Morningstar Portfolio Impact Metrics

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Important Disclosure

Executive Summary

Using the Sustainalytics ESG Impact Framework, Morningstar introduces new impact metrics to help investors evaluate a company's environmental and social impacts, as well as how these play out within an investor's portfolio. In this methodology, a quick overview of the Sustainalytics ESG Impact Framework is provided, followed by a more in-depth description of the way these company-level metrics are leveraged to calculate these Portfolio Impact Metrics for mutual funds and other types of portfolios. The various scope, coverage, involvement, and other calculations that result are detailed, as well as their corresponding category averages.

Introduction

Businesses and governments provide the goods and services required by our global economy. These goods and services often bring real benefits to consumers, other businesses, and citizens at large. In addition to their economic contribution, business and government activities result in social and environmental externalities, which are referred to as *impacts*. These impacts can be positive or negative, and often they are positive in some areas while negative in others. With the introduction of the U.N. Sustainable Development Goals in 2015, businesses are increasingly being scrutinized on these externalities in the context of global issues including poverty, human well-being, consumption of natural resources, climate change, and environmental conservation. Furthermore, the EU taxonomy for sustainable activities is a classification system that helps companies and investors to report on the environmental and social impact of their activities and their investments in these activities.

The Sustainalytics ESG Impact Framework has been designed to enhance the understanding of business- and government-related ESG impacts and support informed investor decisions and reporting. It provides a foundational structure for research and is the chosen organizing framework for Sustainalytics' impact products, including existing products as well as those that are yet to be developed. It also forms the basis for the Morningstar Portfolio Impact Metrics discussed in this paper.

Methodology

The Sustainalytics ESG Impact Framework

The Sustainalytics ESG Impact Framework captures a company's environmental and social impacts rather than the ESG risks that a company is exposed to. The latter is captured by Sustainalytics' ESG Risk Ratings Framework.

Sustainalytics' ESG Impact Framework comprises 5+1 themes. They span two social areas and three environmental areas:

- Climate Action
- Healthy Ecosystems
- Resource Security
- Basic Needs
- Human Development

Additionally, there is a baseline theme, Leadership and Collaboration, which addresses the indirect impacts an entity can have by way of its leadership and contribution to collective efforts.

The impact themes are considered exhaustive and are intended to encompass all potential environmental and social impacts that can be attributed to an entity's activities. Furthermore, they are meant to capture direct and indirect impacts across the value chain.

At the micro level, the Impact Framework comprises impact metrics, which are quantitative measures of environmental or social outcomes (either positive or negative) attributable to the activities of an entity. Each of the topics outlined in the UN SDGs is represented within the Impact Framework. All impact themes and all impact metrics have been mapped to at least one SDG.

In addition to these revenue-based measures, the Sustainalytics research team has developed operational metrics that measure the impact of a company's own operations on the environment or society. These include measuring greenhouse gas emissions, water consumption and withdrawal, and so on. Several of these operational metrics are already available at the portfolio level, such as the Scope 1 and Scope 2 Emissions Intensity metrics that are a part of the Morningstar Portfolio Carbon metrics. Only one operational metric is newly introduced at the portfolio level, and it is the Water Withdrawal Intensity measure described within the Average Revenue Percentage section below.

Portfolio Metrics

Using the Sustainalytics ESG Impact Framework at the company level as a basis, Morningstar leverages its vast database of mutual fund holdings to map the company-level data to portfolio holdings and calculate impact metrics at the portfolio level, following the standard aggregation methodology described below. This methodology has been created to help investors assess the impact of their mutual fund portfolios, or other types of portfolios they may own.

Calculation Timing

The calculation will be performed upon the collection of the portfolio, regardless of date, and so will be calculated on intra-month and month-end portfolios. Only data that is available to the market on the portfolio date will be used in the calculation of the aggregate values.

Portfolio 'Look Through'

Morningstar will first attempt to "look through" any funds that are held by the portfolio to find the underlying holdings that are indirectly held. The "look though" function goes up to 10 portfolios "deep"—that is, when a portfolio holds a fund and in turn that fund holds other funds, the "look through" process will assess 10 "levels" of portfolios and fully flatten the holdings as if the fund directly held all these underlying holdings. The exception to this rule is for funds that are synthetically replicated: for the purpose of the impact calculations, they will be treated as being equivalent to the portfolio holding derivatives.

