

MSCI ESG Fund Ratings Summary

MSCI ESG Research LLC

January 2021

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Executive Summary

This document is a summary of the MSCI ESG Fund Ratings methodology¹. We leverage MSCI ESG Ratings for over 8,500 companies (14,000 total issuers including subsidiaries) and more than 680,000 equity and fixed income securities globally to create ESG scores and metrics for approximately 53,000 multi-asset class Mutual Funds and ETFs globally. MSCI ESG Fund Ratings aims to provide fund-level transparency to help clients better understand and measure the ESG characteristics of the total portfolio, and rank or screen funds based on a diverse set of ESG exposure categories.

Product Features

MSCI ESG Fund Ratings clients receive access to a data feed of approximately 53,000 funds in the coverage universe.

MSCI ESG Fund Ratings (AAA-CCC)

The MSCI ESG Fund Ratings is designed to assess the resilience of a fund's aggregate holdings to long term ESG risks and opportunities. Highly rated funds consist of issuers with leading or improving management of key ESG risks.

Fund ESG Quality Score & E, S, G Scores (0-10)

Each fund in the coverage universe will receive an overall "Fund ESG Quality Score" (0-10) as well as an Environmental, Social and Governance Score (0-10). The overall "Fund ESG Quality Score" aggregates issuer-level ESG scores to provide investors with an indication of the overall fund-level ESG score based on the fund's underlying holdings.

Percentile Rank

We also provide Global and Peer Group Percentile Ranks (0-100), which are calculated using fund-level "ESG Quality Scores" and the Lipper Global Classification for a definition of peer groups.

Over 200 ESG Metrics

¹ Available on MSCI ESG Manager with subscription.

Clients also have access to over 200 fund metrics to evaluate the ESG attributes of their funds. The attributes fall into three categories: sustainable impact, values alignment and risks.

Sustainable Impact;
fund exposure to companies that address core environmental & social challenges

Values Alignment;
screens funds for investments that align with ethical, religious or political values

Risk; understand
fund exposure to ESG-related risks

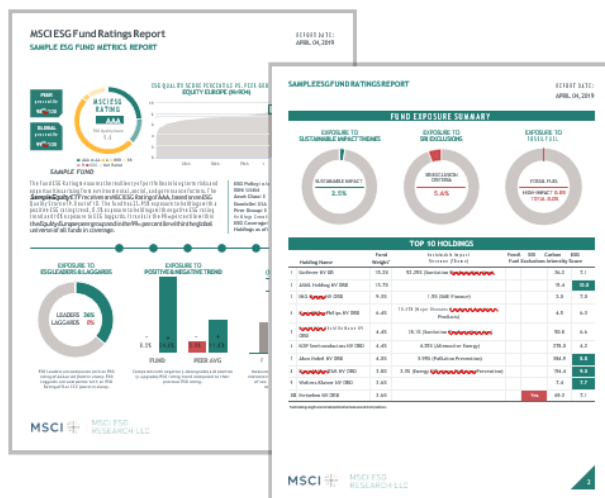


- **Sustainable Impact** metrics to help investors measure fund exposure to publicly traded companies addressing core environmental and social challenges. May be used by impact-based investors with a preference to capture measurable social returns per dollar invested including clean technology exposure, community building, or access to healthcare.
- **Values alignment** metrics are designed to help investors screen for investments that align with ethical, religious, or political value. May be used by values-based investors with a preference to avoid businesses involved in areas such as tobacco, weapons manufacturing, or human rights violations.
- **Exposure to ESG risks** metrics aim to help investors understand fund exposure to ESG-related risks. May be used by long-horizon investors with a goal of limiting potential financial costs connected with issues like water scarcity, or carbon regulations.

Fund Ratings Reports

The MSCI ESG Fund Ratings Report highlights fund exposure to over 200 metrics organized under three themes: Values Alignment, Sustainable Impact and ESG Risks.

SAMPLE ESG FUND RATINGS REPORT



The updated report includes the following features:

- Indicates the top-level ESG Fund Rating as well as the Fund ESG Quality Score (0-10 scale) and fund peer group average for comparison purposes
- Highlights fund exposure to over 200 metrics organized under three themes: Values Alignment, Sustainable Impact and ESG Risks.
- Identifies the top 10 fund holdings with details on Sustainable Impact Solutions revenue, Fossil Fuel ownership, SRI Exclusion, and Carbon Intensity
- Showcases the fund holdings' ESG Fund Rating Distribution and the ESG Fund Rating momentum trend, either positive or negative, over time
- Provides the fund Weighted Average Carbon Intensity compared to the Peer Group Average and five MSCI Indexes.

