREATMENT

This appendix describes the treatment of the most common corporate events in the MSCI Indexes. Details regarding the treatment of all other corporate events not covered in this appendix can be found in the MSCI Corporate Events Methodology book, available at

<http://www.msci.com/products/indexes/size/standard/methodology.html>

Event	Event details	Action
Acquisition	Buyback Yield Index constituent acquires another Buyback Yield Index constituent	Maintain acquiring company and remove acquired company
	Buyback Yield Index constituent acquires non Buyback Yield Index constituent	Maintain acquiring company
	Non Buyback Yield Index constituent acquires Buyback Yield Index constituent	Remove acquired company without adding acquiring company
Merger	Buyback Yield Index constituent merges with the Buyback Yield Index constituent	Add new company with a constraint factor that is the weighted average of the two constituents
	Buyback Yield Index constituent merges with non Buyback Yield Index constituent	Add new company if MSCI links its price history to the Buyback Yield Index constituent. New company not added if price history is linked to the non Buyback Yield Index constituent
IPO	IPO added to Parent Index	Security will be considered for inclusion in the Buyback Yield Index at the next Annual Index Review
Spin-off	Buyback Yield Index constituent spins off security	Add spun-off security to the Buyback Yield Index with the constraint factor of the spinning security, if it is included in the Parent Index
Conversion	Security A converted to B, A deleted from Parent Index, B added	B inherits constraint factors from A
Country Reclassification	Domicile of company reviewed: Security A deleted from country A, security B added to country B	B inherits constraint factors from A if it is added to the Parent Index
Stock exchange reclassification	Stock exchange (price source) of company reviewed: Security A deleted, security B added	B inherits constraint factors from A if it is added to the Parent Index

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