MORNINGSTAR | SUSTAINALYTICS

The ESG Risk Ratings for Funds

Methodology: Version 4.0

March 2025

About Morningstar Sustainalytics

Morningstar Sustainalytics is a leading ESG research, ratings, and data firm that supports investors around the world with the development and implementation of responsible investment strategies. For 30 years, the firm has been at the forefront of developing high-quality, innovative solutions to meet the evolving needs of global investors. Today, Morningstar Sustainalytics works with hundreds of the world's leading asset managers and pension funds who incorporate ESG and corporate governance information and assessments into their investment processes. The firm also works with hundreds of companies and their financial intermediaries to help them consider ESG Risk in policies, practices, and capital projects. For more information, visit www.sustainalytics.com.

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The ESG Risk Ratings for Funds

March 2025

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Morningstar ESG Risk Ratings were introduced in 2016 to help investors assess environmental, social, and governance (ESG) factors in portfolios. The rating evaluates the financially material ESG risks of a fund in comparison to similar funds. In late 2021, the methodology was updated to include Sustainalytics' Country Risk Ratings, which assess sovereign risks related to a country's socioeconomic well-being and its ability to manage resources sustainably.

Highlights

- Morningstar ESG Risk Ratings are determined using bottom-up assessments of the underlying holdings within a portfolio, underpinned by Sustainalytics' methodologies for assessing corporate and sovereign ESG risk.
- The rating, based on Morningstar's portfolio holdings database, is expressed as 1 to 5 'globes', with higher globe numbers indicating lower ESG risks.
- The rating is relative to other funds within the same Morningstar Global Category:
  - Funds in different categories may receive different ratings despite having varying levels of ESG risk.

INTRODUCTION

Scope and Limitations

Keeping pace with the changing landscape

In 2016, Morningstar released the Morningstar ESG Risk Ratings to help investors evaluate portfolios on environmental, social, and governance factors. At present, the rating is considered a measure of the financially material ESG risks in a fund when compared with similar funds. The methodology was updated in late 2021 to incorporate **Sustainalytics' Country Risk Ratings**,[1] which assess the risks to a sovereign entity's socioeconomic well-being by combining an assessment of the government entity's current stock of capital with an assessment of its ability to manage the wealth in a sustainable manner. The rating is calculated for managed products and indexes using Morningstar's portfolio holdings database.

For each fund that is eligible for a Morningstar ESG Risk Rating, the rating is expressed as 1 to 5 'globes', whereby a higher number of globes indicates that the portfolio has lower ESG Risk. Notably, the number of globes a fund receives is determined relative to other funds in the same Morningstar Global Category. This means that a fund could have more ESG risk than another fund yet still receive a better rating if those funds are in different global categories, with their own unique qualification of what is a relatively low or relatively high amount of ESG risk.

RATING INPUTS

The Morningstar ESG Risk Rating is calculated using **Sustainalytics' ESG Risk Ratings** for corporate issuers and Sustainalytics' Country Risk Ratings for sovereign issuers and is based on historical holdings.

Input 1: ESG Risk Ratings

Three checks in place to validate coverage to provide these ratings

Sustainalytics' ESG Risk Ratings measure the degree to which a company's economic value (enterprise value) is at risk driven by ESG factors or, more technically speaking, the magnitude of a company's unmanaged ESG risks. The rating provides investors with a signal that reflects to what degree their investments—single assets or portfolios—are exposed to ESG risks that are not sufficiently managed by companies.

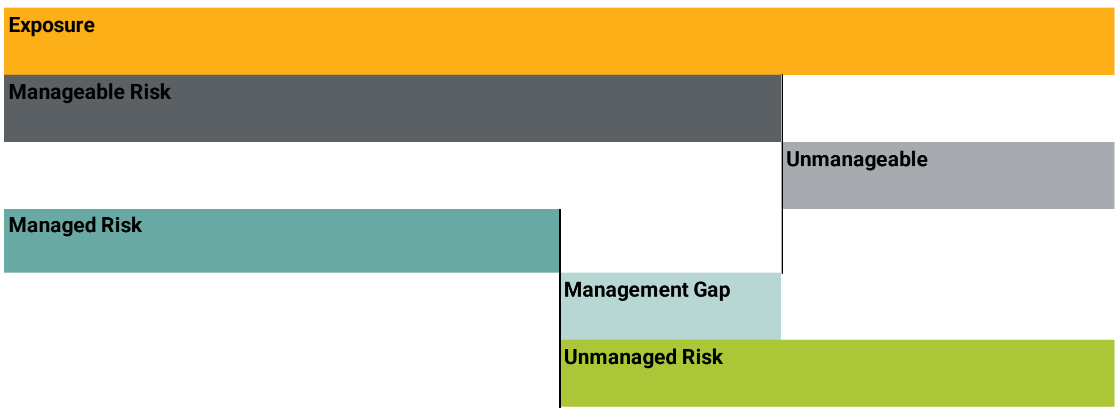
The overall unmanaged risk is measured by evaluating the company's **ESG Exposure** to and **ESG Management** of material ESG issues.

For each issue, exposure can be broken between two types of risk, Manageable and Unmanageable risks.

- Unmanageable risks are those risks that are outside the boundaries of a company management's control based on the assumption that the company continues its inherent business—that is, doesn't fundamentally change what it is doing. For the portion that is manageable, a management assessment is applied based on the strength of company commitments, actions, and outcomes that demonstrate how well a company is managing the ESG exposure.

- The portion of manageable risk that is managed is considered Managed Risk, and the portion that is not managed is a Management Gap. Any risk to an ESG issue that is not properly managed by the company or that is unable to be managed by the company is considered Unmanaged Risk, as illustrated by Exhibit 1. The resulting measure of risk for each issue is summed to provide one score that represents the company's overall ESG risk.

Exhibit 1: Combining Exposure and Management to Determine Unmanaged Risk



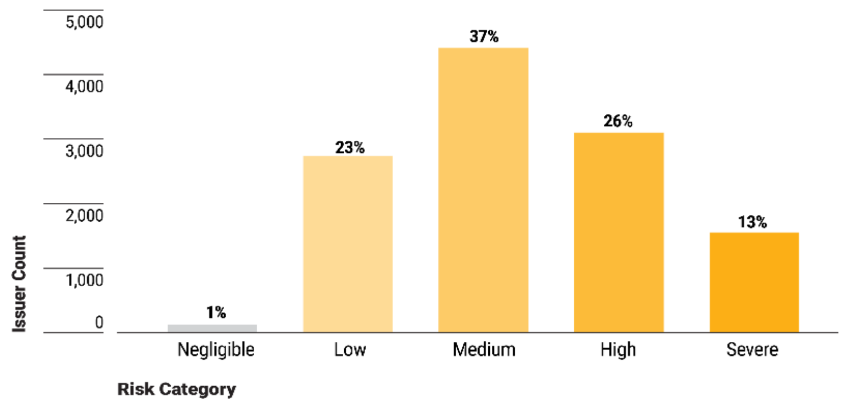
Source: Morningstar Sustainalytics

Synthetic ETFs are out of scope for ESG Risk Ratings, and Money Market Funds are rarely eligible

The ESG Risk Ratings are considered an absolute risk assessment, which means that the output is comparable across sectors, industries, and subindustries as opposed to relative risk assessments, which calculate performance relative to peers and which may not be directly comparable to nonpeers. Based on the Unmanaged Risk scores, corporate entities are assigned to one of five ESG risk categories: Negligible, Low, Medium, High, and Severe.

