MSCI QUALITY INDEXES METHODOLOGY

August 2014
CONTENTS

1 Introduction ............................................................................................................ 3

2 Index Construction Methodology ........................................................................... 4
   2.1 Applicable Universe ......................................................................................... 4
   2.2 Determination of Quality Score ........................................................................ 4
      2.2.1 Winsorizing the variable ........................................................................... 4
      2.2.2 Calculating the Z-Scores ........................................................................... 4
      2.2.3 Calculating the Quality Score .................................................................... 5
   2.3 Security Selection ............................................................................................. 6
   2.4 Weighting Scheme ............................................................................................ 6

3 Maintaining MSCI Quality Indexes ......................................................................... 7
   3.1 Semi-Annual Index Reviews ............................................................................. 7
      3.1.1 Buffer Rules ............................................................................................... 7
   3.2 Ongoing Event Related changes ...................................................................... 7
      3.2.1 IPOs and other early inclusions .................................................................. 7
      3.2.2 Additions and Deletions due to corporate events ....................................... 7

Appendix I: Calculation of Fundamental Variables ................................................. 9

Appendix II: Quality Z-Score Computation ............................................................ 10

Appendix III: Rules to Determine Fixed Number of Securities at Initial Construction and in Ongoing Rebalancing ......................................................... 11

Appendix IV: Issuer Weight Capping ....................................................................... 14

Appendix V: Corporate Events Treatment .............................................................. 15

Appendix VI: Constructing MSCI Quality Tilt Index ............................................. 17

Appendix VII: Constructing MSCI Sector Neutral Quality Index ................. 18
1 INTRODUCTION

The MSCI Quality Indexes aim to reflect the performance of a quality growth strategy. Quality growth companies are characterized as companies with durable business models and sustainable competitive advantages. Companies that tend to have high ROE, stable earnings that are uncorrelated with the broad business cycle, and strong balance sheets with low financial leverage are targeted for quality growth. MSCI categorizes the MSCI Quality Indexes as Factor Indexes, which are designed to reflect the systematic elements of particular investment styles or strategies. While capitalization weighted indexes aim to represent the broad market beta, there may be 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. The Quality factor is complementary to other systematic factors such as Size, Value and Low Volatility.

The MSCI Quality Indexes aim to reflect the performance of the Quality factor with a simple and transparent methodology while ensuring reasonably high trading liquidity and investment capacity of constituent companies, as well as moderate Index turnover. Quality is an objective measure of certain historical variables and is not an endorsement or recommendation by MSCI as to the future performance of any constituents or the index.

With an aim to more heavily weight the Quality factor, the MSCI Quality Indexes are constructed by selecting a set number of securities from the Parent Index (defined below) with the highest Quality Scores (defined in Section 2). The market capitalization of securities is then weighted based on the Quality Score.

In addition to the MSCI Quality Indexes, MSCI also constructs the MSCI Quality Tilt Indexes and the MSCI Sector Neutral Quality Indexes.

The MSCI Quality Tilt Indexes are constructed by including all the constituents in the Parent Index and applying Quality tilt on the market capitalization weights of securities. Please refer to Appendix VI for further details on the methodology of MSCI Quality Tilt Indexes.

The MSCI Sector Neutral Quality Index aims to reflect the performance of securities that exhibit stronger quality characteristics relative to their peers within the same General Industry Classification Standard (GICS®) Sector. They are constructed by using the Quality Score that is computed within the sector. The index methodology also targets minimal active weights on sectors while ensuring reasonably high trading liquidity and investment capacity of constituent companies. Please refer to Appendix VII for further details on the methodology of MSCI Sector Neutral Quality Indexes.
INDEX CONSTRUCTION METHODOLOGY

2.1 APPLICABLE UNIVERSE

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

2.2 DETERMINATION OF QUALITY SCORE

The Quality score for each security is calculated by combining Z-Scores of three winsorized fundamental variables, namely Return on Equity, Debt to Equity and Earnings Variability. The details of the calculation of the fundamental variables are provided in Appendix I.

2.2.1 WINSORIZING THE VARIABLE

As part of the standardization process, outlier fundamental variable values are winsorized to ensure that the average values used to standardize the variables are less affected by extreme values. To do this, for a given variable, the values for all securities are first ranked in ascending order within each MSCI Parent Index. Missing values are excluded from the ranking. Then, for securities that lie below the 5th percentile rank or above the 95th percentile rank, their value is set equal to the value of the 5th percentile ranked or 95th percentile ranked security, as applicable. This process is repeated for each of the three fundamental variables.

