MSCI ESG GOVERNANCEMETRICS METHODOLOGY

Executive Summary

MSCI ESG Research

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1 OVERVIEW

MSCI ESG Research publishes research and rankings on over 6,000 public companies worldwide, and the scoring model is based on 96 unique governance and accounting metrics, organized into four individual scoring themes. This organization is designed to provide consistency, transparency, and structural integrity. Context-sensitive weightings emphasize behavior over policy.

All data inputs are based on publicly available information, most compiled from company filings and reports. MSCI ESG Research has also developed its own proprietary system for monitoring and evaluating current news reports, and for accessing various global regulatory and legal databases. Although we welcome feedback from rated companies, who are entitled to receive free copies of their report, we do not rely on company surveys or questionnaires.

MSCI ESG Research clients may access the governance rankings, underlying metrics and other supporting data via ESG Manager — which incorporates a wide range of screening and benchmarking tools as well as comprehensive individual company reports — and/or through regularly updated data feeds supplied via FTP and via FactSet.

2 USE OF GOVERNANCE RESEARCH AND RANKINGS

GovernanceMetrics is designed to assist clients to:

- Identify governance and accounting risk in a portfolio
- Identify areas for engagement with portfolio companies
- Meet UN PRI commitments and mandates

The GovernanceMetrics scores and rankings are designed to provide institutional investors with an effective summary of corporate governance factors that may impact investment value. They are not, however, intended for stand-alone use and are not buy, sell or hold recommendations.

3 GOVERNANCEMETRICS SCORE

The GovernanceMetrics Score is an absolute assessment of a company’s governance that utilizes a universally applied 0-10 scale. Each company starts with a “perfect 10” score and points are deducted based on the triggering of KeyMetrics. The GovernanceMetrics Score is derived from the raw score which is calculated as the weighted Sum of Deductions from flagged KeyMetrics.

4 GOVERNANCEMETRICS RANKINGS

4.1 HOME MARKET PERCENTILE RANKS

GovernanceMetrics assessments are also expressed as percentile rankings ranging from one to 100 based on a company's relative performance to home market peers, as shown in Figure 1 below. Home market rankings for the four underlying themes (Board, Pay, Ownership & Control, Accounting) are also calculated.

4.2 GLOBAL PERCENTILE RANKS

Global percentile rankings are available to compare companies between markets, and component rankings for underlying themes (Board, Pay, Ownership & Control, Accounting) are also made available through ESG Manager.

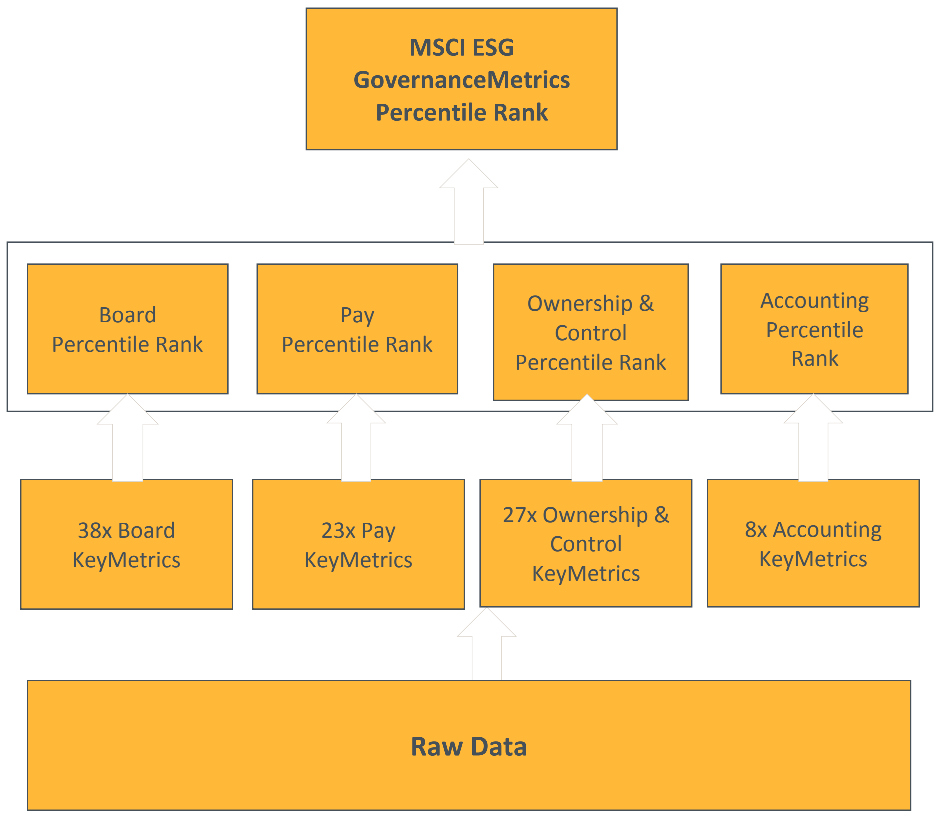
MSCI GOVERNANCEMETRICS PERCENTILE RANKINGS