Company scores are dispersed across these categories when looking at Sustainalytics' global universe of over 12,000 companies. As Exhibit 2 shows, Medium risk (37%) is the most common risk category, with a moderate skew toward High risk (26%) and Severe risk (13%).

Exhibit 2: ESG Risk Ratings Category Distribution



Source: Morningstar Sustainalytics

Input 2: Country Risk Ratings

Sustainalytics' Country Risk Ratings assess the risks to a sovereign entity's socioeconomic well-being by combining an assessment of the government entity's current stock of capital with an assessment of its ability to manage the wealth in a sustainable manner. To quantify the amount of risk, the rating combines two dimensions: **Wealth** and **ESG Performance**.

ESG Risk Ratings and Country Risk Ratings are based on similar principles

Wealth reflects the vulnerability of a country in relation to ESG risks. It is measured as the value of assets within a country, as calculated by the World Bank. The higher the Wealth of a country, the lower its vulnerability to ESG risks. The assets can be organized according to four distinct stocks of wealth: Natural Capital, Produced Capital, Human Capital, and Institutional Capital.

- Natural Capital is the stock of natural resources that provides inputs into economic activity as well as the ecological services upon which an economy depends.
- Produced Capital includes the stock of infrastructure, machinery, buildings, equipment, residential and non-residential urban land, and so on that is produced through the economic activity of a region.
- Human Capital includes the stock of knowledge and skills among economic participants.
- Institutional Capital includes the social and institutional infrastructure that enables the productive functioning of a society and economy.

ESG Performance assesses how well a country is managing ESG key factors

ESG Performance is an assessment of how well a country is managing key environmental, social and governance factors. It provides an indication on the direction of the region's future wealth, whereby strong ESG performance indicates that wealth stocks are likely to improve, while weak ESG performance indicates that wealth stocks are likely to deteriorate.

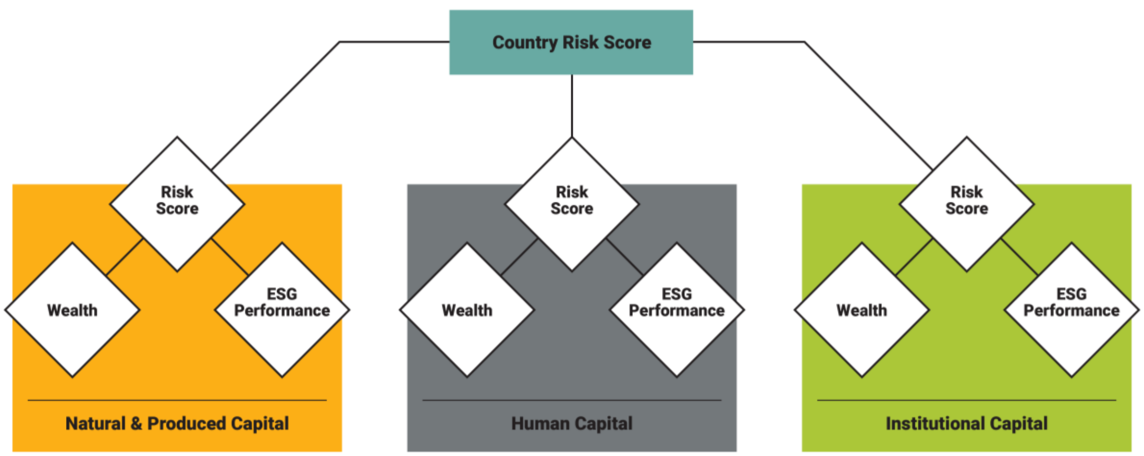
ESG Performance for each capital is determined using socioeconomic indicators, analysis of trends, and assessments of any significant events that have occurred within the country.

As a starting point to determining the Country Risk Rating, the scores for Wealth and ESG Performance for each capital are averaged together to determine risk scores. Next, the risk scores for each capital are combined in a weighted sum to arrive at the overall risk score, which is its Country Risk Rating, as showcased by Exhibit 3. Based on the overall risk scores, sovereign issuers are assigned to one of five ESG risk categories: Negligible, Low, Medium, High, and Severe.

Morningstar Sustainalytics' Country Risk Ratings

A country's long-term prosperity influences its ability to service debt and supports the growth of businesses within its borders. Traditional sovereign credit assessments can be enhanced with additional insights beyond macro-economic analysis.[2]

Exhibit 3: Combining Wealth and ESG Performance Scores to Determine Country Risk

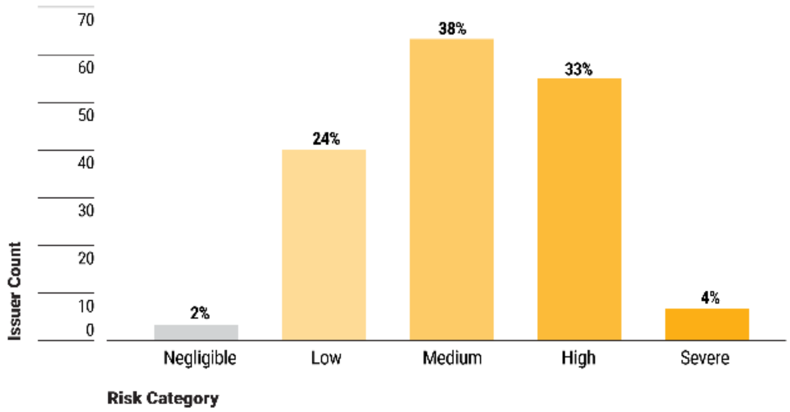


Source: Morningstar Sustainalytics

Leveraging the Country Risk Scores and Wealth offers a more complete picture of ESG risk

Country Risk Ratings are dispersed across these categories when looking at Sustainalytics' global universe of 169 countries. Medium risk (38%) and High risk (33%) are the most common risk categories, as depicted in Exhibit 4 below.

Exhibit 4: Country Risk Ratings Category Distribution



Source: Morningstar Sustainalytics

RATING CALCULATION

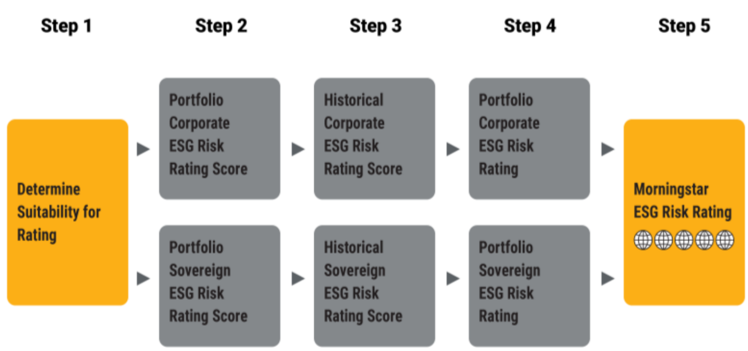
A five-step process to derive the Morningstar ESG Risk Rating

The **Morningstar ESG Risk Rating** is the result of a five-step process. First, we identify which portfolio holdings are potentially exposed to material ESG risks and which holdings fall under the corporate or sovereign risk ratings frameworks. Next, we derive the **Portfolio Corporate ESG Risk Score** and **Portfolio Sovereign ESG Risk Score** for every portfolio within the trailing 12 months. We then use these scores to derive a respective **Historical Corporate ESG Risk Score** and **Historical Sovereign ESG Risk Score**. A **Portfolio Corporate ESG Risk Rating** and **Portfolio Sovereign ESG Risk Rating** are determined by its respective historical scores relative to its **Morningstar Global Category**[3]. Corporate scores and ratings are derived separate from the sovereign scores and ratings using the same methodology in parallel, as depicted in Exhibit 5 below.

