

MSCI ESG RATINGS METHODOLOGY

Executive Summary

MSCI ESG Research

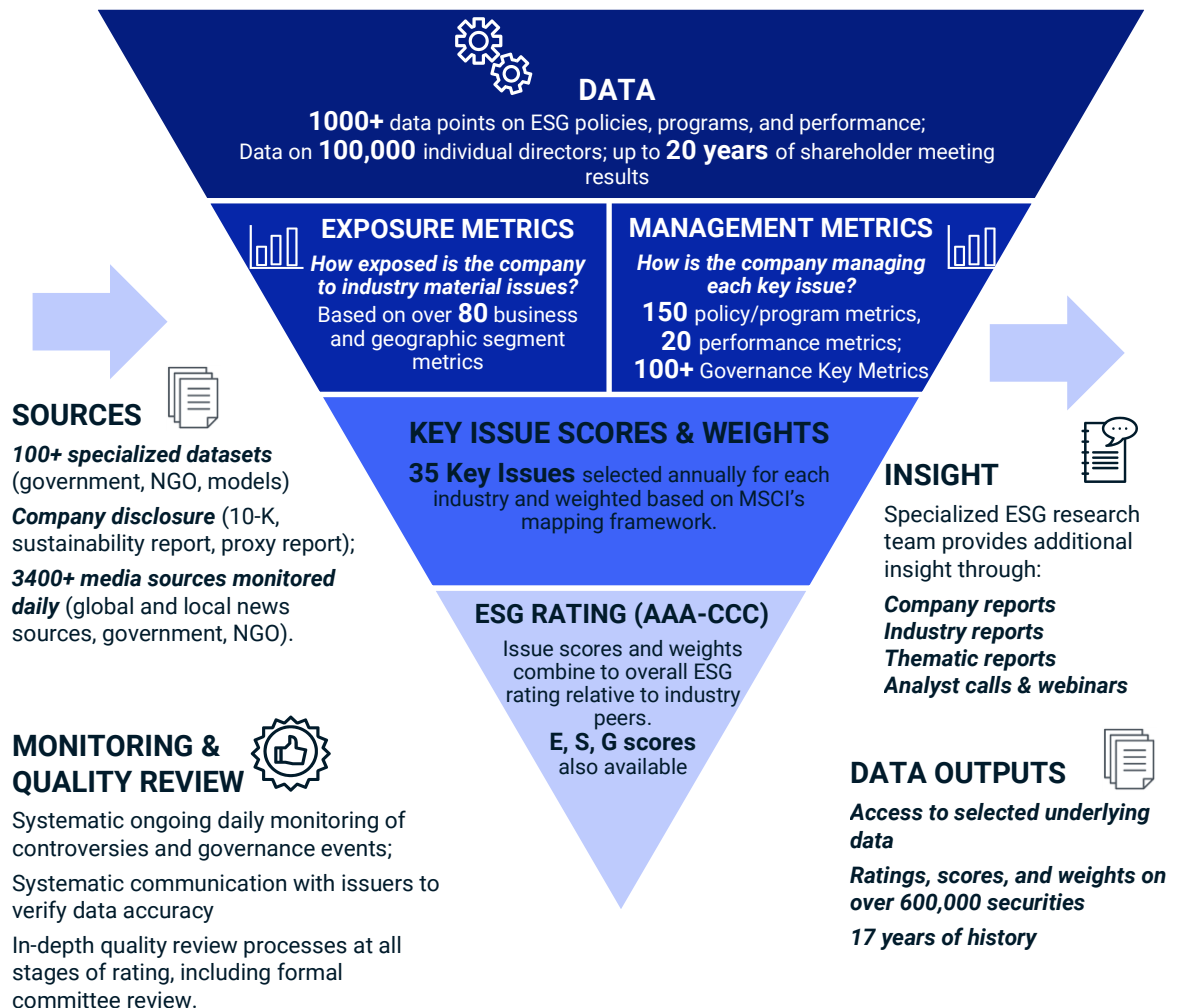
December 2020

1 EXECUTIVE SUMMARY

From natural resource scarcity to changing governance standards, from global workforce management to the evolving regulatory landscape, ESG factors can impact the long-term risk and return profile of institutional portfolios. MSCI ESG Ratings are designed to help investors to understand **ESG risks and opportunities** and integrate these factors into their portfolio construction and management process.

