

# **MSCI Index Glossary**

August 2023



# Introduction

The MSCI Index Glossary intends to offer clarity and understanding of some essential terms and concepts involved in the creation and maintenance of various index methodologies. By providing concise definitions and explanations, this glossary aims to serve as a useful reference for MSCI clients in relation to indexing.

Please note that this document is intended solely for informational purposes to highlight certain aspects of the MSCI methodology framework. It neither contains nor claims to encompass all elements featured in all index methodologies. For a comprehensive understanding of the different methodologies, please refer to the complete set of index methodology books available on MSCI's website at: <a href="https://www.msci.com/index-methodology">https://www.msci.com/index-methodology</a>



# **MSCI Index Glossary**

Key term	Definition
Adjusted Market Capitalization	Market Capitalization of a security adjusted by the Inclusion Factor and the Price Adjustment Factor for the day, using the FX Rate as of t.
All Country World Index (ACWI) Countries	Countries classified as either Developed Markets or Emerging Markets according to the MSCI Market Classification Framework.
	For details, please refer to the MSCI Market Classification Framework, available at: <a href="https://www.msci.com/our-solutions/indexes/market-classification">https://www.msci.com/our-solutions/indexes/market-classification</a> .
Alternate Listing	A designation that describes the listing types of the shares (e.g., ADR, GDR).
Announcement date	Date on which results of index review are disseminated publicly.
Annual Market Classification Review	Annual cycle aiming to review the classification of Equity Markets into Investment Universes, such as Developed, Emerging, Frontier or Standalone. The results of each annual cycle are announced in June.
Annualized Traded Value Ratio (ATVR)	Liquidity measure used to assess liquidity of securities in the Global Investable Market Indexes.
	The ATVR corresponds to the Annualized Traded Value of a security relative to its Free Float-Adjusted Market Capitalization.
Average (self) decarbonization	Measure of the degree to which the decarbonization trajectory for the specific index has been achieved on average per year relative to its initial climate footprint since the base date. The calculation complies with the rules described in Article 7 of the EU Commission's Delegated Act containing the minimum technical requirements for the EU Climate Transition Benchmarks and EU Paris-aligned Benchmarks (https://eurlex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32020R1818&from=EN)
Base date (decarbonization)	Reference date relative to which the decarbonization trajectory is calculated, in accordance with the concept of "base year" defined by the EU Commission's Delegated Act containing the minimum technical requirements for the EU Climate Transition Benchmarks and EU Parisaligned Benchmarks (https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32020R1818&from=EN)
Base date of the index	The date where the index has its base value and against which the performance of the index is measured.
Base value	The initial value (index level) that the index has. The value from which ongoing calculations are done and compared to.
Calculated price	Price determined by MSCI based on the terms of a corporate event.
Capping	The process of limiting the maximum weight of a security in an index, typically to avoid concentration risk.
Carbon emissions intensity	Ratio of a company's greenhouse gas (GHG) emissions expressed in tons of Co2 divided by a measure of the company's value (e.g., enterprise value including cash or market capitalization) or by the company's revenues.