Fund Ratings Badge

MSCI ESG Fund Ratings Badges are awarded to funds with qualifying ratings. Separate badges are available for meeting the requirements of Peer Rank Top 10%, Peer Rank Top 20%, Global Rank Top 10%, and Global Rank Top 20%.

MSCI ESG Research grants asset managers permission to use the MSCI ESG Fund Ratings Badge associated with their funds in public facing fund-related documents or web pages. Users are required to sign a no-cost license with terms and conditions of use and required disclosures.

For more information please contact ESG Client Service at esgclientservice@msci.com.



MSCI ESG Fund Ratings Inclusion Criteria

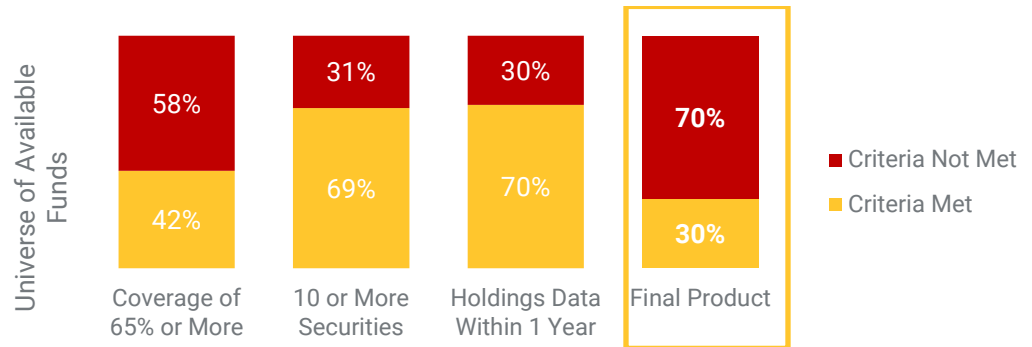
MSCI ESG Fund Ratings holdings data is sourced from Lipper. To be included in MSCI ESG Fund Ratings, a fund must pass the following three criteria:

1. 65% of the fund’s gross weight must come from covered securities.
 - a. See Appendix 1 for a detailed description of MSCI ESG Ratings coverage.
 - b. Cash positions and other asset types not relevant for ESG analysis are removed prior to calculating a fund’s gross weight. See Appendix 3 for a full listing of excluded asset types.
 - c. The absolute values of short positions are included in a fund’s gross weight calculation, but are treated as uncovered for ESG data
 - d. Security asset type must have recourse to the rated issuer. See Appendix 2 for a list of eligible asset types.
2. Fund holdings date must be less than one year old.
3. Fund must have at least ten securities.

Fund ESG Coverage Calculation Example

| | Market Value | Fund Weight | Absolute Market Value | Gross Weight | ESG Rated | Contributes towards Fund Metrics Coverage | Covered Weight |
|--------------|--------------|-------------|-----------------------|--------------|-----------|---|----------------|
| Security A | 400 | 50% | 400 | 40% | Yes | Yes | 40% |
| Security B | 400 | 50% | 400 | 40% | Yes | Yes | 40% |
| Security C | 100 | 13% | 100 | 10% | No | No. Security not covered by ESG Ratings | 0% |
| Security D | -100 | -13% | 100 | 10% | Yes | No. Security held as a short position | 0% |
| Total | 800 | 100% | 1,000 | 100% | | | 80% |

Where MSCI ESG Research provides fund metrics for funds excluded from MSCI ESG Fund Ratings due to falling below the 65% inclusion threshold, these metrics will only be based upon covered holdings in the fund. As a result, they may not fully represent the fund's ESG performance given the lack of coverage.



ESG Fund Rating

The top level rating, the “Fund ESG Rating”, is designed to assess the resilience of a fund’s aggregate holdings to long term ESG risks. Highly rated funds consist of issuers with leading or improving management of key ESG risks.