Our global team of over 200 experienced research analysts assesses thousands of data points across 35 ESG Key Issues, focusing on the intersection between a company’s core business and the industry issues that can create significant risks and opportunities for the company. Companies are rated on a AAA-CCC scale relative to the standards and performance of their industry peers.

Figure 1: ESG Rating Framework and Process Overview



1.1 MSCI ESG RATINGS METHODOLOGY OVERVIEW

MSCI ESG Ratings aim to measure a company’s resilience to long-term, financially relevant ESG risks.

- *Of the negative externalities that companies in an industry generate, which issues may turn into unanticipated costs for companies in the medium to long term?*
- *Conversely, which ESG issues affecting an industry may turn into opportunities for companies in the medium to long term?*

More specifically, the MSCI ESG Ratings model seeks to answer four key questions about companies:

- What are the most significant ESG risks and opportunities facing a company and its industry?
- How exposed is the company to those key risks and/or opportunities?
- How well is the company managing key risks and opportunities?
- What is the overall picture for the company and how does it compare to its global industry peers?

MATERIAL INDUSTRY ESG RISKS AND OPPORTUNITIES

Environmental, social, and governance risks and opportunities are posed by large scale trends (e.g. climate change, resource scarcity, demographic shifts) as well as by the nature of the company’s operations. Companies in the same industry generally face the same major risks and opportunities, though individual exposure can vary.

A risk is material to an industry when it is likely that companies in a given industry will incur substantial costs in connection with it (for example: regulatory ban on a key chemical input requiring reformulation). An opportunity is material to an industry when it is likely that companies in a given industry could capitalize on it for profit (for example: opportunities in clean technology for the LED lighting industry). The MSCI ESG Ratings model focuses only on issues that are determined as material for each industry.

We identify material risks and opportunities for each industry through a quantitative model that looks at ranges and average values for each industry for externalized impacts such as carbon intensity, water intensity, and injury rates. Companies with unusual business models for their industry may face fewer or additional key risks and opportunities. Company-specific exceptions are allowed for companies with diversified business models, facing controversies, or based on industry rules. Once identified, these **Key Issues** are assigned to each industry and company.

Figure 1 MSCI ESG Key Issue Hierarchy

3 Pillars	10 Themes	35 ESG Key Issues	
Environment	Climate Change	Carbon Emissions Product Carbon Footprint	Financing Environmental Impact Climate Change Vulnerability
	Natural Capital	Water Stress Biodiversity & Land Use	Raw Material Sourcing
	Pollution & Waste	Toxic Emissions & Waste Packaging Material & Waste	Electronic Waste
	Environmental Opportunities	Opportunities in Clean Tech Opportunities in Green Building	Opportunities in Renewable Energy
Social	Human Capital	Labor Management Health & Safety	Human Capital Development Supply Chain Labor Standards
	Product Liability	Product Safety & Quality Chemical Safety Financial Product Safety	Privacy & Data Security Responsible Investment Health & Demographic Risk
	Stakeholder Opposition	Controversial Sourcing Community Relations	
	Social Opportunities	Access to Communications Access to Finance	Access to Health Care Opportunities in Nutrition & Health
Governance*	Corporate Governance	Ownership & Control Board	Pay Accounting
	Corporate Behavior	Business Ethics Tax Transparency	

* The Governance Pillar carries weight in the ESG Rating model for all companies.

ESG RATINGS

To arrive at a final ESG Rating, the weighted average of individual Key Issue Scores is normalized relative to ESG Rating Industry peers. After any committee-level overrides are factored in, each company's Final Industry-Adjusted Score corresponds to a rating between best (AAA) and worst (CCC). These assessments are not absolute but are explicitly intended to be interpreted relative to a company's industry peers.

SETTING KEY ISSUE WEIGHTS

Once the Key Issues have been selected for a GICS Sub-Industry, we set the weights that determine each Key Issue’s contribution to the overall rating. Each Key Issue typically comprises 5-30% of the total ESG Rating. The weightings take into account both the contribution of the industry, relative to all other industries, to the negative or positive impact on the environment or society; and the timeline within which we expect that risk or opportunity for companies in the industry to materialize, as illustrated conceptually below.