Example: Winsorization

For example, assume there are 200 securities ranked in ascending order of the variable value. The 5th percentile security is the 10th ranked security and the 95th percentile security is the 191st ranked security. For all the securities ranked from 1 through 9, their values become equal to the value of the 10th ranked security. Meanwhile, for all securities ranked from 192 through 200, their values become equal to the value of the 191st ranked security.

2.2.2 CALCULATING THE Z-SCORES

After winsorizing all the three variables within each MSCI Parent Index, the Z-Score for each of the three variables for each security can be calculated using the mean and standard deviation of the relevant variable within each MSCI Parent Index. Computing a Z-Score is a widely used method of standardizing a variable in order to combine it with other variables that may have a different unit of measurement or a different scale. Because it has a mean
value of zero and a standard deviation of 1, the value of a z-score shows how many standard deviations a given value lies from the mean.

The Z-Score is defined as follows for **ROE (Return on Equity)**:

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

Where:
- \(x\) is the winsorized variable for a given security
- \(\mu\) is the mean of the winsorized variable in the MSCI Parent Index Universe, excluding missing values
- \(\sigma\) is the standard deviation of the winsorized variable in the MSCI Parent Index Universe, excluding missing values

The Z-Score is defined as follows for the **Debt to Equity and Earnings Variability**:

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

A negative Z score is calculated to ensure that a security having higher Debt to Equity or higher Earnings Variability gets a lower respective Z-Score.

### 2.2.3 CALCULATING THE QUALITY SCORE

After standardizing each of the three variable values for each security, MSCI calculates a composite Quality Z-Score for each security. The Quality Z-Scores are computed by averaging the Z scores of all the three fundamental descriptor as calculated in section 2.2.2. Computation of the Quality Z Score also depends on the availability of fundamental variables as described in Appendix II.

The Quality Score is then computed from the composite Quality Z Score as follows:

\[
Quality\ Score = \begin{cases} 
1 + Z, & Z > 0 \\
(1 - Z)^{-1}, & Z < 0 
\end{cases}
\]

Where Z is the composite Quality Z Score determined in the previous step.
2.3 SECURITY SELECTION

The MSCI Quality Index is constructed using a fixed number of securities approach. All the existing constituents of the relevant MSCI Parent Index are ranked based on their Quality Scores. If multiple securities have the same Quality Score, then the security having a higher weight in the Parent Index is given a higher rank. A fixed number of securities with the highest positive Quality Scores are predetermined for every MSCI Quality Index at initial construction with an aim to attain a high exposure to the Quality factor while maintaining sufficient index market capitalization and number of securities coverage. Rules for arriving at a fixed number of constituents at initial construction are explained in Appendix III. The fixed number for security selection determined at initial construction is evaluated at every Semi-Annual Index Review (SAIR) to ensure that the Quality universe has sufficient index market capitalization coverage. Rules for evaluating the fixed number of constituents at every SAIR are explained in Appendix III.

2.4 WEIGHTING SCHEME

At each rebalancing, all the securities eligible for inclusion in the MSCI Quality Indexes are weighted by the product of their market capitalization weight in the Parent Index and the Quality Score.

\[
\text{Quality Weight} = \text{Quality Score} \times \text{Market Capitalization Weight in the Parent Index}
\]

The above weights are then normalized to 100%. The final security level inclusion factor is determined as the ratio of the final security level weight and the security level pro forma market capitalization weight in the relevant MSCI Parent Index.

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

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

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

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

3.1 SEMI-ANNUAL INDEX REVIEWS

The MSCI Quality 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 Review 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 Quality characteristics of the companies and coincides with the rebalancing frequency of the relevant MSCI Parent Indexes. The pro forma MSCI Quality Indexes are in general announced nine business days before the effective date.

3.1.1 BUFFER RULES:

To reduce Index turnover and enhance Index stability, buffer rules are applied at 20% of the fixed number of securities in the MSCI Quality Index.

For example, the MSCI World Quality Index targets 300 securities and the buffers are applied between rank 241 and 360. The securities in the MSCI Parent Index with a Quality rank at or above 240 will be added to the MSCI World Quality Index on a priority basis. The existing constituents that have a Quality rank between 241 and 360 are then successively added until the number of securities in the MSCI World Quality Index reaches 300. If the number of securities is below 300 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 World Quality Index reaches 300.

3.2 ONGOING EVENT RELATED CHANGES

In general, the MSCI Quality Indexes follow the event maintenance of the MSCI Parent Index.