ESG FUND RATINGS

WHAT IT MEANS

| | | |
|------------|---------------|---|
| AAA | LEADER | The companies that the fund invests in tend to show strong and/or improving management of financially relevant environmental, social and governance issues. These companies may be more resilient to disruptions arising from ESG events. |
| AA | | |

| | | |
|------------|----------------|--|
| A | AVERAGE | The fund invests in companies that tend to show average management of ESG issues, or in a mix of companies with both above-average and below-average ESG risk management. |
| BBB | | |
| BB | | |
| B | LAGGARD | The fund is mostly exposed to companies that do not demonstrate adequate management of the ESG risks that they face or show worsening management of these issues. These companies may be more vulnerable to disruptions arising from ESG events. |
| CCC | | |

The Fund ESG Rating is calculated as a direct mapping of “Fund ESG Quality Score” to letter rating categories.

| Fund ESG Quality Score | Fund ESG Rating |
|------------------------|-----------------|
| 8.6* - 10.0 | AAA |
| 7.1 - 8.6 | AA |
| 5.7 - 7.1 | A |
| 4.3 - 5.7 | BBB |
| 2.9 - 4.3 | BB |
| 1.4 - 2.9 | B |
| 0.0 - 1.4 | CCC |

*Appearance of overlap in the score ranges is due to rounding. Every possible score falls within the range of only one letter rating. The 0 to 10 scale is divided into 7 equal parts, each corresponding to a letter rating.

Fund ESG Quality Score

The “Fund ESG Quality Score” assesses the resilience of a fund’s aggregate holdings to long term ESG risks. Highly rated funds consist of issuers with leading or improving management of key ESG risks, based on a granular breakdown of each issuer’s business: its core product or business segments, the locations of its assets or revenues, and other relevant measures such as outsourced production. The “Fund ESG Quality Score” is provided on a 0-10 score, with 0 and 10 being the respective lowest and highest possible fund scores.

The “Fund ESG Quality Score” is assessed using the underlying holding’s “Overall ESG Scores”, “Overall ESG Ratings”, and “Overall ESG Rating Trends”. It is calculated in a series of 3 steps.

Step 1: Calculate the “Fund Weighted Average ESG Score” of the underlying holding’s “Overall ESG Scores”. The Overall ESG Scores represent either the ESG Ratings Final Industry-Adjusted Score or Government Adjusted ESG Score of the issuer depending on its asset classification.² Methodology for the issuer level scores are available in the MSCI ESG Ratings Methodology document. The table below demonstrates how the “Fund Weighted Average ESG Score” is calculated. Note that in this example, Security E does not have an ESG Score. Security E is therefore “dropped” from analysis, and the weights of the remaining securities are normalized to 100%. The normalized weights and ESG scores are then used to calculate the “Fund Weighted Average ESG Score” of 6.6.

Step 1 Example

| | Weight | ESG Score | ESG Rating | ESG Rating Trend | Normalized Weight | Normalized Weight x Score |
|--------------|-------------|-----------|------------|------------------|-------------------|---------------------------|
| Security A | 20% | 2.5 | B | 0 | 25% | 0.6 |
| Security B | 40% | 7.0 | A | 0 | 50% | 3.5 |
| Security C | 8% | 8.0 | AA | -1 | 10% | 0.8 |
| Security D | 12% | 6.0 | A | 1 | 15% | 0.9 |
| Security E | 20% | N/A | N/A | N/A | 0% | N/A |
| Total | 100% | | | | 100% | 5.8 |

Step 2: Calculate adjustment % based on fund exposure to “Fund ESG Laggards (%)”, “Fund ESG Trend Negative (%)”, and “Fund ESG Trend Positive (%)”.

$$\text{Adjustment \%} = \text{“Fund ESG Trend Positive (\%)”} - \text{“Fund ESG Laggards (\%)”} - \text{“Fund ESG Trend Negative (\%)”}$$

Step 2 Example

| Fund Factors | Fund Values |
|--------------------------------------|-------------|
| Fund ESG Trend Positive | 12% |
| Minus Fund ESG Laggards | 20% |
| Minus Fund ESG Trend Negative | 8% |
| = Adjustment % | -16% |

² This is detailed in the ESH Fund Ratings Methodology, available on MSCI ESG Manager with subscription.

Step 3: Multiply the “Fund Weighted Average ESG Score” by (1 + Adjustment %).

Step 3 Example

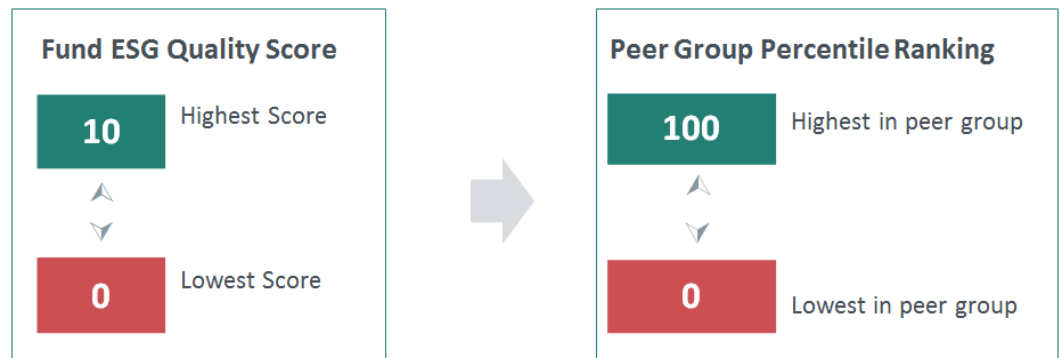
| Fund Factors | Fund Values |
|---------------------------------|-------------|
| Fund Weighted Average ESG Score | 5.83 |
| X Adjustment % | -16% |
| = ESG Quality Score | 4.89 |