Figure 2 Framework for Setting Key Issue Weights

		Expected Time frame for Risk/Opportunity to Materialize	
		Short-Term (<2 years)	Long-Term (5+ years)
Level of Contribution to Environmental or Social Impact	Industry is major contributor to impact	Highest Weight	
	Industry is minor contributor to impact		Lowest Weight

The framework is such that a Key Issue defined as “High Impact” and “Short-Term” would be weighted three times higher than a Key Issue defined as “Low Impact” and “Long-Term”.

- **Level of contribution to social or environmental externality:** Similar to the process outlined above, each GICS Sub-Industry is assigned a “High”, “Medium”, or “Low” impact for each Key Issue based on our analysis of relevant data (e.g. average carbon emissions intensity).
- **Expected time horizon of risk / opportunity:** The time horizon of each Key Issue (Short-Term, Medium-Term, Long-Term) is classified based on the type of risk or opportunity that each Key Issue presents to companies.

Starting in November 2020, the Governance Pillar weight has been determined assuming a “High Contribution/Long Term” and “Medium Contribution/Long Term” assessment on Corporate Governance and Corporate Behavior respectively across all sub-industries. Additionally, the weight on the Governance Pillar will be floored at a minimum value of 33%.

KEY ISSUE ASSESSMENT

Risks

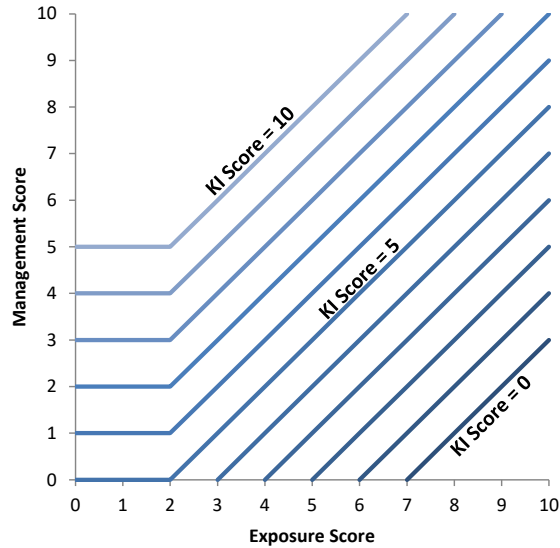
To understand whether a company is adequately managing a key ESG risk, it is essential to understand both what management strategies it has employed and how exposed it is to the risk. The MSCI ESG Ratings model measures both of these: **risk exposure** and **risk management**. To score well on a Key Issue, management needs to be commensurate with the level of exposure: a company with high exposure must also have very strong management, whereas a company with limited exposure can have a more modest approach. Conversely, a highly exposed company with poor management will score worse than a company with the same management practices but lower exposure to the risk.

Example: Electric Utilities are typically highly water-dependent, but each company may be more or less exposed to water related risks depending on where its plants are – desert locations present much higher risks than those where water supplies are plentiful. Companies operating in water-scarce regions must take more extensive measures to mitigate these risks than those with abundant access to water.

While Key Issues are identified by looking quantitatively at each industry as a whole, individual companies' exposure to each issue will vary. MSCI ESG Ratings calculate each company's exposure to key ESG risks based on a granular breakdown of its business: its core product or business segments, the locations of its operations, and other relevant measures such as outsourced production or reliance on government contracts. Risk exposure is scored on a 0-10 scale, with 0 representing no exposure and 10 representing very high exposure.

The analysis then takes into account the extent to which a company has developed strategies and demonstrated a strong track record of performance in managing its specific level of risks or opportunities. Controversies occurring within the last three years lead to a deduction from the overall management score on each issue. Management is scored on a 0-10 scale, where 0 represents no evidence of management efforts and 10 represents indications of very strong management.