ESG Risk and Country Risk Ratings are comparable, but they are not interchangeable

Finally, the Corporate and Sovereign Rating are combined proportional to the relative contribution of the corporate and sovereign positions and rounded to the nearest whole number to derive the Morningstar ESG Risk Rating.

Exhibit 5: Morningstar ESG Risk Rating Calculation Steps



Source: Morningstar Sustainalytics

Determine Suitability for Rating

Identifying whether the fund is suitable for a rating

The initial step of the process is to identify whether the fund is suitable for a rating. This assessment is made by first identifying which portion of the fund's holdings are potentially exposed to ESG risk, known as Qualified Holdings. Next, as a subset of Qualified Holdings, the holdings deemed eligible to contribute a measure of risk under the Corporate or Sovereign Risk Ratings framework are identified. These are known as Eligible Holdings since they are eligible to contribute to the Morningstar ESG Risk Rating.

Qualified Holdings

Qualified Holdings are those holdings in a portfolio that we consider in scope for a potential ESG risk assessment. This does not mean that Sustainalytics currently calculates a holdings-level rating for all qualified holding types; however, it does mean that it could one day calculate a rating for it since there is material ESG risk within that holding. Qualified Holdings include equities, fixed-income instruments, commodities, real estate, and alternatives. Excluded from this list are short positions, cash and currency, as well as derivatives and synthetic holdings.

Qualified holdings are security types carrying ESG risk and made of long positions

There are three types of qualified holdings according to Morningstar's classification system: Corporate, sovereign, and 'other'. Securities deemed to:

- Carry corporate ESG risk include equities, fixed-income securities issues by corporate entities, select securitized debt, and supranational entities.
- Carry sovereign ESG risk include fixed-income securities issues by government entities and select securitized debt.
- Carry 'other' ESG risk include municipal bonds, commodities, real estate, alternative investment types, and any other securities considered to carry intrinsic ESG risk which are not already classified as corporate or sovereign.

Eligible Holdings

Eligible holdings are those in which a risk ratings framework exists and therefore can potentially contribute a measure of risk toward the Morningstar ESG Risk Rating. Holdings classified as corporate or sovereign are considered eligible to contribute a measure of risk toward the overall rating. Each holding can only contribute an ESG Risk Rating or a Country Risk Rating, not both.

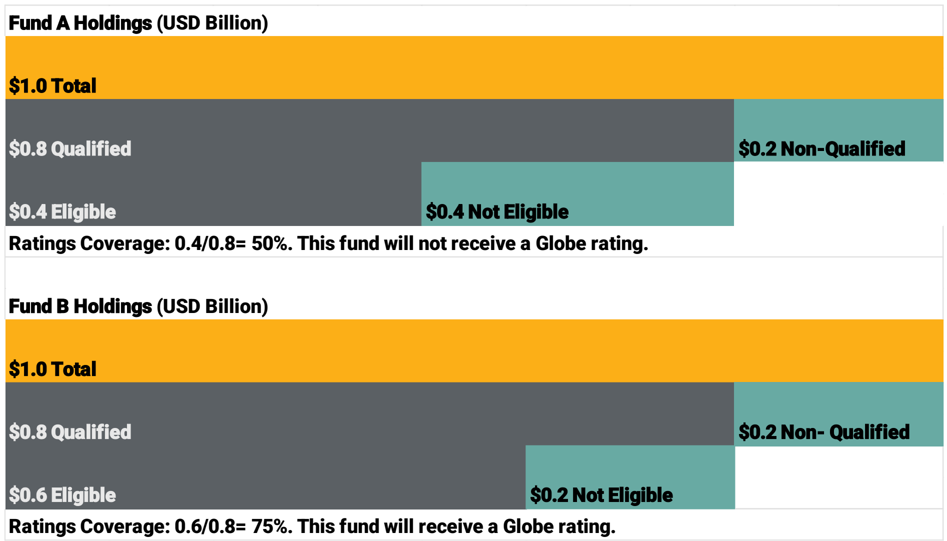
Coverage Requirement Based on Eligible Holdings

The distinction between Qualified and Eligible Holdings in a fund is important because we want to avoid cases where a large portion of the fund's ESG risk is not rated by either the corporate or sovereign risk rating frameworks (hence, not eligible). Once the portion of Qualified Holdings and Eligible Holdings in the fund are determined, the value of Eligible Holdings is divided by the value of Qualified Holdings, with a requirement that at least 67% of the fund's Qualified Holdings are eligible to be rated. In cases where less than 67% of the Qualified Holdings are eligible, the fund is considered unsuitable for a Morningstar ESG Risk Rating and no further steps will be performed.

Municipal bonds, and commodities which carry ESG risk are ineligible due to lack of risk- rating framework

Exhibit 6 provides an example of two funds, Fund A and Fund B, with equal portions of Qualified Holdings. Fund A will not have a Morningstar ESG Risk Rating because only 50% of the fund's Qualified Holdings are considered eligible to be rated by the ESG Risk Ratings or Country Risk Ratings. Fund B could have a Morningstar ESG Risk Rating (Note: there could be other separate conditions that exclude the fund from having a rating), based on the fact that 75% of the fund's Qualified Holdings are considered eligible to be rated by the ESG Risk Ratings or Country Risk Ratings.

Exhibit 6: Example of Determining Rating Suitability



Source: Morningstar Sustainalytics

A consolidated list of all coverage requirements and other rating requirements is included in the appendix of this document.

Rescaling Holdings

All Eligible and Qualified Holdings are rescaled to 100% prior to a portfolio's exposure to corporate, sovereign, and other ESG risk being calculated.

Portfolio Corporate ESG Risk Score and Portfolio Sovereign ESG Risk Score

The second step is to calculate the **Portfolio Corporate ESG Risk Score** and the **Portfolio Sovereign ESG Risk Score** for each portfolio. In some cases, only one of the corporate and sovereign scores is calculated because the portfolio does not have sufficient sovereign or corporate exposure within the holdings.