Calculation Table

| | Sample Fund |
|-----------------------------------|-------------|
| Weighted Average ESG Score | 5.83 |
| Adjustment | |
| (+) Fund ESG Trend Positive | 12.00% |
| (-) Fund ESG Trend Negative | 8.00% |
| (-) Fund ESG Laggards | 20.00% |
| ESG Score Adjustment | -16.00% |
| Fund ESG Score Adjustment | - 0.93 |
| ESG Quality Score | 4.89 |
| ESG Fund Rating | BBB |

Peer Group Percentiles

Each fund’s “ESG Quality Score” is also shown as a percentile in its peer group. The “Fund ESG Quality Score – Peer Percentile” represents the percentage of funds in a fund’s peer group with an “ESG Quality Score” equal to, or lower than, the fund’s “ESG Quality Score”.



The peer groups are defined using the Lipper Global Classification Scheme. The following criteria must be met for a fund to receive a “Fund ESG Quality Score – Peer Percentile”:

1. The fund must be categorized by the Lipper Global Classification scheme.
2. The peer group must contain at least 30 funds.
3. The standard deviation of the Fund ESG Quality Score within the peer group must be greater than, or equal to, 0.1.

Global Percentiles

Every fund included in MSCI ESG Fund Ratings receives a “Fund ESG Quality Score – Global Percentile”. The Global Percentile notes the percentage of funds, covered by MSCI ESG Fund Ratings, with a score lower than, or equal to, a fund’s “ESG Quality Score”. Considered in conjunction, the Global and Peer Percentiles position a fund from both an absolute (product-wide) and relative (peer category) perspective.

Supplemental Fund Metrics

Metrics are included to provide investors a) measurements of positive and negative impacts of the investment on the environment and society and b) to enable European investors subject to the Regulation (EU) 2016/2011 to align reporting with EU regulation to assess funds.

Weighted Average Carbon Intensity

The Weighted Average Carbon Intensity measures the carbon intensity of the fund's holdings. The figure is the sum of security weight (normalized for corporate positions only) multiplied by the security Carbon Intensity. The Weighted Average Carbon Intensity is grouped by the level of intensity Very High – Very Low.

Green Revenues

Fund exposure to Green Revenues is the weighted average of each issuer's percent of revenue generated by goods and services, including alternative energy, energy efficiency, green building, pollution prevention and sustainable water.

Brown Revenues

Fund exposure to Brown Revenues is the weighted average of each issuer's percent of revenue generated from thermal coal extraction, unconventional and conventional oil and gas extraction, oil refining, as well as revenue from thermal coal-based power generation, liquid fuel based power generation or natural gas-based power generation.

Board Independence

Weighted average percentage of issuers in the fund that have an independent board of directors.

Board Diversity

Weighted average percentage of women on the board of the fund's holdings.

UNGC Violations

Sum of the weight of issuers in the fund that are in violation of the UN Global Compact principles according to MSCI ESG Research methodology.

Very Severe Controversies (OECD Guidelines)

Sum of the weight of issuers in the fund that are facing one or more very severe controversies related to the environment, product quality, human rights, labor rights and governance per MSCI ESG Controversies methodology.

Controversial Weapons

Sum of the weight of issuers in the fund that have any tie to landmines, cluster munitions, biological, chemical, depleted uranium, or nuclear weapons.

Tobacco

Sum of the weight of the issuers in the fund that are tobacco producers that derive =>5%, as well as tobacco distributors, suppliers, and retailers if the combined revenue is => 15% of total revenues.