Figure 3 Combining Exposure and Management – ‘Risk’ Key Issues



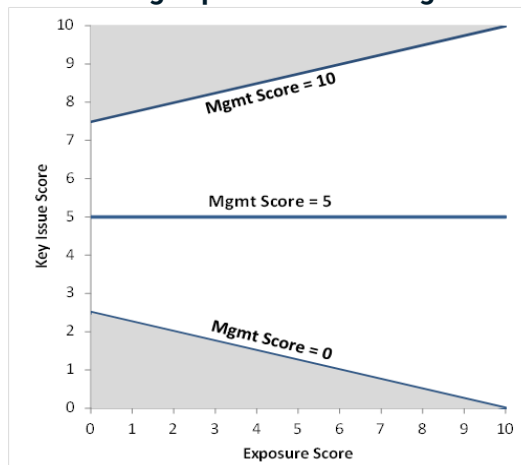
The Risk Exposure Score and Risk Management Score are combined such that a higher level of exposure requires a higher level of demonstrated management capability in order to achieve the same overall Key Issue Score. Key Issue scores are also on a 0-10 scale, where 0 is very poor and 10 is very good. For instance, a utility focused on conventional power generation is required to have stronger measures for mitigating its carbon and toxic emissions compared to a utility which is largely focused on electricity transmission and distribution which is less polluting compared to conventional generation.

Example: Utility Company A focuses on conventional power generation, which typically results in large carbon and toxic emissions. It has high risk exposure in these areas. To score well on these issues, it must have strong risk mitigation programs in place. Utility Company B is largely focused on electricity transmission and distribution, which are less polluting activities. Although they are in the same industry, Company A and Company B have different levels of exposure to these risks. Company B can score as well as Company A with more modest risk mitigation efforts. Alternatively, if Company B has risk mitigation efforts similar to company A, it will score higher overall because its risk management is stronger relative to its risk exposure.

Opportunities

Assessment of opportunities works similarly to risks, but the model for combining exposure and management differs. Exposure indicates the relevance of the opportunity to a given company based on its current business and geographic segments. Management indicates the company’s capacity to take advantage of the opportunity. Where exposure is limited, the key issue score is constrained toward the middle of the 0-10 range, while high exposure allows for both higher and lower scores.

Figure 4 Combining Exposure and Management – ‘Opportunities’ Key Issues



Controversies

MSCI ESG Ratings reviews controversies, which may indicate structural problems with a company’s risk management capabilities. In the ESG Rating model, a controversies case that is deemed by an analyst to indicate structural problems that could pose future material risks for the company triggers a larger deduction from the Key Issue score than a controversies case that is deemed to be an important indicator of recent performance but not a clear signal of future material risk.

A controversy case is defined as an instance or ongoing situation in which company operations and/or products allegedly have a negative environmental, social, and/or governance impact. A case is typically a single event such as a spill, accident, regulatory action, or a set of closely linked events or allegations such as health and safety fines at the same facility, multiple allegations of anti-competitive behavior related to the same product line, multiple community protests at the same company location, or multiple individual lawsuits alleging the same type of discrimination.

Each controversy case is assessed for the severity of its impact on society or the environment and consequently rated Very Severe (reserved for ‘worst of the worst’ cases), Severe, Moderate, or Minor.

