

METHODOLOGY BOOK FOR:

- **MSCI USA VALUE EXPOSURE SELECT INDEX**
- **MSCI EUROPE VALUE EXPOSURE SELECT INDEX**
- **MSCI WORLD VALUE EXPOSURE SELECT INDEX**

May 2018

CONTENTS

- 1 Introduction 3
- 2 Index Construction Methodology 4
 - 2.1 Applicable Universe..... 4
 - 2.2 Score Calculation 4
 - 2.2.1 Sector Relative Value Z-Score4
 - 2.2.2 Sector Relative Quality Z-Score.....4
 - 2.2.3 Determination Of Combined Value-Quality Z-Score.....4
 - 2.2.4 Determination Of Final Combined Value-Quality Score5
 - 2.3 Security Inclusion 5
 - 2.4 Security Weighting 5
- 3 Maintaining the Indexes..... 7
 - 3.1 Index Reviews..... 7
 - 3.1.1 Security Selection Buffer.....7
 - 3.1.2 Turnover Buffer.....7
 - 3.2 Ongoing Event Related Changes 8

1 INTRODUCTION

The MSCI USA Value Exposure Select Index, MSCI Europe Value Exposure Select Index and MSCI World Value Exposure Select Index are designed to represent the performance of companies that exhibit relatively higher Value exposure within the Parent Index (defined below) while also seeking to avoid poor Quality companies.

The MSCI Value Exposure Select Indexes are constructed by including a fixed number of securities from the Parent Index with the highest final combined value-quality score (defined in section 2.2 below).

MSCI Value Exposure Select Indexes are designed to represent the performance of systematic elements of particular investment styles or strategies. While capitalization weighted indexes aim to represent the broad market, alternatively weighted indexes aim to represent the performance of additional sources of systematic return associated with particular investment styles and strategies, such as value, quality, momentum, 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. The relevant Parent Index could be any MSCI Regional or Country Index.

2.2 SCORE CALCULATION

The sector relative value z-score and sector relative quality z-score calculation methodologies are defined below. Z-scores are calculated for all securities in the Parent Index.

2.2.1 SECTOR RELATIVE VALUE Z-SCORE

The sector relative value z-score is calculated as per Appendix IV of the MSCI Enhanced Value Indexes Methodology. The scores range between +/- 3 after winsorization.

2.2.2 SECTOR RELATIVE QUALITY Z-SCORE

The sector relative quality z-score is calculated as per Appendix VI of the MSCI Quality Indexes Methodology. The scores range between +/- 3 after winsorization.

2.2.3 DETERMINATION OF COMBINED VALUE-QUALITY Z-SCORE

- Missing values¹ in sector relative quality z-score are replaced with zero.
- The value-quality z-score would not be computed for securities with missing sector relative value z-score values
- The combined value-quality z-score is computed as a weighted combination of sector relative value z-score and sector relative quality z-score.

$$\begin{aligned}
 \text{combined value - quality z - score} &= \frac{2}{3} \times \text{sector - relative value z - score} \\
 &+ \frac{1}{3} \times \text{sector - relative quality z - score}
 \end{aligned}$$

¹ For example: sector relative quality z-score could have missing values if ROE, debt to equity and earnings variability are values are missing for any security

- The combined value-quality z-score is standardized² and winsorized at +/- 3.

2.2.4 DETERMINATION OF FINAL COMBINED VALUE-QUALITY SCORE

The final combined value-quality score is computed from sector relative z-score as follows:

$$final\ combined\ value - quality\ score = \begin{cases} (1 + Z) & , & Z \geq 0 \\ (1 - Z)^{-1} & , & Z < 0 \end{cases}$$

Where Z is the combined value-quality z-score determined in the previous step.

2.3 SECURITY INCLUSION

The MSCI Value Exposure Select Indexes are constructed using a fixed number of securities approach. The number of securities selected at each rebalance are as per the below table –

Index	Parent Index	Target Number of Securities
MSCI USA Value Exposure Select Index	MSCI USA	125
MSCI Europe Value Exposure Select Index	MSCI Europe	125
MSCI World Value Exposure Select Index	MSCI World	350

All the existing constituents of the relevant Parent Index are ranked based on the final combined value-quality score. If multiple securities have the same final combined value-quality score, then the security having a higher weight in the Parent Index is given a higher rank. A fixed number of securities are selected at initial construction in the order of these ranks with an aim to attain a greater exposure to the final combined value-quality score. The target number of securities in each index helps in maintaining sufficient index market capitalization and number of securities coverage.

2.4 SECURITY WEIGHTING

The securities selected in the previous step are assigned weights in the proportion of market cap weight * final combined value-quality score.