Revenue Exposure to Sustainable Impact Solutions (%)

A weighted average of each issuer's percent of revenue generated from Sustainable Impact Solutions goods and services with positive impact on the society and the environment. Sustainable Impact Solutions include revenue from goods and services contributing to one or more of the following themes: Climate Change, Natural Capital, Basic Needs and Empowerment. Additionally, Sustainable Impact Solutions revenue from companies with negative externalities is excluded. Negative externalities refer to *very severe* and *severe* ESG controversies, ESG Ratings of CCC and B, direct involvement in predatory lending, involvement in controversial weapons, more than 5% revenue from conventional weapons or firearms, and more than 10% revenue from alcohol or tobacco production.

Treatment of Multi Asset Classes

Cash holdings and other asset types are removed prior to calculating Fund ESG Coverage (%).

Cash is removed because it is outside the scope of ESG relevancy. Including it in the coverage figure would lead to the undesired result of funds failing to meet the coverage threshold due to cash allocations. The weight of cash is included in all metrics that measure exposure to specific criteria (e.g. Tobacco, Fossil Fuel Reserves, ESG Laggards, etc.). Excluding cash from exposure metrics would generate overstated results.

Issuer analysis is mapped to both a bond and to a derivative based on that bond, to the extent possible. In cases where there is exposure to multiple underlying issuers, such as index futures analysis is not mapped.

Specific details regarding included and excluded asset types are in Appendix 3.

Treatment of Short Positions

When calculating "Fund ESG Coverage (%)", short positions are always treated as uncovered, even if held as a security of an issuer within ESG coverage. By including the absolute value of short positions in the uncovered portion of a fund, the coverage % will not overstate ESG coverage. Although short positions are included in the gross value when calculating coverage, they are removed prior to calculating the rest of the MSCI ESG Fund Ratings results. This is because the interpretation of short positions, from an ESG perspective, varies widely based on use case and the specific metric being considered.

Appendices

Appendix 1: MSCI ESG Ratings Coverage

The ESG Ratings coverage universe includes over 7,500 companies (13,000 total issuers including subsidiaries) and more than 600,000 equity and fixed income securities globally. As of April 2020, the coverage universe is comprised of:

- 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 Australia IMI+
- MSCI South Africa IMI
- MSCI EFM Africa
- MSCI Japan IMI
- MSCI China A International
- MSCI Hong Kong IMI
- MSCI Malaysia IMI
- MSCI Singapore IMI
- MSCI World IMI
- MSCI Emerging Markets IMI
- MSCI Australia 200
- MSCI Switzerland IMI +
- MSCI Mexico IMI
- MSCI Chile IMI
- MSCI Brazil IMI
- MSCI China A
- MSCI IMI ACWI
- MSCI ESG Ratings covers over 85% of market value of a widely used global fixed income benchmark, including:
 - Approximately 95% 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 85% of global high yield

Appendix 2: Eligible Asset Types

MSCI ESG Research generally conducts ESG assessments at the issuer level. Where an asset has exposure to an underlying issuer, we attempt to map the ESG characteristics of that issuer. For instance, we would map issuer analysis to both a bond and to a derivative based on that bond, to the extent possible. We do not, however, map in cases where there is exposure to multiple underlying issuers, such as index futures. Following is a list of asset types that are eligible for ESG coverage. Asset types outside of this list are not included in MSCI ESG Fund Ratings analysis:

| Asset Type | | |
|-----------------------------|----------------------------------|--------------------------|
| Agency Security | Depository Receipt | Option on Future |
| American Depository Receipt | Equity Future | Preference Shares |
| Bank Loan | Equity Option | Preferred Security |
| Bond Future | Equity Warrant | Provincial Bond |
| Certificate | Global Depository Receipt | Real Estate Invst. Trust |
| Commercial Paper | Government Debt | Rights |
| Common Shares | International Depository Receipt | Supranational |
| Convertible Bond | Limited Partnership | Tracking Instrument |
| Convertible Note | Loan | Treasury Bill |
| Corporate Debt | Municipal bond | Units |

Appendix 3: Excluded Asset Types

Some asset types are out of scope for ESG analysis. They are removed from a fund’s holdings, prior to calculating both coverage and ESG analysis, so that the results are reflective only of the portion of the fund relevant to ESG considerations. Following is a list of asset types that are removed prior to calculating fund results:

| Asset Type | | |
|---------------|------------------|--------------------|
| Cash | Cash Equivalent | FX Forward |
| Cash 120 days | Cash Options | Interest Rate Swap |
| Cash 30 days | Currency | Time/Term Deposit |
| Cash 60 days | Currency Future | |
| Cash 90 days | Foreign Exchange | |

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| São Paulo | + 55 11 3706 1360 |
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EUROPE, MIDDLE EAST & AFRICA

| | |
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ASIA PACIFIC

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* = toll free

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