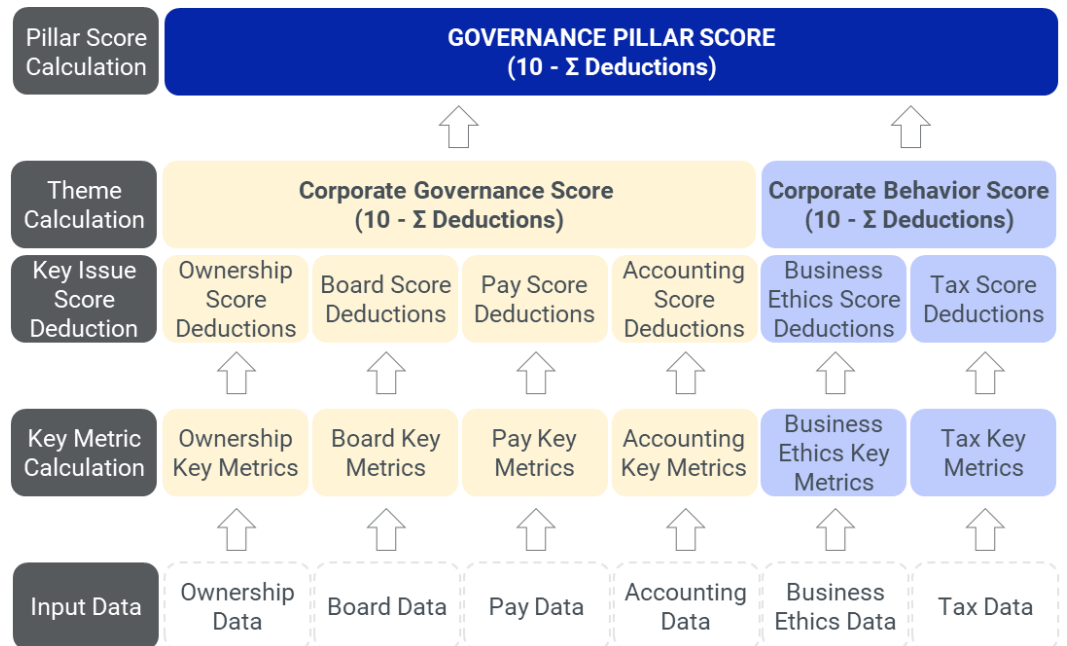
Figure 5 Assessment of Controversial Cases

Scale of Impact	Nature of Impact			
	Egregious	Serious	Medium	Minimal
Extremely Widespread	Very Severe	Very Severe	Severe	Moderate
Extensive	Very Severe	Severe	Moderate	Moderate
Limited	Severe	Moderate	Minor	Minor
Low	Moderate	Moderate	Minor	Minor

DETERMINING GOVERNANCE SCORES

The Governance Pillar Score is an absolute assessment of a company’s governance that uses a universally applied 0-10 scale. Each company starts with a “perfect 10” score and scoring deductions are applied based on the assessment of Key Metrics.