Portfolio Weights

Morningstar calculates portfolio weights based on the proportion of a portfolio a holding represents once all fund holdings have been "looked through." For the impact calculations, some additional steps will be taken to calculate the final portfolio weight:

1. Any securities that have both long and short positions will be "netted out"—that is, the short position weight will be subtracted from the long position weight;
2. Any remaining short positions will be removed;
3. Any currency offsets will be removed; and
4. The portfolio weight will then be recalculated on the netted-out long positions only.

"Net" short positions are removed from the portfolio; Morningstar calculates impact metrics on the long positions of a portfolio only.

[1]

$$W_R = \frac{Portfolio\ Weight_i}{\sum_{i=1}^{n} PortfolioWeight_i}$$

Where

W_R	=	Adjusted portfolio weight of security i
$Portfolio\ Weight_i$	=	Original portfolio weight of security i
i=1, n	=	All long, noncash offset holdings

The portfolio following these amendments will from here on be referred to as the *adjusted portfolio*.

Defining the Scope of the Calculations

The first step before measuring the impact of a portfolio according to any of the five defined environmental and social themes or any of the selected 12 U.N. Sustainable Development Goals is to define which portion of the portfolio is eligible to receive an impact assessment.

This is known as the *eligible portfolio*, which is made up of the long, corporate holdings of the portfolio such as equities, corporates, and convertible bonds. It excludes short positions, cash and currency as well as derivatives and synthetic holdings. Morningstar calculates the percentage of the portfolio that is eligible and ineligible for each theme and SDG.

Establishing Coverage

Once scope is established, Morningstar identifies the percentage of eligible portfolio that has received an impact assessment from Sustainalytics; this is known as the *covered portfolio*. The *eligible portfolio covered* is calculated by dividing the covered portfolio by the eligible portfolio. It allows users to see the proportion of the portfolio that is assessed by Sustainalytics. The purpose of these calculations is to avoid misinterpreting the portfolio's level of involvement in certain themes and SDGs when only a few holdings are covered. The number of holdings covered (that is, that have the underlying data for the impact metrics) is also calculated for all five themes and 12 SDGs.

To start, the proportions of the adjusted portfolio that are eligible, not eligible, covered, not covered, and eligible but not covered will be calculated.

[2]

$$PortfolioEligible_R = \sum_{i=1}^{E} W_R$$

Where

$PortfolioEligible_R$	=	The proportion of the adjusted portfolio that is held in securities for which the impact metric in question is relevant.
$\mathrm{i} = 1, \mathrm{E}$	=	Securities in the adjusted portfolio that are of the relevant holding type (eligible) for the impact metric in question.

[3]

$$PortfolioNotEligible_R = \sum_{i=1}^{NE} W_{Ri}$$

Where

$PortfolioNotEligible_R$	=	The proportion of the adjusted portfolio that is not held in securities for which the impact metric in question is relevant. These may be securities where the holding type is not relevant for the impact metric or where the type is not known.
$\mathrm{i} = 1, \mathrm{NE}$	=	Securities in the adjusted portfolio that are not of the relevant holding type (eligible) for the impact metric in question.

[4]

$$PortfolioCovered_R = \sum_{i=1}^{C} W_{Ri}$$

Where

$PortfolioCovered_R$	=	The proportion of the adjusted portfolio that is held in securities for which the underlying data is available for the calculation.
$\mathrm{i} = 1, \mathrm{C}$	=	Securities in the adjusted portfolio that are of the relevant holding type (eligible) for the impact metric in question and where the relevant underlying data is known (covered).

[5]

$$PortfolioEligibleNotCovered_R = \sum_{i=1}^{ENC} W_{Ri}$$

Where

$PortfolioEligibleNotCovered_R$	=	The proportion of the adjusted portfolio that is held in securities for which the impact metric in question is relevant but where the underlying data is not available for the calculation.
$\mathrm{i} = 1, \mathrm{ENC}$	=	Securities in the adjusted portfolio that are of the relevant holding type (eligible) for the impact metric in question and where the relevant underlying data is not known.