These weights are then updated to implement sector neutrality i.e. the weight of each sector in the MSCI Value Exposure Select Index is equated with the weight of that sector in the Parent Index. This is done by normalizing the weights of the constituents within each sector to reflect the effective Parent Index sector weight. While ensuring sector neutrality,

² Standardizing implies calculating the z-scores such that the standardized values have an average of zero and a standard deviation of one.

issuers are capped at 5%. If the final index does not hold enough issuers in a particular sector to comply with the 5% capping, the capping threshold may be relaxed for that sector. Any excess weight due to capping is redistributed to the constituents of the corresponding sector proportionately.

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

3 MAINTAINING THE INDEXES

3.1 INDEX REVIEWS

The MSCI Value Exposure Select Indexes are 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 Semi-Annual Index Reviews (SAIRs) of the MSCI Global Investable Market Indexes. Fundamental variables as of the end of April and October are used respectively. This approach aims to capture timely updates to the Value characteristics of the companies and coincide with the rebalancing frequency of the relevant Parent Index. The pro forma MSCI Value Exposure Select Indexes are in general announced nine business days before the effective date.

Buffer Rules:

To reduce Index turnover and enhance index stability, 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, the MSCI Value Exposure Select Index targets 350 securities and the buffers are applied between ranks 176 and 525. The securities in the Parent Index with a final combined value-quality score rank at or below 175 will be added to the MSCI Value Exposure Select Index on a priority basis. The existing constituents that have a final combined value-quality score rank between 176 and 525 are then successively added until the number of securities in the MSCI Value Exposure Select Index reaches 350. If the number of securities is below 350 after this step, the remaining securities in the Parent Index are added in the order of final combined value-quality score rank until the number of securities in the MSCI Value Exposure Select Index reaches 350.

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.

3.2 ONGOING EVENT RELATED CHANGES

The general treatment of corporate events in the MSCI Value Exposure Select Indexes aims to minimize turnover outside of the rebalances. 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 rebalances in the MSCI Value Exposure Select Indexes, the changes made to the Parent Index during intermediate Index Reviews will be neutralized in the MSCI Value Exposure Select Index.

The following section briefly describes the treatment of common corporate events within the MSCI Value Exposure Select Indexes.

No new securities will be added (except where noted below) to the Index between rebalances. 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 of the corresponding Underlying Index.

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 of the corresponding Underlying Index.

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>

CONTACT US

clientservice@msci.com

AMERICAS

Americas	1 888 588 4567 *
Atlanta	+ 1 404 551 3212
Boston	+ 1 617 532 0920
Chicago	+ 1 312 675 0545
Monterrey	+ 52 81 1253 4020
New York	+ 1 212 804 3901
San Francisco	+ 1 415 836 8800
Sao Paulo	+ 55 11 3706 1360
Toronto	+ 1 416 628 1007

EUROPE, MIDDLE EAST & AFRICA

Cape Town	+ 27 21 673 0100
Frankfurt	+ 49 69 133 859 00
Geneva	+ 41 22 817 9777
London	+ 44 20 7618 2222
Milan	+ 39 02 5849 0415
Paris	0800 91 59 17 *

ASIA PACIFIC

China North	10800 852 1032 *
China South	10800 152 1032 *
Hong Kong	+ 852 2844 9333
Mumbai	+ 91 22 6784 9160
Seoul	00798 8521 3392 *
Singapore	800 852 3749 *
Sydney	+ 61 2 9033 9333
Taipei	008 0112 7513 *
Tokyo	+ 81 3 5290 1555

* = toll free

ABOUT MSCI

For more than 40 years, MSCI's research-based indexes and analytics have helped the world's leading investors build and manage better portfolios. Clients rely on our offerings for deeper insights into the drivers of performance and risk in their portfolios, broad asset class coverage and innovative research.

Our line of products and services includes indexes, analytical models, data, real estate benchmarks and ESG research.

MSCI serves 98 of the top 100 largest money managers, according to the most recent P&I ranking.

For more information, visit us at www.msci.com.