Morningstar Portfolio Corporate and Sovereign ESG Risk Scores

Eligible assets are qualified assets eligible for coverage under existing risk-ratings framework

The Morningstar Portfolio Corporate ESG Risk Score and Portfolio Sovereign ESG Risk Score are each an asset-weighted average of Sustainalytics' company-level ESG Risk Rating and Sustainalytics' Country Risk Rating, respectively:

[C.1]

$$Portfolio\ Corporate\ ESG\ Risk\ Score = \sum_{i=1}^{n} ESGRisk_i \times RescaledHoldingsWeight_i$$

[C.2]

$$Portfolio\ Sovereign\ ESG\ Risk\ Score = \sum_{i=1}^{n} CountryRisk_i \times RescaledHoldingsWeight_i$$

For holdings 1 to n where 'RescaledHoldingWeight' is not null.

Most scores range from 0 to 50, assigned to five risk categories

Both scores are rendered on an open-ended scale, where lower scores are better, using an asset-weighted average of all covered securities. In practice, most scores range from 0 to 50, assigned to five risk categories as shown in Exhibit 7.

Exhibit 7: Summary of Score Range assigned to Risk Categories

Score Range	Risk Category
0-9.99	Negligible Risk
10-19.99	Low Risk
20-29.99	Medium Risk
30-39.99	High Risk
>40	Severe Risk

Source: Morningstar Sustainalytics

Coverage Requirement Based on Holdings-Level Data Coverage

67% of assets in the portfolio holdings identified as corporate ESG risk need to have company ESG Risk Ratings

For the ESG Risk Scores to act as a representation of the corporate and sovereign portions of a portfolio, we require that at least 67% of the long corporate and 67% of the long sovereign positions have holdings-level data. This means that 67% of assets in the portfolio holdings identified as corporate ESG risk need to have company ESG Risk Ratings to calculate the Corporate ESG Risk Score. Likewise, 67% of assets in the portfolio holdings identified as sovereign ESG risk need to have country ESG Risk Ratings to calculate the Sovereign ESG Risk Score.

Historical Corporate ESG Risk Score and Historical Sovereign ESG Risk Score

The third step is to calculate the Historical Corporate ESG Risk Score and Historical Sovereign ESG Risk Score. These are a weighted average of the trailing 12 months of Morningstar Portfolio Corporate and Sovereign ESG Risk Scores, respectively. Historical scores are not equal-weighted; rather, more-recent portfolios are weighted more heavily than more-distant portfolios:

This method gives more weight to data, ensuring ESG scores reflect trends while adapting

[C.3]

$$Historical\ Corporate\ ESG\ Risk\ Score = \frac{\Sigma_{i=0}^{11}(12-i) \times Portfolio_{Corporate_{ESG\ Risk_i}}}{\Sigma_{i=0}^{11}\ i\ +1}$$

[C.4]

$$Historical\ Sovereign\ ESG\ Risk\ Score = \frac{\Sigma_{i=0}^{11}(12-i) \times Portfolio\_Sovereign\_{ESG\ Risk}_{i}}{\Sigma_{i=0}^{11}\ i\ + 1}$$

Where:

$$i = number\ of\ months\ from\ present$$

Combining the trailing 12 months of corporate or sovereign scores adds stability while still reflecting portfolio managers' current decisions by weighting the most recent portfolio scores more heavily.

In cases where 12 months of consecutive data are not available, a historical score will still be derived based on the most recent consecutive history of available Portfolio Corporate and Sovereign ESG Risk Scores.

Portfolio Corporate ESG Risk Rating and Portfolio Sovereign ESG Risk Rating

Morningstar Portfolio Corporate and Sovereign ESG Risk Rankings and Ratings

Lower risk results in a higher ESG Risk rating

The fourth step is to calculate the Portfolio Corporate ESG Risk Rating and Portfolio Sovereign ESG Risk Rating by ranking the respective Corporate and Sovereign Historical ESG Risk Scores of all scored funds within a Morningstar Global Category. All scored funds within a Morningstar Global Category are ranked based on a normal distribution, and each receives a rating from 1 to 5, with 5 being the lowest risk (see Exhibit). For each Global Category of funds, the median scoring portfolio receives a '3' rating. Notably, there is a requirement that the Global Category has at least 30 portfolios with respective Historical Corporate ESG Risk Scores or Historical Sovereign ESG Risk Scores for funds in that category to be assigned a score. Lower risk results in a higher ESG Risk rating.

Exhibit 8: Summary of Corporate and Sovereign ESG Risk Ratings Distribution

Distribution	Rating
Best 10 % (Lowest Risk)	5
Next 22.5 %	4.0
Next 35 %	3.0
Next 22.5 %	2
Worst 10 % (Highest Risk)	1

Source: Morningstar Sustainalytics

Minimum Distribution Requirement

This step ranks portfolios within a Morningstar Global Category based on their Historical ESG Risk Scores

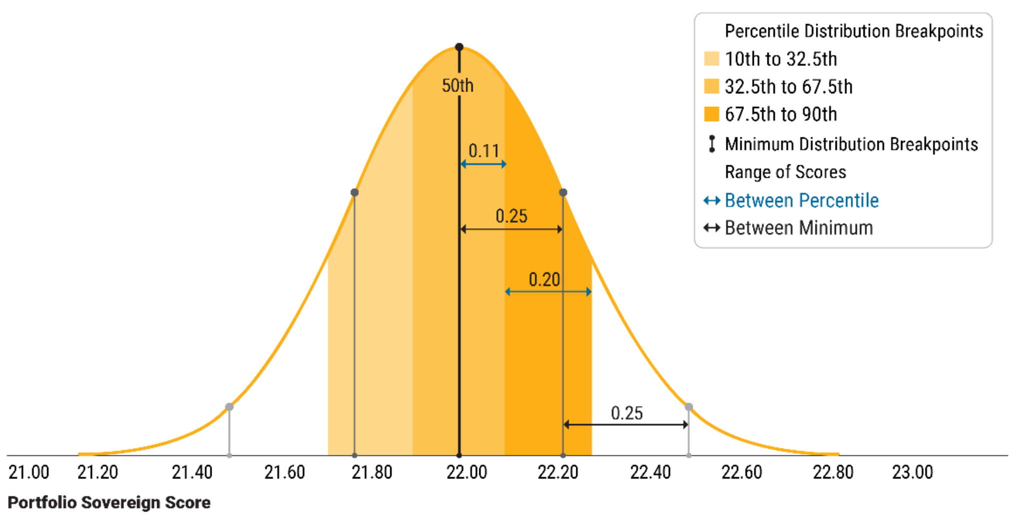
The breakpoints used for the 1 to 5 scale can deviate from the percentile breakpoints outlined in Exhibit 8 in cases where a Global Category's Historical Corporate ESG Risk Scores or Historical Sovereign ESG Risk Scores are not well distributed. Scores must be sufficiently different from the median score to be assigned an ordinal rating of 2 or 4 and must be sufficiently different from the 2-3 breakpoint or 3-4 breakpoint to achieve an ordinal rating of 1 or 5, respectively.

All portfolios within some peer groups may receive the same Corporate or Sovereign Rating

The minimum difference between the median score and each subsequent breakpoint is set to 0.25 for sovereigns and 0.40 for corporates. This requirement guarantees a minimum distribution of scores within each rating band and prevents insignificantly small differences in scores from resulting in different ratings. In practice, this can mean that all portfolios within some peer groups may receive the same Corporate or Sovereign Rating.