Figure 6 Governance Model Structure



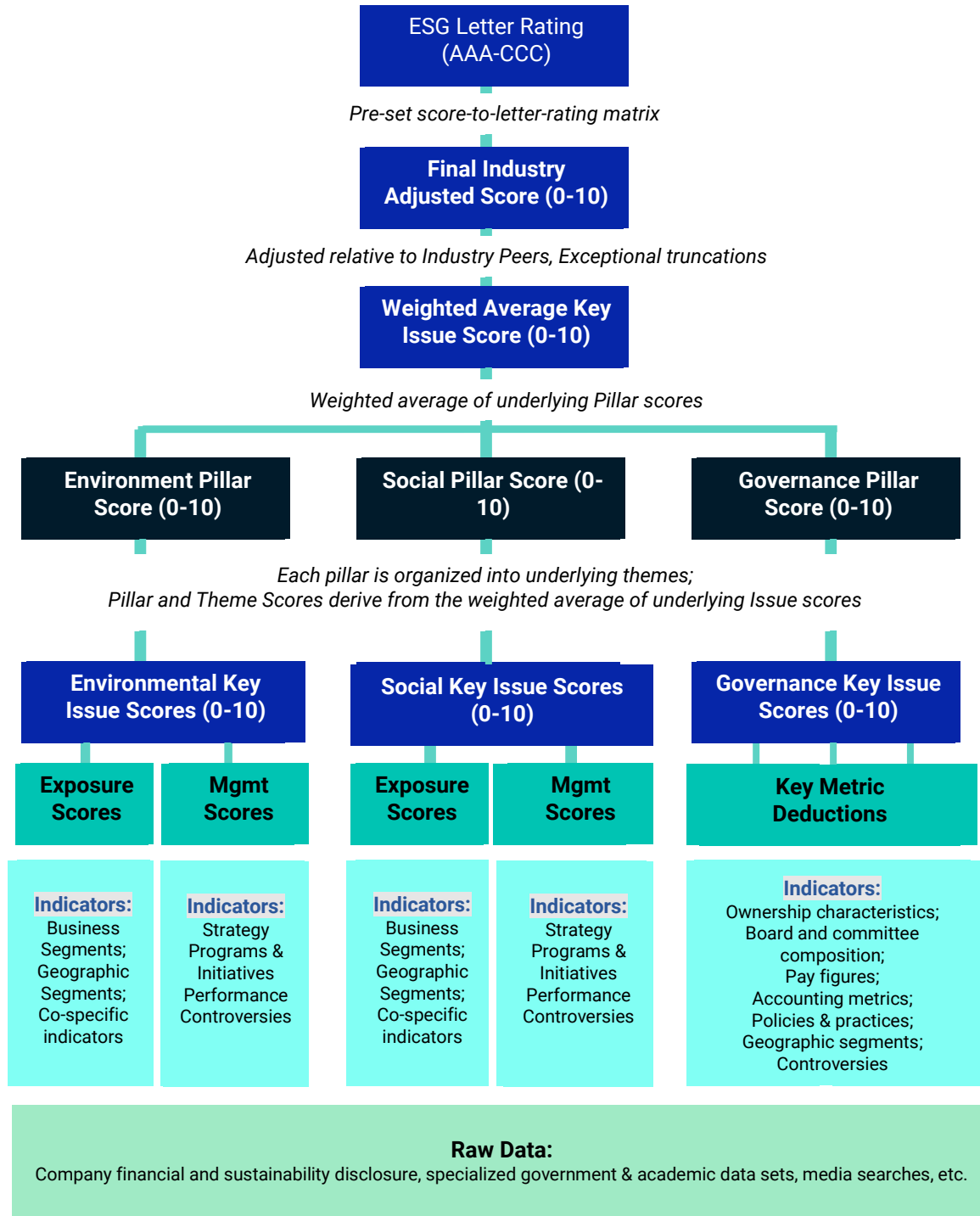
CONSTRUCTING THE RATING

The ESG Ratings model is industry relative and uses a weighted average approach.

Key Issue weights are set at the GICS Sub-Industry level (8-digit) based on each industry's relative external impact and the time horizon associated with each risk. Key Issues and weights undergo a formal review and feedback process at the end of each calendar year. Corporate Governance is always material and therefore always weighted and analyzed for all companies. Where there are company-specific exceptions, weights depart from the industry standard weights but remain in proportion.

For each company a Weighted Average Key Issue Score is calculated based on the underlying Key Issue scores and weights.

Figure 7 Hierarchy of ESG Scores



Prior to November 2020, these benchmark values were based on the rolling 3-year average of the 2.5th and 97.5th percentile scores of ESG Rating Industry peers among constituents of the MSCI ACWI Index.

In conjunction with the methodology enhancements effective November 2020, the following criteria in setting the industry top and bottom benchmark values will apply starting November 2020:

- The top benchmark value (“industry maximum score”) falls between the 95th and 100th percentile of modeled weighted average key issue scores (WAKIS) within an ESG Rating Industry.
- The bottom benchmark value (“industry minimum score”) falls between the 0th and 5th percentile of modeled weighted average key issue scores (WAKIS) within an ESG Rating Industry.

Percentiles were calculated based on the full universe of companies with ESG Ratings (~8,500 companies), which includes approximately 5,600 additional small cap and private companies that are not constituents of the MSCI ACWI Index.

The Industry Adjusted Score corresponds to a rating between best (AAA) and worst (CCC). These assessments of company performance are not absolute but are explicitly intended to be relative to the standards and performance of a company’s industry peers.

Figure 8 The Final Industry Adjusted Company Score is mapped to a Letter Rating as follow.

Letter Rating	Leader/Laggard	Final Industry-Adjusted Company Score
AAA	Leader	8.571* - 10.0
AA	Leader	7.143 – 8.571
A	Average	5.714 – 7.143
BBB	Average	4.286 – 5.714
BB	Average	2.857 – 4.286
B	Laggard	1.429 – 2.857
CCC	Laggard	0.0 – 1.429

**Appearance of overlap in the score ranges is due to rounding error. The 0 to 10 scale is divided into 7 equal parts, each corresponding to a letter rating.*

ESG RATING PROCESS OVERVIEW

DATA SOURCES

To assess companies' exposure to and management of ESG risks and opportunities, we collect data from the following sources:

- Macro data at segment or geographic level from academic, government, NGO datasets (e.g. Transparency International, US EPA, World Bank)
- Company disclosure (10-K, sustainability report, proxy report, AGM results, etc.)
- Government databases, 1600+ media, NGO, other stakeholder sources regarding specific companies

