

Morningstar Sustainability Rating

Morningstar Research

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The Morningstar Sustainability Rating is derived from the Morningstar® Portfolio Sustainability Score™, which is calculated based on company-level ESG scores and company involvement in ESG-related controversies. Sustainalytics provides ESG scores on more than 4,500 companies globally, which are evaluated within global industry peer groups. In addition, Sustainalytics tracks and categorizes ESG-related controversial incidents on more than 10,000 companies globally.

Calculating the Morningstar Portfolio Sustainability Score

The portfolio sustainability score is calculated as follows:

Portfolio Sustainability Score = Portfolio ESG Score - Portfolio Controversy Deduction

Morningstar Portfolio ESG Score

The Morningstar Portfolio ESG Score is an asset-weighted average of normalized company-level ESG scores from Sustainalytics. The company-level ESG scores reflect how well a firm is addressing ESG issues based on a series of indicators measuring preparedness, disclosure, and performance.

$$ESG = \sum_{i=1}^{n} w_i ESGNorm_i \tag{1}$$

Where:

ESGp = the ESG score of the portfolio

n = the number of securities in the portfolio

Wi = the normalized asset weight on security i $(\sum_{i=1}^{n} w_i = 1)$

Sustainalytics assesses a company's performance on ESG issues relative to other firms in the same global industry peer group, using a 0-100 scale. Because the relevance of particular ESG issues varies across the peer groups, a unique combination of indicators is used within each peer group to determine the company-level ESG score.

The use of a unique combination of indicators for each peer group means the same score shared by two companies in different peer groups may not be equivalent—one company's score may signal that it is an "outperformer" in its peer group, while the other company's identical score may indicate that it is an "underperformer" in its peer group. The peer groups also have varying ESG score ranges and means. To make the ESG scores comparable across peer groups, which is necessary for the evaluation of diversified portfolios, Morningstar normalizes the scores of each peer group using a z-score transformation, as follows:

$$Zc = \frac{ESGc - \mu_{PG}}{\sigma_{PG}} \tag{2}$$

Where:

ESGc = the ESG score of company c

 μ_{PG} = the mean of the ESG scores of the companies in the peer group

 σ_{PG} = the standard deviation of the ESG scores of the companies in the peer group

The z-scores are used to create the normalized ESG scores on a 0-100 scale, with a mean of 50, as follows:

$$ESGNorm_{C} = 50 + 10Zc$$
 (3)

Normalized company ESG scores can be interpreted as follows:

70+ = Company scores at least two standard deviations above average in its peer group

60 = Company scores one standard deviation above average in its peer group

50 = Company scores at peer group average

40 = Company scores one standard deviation below average in its peer group

30- Company scores at least two standard deviations below average in its peer group

Once the company ESG scores are normalized, they are aggregated to a portfolio ESG score using an asset-weighted average of all covered securities. Covered securities include equity and fixed-income securities issued by companies that have ESG scores. Securities issued by companies that do not have ESG scores, as well as short positions, options, and derivatives typically issued by third-party financial firms, are not covered.

To receive a portfolio ESG score, at least 50% of a portfolio's assets under management must have a company ESG score. The percentage of assets under management of the covered securities is rescaled to 100% before calculating the portfolio ESG score.



Morningstar Portfolio Controversy Deduction

Sustainalytics tracks and categorizes ESG-related incidents, referred to as "controversies," on more than 10,000 companies globally. Each incident is assessed in terms of its level of impact on the environment and society and its related risk to the company itself. While a single company may be involved in multiple ESG-related incidents at any given time, Sustainalytics also scores companies based on the highest level of current involvement in ESG-related controversies, on a 0-100 scale, as follows:

Exhibit 1 Sustainalytics Controversy Score					
Category	Impact on Environment or Society	Risk to Company	Company Controversy Score		
5	Severe	Serious	0		
4	High	Significant	20		
3	Significant	Moderate	50		
2	Moderate	Minimal	80		
1	Low	Negligible	99		
0	No evidence of controversy	None	100		

Because the presence of controversy is a negative contributor to a company's overall sustainability performance, Morningstar reverses the scale of company controversy scores when aggregating them to create a Morningstar Portfolio Controversy Score, as follows:

$$MContr_{P} = \sum_{i=1}^{n} w_{i}SCont_{i} \tag{4}$$

Where

 $MContr_P$ = the Morningstar portfolio controversy score $SContr_i$ = the Sustainalytics controversy score of company i

To receive a portfolio controversy score, at least 50% of a portfolio's assets under management must have a company controversy score. Covered securities include equity and fixed-income issued by companies that have controversy scores. Securities issued by companies that do not have controversy scores, as well as short positions, options, and derivatives typically issued by third-party financial firms, are not covered. The percentage of assets of the covered securities will be rescaled to 100%.