Exhibit 9 illustrates the application of the minimum 0.25 distribution requirements for sovereign scores. In this example, the 50th percentile score for this global category of funds is 22.00. The colored shading depicts where the breakpoints would fall under a normal distribution (see Exhibit 8) without any minimum distribution requirement. Without this requirement, the distribution of scores between the 50th percentile and 2-3 breakpoint has a range of 0.11, while the distribution of scores between the 2-3 breakpoint and 1-2 breakpoint has a range of 0.20. However, with the minimum distribution requirements, the breakpoint between a 3 and a 2 rating shifts from 22.11 to 22.25, and the breakpoint between a 3 and a 4 rating shifts from 22.31 to 21.75, guaranteeing a range in scores of at least 0.25 between each breakpoint.

Exhibit 9: Minimum Distribution by Breakpoint



Source: Morningstar Sustainalytics

Historical Corporate and Sovereign ESG Risk Scores of 30 or Higher

This rule ensures that funds with higher ESG risks are not assigned overly favorable ratings

To avoid cases where funds with significant ESG risks receive overly favorable ratings, there is a requirement that a fund's Historical Corporate or Sovereign ESG Risk Score cannot exceed certain values to receive positive scores:

- Portfolios with Historical Corporate or Sovereign ESG Risk Scores ranging from 30 to 34.99 can receive no better than a respective Corporate or Sovereign ESG Risk Rating of 3.
- Portfolios with Historical Corporate or Sovereign ESG Risk Scores ranging from 35 to 39.99 can receive no better than a respective Corporate or Sovereign ESG Risk Rating of 2.
- Portfolios with Historical Corporate or Sovereign ESG Risk Scores of 40 or higher receive a respective Corporate or Sovereign ESG Risk Rating of 1.

Morningstar ESG Risk Rating

Combining the Portfolio Corporate ESG Risk Rating and Portfolio Sovereign ESG Risk Rating

The fifth and final step is to calculate the Morningstar ESG Risk Rating by combining the Portfolio Corporate ESG Risk Rating and Portfolio Sovereign ESG Risk Rating proportional to the relative contribution of its (long only) corporate and sovereign positions.

The **Portfolio ESG Risk Rating Corporate Contribution Percent** and **Portfolio ESG Risk Rating Sovereign Contribution Percent** each represent the percentage weight between the corporate and sovereign portions of a portfolio.

[C.5]

$$Morningstar\ ESG\ Risk\ Rating = (Corporate\ ESG\ Risk\ Rating * Corporate\ Contribution\ Percent) + (Sovereign\ ESG\ Risk\ Rating * Sovereign\ Contribution\ Percent)$$

Higher ESG Risk Ratings represent lower ESG risk relative to a fund's peer group

The resulting value is rounded to the nearest whole number, which denotes the Morningstar ESG Risk Rating and is equivalent to the number of globes a fund receives. Higher ESG Risk Ratings represent lower ESG risk relative to a fund's peer group, as showcased by Exhibit 10.

Exhibit 10: Morningstar ESG Risk Rating Categories

Combined Corporate and Sovereign Rating	Rating Icon
<1.5	
<2.5 AND >=1.5	
<3.5 AND >=2.5	
<4.5 AND >=3.5	
>=4.5	

Source: Morningstar Sustainalytics

This step combines the Portfolio Corporate and Sovereign ESG Risk Ratings

Exhibit Exhibit 11 provides an example of the aggregation of the Morningstar ESG Risk Rating for three separate funds, which have identical Portfolio Corporate and Portfolio Sovereign ESG Risk Ratings but receive different Morningstar ESG Risk Ratings because of differences in the corporate and sovereign contribution.

Exhibit 11: Example of Aggregating Portfolio Corporate and Sovereign ESG Risk Ratings

Corporate ESG Risk Rating	Corporate Contribution	Sovereign ESG Risk Rating	Sovereign Contribution	Morningstar ESG Risk Rating
4	50%	2	50%	3
4	50%	2	50%	4
4	50%	2	50%	2

Source: Morningstar Sustainalytics

An almost perfect normal distribution centred around a 3 rating

Although the distribution may vary within certain categories, across all in-scope managed portfolios, Morningstar ESG Risk Ratings are dispersed across the five rating categories following an almost perfect normal distribution centred around a 3 rating.

Morningstar Sustainalytics' ESG Risk Ratings 2021 offer unique insights into ESG risks.[4]

Coverage Requirement for Both Corporate and Sovereign Ratings

Portfolios with a greater share of one type of holding will have their ESG risk rating adjusted accordingly

A portfolio must have both a Portfolio Corporate ESG Risk Rating and a Portfolio Sovereign ESG Risk Rating to receive a Morningstar ESG Risk Rating, unless the portfolio is predominately exposed to only corporate or sovereign holdings. A portfolio that receives a Sovereign ESG Risk Rating but not a Corporate ESG Risk Rating may still receive a Morningstar ESG Risk Rating if the corporate portion of the qualified holdings is less than 5%. Similarly, a portfolio that receives a Corporate ESG Risk Rating but not a Sovereign ESG Risk Rating may still receive a Morningstar ESG Risk Rating if the sovereign portion of the qualified holdings is smaller than 5%.

Frequency of Calculations

Issuing the Morningstar ESG Risk Rating monthly

The Morningstar ESG Risk Rating will be issued monthly, one month and six business days after the reported as-of date for company and country data from Sustainalytics.

The Portfolio Corporate and Sovereign ESG Risk Scores, Historical Corporate and Sovereign Scores, and Portfolio Corporate and Sovereign ESG Risk Ratings are issued as part of the same monthly cadence.

Portfolios will receive a rating one month and six business days after their reported as-of date based on the most recent portfolio.

If an updated portfolio has not yet been received by the rating date, the most recent portfolio available will be used for score and ranking, provided the portfolio is less than 276 days old.

APPENDIX

Tables & Figures

The following example uses a simplified portfolio of 10 positions. It illustrates a portfolio that would have previously not received a Morningstar ESG Risk Rating.

Determine Suitability for Rating

Qualified Holdings include equities, fixed-income instruments, commodities, real estate, and alternatives

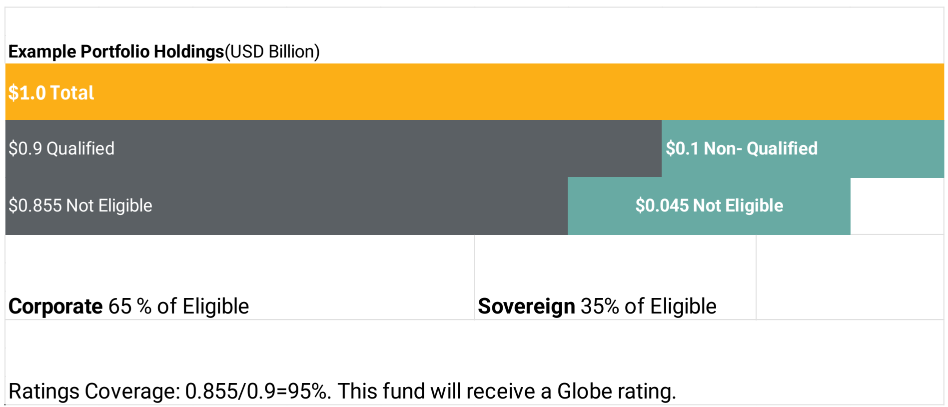
Qualified Holdings are identified and rescaled to 100%. Qualified Holdings include equities, fixed-income instruments, commodities, real estate, and alternatives. Excluded from this list are short positions, cash, and currency, as well as derivatives and synthetic holdings.

