LIBERTYQ EUROPEAN DIVIDEND INDEX METHODOLOGY

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1 Introduction

MSCI Indexes are constructed and maintained in accordance with the MSCI Global Investable Market Indexes (GIMI) Methodology and calculated as per the MSCI Index Calculation Methodology. This methodology book provides a description of the rules and guidelines followed by MSCI for the construction and maintenance of the LibertyQ European Dividend Index[1]. The LibertyQ European Dividend Index ("Index") is designed to represent the performance of a strategy that seeks exposure to securities with high and persistent dividend income along with superior Quality characteristics in Europe.

[1] The Index is governed by a set of methodology and policy documents ("Methodology Set"), including the present index methodology document. The Methodology Set for the Index can be accessed from MSCI's webpage https://www.msci.com/index-methodology in the section 'Search Methodology by Index Name or Index Code'.

2 Index Construction Methodology

2.1 Defining the Eligible Universe

The Parent Index includes all securities belonging to the MSCI Europe Investable Market Index (IMI), excluding:

1. Securities classified in the Equity Real Estate Investment Trusts Industry Group and Mortgage Real Estate Investment Trusts Sub-Industry as per the Global Industry Classification Standard (GICS®[2]).
2. Within the Small Cap Family of securities, the bottom 50% Small Cap Securities by number are excluded when sorted in descending order by their free float market capitalization. Security size segmentation is done as per MSCI Global Investable Market Indexes Methodology[3].

Real Estate Investment Trusts (REITs) have structurally very high dividend yield and, if included, would represent a disproportionate share of the Index. All securities belonging to the Parent Index are eligible for inclusion in the LibertyQ European Dividend Index.

Dividend yield strategies typically target not only high dividend yield, but also companies where that dividend is persistent. Therefore, the LibertyQ European Dividend Index also considers the following dividend persistence and yield screens in order to achieve a better representation of the opportunity set of a high dividend yield strategy:

- Dividend Persistence screening
- Dividend Yield screening

2.1.1 Applying the Dividend Persistence Screen

Securities with a negative year-over-year (“YoY”) Dividend per Share (DPS) growth in any of the last five years are excluded from the Index, as this is an indicator of shrinking dividend growth which could be a precursor to lower dividends. Securities which have insufficient data to calculate a YoY DPS growth rate for each of the last 5 years are also excluded from the Index.

[2] GICS, the Global Industry Classification Standard jointly developed by MSCI and S&P Global.

[3] MSCI Global Investable Market Indexes methodology book available at https://www.msci.com/index/methodology/latest/GIMI

2.1.2 Applying the Dividend Yield Screen

Securities with a 5 year average monthly dividend less than 1.2 times the 5 year average monthly dividend yield of the Parent Index are excluded from the Index.

2.2 Determination of the Quality Factor Score

The Quality Factor Score is determined for each security in the eligible universe as follows:

2.2.1 Calculating the Quality Factor Z-Score

In the first step, the z-score for a descriptor for each security is calculated as described below.

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

Where:

- z is the individual descriptor z-score in the eligible universe
- x is the descriptor value for a given security
- μ is the equal weighted mean of the descriptor values of all the securities included in the eligible universe
- σ is the equal weighted standard deviation of the descriptor values of all the securities included in the eligible universe

Z-scores are then winsorized at +/-3 (i.e., the z-scores above 3 are capped at 3 and z-scores below -3 are floored at -3). If a z-score of an individual descriptor is not computed due to the unavailability of the underlying descriptor data, the eligible universe average z-score is used.

A region relative z-score is then computed for a descriptor by standardizing the individual descriptor z-scores within the sector groups for each region.

The three sector groups defined to apply region relative z-scores are:

a) Securities belonging to the GICS “Financials” Sector (Sector “40” of the Global Industry Classification Standard (GICS) respectively)

b) Securities belonging to the GICS “Real Estate” Sector (Sector “60” of the Global Industry Classification Standard (GICS) respectively)

c) Securities belonging to all the other GICS sectors except “Financials” and “Real Estate” Sectors

The regions selected to compute region relative z-scores within each sector group are:

a) Europe ex UK

b) United Kingdom

Please refer to Appendix I for further details on region definitions

$$Z_{reg\_rel} = \frac{(Z - \mu_{reg_{rel}})}{\sigma_{reg\_rel}}$$

Where:

- Z_{reg_rel} is the region relative z-score for a descriptor
- z is the individual descriptor z-score for a given security within a sector group for each region
- μ_{reg_rel} is the equal weighted mean of the descriptor z-scores of all the securities included in a sector group for each region
- σ_{reg_rel} is the equal weighted standard deviation of the descriptor z-scores of all the securities included a sector group for each region

A region relative z-score for each sector group universe is then winsorized at +/- 3.

Quality factor Z-Score is then computed by equal weighting the region relative z-scores calculated in the previous step for each of the relevant descriptors as follows:

For all the securities in the GICS "Financials" and "Real Estate" Sectors

a) Return on Equity (ROE)

b) Negative of Earnings Variability

c) Cash ROA

For all the securities except for "Financials" and "Real Estate" Sectors

a) Return on Equity (ROE)

b) Negative of Earnings Variability

c) Cash ROA

d) Negative of Leverage

Please refer to Appendix II for further details on the calculation of each variable.