[6]

$$PortfolioNotCovered_R = \sum_{i=1}^{NC} W_{Ri}$$

Where

$PortfolioNotCovered_R$	=	The proportion of the adjusted portfolio that is held in securities for which the underlying data is not available for the calculation.
$\mathrm{i} = 1, \mathrm{NC}$	=	Securities in the adjusted portfolio where the relevant underlying data is not known (regardless if the holding type is relevant [eligible] or not).

Next, the proportion of the eligible part of the adjusted portfolio where the relevant data is known (covered) and not known (not covered) is calculated.

This is calculated by taking the proportion of the adjusted portfolio that is covered (or not covered) and dividing it by the proportion of the portfolio that is eligible.

[7]

$$EligiblePortfolioCovered_R = \frac{PortfolioCovered_R}{PortfolioEligible_R}$$

Where

$EligiblePortfolioCovered_R$	=	The proportion of only the eligible part of the adjusted portfolio where the underlying data is available for the calculation.

[8]

$$EligiblePortfolioNotCovered_R = \frac{PortfolioNotCovered_R}{PortfolioEligible_R}$$

Where

$EligiblePortfolioNotCovered_R$	=	The proportion of only the eligible part of the adjusted portfolio where the underlying data is not available for the calculation.

The number of holdings where the underlying data (covered) is known is also calculated.

[9]

Number of Holdings Covered	=	A simple count of the holdings in the adjusted portfolio where the underlying data is available.

Calculating Involvement in the Five Themes and 12 U.N. SDGs

Establishing the percentage of the portfolio that is involved in any of the five themes or 12 SDGs is the core of the impact methodology. Involvement is calculated as the percentage of the portfolio that is exposed to corporations that generate revenues related to one of the themes or SDGs. Morningstar also calculates the percentage of the portfolio that is not involved in each theme and SDG. The sum of the eligible portfolio involved, eligible portfolio not involved, and eligible portfolio not covered in a theme or SDG equals to the total eligible portfolio.

Percentage of Portfolio Involved

The percentage of the long-only portfolio that is exposed to corporations that make any revenue (>0%) from one of the five themes or 12 SDGs.

[10]

$$PortfolioInvolved_R = \sum_{i=1}^{CI} W_{Ri}$$

Where

$PortfolioInvolved_R$	=	The proportion of the adjusted portfolio that is held in securities that are exposed to or involved in the relevant theme/SDG.
$\mathrm{i = 1, CI}$	=	Securities in the adjusted portfolio that are exposed to or involved in the relevant theme/SDG.

Percentage of Portfolio Not Involved

The percentage of the long-only portfolio that is not exposed to corporations that make any revenue (>0%) from any of the five themes or 12 SDGs. This will also include any holdings that are not related to a corporate issuer (like government bonds, derivatives, and so on).

[11]

$$PortfolioNotInvolved_R = \sum_{i=1}^{CNI} W_{Ri}$$

Where

$PortfolioNotInvolved_R$	=	The proportion of the adjusted portfolio that is held in securities that are not exposed to or involved in the relevant theme/SDG.
$\mathrm{i = 1, CNI}$	=	Securities in the adjusted portfolio that are not exposed to or involved in the relevant theme/SDG. This does not include securities where it is not known if the security is involved or not.

The involved and not involved percentages of the eligible portfolio statistics only include those holdings where the information is known; combining these involved/not involved statistics (as a percentage of the eligible portfolio) with the percentage eligible not covered of the portfolio will sum to 100%.

Percentage of Eligible Portfolio Involved

The percentage of the long-only portfolio invested in corporate securities (eligible holdings) that are exposed to corporations that make any revenue (>0%) from any of the five themes or 12 SDGs. For example, the fields "Human development - Percentage of Eligible portfolio involved," "Human development - Percentage of Eligible portfolio not involved," and "Human Development - Percentage of Portfolio Eligible not Covered" combined would sum to 100%.

[12]

$$EligiblePortfolioInvolved_R = \frac{PortfolioInvolved_R}{PortfolioEligible_R}$$

Where

$EligiblePortfolioInvolved_R$	=	The proportion of the eligible portion of the portfolio that is held in securities that are exposed to or involved in the relevant theme/SDG.