3.2.1 IPOS AND OTHER EARLY INCLUSIONS

IPOs and other newly listed securities will only be considered for inclusion at the next Semi-Annual Index Review in the MSCI Quality Index, even if they qualify for early inclusion in the MSCI Parent Index.

3.2.2 ADDITIONS AND DELETIONS DUE TO CORPORATE EVENTS

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

Please refer to Appendix V for more details on the treatment of corporate events.
### APPENDIX I: CALCULATION OF FUNDAMENTAL VARIABLES

<table>
<thead>
<tr>
<th>Fundamental Variable</th>
<th>Calculation Details</th>
</tr>
</thead>
</table>
| **Return on Equity (ROE)** | (ROE) is calculated using the trailing 12 month earnings per share figure and latest book value per share  
\[
ROE = \frac{\text{Trailing 12 month earnings per share}}{\text{Latest Book Value Per Share}}
\] |
| **Debt to Equity (D/E)** | Debt to Equity is calculated using the latest fiscal year Total Debt and Book Value  
\[
\frac{D}{E} = \frac{\text{Total Debt}}{\text{Book Value}}
\] |
| **Earnings Variability** | Earnings Variability is defined as the standard deviation of y-o-y earnings per share growth over the last five fiscal years |

For more details on the fundamental data, please refer to the MSCI Fundamental Data Methodology ([http://www.msci.com/products/indexes/country_and_regional/all_country/methodology.html](http://www.msci.com/products/indexes/country_and_regional/all_country/methodology.html)).
APPENDIX II: QUALITY Z-SCORE COMPUTATION

Computation of the Quality Z-Score also depends on the availability of fundamental variables as described below:

<table>
<thead>
<tr>
<th>Case</th>
<th>Detail</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>Case 1</td>
<td>ROE is missing</td>
<td>If ROE is missing, Composite Quality Z Score is not calculated and the security will not be part of the MSCI Quality Index</td>
</tr>
<tr>
<td>Case 2</td>
<td>Debt to Equity is missing, but other two variables are available</td>
<td>Composite Quality Z Score is calculated using ROE and Earnings Variability Z Scores</td>
</tr>
<tr>
<td>Case 3</td>
<td>Earnings Variability is missing, but other two variables are available</td>
<td>Composite Quality Z Score is calculated using ROE &amp; Debt to Equity Z Scores</td>
</tr>
<tr>
<td>Case 4</td>
<td>Debt to Equity and Earnings Variability are missing but ROE is available</td>
<td>Composite Quality Z Score is not calculated and the security will not be part of the MSCI Quality Index</td>
</tr>
<tr>
<td>Case 5</td>
<td>All three variables are missing</td>
<td>Security will not be part of the MSCI Quality Index</td>
</tr>
</tbody>
</table>
APPENDIX III: RULES TO DETERMINE FIXED NUMBER OF SECURITIES AT INITIAL CONSTRUCTION AND IN ONGOING REBALANCING

Algorithm to Determine Fixed Number of Securities at Initial Construction

- NumSec: Number of Securities
- Mcap: Float Market Capitalization
Rounding Off Rules:

Upward rounding off is done depending on NumSec Obtained in the Previous Box Step

- If NumSec in Previous Step < 100, Nearest Rounding = 10 Securities
- If NumSec in Previous Step >= 100 but < 300, Nearest Rounding = 25 Securities
- If NumSec in Previous Step >= 300, Nearest Rounding = 50 Securities

Examples: Initial Construction, major Regions as of May 2012

<table>
<thead>
<tr>
<th>Region</th>
<th>Parent Num Sec</th>
<th>Num Sec for 30% Mcap</th>
<th>Final Num Sec</th>
<th>Mcap Coverage</th>
<th>Num Sec Coverage</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACWI</td>
<td>2448</td>
<td>479</td>
<td>500</td>
<td>31.3%</td>
<td>20.4%</td>
</tr>
<tr>
<td>World</td>
<td>1629</td>
<td>291</td>
<td>300</td>
<td>31.1%</td>
<td>18.4%</td>
</tr>
<tr>
<td>EM</td>
<td>820</td>
<td>187</td>
<td>200</td>
<td>32.8%</td>
<td>24.4%</td>
</tr>
<tr>
<td>Europe</td>
<td>448</td>
<td>102</td>
<td>125</td>
<td>39.0%</td>
<td>27.9%</td>
</tr>
<tr>
<td>USA</td>
<td>605</td>
<td>114</td>
<td>125</td>
<td>32.3%</td>
<td>17.7%</td>
</tr>
</tbody>
</table>
Algorithm to reevaluate Fixed Number of Securities at Semi Annual Rebalancing