Key term	Definition
	The calculation may use a combination of Scope 1, Scope 2 and Scope 3 emissions, or potential emissions (expressed in tons of Co2) to derive potential emissions intensity. Carbon emissions intensity may also be aggregated at index level using relevant method as described in the MSCI index methodology documentation.
Carry forward market price	Market price of the previous business day used for the next business day in the MSCI Index calculations.
Cash Line	A dummy security added as a constituent to an MSCI Index in the handling of Highly Dilutive Rights Issues and specific other rights issues in China and Australia. The dummy security reflects the cash to be paid for the new issued shares.
Constraint factor	The ratio of the weight of a security in a derived index and the parent index, at the time of the index rebalancing. It is a primary factor used in constituent weighting for non-market capitalization weighted indexes or where weighting is adjusted by a capping mechanism. Additionally, the implementation of certain types of corporate events impacts security level constraint factor calculation.
Controversial business involvement criteria	Criteria used to identify companies that are involved in certain business activities, based on products of MSCI ESG Research such as (but not limited to) the MSCI ESG Business Involvement Screening Research and MSCI Climate Change Metrics.
Conversion factor	An estimate of the economic value of the unlisted shares relative to the economic value (i.e., price) of the reference listed shares.
Country Classification (Frontier Markets)	Rules within the MSCI GIMI Methodology used to classify each Frontier Market into size (Large, Small) and liquidity (Average, Low, Very Low) categories.
	The Country Classification is used as a basis for the construction and maintenance of each Frontier Market.
Country Classification Framework	Rules used to determine the country classification of equity securities.
Country of Classification	A country assigned to all eligible companies in the equity universe based on MSCI Country Classification framework.
Country of Incorporation	A country where a company is incorporated or legally registered.
Cross-border event	Corporate event involving companies classified in two different countries.
Cum date	Business day prior to the ex-date.
Default distribution	Distribution received if shareholders do not elect for any option.
Depository Receipt (DR) Ratio	Ratio of the common shares to the DRs.
Detached security	A dummy security added to the MSCI Indexes to offset the drop in market capitalization of the parent security, when the spun off entity is not trading on the spinoff ex-date.
Domestic Equity Indexes	Equity indexes constructed on the basis of the investment opportunity set available for domestic institutional investors.
Domestic Inclusion Factor (DIF)	Free float-adjustment factor applicable to domestic investors.



Key term	Definition
Early Inclusion	Addition of a security to the MSCI Indexes outside regular index review process.
Effective Date	"From the open day" date as of which changes are implemented in the MSCI Indexes.
Effective Implementation Date	"End of day" date as of which changes are implemented in the MSCI Indexes.
Efficiency of a benchmark	Level of stability and simplicity of a benchmark, potentially lowering replication costs
Equity Index Methodologies	Methodology documents containing construction and maintenance rules for the MSCI Equity Indexes. Any index family is governed by a number of documents: the specific index methodology, the MSCI Global Investable Market Indexes methodology (in most cases), the MSCI Index Calculation methodology, the MSCI Corporate Events methodology, the MSCI Fundamental Data methodology and the MSCI Index Policies.
Equity Market	Geographical entity used as a basis for the construction and maintenance of the GIMI. It is represented by securities of companies classified in relevant countries.  Defined by MSCI either as a country or a group of countries (e.g.
E '. II '	Developed Markets Europe).
Equity Universe	Universe of eligible equity securities.  Example: the Developed Markets Equity Universe consists of eligible equity securities in Developed Markets.
Equity Universe Minimum Size Requirement	Minimum full company market capitalization requirement for inclusion of a security in the Investable Equity Universe.
ESG Controversies	A product of MSCI ESG Research named "MSCI ESG Controversies", that provides assessments of controversies concerning the potential negative environmental, social, and/or governance impact of company operations, products and services. MSCI ESG Controversies Score is integer-valued using a 0-10 scale, with "0" being the most severe controversy.  The MSCI ESG Controversies methodology can be found at: https://www.msci.com/esg-and-climate-methodologies
ESG Rating	A factor produced by MSCI ESG Research and named "MSCI ESG Rating", that aims to measure entities' management of environmental, social and governance risks and opportunities. MSCI ESG Ratings are translated from the Industry-Adjusted Scores into a seven-point scale from 'AAA' to 'CCC', indicating how an entity manages relevant key issues relative to industry peers.  The MSCI ESG Ratings methodology can be found at:
ESG score	https://www.msci.com/esg-and-climate-methodologies  A factor produced by MSCI ESG Research and named "Industry-Adjusted Score", but often referred to as "ESG score" in MSCI index methodology documentation. Industry-Adjusted Scores aim to measure entities' management of environmental, social and governance risks and opportunities. A weighted average key issue calculation that is normalized by industry is used to arrive at the Industry-Adjusted Score (0-10),