NOTICE AND DISCLAIMER

- This document and all of the information contained in it, including without limitation all text, data, graphs, charts (collectively, the “Information”) is the property of MSCI Inc. or its subsidiaries (collectively, “MSCI”), or MSCI’s licensors, direct or indirect suppliers or any third party involved in making or compiling any Information (collectively, with MSCI, the “Information Providers”) and is provided for informational purposes only. The Information may not be modified, reverse-engineered, reproduced or disseminated in whole or in part without prior written permission from MSCI.
- The Information may not be used to create derivative works or to verify or correct other data or information. For example (but without limitation), the Information may not be used to create indexes, databases, risk models, analytics, software, or in connection with the issuing, offering, sponsoring, managing or marketing of any securities, portfolios, financial products or other investment vehicles utilizing or based on, linked to, tracking or otherwise derived from the Information or any other MSCI data, information, products or services.
- The user of the Information assumes the entire risk of any use it may make or permit to be made of the Information. NONE OF THE INFORMATION PROVIDERS MAKES ANY EXPRESS OR IMPLIED WARRANTIES OR REPRESENTATIONS WITH RESPECT TO THE INFORMATION (OR THE RESULTS TO BE OBTAINED BY THE USE THEREOF), AND TO THE MAXIMUM EXTENT PERMITTED BY APPLICABLE LAW, EACH INFORMATION PROVIDER EXPRESSLY DISCLAIMS ALL IMPLIED WARRANTIES (INCLUDING, WITHOUT LIMITATION, ANY IMPLIED WARRANTIES OF ORIGINALITY, ACCURACY, TIMELINESS, NON-INFRINGEMENT, COMPLETENESS, MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE) WITH RESPECT TO ANY OF THE INFORMATION.
- Without limiting any of the foregoing and to the maximum extent permitted by applicable law, in no event shall any Information Provider have any liability regarding any of the Information for any direct, indirect, special, punitive, consequential (including lost profits) or any other damages even if notified of the possibility of such damages. The foregoing shall not exclude or limit any liability that may not by applicable law be excluded or limited, including without limitation (as applicable), any liability for death or personal injury to the extent that such injury results from the negligence or willful default of itself, its servants, agents or sub-contractors.
- Information containing any historical information, data or analysis should not be taken as an indication or guarantee of any future performance, analysis, forecast or prediction. Past performance does not guarantee future results.
- The Information should not be relied on and is not a substitute for the skill, judgment and experience of the user, its management, employees, advisors and/or clients when making investment and other business decisions. All Information is impersonal and not tailored to the needs of any person, entity or group of persons.
- None of the Information constitutes an offer to sell (or a solicitation of an offer to buy), any security, financial product or other investment vehicle or any trading strategy.
- It is not possible to invest directly in an index. Exposure to an asset class or trading strategy or other category represented by an index is only available through third party investable instruments (if any) based on that index. MSCI does not issue, sponsor, endorse, market, offer, review or otherwise express any opinion regarding any fund, ETF, derivative or other security, investment, financial product or trading strategy that is based on, linked to or seeks to provide an investment return related to the performance of any MSCI index (collectively, “Index Linked Investments”). MSCI makes no assurance that any Index Linked Investments will accurately track index performance or provide positive investment returns. MSCI Inc. is not an investment adviser or fiduciary and MSCI makes no representation regarding the advisability of investing in any Index Linked Investments.
- Index returns do not represent the results of actual trading of investible assets/securities. MSCI maintains and calculates indexes, but does not manage actual assets. Index returns do not reflect payment of any sales charges or fees an investor may pay to purchase the securities underlying the index or Index Linked Investments. The imposition of these fees and charges would cause the performance of an Index Linked Investment to be different than the MSCI index performance.
- The Information may contain back tested data. Back-tested performance is not actual performance, but is hypothetical. There are frequently material differences between back tested performance results and actual results subsequently achieved by any investment strategy.
- Constituents of MSCI equity indexes are listed companies, which are included in or excluded from the indexes according to the application of the relevant index methodologies. Accordingly, constituents in MSCI equity indexes may include MSCI Inc., clients of MSCI or suppliers to MSCI. Inclusion of a security within an MSCI index is not a recommendation by MSCI to buy, sell, or hold such security, nor is it considered to be investment advice.
- Data and information produced by various affiliates of MSCI Inc., including MSCI ESG Research LLC and Barra LLC, may be used in calculating certain MSCI indexes. More information can be found in the relevant index methodologies on www.msci.com.
- MSCI receives compensation in connection with licensing its indexes to third parties. MSCI Inc.’s revenue includes fees based on assets in Index Linked Investments. Information can be found in MSCI Inc.’s company filings on the Investor Relations section of www.msci.com.
- MSCI ESG Research LLC is a Registered Investment Adviser under the Investment Advisers Act of 1940 and a subsidiary of MSCI Inc. Except with respect to any applicable products or services from MSCI ESG Research, neither MSCI nor any of its products or services recommends, endorses, approves or otherwise expresses any opinion regarding any issuer, securities, financial products or instruments or trading strategies and MSCI’s products or services are not intended to constitute investment advice or a recommendation to make (or refrain from making) any kind of investment decision and may not be relied on as such. Issuers mentioned or included in any MSCI ESG Research materials may include MSCI Inc., clients of MSCI or suppliers to MSCI, and may also purchase research or other products or services from MSCI ESG Research. MSCI ESG Research materials, including materials utilized in any MSCI ESG Indexes or other products, have not been submitted to, nor received approval from, the United States Securities and Exchange Commission or any other regulatory body.
- Any use of or access to products, services or information of MSCI requires a license from MSCI. MSCI, Barra, RiskMetrics, IPD, InvestorForce, and other MSCI brands and product names are the trademarks, service marks, or registered trademarks of MSCI or its subsidiaries in the United States and other jurisdictions. The Global Industry Classification Standard (GICS) was developed by and is the exclusive property of MSCI and Standard & Poor’s. “Global Industry Classification Standard (GICS)” is a service mark of MSCI and Standard & Poor’s.