Percentile Ranking	Description
96 - 100	Best in class
76 - 95	Above average
26 - 75	Average
6 - 25	Below average
1 - 5	Worst in class

5 GOVERNANCEMETRICS COMPONENT STRUCTURE

The MSCI ESG GovernanceMetrics component structure is shown in Figure 2 below. The 96 underlying KeyMetrics are grouped into four rating themes: Board, Pay, Ownership & Control and Accounting. The KeyMetrics are individually weighted, based on their relative materiality and desired impact on the company's overall rating.

Figure 2: MSCI GovernanceMetrics Rankings Component Structure



6 GOVERNANCEMETRICS SCORING PROCESS

The governance scoring process is fully automated, and applied consistently to all companies. Input data is collected and reviewed on an ongoing basis throughout the year, automatically updating the underlying metrics that drive the overall assessments and scores. Our analysts may review such updates for accuracy and timeliness, and provide additional commentary to add context or explain changes, but the actual scoring mechanisms are designed to eliminate analyst bias or subjectivity at the individual company level.

In the interest of simplicity and transparency, each of the metrics allows for a simple pass/fail evaluation and each flagged metric is indicated in ESG Manager. The scores associated with each flag are summed for each individual governance theme, such as board or pay, and each flag's contribution to the company's rating is shown with an impact figure. This impact figure indicates the contribution of that factor to the company's governance score.

The relative weights of governance metrics are context-sensitive, based on various market or ownership differences. The weights of individual flags are adjusted in the case of a controlling shareholder. In these cases, flags related to board independence and anti-takeover defenses carry reduced weight, while flags related to the company's basic ownership structure, minority shareholder rights, and any related-party transactions involving the controlling shareholder have more impact.

Because these impacts vary from company to company, these values are displayed at both the individual metric and rating component levels, in the interest of maximizing transparency.

7 ASSESSING THEMES

7.1 CORPORATE GOVERNANCE – BOARD

The board theme is scored primarily on the basis of the board's independence from management, and on various measures of board experience and effectiveness. Metrics included in this component evaluate:

- Basic board structures such as overall board independence, the independence of key committees, and the structure of board leadership.
- Individual director qualifications and experience, including industry and financial expertise, cases of executive misconduct, as well as areas of concern such as attendance and over boarding, where otherwise highly qualified individuals compromise their effectiveness by serving on too many boards.

Negative governance-related events such as bankruptcies; accounting or securities fraud litigation or regulatory investigations; delisting threats; and certain other negative events are included in this section. While not generally applicable to a majority of companies, and thus not assigned a separate component ranking, these event metrics may have a significant impact on a company's overall governance ranking.

INDEPENDENCE CRITERIA

The MSCI ESG Research's definition of "fully independent" excludes any "inside" or company executive directors, plus any "outside related" directors as well. "Outside Related" directors are defined as any non-executive director who meets one or more of the following criteria:

- A current paid executive or employee of the company
- A past executive or employee of the company; no matter how long ago the employment was terminated, excluding interim CEOs who were independent prior to becoming CEO
- Current non-executive employee, or lower level executive who is not a member of the executive board, management board, or other top level executive body.
- A director who is an owner or executive of an entity that has majority control of the company in question.
- Company founder(s), regardless of their current employment status with the company, current share ownership, and/or current economic interest in the company.
- Any director with a family or close personal relationship with an executive of the company.