ISSUER COMMUNICATION AND FEEDBACK PROCESS

We proactively reach out to companies as part of our standardized and systematic data review processes. We do not issue surveys or questionnaires or conduct general interviews with companies, nor do we accept or consider in our analysis any data provided by issuers that is not publicly available to other stakeholders. Typically, companies receive an alert, roughly 6-8 weeks ahead of the expected annual ESG Rating Action update. They will also receive an auto-notification when the update is complete. Given the dynamic nature of our research, companies can access the data we have collected to date via the issuer portal at any time to review. They are welcome to ask questions and provide feedback at any time through the annual ESG Rating review process, as well as any time throughout the year. We are committed to updating a company profile as required in a timely manner. This process is also in accordance with the objective of frequently updating company reports with the latest available information as provided by companies.

MONITORING AND UPDATES

Companies are monitored on a systematic and ongoing basis, including daily monitoring of controversies and governance events. New information is reflected in reports on a weekly basis and significant score changes trigger analyst review and re-rating. Companies receive an in-depth review at least annually.

QUALITY REVIEW

Formal in-depth quality review processes take place at each stage of analysis, including automated and quality checks of data and rating publication; industry and market lead oversight of ratings and reports; and ESG Ratings Methodology

Committee approval of any exceptions, truncations, or major (2+) rating changes. The ESG Methodology Committee reviews contentious cases and model changes.

ANNUAL CONSULTATION

In November of each year, MSCI ESG Research reviews the Key Issues assigned to each industry as well as their weights. This process also identifies emerging issues and those that have become less significant. As part of this process, MSCI ESG Research consults with clients about proposed changes to Key Issue selections for each industry as well as any proposed new Key Issues.

1.2 COVERAGE

MSCI ESG Ratings covers¹ more than **14,000*** equity and fixed income issuers linked to over 600,000* equity and fixed income securities.

MSCI ESG Ratings are available for more than **8,700** companies included in the following MSCI indexes:

- MSCI World Index
- MSCI Emerging Markets Index
- MSCI US Investible Market Index (IMI)
- MSCI Canada IMI+
- MSCI Europe IMI+
- MSCI UK IMI+
- MSCI Nordic IMI+
- MSCI Swiss IMI
- MSCI Australia IMI+
- MSCI South Africa IMI
- MSCI EFM Africa
- MSCI Japan IMI ~Top 750 constituents by market cap
- MSCI China A International
- MSCI Hong Kong IMI
- MSCI Malaysia IMI
- MSCI Singapore IMI
- MSCI Argentina Standard
- MSCI Saudi Arabia Standard
- MSCI Brazil IMI
- MSCI Mexico IMI
- MSCI Chile IMI
- MSCI World IMI Small Cap and Emerging Markets IMI Small Cap ~500 constituents
- MSCI Korea IMI
- MSCI Saudi Arabia IMI

¹ As of 13th October 2020

- MSCI Domestic Kuwait

MSCI ESG Ratings covers more than 85% of market value of a widely used global fixed income benchmark, including:

- Approximately 96% of the corporate investment grade (listed and non-listed)
- Approximately 95% of the covered bonds
- Approximately 99% of the treasuries/Sovereign**
- Approximately 91% of the government related (ex-Sovereign)**
- Approximately 87% of global high yield

Notes:

+ Includes coverage of regional benchmarks outside of the MSCI regional index

* Includes coverage through subsidiary mapping

**The overall ESG rating for government-related bond issuers will be either in the MSCI ESG Ratings or MSCI Government ESG Rating framework

Additions to the MSCI ACWI Index and the MSCI US Investable Market Index (IMI) will be rated within one quarter from their addition to the relevant index, while other companies will be rated within two quarters from their addition to the relevant index.

Companies are monitored on a systematic and ongoing basis, including daily monitoring of controversies and governance events. New information is reflected in reports on a weekly basis and significant changes to scores trigger analyst review and re-rating. Companies receive an in-depth review at least annually.

Contact us

esgclientservice@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
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 *
Tokyo	+ 81 3 5290 1555

* = toll free

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