Is Final Fixed NumSec in Prev Rebalancing > Proforma Parent Num Sec?
  Yes → 1) Apply the Initial Construction Box Algorithm → Final Number
  No → Is Proforma Parent Num Sec <= 25?
    Yes → Select all Securities → Final Number
    No → Is Parent Num Sec in Previous Rebalancing < 25?
      Yes → 1) Apply the Initial Construction Box Algorithm → Final Number
      No → Is Mcap Coverage of Proforma Quality Index Using Previous Rebal Num Sec < 10%?
        Yes → 1) Apply the Initial Construction Box Algorithm → Final Number
        No → Final Number: Same as Num Sec in Prev Rebalancing

- NumSec: Number of Securities
- Mcap: Float Market Capitalization
APPENDIX IV: ISSUER WEIGHT CAPPING

For Broad Regional/Country Indexes issuer weight is capped at 5%. For other narrow Country/Regional Indexes issuer weight is capped at a maximum of 10% and maximum issuer weight in the Parent Index.

Cap for narrow Country/Regional Indexes = max (10%, maximum issuer weight in the Parent Index)

For the following broad regional Quality Indexes, the issuer weight is capped at 5%:

1. MSCI ACWI Quality Index
2. MSCI World Quality Index
3. MSCI EM Quality Index
4. MSCI Europe Quality Index
5. MSCI USA Quality Index
APPENDIX V: 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.mscibarra.com/products/indexes/international_equity_indexes/gimi/stdIndex/methodology.html

<table>
<thead>
<tr>
<th>Event Type</th>
<th>Event details</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acquisition</td>
<td>Quality Index constituent acquires another Quality Index constituent</td>
<td>Maintain acquiring company and remove acquired company</td>
</tr>
<tr>
<td></td>
<td>Quality Index constituent acquires non Quality Index constituent</td>
<td>Maintain acquiring company</td>
</tr>
<tr>
<td></td>
<td>Non Quality Index constituent acquires Quality Index constituent</td>
<td>Remove acquired company without adding acquiring company</td>
</tr>
<tr>
<td>Merger</td>
<td>Quality Index constituent merges with Quality Index constituent</td>
<td>Add new company with a constraint factor that is the weighted average of the two constituents</td>
</tr>
<tr>
<td></td>
<td>Quality Index constituent merges with non Quality Index constituent</td>
<td>Add new company if MSCI links its price history to the Quality Index constituent. New company not added if price history is linked to the non Quality Index constituent</td>
</tr>
<tr>
<td>IPO</td>
<td>IPO added to Parent Index</td>
<td>Security will be considered for inclusion in the Quality Index at the next Semi-Annual Index Review</td>
</tr>
<tr>
<td>Spin-off</td>
<td>Quality Index constituent spins off security</td>
<td>Add spun-off security to the Quality Index with the constraint factor of the spinning security, if it is included in the Parent Index</td>
</tr>
<tr>
<td>Conversion</td>
<td>Security A converted to B, A deleted from Parent Index, B added</td>
<td>B inherits constraint factors from A</td>
</tr>
<tr>
<td>Country Reclassification</td>
<td>Domicile of company reviewed: Security A deleted from country A, security B added to country B</td>
<td>B inherits constraint factors from A if it is added to the Parent Index</td>
</tr>
<tr>
<td>Event Type</td>
<td>Event details</td>
<td>Action</td>
</tr>
<tr>
<td>------------</td>
<td>--------------</td>
<td>--------</td>
</tr>
<tr>
<td>Stock exchange reclassification</td>
<td>Stock exchange (price source) of company reviewed: Security A deleted, security B added</td>
<td>B inherits constraint factors from A if it is added to the Parent Index</td>
</tr>
<tr>
<td>Other Events Resulting in Changes in Number of Shares and FIFs</td>
<td>Changes in number of shares and subsequent FIF resulting from other events such as share placements and offerings, and debt-to-equity-swaps</td>
<td>No change in Constraint Factor</td>
</tr>
</tbody>
</table>
APPENDIX VI: CONSTRUCTING MSCI QUALITY TILT INDEX

The MSCI Quality Tilt Indexes aim to reflect the performance of a Quality strategy with high investment capacity. The MSCI Quality Tilt Indexes are created by including all the constituents in the Parent Index and tilting the market capitalization weights of securities, based on Quality Score. By comparison, the MSCI Quality Indexes are constructed by selecting a set number of securities from the underlying Parent Index with an aim to emphasize the Quality factor.