To calculate the Morningstar Portfolio Sustainability Score, we rescale the portfolio controversy score, creating the portfolio controversy deduction, as follows:

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Exhibit 2	Portfolio	Controversy	Deduction

	Score	Deduction
Best	0	0
	1	0.2
	20	4
	50	10
	80	16
Worst	100	20

Morningstar Portfolio Sustainability Score

To summarize, the portfolio sustainability score is calculated as:

Portfolio Sustainability Score = Portfolio ESG Score - Portfolio Controversy Deduction

In order to receive a portfolio sustainability score, a portfolio must have a portfolio ESG score and a portfolio controversy score.

Morningstar Category Rank, Category Percent Rank, and Rank Description

Morningstar includes open-end mutual funds, exchange traded funds, closed-end funds and variable annuities in a single rated universe, and all of the portfolios within these legal structures contribute to a single ranking universe. Based on their portfolio ESG scores and controversy scores, funds are assigned absolute category ranks, percent ranks, normally distributed ordinal scores, and descriptive ranks within their Morningstar Categories, provided that a category has at least 10 funds with portfolio sustainability scores, as follows:

Exhibit 3 Portfolio ESG Scores

Distribution	Score	Descriptive Rank
Highest 10% (best)	5	High
Next 22.5%	4	Above Average
Next 35%	3	Average
Next 22.5%	2	Below Average
Lowest 10% (worst)	1	Low



Exhibit 4 Portfolio Controversy Scores

Distribution Score Descriptive Rank Lowest 10% (best) 5 High Next 22.5% 4 Above Average Next 35% Average Next 22.5% 2 Below Average Highest 10% (worst) 1 Low

Separate accounts, unit investment trusts, collective investment trusts and private funds can also receive portfolio ESG, Controversy and Sustainability Scores. These vehicles can also receive ranks and ratings, but these vehicles are ranked and rated using an overlay of the primary universe of products mentioned above. Their scores do not contribute to the bell curve and are not used to determine the Category-specific breakpoints for ratings.

Morningstar Sustainability Rating

Based on their portfolio sustainability scores, funds are assigned absolute category ranks and percent ranks within their Morningstar Categories, provided that a category has at least 10 funds with portfolio sustainability scores. A fund's Morningstar Sustainability Rating is its normally distributed ordinal score and descriptive rank relative to the fund's category. In order for a fund to receive a sustainability rating, its Morningstar Category must have at least 10 funds with portfolio sustainability scores.

Exhibit 5 Morningstar Sustainability Rating			
Distribution	Score	Descriptive Rank	Rating Icon
Highest 10%	5	High	
Next 22.5%	4	Above Average	
Next 35%	3	Average	
Next 22.5%	2	Below Average	
Lowest 10%	1	Low	

Morningstar Portfolio E, S, and G Pillar Scores

Sustainalytics' company-level ESG scores can be disaggregated into three pillar scores—environmental, social, and governance. Morningstar calculates portfolio-level scores for each pillar, using the same method for normalizing scores that is used for the portfolio ESG score, described above. Scores are aggregated by using the peer-group-weighted contribution of the pillar, as follows:

$$PortfolioPillar = \sum_{r=1}^{n} PillarNormalized \times Weight adj \times PeerPillar Weight$$
 (5)



This is necessary because the contribution of each pillar to a company's overall ESG score may differ by peer group. Using the peer-group-weighted contribution more accurately reflects the overall contribution of each pillar to a company's overall ESG score.

Frequency of Calculations

The Morningstar Portfolio Sustainability Score, and rankings, including the Morningstar Sustainability Rating, will be issued monthly based on the most recent company data from Sustainalytics. Portfolios will receive a score and rating one month and six business days after their reported as-of date based on the most recent portfolio. The fund will be ranked relative to peers on the same 1 month and 6 business day lag. If a portfolio has not yet been received for the rating date, the most recent portfolio available will be used for score and ranking, provided the portfolio is less than 276 days old.