Three ESG risk types: Corporate ESG risk, sovereign ESG risk and other ESG risk

Morningstar breaks out Qualified Holdings into three ESG risk types—corporate ESG risk, sovereign ESG risk and other ESG risk.

Exhibit 12 illustrates identifying and classifying the qualified holdings of the portfolio.

Exhibit 12: Example of Determining Rating Suitability



Source: Morningstar Sustainalytics

Exhibit 13 provides an example of how holdings weights are rescaled to remove cash because it is not a Qualified Holding type (it has no material ESG risk). In this example, 90% of holdings are qualified for a rating, which exceeds the 67% coverage requirement in order to calculate a rating.

Rescaling holding weights to adjust for ineligible holdings

The holding weights are further rescaled to adjust for ineligible holdings. Holdings classified as corporate or sovereign are considered eligible to contribute a measure of risk toward the overall rating, while holdings that are classified as 'other' are not considered eligible. This means that Alternative A holding is qualified but not eligible, and therefore its proportional weight is redistributed among the remaining holdings.

Exhibit 13: Example Portfolio - Qualified Holdings Rescaled

Holding	Qualified Holding Type	Percentage of Portfolio	Percentage of Portfolio Qualified Holdings (rescaled)
Cash	___	10	___
Equity A	Corporate	13,5	15,0
Equity B	Corporate	13,5	15,0
Equity C	Corporate	10,8	12
Corporate Bond A	Corporate	9,0	10,0
Corporate Bond B	Corporate	9,0	10,0
Sovereign Bond A	Sovereign	13,5	15
Sovereign Bond B	Sovereign	10,8	12,0
Sovereign Bond C	Sovereign	5,4	6,0
Alternative A	Other	4,5	5
Total		**100%**	**100%**

Source: Morningstar Sustainalytics

Portfolio Corporate ESG Risk Score and Portfolio Sovereign ESG Risk Score

As showed by the examples in Exhibit 14a and 14b, the Morningstar Portfolio Corporate ESG Risk Score and Portfolio Sovereign ESG Risk Score are each an asset-weighted average of Sustainalytics' company-level ESG Risk Rating and Sustainalytics' Country Risk Rating, respectively.

Exhibit 14a: Example Portfolio -Portfolio Corporate ESG Risk Score

Eligible Holdings	Percentage of Eligible Portfolio Assets	ESG Risk Rating	Percentage of Covered Corporate	Percentage of Covered Corporate x ESG Risk Rating	Corporate ESG Risk Score
Equity A	15,79	22	28,85	6,35	
Equity B	15,79	21	28,85	6,06	
Equity C	12,63	20	23,08	4,62	20,67
Corporate Bond A	10,53	19	19,23	3,65	
Corporate Bond B	10,53	Not covered	0	0	

Source: Morningstar Sustainalytics

In this example, not every corporate holding has coverage of a Sustainalytics ESG Risk Rating, but there is still more than 67% of corporate securities covered, a coverage requirement to derive the final respective Corporate Rating.

Exhibit 24b: Example Portfolio - Portfolio Sovereign ESG Risk Score

Eligible Holdings	Percentage of Eligible Portfolio Assets	Country Risk Rating	Percentage of Covered Corporate	Percentage of Covered Corporate x Country Risk Rating	Sovereign ESG Risk Score
Sovereign Bond A	15,79	17	45,45	7,73	
Sovereign Bond B	12,63	19	36,36	6,91	17,55
Sovereign Bond C	6,32	16	18,18	2,91	

Source: Morningstar Sustainalytics

Historical Corporate ESG Risk Score and Historical Sovereign ESG Risk Score

The Morningstar Historical Corporate ESG Risk Score and Historical Sovereign ESG Risk Score are each a weighted average of the trailing 12 months of Morningstar Portfolio Corporate and Sovereign ESG Risk Scores, respectively. Historical scores are not equal-weighted; rather, more-recent portfolios are weighted more heavily than more-distant portfolios, as illustrated by Exhibit 15a and 15b.

Exhibit 35a: Example Portfolio - Historical Corporate ESG Risk Score

Calculation Month	Corporate ESG Risk Score	Weighting %	Historical Corporate ESG Risk Score
Most Recent	20,67	15,38	
(-1 month)	20,45	14,1	
(-2 month)	20,55	12,82	
(-3 month)	19,88	11,54	
(-4 month)	20,02	10,26	
(-5 month)	20,85	8,97	
(-6 month)	19,23	7,69	20,2
(-7 month)	18,7	6,41	
(-8 month)	20,25	5,13	
(-9 month)	20,47	3,85	
(-10 month)	19,78	2,56	
(-11 month)	20,97	1,28	

Source: Morningstar Sustainalytics

Exhibit415b: Example Portfolio - Historical Sovereign ESG Risk Score

Calculation Month	Sovereign ESG Risk Score	Weighting %	Historical Sovereign ESG Risk Score
Most Recent	17,55	15,38	
(-1 month)	18,5	14,1	
(-2 month)	17,75	12,82	
(-3 month)	17,23	11,54	
(-4 month)	17,67	10,26	
(-5 month)	17,47	8,97	
(-6 month)	17,15	7,69	17,58
(-7 month)	19,92	6,41	
(-8 month)	17,38	5,13	
(-9 month)	17,46	3,85	
(-10 month)	17,1	2,56	
(-11 month)	17,2	1,28	

Source: Morningstar Sustainalytics

Portfolio Corporate ESG Risk Rating and Portfolio Sovereign ESG Risk Rating

A portfolio's Corporate ESG Risk Rating and Sovereign ESG Risk Rating is its normally distributed ordinal corporate or sovereign score and descriptive rank relative to the portfolio's global category. The breakpoints for the 1-5 scale can vary in cases where a Global Category does not follow a normal distribution for its portfolios' Historical Corporate ESG Risk Scores or Historical Sovereign ESG Risk Scores.

Using Exhibits 16a and 16b, the Historical Corporate ESG Risk Score of 20.20 would receive a Portfolio Corporate ESG Risk Rating of 4, and the Historical Sovereign ESG Risk Score of 17.58 would receive a Portfolio Sovereign ESG Risk Rating of 2.

Exhibit 16a: Example Portfolio Corporate Ratings Breakpoints

Rating Breakpoint	Historical Corporate ESG Risk Score
4 to 5	18,63
3 to 4	22,6
50th Percentile	23,64
2 to 3	24,55

Source: Morningstar Sustainalytics

Exhibit 16b: Example Portfolio Sovereign Ratings Breakpoints

Sovereign Global Category Breakpoint	Portfolio Sovereign ESG Risk Rating Breakpoints	% of Portfolio Sovereign ESG Risk Scores
4 to 5	15,26	0,1
3 to 4	15,89	0,23
50th Percentile	16,34	0,5
2 to 3	17,09	0,23
1 to 2	19,38	0,1

Source: Morningstar Sustainalytics

Morningstar ESG Risk Rating

Morningstar assigns ESG Risk Ratings by combining a Portfolio Corporate ESG Risk Rating and Portfolio Sovereign ESG Risk Rating proportional to the relative weight of the (long only) corporate and sovereign positions, rounded to the nearest whole number.