Key term	Definition
	indicating how an entity manages relevant key issues relative to industry peers.
ESG trend	The direction of the change in ESG Rating as of the latest review of the ESG Rating for a company. A Positive ESG Trend indicates an upgrade in ESG Rating of any scale as of the latest review of the company's ESG Rating, while Negative ESG Trend indicates a downgrade in ESG Rating of any scale as of the latest review of the company's ESG Rating. Neutral ESG Trend indicates an unchanged ESG Rating as of the latest review of the company's ESG Rating (also, companies that receive a re-initiated ESG Rating due to a change in the ESG Ratings Industry are considered to have a neutral ESG Trend).
Factor Tilt	Active Exposure to a certain factor that any strategy index might have relative to its parent.
Final Size-Segment Investability Requirements	Additional investability requirements applied to investable equity securities assigned to the IMI Size-Segment during Index Reviews.  Different requirements apply for securities assigned to the Standard Size-Segment compared to securities assigned to the Small Cap Size-Segment.
Foreign Inclusion Factor (FIF)	Free float-adjustment factor applicable to foreign investors.
Foreign Listing Materiality Requirement	Assessment applied at the time of Index Reviews in order to determine whether a market meets the conditions to include securities represented by foreign listings in its country indexes.
Foreign Ownership Limit (FOL)	Proportion of share capital of the security that is available for purchase to foreign investors.
Foreign Room	Proportion of shares still available to foreign investors relative to the maximum allowed.
Foreign Room Adjustment Factor	Adjustment factor applied to the weight of securities in the GIMI. Used to reflect investment limitations due to foreign room.
Free Float	Proportion of shares outstanding that are available to investors for purchase in the public equity markets.
Free Float-Adjusted Market Capitalization	Market capitalization of an equity security adjusted by its Foreign Inclusion Factor or Domestic Inclusion Factor.
Frequency of Trading	Liquidity measure used to assess liquidity of securities in the GIMI.  The Frequency of Trading corresponds to the proportion of days a security traded to the number of trading days available.
Full Market Capitalization	Aggregated market capitalization of all listed and unlisted securities of a company.
GICS Structure	GICS is designed with four levels of classifications, starting with sectors on the top, branching into industry groups, industries and finally the subindustries at the grass root level.
GICS Structure Review	Annual Review of the GICS Structure to ensure that the GICS structure remains relevant and current to the investment community.
Global Industry Classification Standard (GICS)	Standard developed by MSCI and S&P Dow Jones Indices used to classify companies within the Global Investable Equity Universe to an industry based on its principal business activity.



Key term	Definition
	The Global Industry Classification Standard (GICS) was developed by and is the exclusive property of MSCI and S&P Global Market Intelligence. "Global Industry Classification Standard (GICS)" is a service mark of MSCI and S&P Global Market Intelligence.
Global Investable Equity Universe	Aggregation of all Market Investable Equity Universes.
Global Investable Market Indexes (GIMI)	Family of MSCI indexes constructed and maintained based on the MSCI Global Investable Market Indexes (GIMI) Methodology.
Global Minimum Size Range	Full market capitalization range around the Global Minimum Size Reference. Used as a basis for determining the Size and Coverage Target Area.
Global Minimum Size Reference (GMSR)	Minimum full market capitalization reference number applicable to a given Size-Segment of a particular Investment Universe.
Growth Inclusion Factor	Proportion of a security's free float-adjusted market capitalization that is allocated to the Growth Index, as part of the MSCI Global Value Growth methodology.
Hedge Impact	Represents the mark to market gain or loss on the forward contracts measured in terms of the home currency.
Historical link	Price linkage established between two securities following an M&A where a newly added security in the MSCI Indexes will have the market prices and volume history of the existing index constituent being deleted from the MSCI Indexes.
Home Currency	Local currency of investor investing in international equity markets.
Index Continuity Rules	Rules within the MSCI GIMI Methodology aimed at maintaining index stability by avoiding the temporary inclusion or exclusion of Equity Market indexes in composite indexes.
Index Inclusion Factor (IIF)	An additional adjustment factor that may be applied to the free-float adjusted market capitalization of a constituent in select indexes.
Index Rebase	Changes to the base date and base value of an index.
Index Review	Regular index maintenance process performed at the frequency defined by the relevant index methodologies. Many indexes, including the MSCI Global Investable Market Indexes are reviewed on a quarterly basis in February, May, August and November. Other indexes may be reviewed at a different frequency, e.g. monthly, semi-annually or annually.
Initial Market	Market Capitalization of a security adjusted by the Inclusion Factor for the
Capitalization	day, using the FX Rate as of t-1.
Initial Security	The weight a security has at the beginning of the day, comparing its initial
Weight Interim constituents	market cap against the index initial market cap.  Provisional Constituents that reflect certain corporate events, similar to the Price Adjustment Factor.
International Equity Indexes	Equity indexes constructed on the basis of the opportunity set which takes into account potential investment restrictions applicable to foreign investors.
Intraday Security Pricing	Price movements during the day or during the trading session.