- Anyone providing personal/professional services to the company or to a member of the company's senior management for a fee of at least $120,000 per year.
- Owner, partner, employee, paid adviser or director of a publicly traded firm that within the preceding or current fiscal year has sold goods or services to the corporation for a fee representing more than one percent of the sales of the supplier or the corporation. Or owner, partner, employee, paid adviser or director of a private firm that has sold goods or services to the corporation for a fee representing or more than US $250,000 to the corporation. If the monetary value of goods or services sold to the corporation is not disclosed, the director will be classified as non-independent
- Within the last three years has been an owner, partner, employee or paid adviser to a professional services firm (e.g., law firm, accounting firm, insurer, underwriting firm, commercial bank, information technology consultant, management consultant) that has provided services of at least $120,000 per year to the company or to a member of the company's senior management.
- A director who is an employee of a company owned or run by a non-independent director or a member of management.
- Within the last five years has been an employee of a predecessor company that represented more than 50 percent of the company's sales or assets when it became part of the company or an employee of a business acquired by the company, or, within the last five years, has been an employee or other representative of a former parent company following a spin-off or divestment, regardless of the parent's current interest.
- A non-executive chairman whose annual cash compensation is equal to or greater than 50% of the total cash compensation (salary plus bonus) of any of the named executive officers or is more than five times that of other non-executive directors (whichever is greater).
- Within the last three years has been an employee of a company at which an employee of the company in question also serves as a director ("interlocked directors").
- MSCI ESG Research will also review directors who are employees, directors or trustees (as opposed to general members) of a non-profit organization to which the company made charitable contributions of $100,000 or more in the last fiscal or calendar year. Depending on the situation, these individuals may be classified as independent or non-independent.
- Any individual classified as not independent by the company itself, should be classified as Outside Related by MSCI ESG Research as well.

- If a company does not disclose sufficient information regarding its directors to properly judge independence (e.g. by not disclosing director biographies), MSCI ESG Research will rate such directors as non-independent due to insufficient disclosure.
- We also review at situations not explicitly covered by the guidelines above and will use our best judgment to determine if a director's relationship with the company warrants being classified as non-independent.

A director will not be classified as “Outside related” solely due to long tenure, except in cases where the company explicitly identifies the director as not being independent.

7.2 CORPORATE GOVERNANCE – PAY

CEO and other executive pay practices are evaluated for all companies, including specific pay figures, where disclosed. Pay is scored primarily based on levels of pay relative to peers, as well as specific features of the pay program design. Metrics included in the pay theme evaluate the following concepts:

- Total pay levels (annual cash pay, realized total pay, and granted pay opportunity, as well as perks and pension values) relative to market-cap and industry-based peer groups and internal pay equity across the executive team.
- Sign-on and severance provisions, including golden parachutes and golden hellos where special awards are paid without requiring performance conditions.
- Performance goals and the alignment of pay with performance in both short- and long-term incentive plans.
- Policies and practices regarding the use of equity, including dilution and run rate concerns, as well as policies regarding CEO and director equity ownership.

Reflecting the varying levels of disclosure across markets, pay rankings are designed to prevent companies with poor disclosure from being rewarded.

7.3 CORPORATE GOVERNANCE – OWNERSHIP & CONTROL

The ownership and control theme evaluates the following:

- Concerns regarding the company’s ownership structure, including the presence of controlling shareholders, differential voting rights across multiple share classes, and majority voting provisions.
- Takeover defenses such as poison pills, classified boards, and other provisions affecting the ability of shareholders to accept an attractive bid for a company, with special emphasis placed on multiple defenses.

- Shareholder rights that enable investors to act collectively, such as rights to call special meetings or act by written consent.
- Provisions impeding shareholder rights, such as limitations on voting rights and the ability of shareholders to approve charter and bylaw amendments.

The presence of a controlling shareholder adjusts the scoring model, placing more focus on related party transactions and less on board independence.

DIRECTOR CLASSIFICATION

Inside: Includes the CEO, any other executive members of the Board of Directors in a unitary board structure, and members of the Management Board in a dual board structure.
Outside: Non-executive members of the Board of Directors in a unitary board structure and members of the Supervisory Board in a dual board structure where they are considered to be independent by MSCI ESG Research, applying the criteria above.
Outside Related: Non-executive members of the Board of Directors in a unitary board structure and members of the Supervisory Board in a dual board structure where they are not considered to be independent by MSCI ESG Research, applying the criteria above.

7.4 ACCOUNTING

The accounting theme evaluates corporate transparency and the reliability of reported financials as an aspect of corporate governance.

Three accounting-based metrics—revenue recognition, expense recognition and asset-liability valuation—are based on quantitative analysis of underlying accounting ratios. These ratios are evaluated along multiple analytic dimensions (i.e. compared to industry peers, year-over-year percentage change, and volatility over a two-year period) to identify outlying values. While other governance KeyMetrics are scored using a simple flagged/not flagged approach, the three accounting-based metrics use scoring point values. The worst ranked 20 percent of companies are flagged as an indicator of their greater negative impact on the overall governance assessment. A median scoring value is assigned to any company for which these inputs are not available, to offset the potential impact on overall rankings. Absent any other key metrics flags in Accounting these companies will automatically be assigned a global Accounting rank at or near 50.

This theme also includes five event-triggered metrics, including accounting investigations, qualified auditor opinion, internal controls, restatements or special charges and late filings.

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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.

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