Exhibit 17: Example Portfolio - Portfolio ESG Risk Rating

Corporate			Sovereign				
Contribution	Rating	Contribution x Rating	Contribution	Rating	Contribution x Rating	(Corporate Contribution xRating) + (Sovereign Contribution x Rating)	Portfolio ESG Risk Rating
0.65	4	2.6	0.35	2	0.7	3.3	

Source: Morningstar Sustainalytics

Rating Requirements Summary

The following coverage requirements are previously noted in the document but are summarized here for ease of reference.

Coverage Requirement Based on Eligible Holdings

Avoiding cases where a large portion of the fund's ESG risk is not rated by the corporate or sovereign risk rating frameworks

The distinction between Qualified and Eligible Holdings in a fund is important because we want to avoid cases where a large portion of the fund's ESG risk is not rated by either the corporate or sovereign risk rating frameworks (hence, not eligible).

Once the portion of Qualified Holdings and Eligible Holdings in the fund are determined, the value of Eligible Holdings is divided by the value of Qualified Holdings, with a requirement that at least 67% of the fund's Qualified Holdings are eligible to be rated. In cases, where less than 67% of the Qualified Holdings are eligible, the fund is considered unsuitable for a Morningstar ESG Risk Rating and no further steps will be performed.

Coverage Requirement Based on Holdings-Level Data Coverage

For the Corporate and Sovereign ESG Risk Scores to each act as a representation of the corporate and sovereign portions of a portfolio, we require that at least 67% of the long corporate and 67% of the long sovereign positions have holdings-level data. This means that 67% of assets in the portfolio holdings identified as corporate ESG risk need to have company ESG Risk Ratings to calculate the Corporate ESG Risk Score. Likewise, 67% of assets in the portfolio holdings identified as sovereign ESG risk need to have Country Risk Ratings to calculate the Sovereign ESG Risk Score.

Requirement for Both Corporate and Sovereign Ratings

A portfolio must have both a Portfolio Corporate ESG Risk Rating and a Portfolio Sovereign ESG Risk Rating to receive a Morningstar ESG Risk Rating, unless the portfolio is predominately exposed to only corporate or sovereign holdings. A portfolio that receives a Sovereign ESG Risk Rating but not a Corporate ESG Risk Rating may still receive a Morningstar ESG Risk Rating if the corporate portion of the qualified holdings is less than 5%. Similarly, a portfolio that receives a Corporate ESG Risk Rating but not a Sovereign ESG Risk Rating may still receive a Morningstar ESG Risk Rating if the sovereign portion of the qualified holdings is smaller than 5%.

Minimum Distribution Requirements

The minimum distance between breakpoints is set to 0.25 for sovereigns and 0.4 for corporates

The breakpoints for the 1-5 scale can vary in cases where a Global Category does not follow a normal distribution for its portfolios' Historical Corporate ESG Risk Scores or Historical Sovereign ESG Risk Scores. Scores must be sufficiently different from the median score to be assigned an ordinal rating of 2 or 4 and must be sufficiently different from the 2-3 breakpoint or 3-4 breakpoint to achieve an ordinal rating of 1 or 5, respectively. The minimum distance between breakpoints is set to 0.25 for sovereigns and 0.4 for corporates. This requirement prevents insignificantly small differences in scores from resulting in different ratings. In practice, this can mean that all portfolios within some peer groups may receive the same Corporate or Sovereign Rating.

Historical Corporate and Sovereign ESG Risk Scores of 30 or Higher

To avoid cases where funds with significant ESG risks receive overly favorable ratings, there is a requirement that a fund's Historical Corporate or Sovereign ESG Risk Score cannot exceed certain values to receive positive scores:

- Portfolios with Historical Corporate or Sovereign ESG Risk Scores ranging from 30 to 34.99 can receive no better than a respective Corporate or Sovereign Rating of 3.
- Portfolios with Historical Corporate or Sovereign ESG Risk Scores ranging from 35 to 39.99 can receive no better than a respective Corporate or Sovereign Rating of 2.
- Portfolios with Historical Corporate or Sovereign ESG Risk Scores of 40 or higher receive a respective Corporate or Sovereign Rating of 1.

Glossary of Terms

Eligible Holdings (for ESG Risk Rating)
For the ESG Risk Rating, the long positions in which a risk ratings framework exists and therefore can potentially contribute a measure of risk toward the rating. Holdings classified as corporate or sovereign are considered eligible to contribute a measure of risk toward the overall rating. Each holding can only contribute an ESG Risk Score or a Country Risk score, not both.

ESG Exposure
A measure of the extent to which a company is exposed to material ESG risks. Exposure can be considered as a sensitivity or vulnerability to ESG risks. It is one of two key dimensions in the ESG Risk Ratings.

ESG Management
A measure of a company's handling of material ESG issues through policies, programs, quantitative performance, and involvement in controversies, as well as its management of corporate governance. It is one of two key dimensions in the ESG Risk Ratings.

ESG Performance
A general term for the measurement of how well a government entity is managing on key environmental, social, and governance indicators. It provides an indication on the direction of the government entity's future wealth. It is one of two key dimensions in the Country Risk Ratings.

Historical Corporate ESG Risk Score
The Morningstar Historical Corporate ESG Risk Score is a weighted average of the trailing 12 months of Morningstar Portfolio Corporate ESG Risk Score. Historical portfolio scores are not equal-weighted; rather, more-recent portfolios are weighted more heavily than older portfolios. Combining the trailing 12 months of portfolio scores adds consistency while still reflecting portfolio managers' current decisions by weighting the most recent portfolio scores more heavily.

Historical Sovereign ESG Risk Score
The Morningstar Historical Sovereign ESG Risk Score is a weighted average of the trailing 12 months of Morningstar Portfolio Sovereign ESG Risk Score. Historical portfolio scores are not equal-weighted; rather, more-recent portfolios are weighted more heavily than older portfolios. Combining the trailing 12 months of portfolio scores adds consistency while still reflecting portfolio managers' current decisions by weighting the most recent portfolio scores more heavily.

Morningstar Global Category
The Morningstar Global Category assignments were introduced in 2010 to help investors search for similar investments domiciled across the globe. Global categories are assigned by Morningstar based on many factors, including but not limited to: familiarity with the strategy of the portfolio managers and fund family, the fund's Morningstar Retail category assignment, and a desire to portray the most accurate picture of economic exposure possible. Please refer to the Morningstar Global Category Classifications for more information.

Morningstar ESG Risk Rating
Morningstar assigns ESG Risk Ratings by combining a Portfolio Corporate ESG Risk Rating and Portfolio Sovereign ESG Risk Rating proportional to the relative weight of the (long only) corporate and sovereign positions, rounded to the nearest whole number. Historical Sovereign ESG Risk Scores and Historical Corporate ESG Risk Scores are ranked and rated separately to represent the ESG risk of the portfolio relative to its peers for its respective corporate and sovereign positions and then combined by their relative weights for the Morningstar ESG Risk Rating.