Key term	Definition
Investable Company	Company (issuer level) with at least one class of shares included in the Investable Equity Universe.
Investable Market Index (IMI)	Size-Segment Index corresponding to the aggregation of the Large Cap, Mid Cap and Small Cap Size-Segments.
Investment Universe	Universe of Equity Markets sharing similar investment characteristics.
	There are three investment universes (Developed Markets, Emerging Markets, Frontier Markets).
J-Series Indexes	Indexes that do not apply the treatment of investment sanctions related to the U.S. Executive Order 13959.
Late announcement	Index email announcement sent to MSCI clients in cases where MSCI decides to postpone a corporate event implementation in order to leave sufficient advance notice to clients and respect the announcement policy.
Light Rebalance	Rebalance aiming at reflecting only significant changes, in place of the usual comprehensive Index Review index maintenance rules in the event of market stress, as defined in Appendix VIII of the MSCI GIMI methodology book.
Limited Investability Factor (LIF)	Adjustment factor applied to the securities in the GIMI in the process of determining the Foreign Inclusion Factor and Domestic Inclusion Factor. Used to reflect certain investment limitations in Equity Markets and securities.
Liquidity Adjustment Factor	Adjustment factor applied to the weight of large securities in Emerging Markets and Frontier Markets which fail the liquidity requirements for inclusion in the Investable Equity Universe.
Market Classification Framework	Rules used to classify Equity Markets into Investment Universes.
Market Coverage	Proportion of the Investable Equity Universe covered by a given Size- Segment.
Market Investable Equity Universe	Market universe of investable equity securities derived from the application of investability requirements to the securities in the Equity Universe classified in that market.
Market Monitoring Framework	Framework used to continually assess the potential impact of market conditions on regular Index Reviews along three key dimensions: Market Functioning, Market Liquidity and Data Availability in order to determine if a switch to a "light rebalancing" is appropriate under conditions of market stress.
Market Monitoring Period	The last ten business days of the month prior to the announcement date of an Index Review of the MSCI Global Investable Market Indexes in the context of the Market Monitoring Framework.
Market Size-Segment Cutoff	Minimum full market capitalization number applicable to a given Size-Segment of a particular Equity Market.  Used as part of the index construction and Index Review process, as well as for ongoing index maintenance (corporate events).
Market Stress	In the context of the Market Monitoring Framework, a set of criteria used to determine whether "light rebalancing" could be triggered.
Merger	Event where two merging entities cease to exist and a brand new entity is created.