The MSCI Quality Tilt Index includes all the existing constituents of underlying Parent Index for which Quality Scores are available. Please refer to Appendix II for further details on Quality Score computation. The MSCI Quality Tilt Index follows the same weighting scheme as the MSCI Quality Index. Please refer to Section 2 for further details on weighting scheme. The MSCI Quality Tilt Index follows the same rebalancing schedule and corporate events treatment as the MSCI Quality Index and as described in Section 3.
APPENDIX VII: CONSTRUCTING MSCI SECTOR NEUTRAL QUALITY INDEX

The MSCI Sector Neutral Quality Index aims to reflect the performance of securities that exhibit stronger quality characteristics relative to their peers within the same GICS® sector. They are constructed by using the Quality Score that is computed within the sector.

Calculating the sector-relative quality score

The “composite quality z-score” for each security is first computed as described in the section 2.1.3 above. A sector-relative quality score is then derived from the composite quality z-score. It is arrived at by standardizing the composite quality z-score within each sector. The sector-relative quality scores are winsorized at +/− 3.

The Quality Score is then computed from the sector-relative quality score as follows:

\[
\text{Quality Score} = \begin{cases} 
1 + Z_{rel}^T, & Z_{rel}^T \geq 0 \\
(1 - Z_{rel}^T)^{-1}, & Z_{rel}^T < 0
\end{cases}
\]

Where \(Z_{rel}^T\) is the sector-relative quality score determined in the previous step.

Sector neutral weighting

The selection of securities for inclusion in the index and the index weighting is done as described in Section 2 using the Quality Score computed as mentioned in the above step. These weights are then updated to implement sector neutrality i.e. the weight of each sector in the MSCI Sector Neutral Quality Index is equated with the weight of that sector in the Parent Index at the rebalancing. This is done by normalizing the weights of the constituents within each sector to reflect the Parent Index sector weight.
The following sections have been modified since March 2014:

1. Introduction
   - Update of the introduction of the MSCI Quality Indexes

Appendix VI. Constructing MSCI Quality Tilt Index
   - Addition of Appendix VI containing methodology details of MSCI Quality Tilt Index

The following sections have been modified since June 2014:

1. Introduction
   - Update of the introduction of the MSCI Quality Indexes

Appendix VII. Constructing MSCI Sector Neutral Quality Index
   - Addition of Appendix VII containing methodology details of MSCI Sector Neutral Quality Index
### CONTACT US

clientservice@msci.com

### AMERICAS

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

### EUROPE, MIDDLE EAST & AFRICA

<table>
<thead>
<tr>
<th>City</th>
<th>Phone</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cape Town</td>
<td>+ 27 21 673 0100</td>
</tr>
<tr>
<td>Frankfurt</td>
<td>+ 49 69 133 859 00</td>
</tr>
<tr>
<td>Geneva</td>
<td>+ 41 22 817 9777</td>
</tr>
<tr>
<td>London</td>
<td>+ 44 20 7618 2222</td>
</tr>
<tr>
<td>Milan</td>
<td>+ 39 02 5849 0415</td>
</tr>
<tr>
<td>Paris</td>
<td>0800 91 59 17 *</td>
</tr>
</tbody>
</table>

### ASIA PACIFIC

<table>
<thead>
<tr>
<th>City</th>
<th>Phone</th>
</tr>
</thead>
<tbody>
<tr>
<td>China North</td>
<td>10800 852 1032 *</td>
</tr>
<tr>
<td>China South</td>
<td>10800 152 1032 *</td>
</tr>
<tr>
<td>Hong Kong</td>
<td>+ 852 2844 9333</td>
</tr>
<tr>
<td>Mumbai</td>
<td>+ 91 22 6784 9160</td>
</tr>
<tr>
<td>Seoul</td>
<td>00798 8521 3392 *</td>
</tr>
<tr>
<td>Singapore</td>
<td>800 852 3749 *</td>
</tr>
<tr>
<td>Sydney</td>
<td>+ 61 2 9033 9333</td>
</tr>
<tr>
<td>Taipei</td>
<td>008 0112 7513 *</td>
</tr>
<tr>
<td>Tokyo</td>
<td>+ 81 3 5290 1555</td>
</tr>
</tbody>
</table>

* = 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.
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 redisseminated 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, COMPLETEENESS, 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 Inc. 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 Inc. 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, FEA, 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.