Portfolio Corporate ESG Risk Rating
Morningstar assigns Portfolio Corporate ESG Risk Ratings by ranking all scored funds within a Morningstar Global Category by their Historical Corporate ESG Risk Scores. The ranked funds are then divided into five groups, based on a normal distribution, and each receives a rating from High to Low. For each peer group, the median scoring portfolio receives a 3 rating. Ratings are assigned to other portfolios in the peer group to achieve a normal distribution, with an exception made for cases where the scores within the peer group are not meaningfully differentiated. In practice, this can mean that all portfolios within some peer groups may receive the same Corporate or Sovereign Rating. Please note that lower risk results in a higher rating. Higher ratings indicate that a fund is, on average, invested in fewer companies or sovereign debt with a high ESG risk under Sustainalytics' ESG Risk and Country Risk methodologies and therefore is exposed to less risk driven by E, S, or G factors.

Portfolio Corporate ESG Risk Score	The Morningstar Portfolio Corporate ESG Risk Score is an asset-weighted average of Sustainalytics' company-level ESG Risk Rating the Sustainalytics' company-level ESG Risk Rating measures the degree to which a company's economic value may be at risk driven by ESG factors. Like the ESG Risk Ratings, the Portfolio Corporate ESG Risk Score is rendered on a 0-100 scale, where lower scores are better, using an asset-weighted average of all covered securities. Morningstar determines whether each eligible portfolio holding can be classified under the corporate or sovereign framework. Each holding can only contribute an ESG Risk Rating or a Country Risk Rating, not both. To receive a Corporate ESG Risk Score, at least 67% of a portfolio's corporate assets under management (long positions only) must have a company ESG Risk Rating.
Portfolio ESG Risk Rating Corporate Contribution Percent	The percentage of the Portfolio ESG Risk Rating attributable to the Portfolio Corporate ESG Risk Score.
Portfolio Sovereign ESG Risk Rating	Morningstar assigns Portfolio Sovereign ESG Risk Ratings by ranking all scored funds within a Morningstar Global Category by their Historical Sovereign ESG Risk Scores. The ranked funds are then divided into five groups, based on a normal distribution, and each receives a rating from High to Low. For each peer group, the median scoring portfolio receives a 3 rating. Ratings are assigned to other portfolios in the peer group to achieve a normal distribution, with an exception made for cases where the scores within the peer group are not meaningfully differentiated. In practice, this can mean that all portfolios within some peer groups may receive the same Corporate or Sovereign Rating. Please note that lower risk results in a higher rating. Higher ratings indicate that a fund is, on average, invested in fewer companies or sovereign debt with a high ESG risk under Sustainalytics' ESG Risk and Country Risk methodologies and therefore is exposed to less risk driven by E, S, or G factors.
Portfolio Sovereign ESG Risk Score	The Morningstar Portfolio Sovereign ESG Risk Score is an asset-weighted average of Sustainalytics' Country Risk Rating. The Sustainalytics' Country Risk Rating measures the risk to a country's long-term prosperity and economic development by assessing its wealth and its ability to managing its wealth sustainably. Like the Country Risk Ratings, the Portfolio Sovereign ESG Risk Score is rendered on a 0-100 scale, where lower scores are better, using an asset-weighted average of all covered securities. Morningstar determines whether each eligible portfolio holding can be classified under the corporate or sovereign framework. Each holding can only contribute an ESG Risk Rating or a Country Risk Rating not both. To receive a Sovereign ESG Risk Score, at least 67% of a portfolio's sovereign assets under management (long positions only) must have a Country Risk Rating.
Portfolio ESG Risk Rating Sovereign Contribution Percent	The percentage of the Portfolio ESG Risk Rating attributable to the Portfolio Sovereign ESG Risk Score.
Qualified Holdings (for ESG Risk Rating)	For the ESG Risk Rating, the long positions considered in scope for potential ESG risk assessment. This does not mean that Sustainalytics currently calculates a holdings-level rating for all Qualified Holding types; however, it does mean that it could one day calculate a rating for it since there is material ESG risk within that holding. Qualified Holdings include equities, fixed-income instruments, commodities, real estate, and alternatives. Excluded from this list are short positions, cash, and currency, as well as derivatives and synthetic holdings.
Sustainalytics' Country Risk Ratings	Sustainalytics' ratings framework measures the risk to a country's long-term prosperity and economic development by assessing national wealth of a country and the ability to utilize and manage this wealth in an effective and sustainable manner.
Sustainalytics' ESG Risk Ratings	Sustainalytics' rating framework that measures the extent to which enterprise value is at risk, driven by environmental, social, and governance factors. The rating takes a two-dimensional approach. The exposure dimension measures a company's exposure to ESG risks, while the management dimension assesses a company's handling of these ESG risks. It is calculated as the difference between a company's overall ESG Exposure score and its overall Managed Risk score.

Wealth	A score that is based on the relative value of all the assets of worth within a region, including tangible and intangible assets. It is one of two key dimensions in the Country Risk Ratings.
ESG Risk Management Gap Score	Represents the total amount of risk the company could be managing but which it is not yet managing. It is calculated by subtracting the overall managed risk score from the overall manageable risk score, or alternatively by adding the Corporate Governance management gap score to the sum of the company's issue management gap scores. The score ranges from 0 to a company's overall manageable risk score (maximum of 100). A score of 0 indicates that all of a company's manageable risk has been managed, and a score equaling a company's overall manageable risk score indicates that none of the company's manageable risk has been managed.

Endnotes

[1] Text that is highlighted in bold teal indicates a term that is explained in the glossary of terms in the Appendix.

[2] ESG Country Risk Ratings Methodology(2019): Country Risk Rating

[3] Morningstar Global Category Classifications (2018), Morningstar: Global Category Classifications

[4] ESG Risk Ratings Methodology (2021), Sustainalytics: ESG Risk Ratings Methodology

Change Log

Version	Date	Initiator	Main items that changed	Comment / Rationale
1.0	01.03.2016	Managed Investment Data Methodology	Initial Launch	Please note, this version was under a different style and format.
1.1	31.10.2018	Managed Investment Data Methodology	Update to use Morningstar Global Category instead of Morningstar Local Category for determining relative performance. Introduction of the 12-month historical score to increase stability.	Please note, this version was under a different style and format.
2.0	31.10.2019	Managed Investment Data Methodology	Update to use Sustainalytics' ESG Risk Ratings rather than ESG Ratings as the basis of the rating. Addition of buffer rules to increase stability and handle portfolios with extremely high overall ESG risk.	Please note, this version was under a different style and format.
3.0	08.11.2021	Managed Investment Data Methodology	Addition of sovereign risk to the rating. Introduction of a modular approach to combine multiple risk ratings frameworks.	Please note, this version was under a different style and format.
4.0	31.03.2025	ESG Methodology	Updates to focus solely on changing existing data point names to reflect new names, in general, this is replacing the words 'Sustainability' when in reference to a data field with 'ESG Risk'.	Updated methodology publication style and format.