Key term	Definition
MSCI ESG Research	A short name for MSCI ESG Research LLC, a subsidiary of MSCI Inc. that produces and provides information such as company ratings and research that are used by MSCI Inc. for the construction and maintenance of MSCI Indexes.
N Indexes	Free float-adjusted market capitalization weighted indexes designed to track the performance of the largest N securities of an underlying MSCI IMI Index.
Number of Shares (NOS)	All shares of the company that have been issued and outstanding.
Optimization-based Indexes	Indexes that use an optimization approach to select and weigh the constituents of the index in order to maximize/minimize a defined objective (e.g., minimize tracking error, maximize exposure to a factor) while satisfying a set of constraints (e.g., active weight to countries, minimum improvement in ESG score).
Parent Index	MSCI index used as the universe for the construction of any derived index. For example: MSCI World is the parent index for MSCI Minimum Volatility Index.
Potential emissions	Potential GHG emissions embedded in companies' coal, oil and gas reserves.
Pre-opening	Information that is available before the open of the trading session, as a reference.
Price Adjustment Factor (PAF)	Multiplier applied to the market price of a security on the ex-date (from the opening of that day till its end) of a corporate event to offset the price movement related to the corporate event only.
Price Limit	Permissible range in which a price may increase or decrease in any single trading day from the previous day's closing price as determined by the relevant stock exchange.
Pro-Rata basis (float)	Corporate event applied proportionally to all existing shareholders.
Provisional Indexes	Indexes that are used in order to reflect future changes to current indexes, and for doing so they are based on pro forma information.
Real Time	Information that is available instantaneously, without delay.
Reinvest a negative amount	Cash amount reinvested in the MSCI Net DTR Indexes corresponding to the withholding tax applicable on a distribution in cases where the treatment applied by MSCI used a Price Adjustment Factor (PAF) in the MSCI Indexes.
Replicability & Investability of a benchmark	Level of accessibility of index constituents by a target investor group enabling passive replication a benchmark.
Representativeness of a benchmark	Ability of a benchmark to reflect an investment process it aims to represent.
Restrictiveness level (framework)	Framework designed by MSCI ESG Research to define significant involvement in controversial activities. According to this framework, there are four restrictiveness levels: Most Restrictive, Highly Restrictive, Moderately Restrictive, Least Restrictive. The framework and the corresponding restrictiveness levels are used to screen certain controversial activities from the MSCI Indexes.



Key term	Definition	
Rights Line	A dummy security added to the MSCI Indexes for Highly Dilutive Rights Issue and specific rights issue in China and Australia to represents the right to subscribe for new shares.	
Sector Indexes	Indexes aiming to represent sector-based subset of a given index, as defined by the MSCI GICS Classification methodology.	
Security Contribution	The fraction of performance to the index that a security contributes according to its weight.	
Security Index of Price	It represents the performance of a security in the form of an index.	
Segment Number of Companies	Number of Investable Companies in a given Size-Segment of a particular Equity Market.	
Share Class	A designation that describes the different types of shares a company can issue.	
Share Type	A designation applied to identify different securities under same Share Class.	
Size and Coverage Target Area	Intersection of the GIMI size (Global Minimum Size Range) and coverage (Target Coverage Range) objectives.	
	Used at the time of index construction and Semi-Annual Index Reviews for the purpose of updating the Segment Number of Companies.	
Size Range Boundary Proximity Area	Buffers around the lower and upper bounds of the Global Minimum Size Range. Aimed at minimizing reverse index turnover resulting from the update of the Segment Number of Companies during Semi-Annual Index Reviews.	
Size-Segments	Market capitalization categories derived from the segmentation of the Market Investable Equity Universe (example: Large Cap Size-Segment).	
	Size-Segments are used as a basis for deriving Size-Segment Indexes.	
Standalone Index	Index for a given Equity Market that is provided on a standalone basis only, and hence not included in either the MSCI World Index, the MSCI Emerging Markets Index or the MSCI Frontier Markets Index.	
Standard Index	Size-Segment Index corresponding to the aggregation of the Large Cap and Mid Cap Size-Segments.	
Strategy Indexes	Indexes that are based on alternative weighting schemes, and introduce a tilt towards certain variables (for example: Factors, ESG, Climate, Themes, etc.) intended to capture systematic risk premia or other fundamental characteristics.	
Style Segment	Style categories derived from the segmentation of the Market Investable Equity Universe.	
	Style Segments are used as a basis for deriving Style Indexes (Value & Growth Indexes).	
Sustainable impact	A product of MSCI ESG Research named "MSCI Impact Solutions: Sustainable Impact Metrics", designed to identify companies that derive revenue from products or services with positive impact on society and the environment. The MSCI Sustainable Impact Metrics are comprised of Environmental Impact and Social Impact categories.	
Target Coverage Range	Target range for the Market Coverage. Used as a basis for determining the Size and Coverage Target Area.	