2.2.2 Calculating the Final Factor Score

The Final Factor Score is computed from the Quality factor Z-score as follows:

$$Final\ Factor\ Score = \begin{cases} 1 + Z, & Z \geq 0 \\ (1 - Z)^{-1}, & Z < 0 \end{cases}$$

Where Z is the Quality factor Z-Score determined in the previous step.

2.3 Security Selection & Weighting Scheme

The LibertyQ European Dividend Index is constructed with a fixed number of securities approach. All the constituents of the eligible universe are ranked based on their Quality Factor Z-Score and 50 securities with the highest rank are selected.

The securities included are assigned weights in the proportion of Market Cap Weight*Final Factor Score.

3 Maintaining the Index

3.1 Semi-Annual Index Reviews

The LibertyQ European Dividend Index is rebalanced on a semi-annual basis, usually as of the close of the last business day of May and November, coinciding with the May and November Index Reviews of the MSCI Global Investable Market Indexes. Descriptor data as of the end of April and October are used respectively. The pro forma Index is typically announced nine business days before the effective date.

At each rebalancing, a constraint factor (CF) is calculated for each constituent in the Index. The constraint factor is defined as the weight in the Index at the time of the rebalancing divided by the weight in the Parent Index. The constraint factor as well as the constituents in the Index remains constant between Index Reviews except in case of corporate events as described in section 3.2.

3.1.1 Buffer Rules

To reduce Index turnover and enhance stability, buffer rules are applied as follows:

Dividend Persistence Screening Buffer

If a security is already an Index constituent but it has a negative YoY DPS growth in only one of the last five years, it will still be allowed to remain in the Index. If it has a negative YoY DPS growth in more than one year, it will be excluded from the Index. Securities which have insufficient data to calculate a YoY DPS growth rate for each of the last 5 years are excluded from the Index.

Dividend Yield Screening Buffer

If a security is already an Index constituent, it will remain in the Index as long as its 5 year average monthly dividend is greater than or equal to 1.1 times the 5 year average monthly dividend yield of the Parent Index.

Security Selection Buffer

A security selection buffer of 100% is applied at each Index Review.

For example, the Index targets 50 securities and the buffers are applied between rank 1 and 100. The existing constituents that have a final factor score rank between 1 and 100 are added until the number of securities reaches 50. If the number of securities is below 50 after this step, the remaining securities in the Parent Index with the highest final factor score rank are added until the number of securities in the Index reaches 50.

Turnover Buffer

A turnover buffer of 50% is applied at each Index Review. For example, if the then current rebalancing results in changing the weight of a security from x% to y% in the Index, then the effective change in weight will be:

Effective pro forma constituent weight = x + (y-x)/2

The turnover buffer is applied on the uncapped weights of existing and pro forma constituents and is not applied on deletions. After the turnover buffers are applied, weight capping of 2% is applied at the issuer level.

3.2 Ongoing Event Related Changes

The general treatment of corporate events in the LibertyQ European Dividend Index 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 LibertyQ European Dividend Index, the changes made to the Parent Index during intermediate Index Reviews will be neutralized in the LibertyQ European Dividend Index.

The following section briefly describes the treatment of common corporate events within the LibertyQ European Dividend Index.

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/latest/CE

Appendix I: Region / Country Definitions

The Parent Index is composed of the European countries. Currently, this includes the following countries, under each defined region

Europe ex UK	UK
AUSTRIA	UNITED KINGDOM
BELGIUM	
DENMARK	
FINLAND	
FRANCE	
GERMANY	
IRELAND	
ISRAEL	
ITALY	
NETHERLANDS	
NORWAY	
PORTUGAL	
SPAIN	
SWEDEN	
SWITZERLAND	

Whenever MSCI changes the country constituents of the Parent Index, the constituent countries of this Index will change accordingly. Changes in the constituent companies of the MSCI Standard Country Indexes that comprise this Index will also be reflected in this Index.

Appendix II: Calculation of Variables

Factor	Descriptor	Computation Details
Quality	Return on Equity (ROE)	$\frac{\text{Trailing 12 months earnings per share}}{\text{Latest book value per share}}$
	Earnings Variability	Earnings variability is defined as the standard deviation of y-o-y earnings per share growth over the last five fiscal years
	Cash ROA	$\frac{\text{Latest Fiscal Year Net Operating Cash Flow}}{\text{Latest Fiscal Year Total Assets}}$
	Leverage	Leverage is defined as the average of Market Leverage, Book Leverage and Debt to Assets. Market Leverage = (ME + PE + LD)/ME, Book Leverage = (BE + PE + LD)/BE, Debt to Assets = TD/TA Where ME = Market Value of Equity on the Last Trading day, PE = Book Value of the Preferred Equity, LD = Most recent Book Value of the Long-Term Debt, BE = Book Value of the Equity, TD = Total Debt, TA is most recent Book Value of Total Assets

Appendix III: Changes to this Document

The following sections have been modified since May 2017:

- 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.

The following sections have been modified as of June 2023:

- Methodology book was updated to reflect the transition of the MSCI Global Investable Market Indexes (GIMI) to Quarterly Comprehensive Index Reviews.
- All references to "Semi-Annual Index Reviews" and "Quarterly Index Reviews" of the MSCI GIMI were replaced with "Index Reviews."
- Section 2.1: Updated to reflect the change from Industry to Industry Group for Equity Real Estate Investment Trusts under the GICS structure

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