Key term	Definition
Thematic Indexes	Indexes that seek to identify specific social, economic, industrial, environmental or demographic trends and their long-term secular, cyclical and structural influences on the world's economies and markets.  Thematic indexes often cut across traditional sector and geographical boundaries and can provide diversification in a portfolio context.
(Thematic) Relevance Score	Within the MSCI thematic index methodologies, potential constituents are selected and reweighted using a measure of their economic linkage to the underlying theme. Relevance Score is designed to measure the importance of a theme to the company's business activities but is not an explicit measurement or estimate of the proportion of revenue that the company derives from business activities exposed to the theme.  For details, please refer to the MSCI Thematic Relevance Score
	Methodology document, available at: <a href="http://www.msci.com/index/methodology/latest/ThemRelevScore">http://www.msci.com/index/methodology/latest/ThemRelevScore</a>
Theo Cum PAF	PAF calculated using the closing market price of the ex-date and the terms of the corporate event ex on that day.
Theo Ex	Calculated price of the expected opening market price on the ex-date of a corporate event, based on the terms of this corporate event and the market price prior to the ex-date.
Value Inclusion Factor	Proportion of a security's free float-adjusted market capitalization that is allocated to the Value Index, as part of MSCI Global Value Growth methodology.
Variable Weighting Factor (VWF)	A factor used to offset the change to market capitalization that occurs as a result of a corporate event implementation in Non-Market Capitalization Weighted indexes. The VWF is also applied to offset any changes in post event market capitalization that may result from FIF rounding.  For details, please refer to the MSCI Corporate Events Methodology,
Z-score	available at: <a href="http://www.msci.com/index/methodology/latest/CE">http://www.msci.com/index/methodology/latest/CE</a> .  The number of standard deviations an observation is away from the mean.



# Contact us

## msci.com/contact-us

#### **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
São 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 *
Thailand	0018 0015 6207 7181 *

+81 3 5290 1555

Tokyo

#### **About MSCI**

MSCI is a leading provider of critical decision support tools and services for the global investment community. With over 50 years of expertise in research, data and technology, we power better investment decisions by enabling clients to understand and analyze key drivers of risk and return and confidently build more effective portfolios. We create industry-leading researchenhanced solutions that clients use to gain insight into and improve transparency across the investment process.

To learn more, please visit www.msci.com.

The process for submitting a formal index complaint can be found on the index regulation page of MSCI's website at: <a href="https://www.msci.com/index-regulation">https://www.msci.com/index-regulation</a>.

<sup>\*</sup> toll-free



# 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 redisseminated in whole or in part without prior written permission from MSCI. All rights in the Information are reserved by MSCI and/or its Information Providers.

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 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 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 S&P Global Market Intelligence. "Global Industry Classification Standard (GICS)" is a service mark of MSCI and S&P Global Market Intelligence.

MIFID2/MIFIR notice: MSCI ESG Research LLC does not distribute or act as an intermediary for financial instruments or structured deposits, nor does it deal on its own account, provide execution services for others or manage client accounts. No MSCI ESG Research product or service supports, promotes or is intended to support or promote any such activity. MSCI ESG Research is an independent provider of ESG data, reports and ratings based on published methodologies and available to clients on a subscription basis.

Privacy notice: For information about how MSCI collects and uses personal data, please refer to our Privacy Notice at <a href="https://www.msci.com/privacy-pledge.">https://www.msci.com/privacy-pledge.</a>