Percentage of Eligible Portfolio Not Involved

The percentage of the long-only portfolio invested in corporate securities (eligible holdings) that are exposed to corporations that do not make any revenue from any of the five themes or 12 SDGs. This only involves investment in companies where there is data to indicate the companies are not involved in the relevant activities, and this does not include any corporate holding for which the relevant data is not known. The fields "Human development - Percentage of Eligible portfolio involved," "Human development - Percentage of Eligible portfolio not involved," and "Human Development - Percentage of Portfolio Eligible not Covered" combined would sum to 100%.

[13]

$$EligiblePortfolioNotInvolved_R = \frac{PortfolioNotInvolved_R}{PortfolioEligible_R}$$

Where

$EligiblePortfolioNotInvolved_R$	=	The proportion of the eligible portion of the portfolio that is held in securities that are not exposed to or involved in the relevant theme/SDG.

The involved/not involved statistic (as a percentage of the covered portfolio) will sum to 100% as it only contains holdings that have data.

Percentage of Covered Portfolio Involved

The percentage of the long-only portfolio invested in corporate securities (where the relevant underlying data is available—that is, eligible covered holdings) that are exposed to corporations that make any revenue (>0%) from any of the five themes or 12 SDGs.

[14]

$$CoveredPortfolioInvolved_R = \frac{PortfolioInvolved_R}{PortfolioCovered_R}$$

Where

$CoveredPortfolioInvolved_R$	=	The proportion of the covered portion of the portfolio that is held in securities that are exposed to or involved in the relevant theme/SDG.

Percentage of Covered Portfolio Not Involved

The percentage of the long-only portfolio invested in corporate securities (where the relevant underlying data is available—that is, eligible covered holdings) that are exposed to corporations that do not make any revenue from any of the five themes or 12 SDGs.

[15]

$$CoveredPortfolioNotInvolved_R = \frac{PortfolioNotInvolved_R}{PortfolioCovered_R}$$

Where

$CoveredPortfolioNotInvolved_R$	=	The proportion of the covered portion of the portfolio that is held in securities that are not exposed to or involved in the relevant theme or SDG.

Exhibit 1 summarizes the various steps described so far in one table:

Exhibit 1 Summary Table: Percentage of Eligible vs Covered vs Involved Portfolio

Example of Portfolio Involvement in Human Development
Fund A Holdings (USD Billion)

$1.5 Total				
$1.0 Eligible			$ 0.5 Not Eligible	
$ 0.8 Covered		$0.7 Not covered		
$ 0.8 Eligible Covered		$0.2 Eligible not covered		
$0.4 Involved in Human Development	$ 0.4 Not involved in Human Development			

Involvement: 0.4/1 = 40%
Human Development - Percentage of Eligible Portfolio Involved: 40%

Source: Morningstar/Sustainalytics.

Average Revenue Percentage

This refers to the percentage of the portfolio's covered assets contributing to one of the five themes or 12 SDGs. It is calculated as a weighted average of the holding-level revenue percentage in the corresponding theme or SDG.

These metrics require a calculation of the average revenue percentage of the holdings; as such, only holdings with the relevant underlying data can be used in the calculation. Morningstar calculates the weighted average value of the holdings.

[16]

$$AverageRevenuePercentage_R = \frac{\sum_{i=1}^{EC} W_R * UnderlyingHoldingRevenuePercentage}{PortfolioCovered_R}$$

Where

$AverageRevenuePercentage_R$	=	The weighted average revenue percentage of the covered holdings (that is, holdings where the data is known) in the portfolio.
$\mathrm{UnderlyingHoldingRevenuePercentage}$	=	The revenue percentage value of the individual holding for the theme or SDG in question.

Please note that in addition to the above described revenue-based measures, the Sustainalytics research team has developed operational metrics that measure the impact of a company's own operations on the environment or society. With the Morningstar Portfolio Impact Metrics, a new operational metric for portfolios is introduced: Water Withdrawal Intensity. Similar to the average revenue percentage calculation described here, it is defined as the weighted average of the covered holdings' water withdrawal intensity values. At the holding level, water withdrawal intensity represents the volume of water withdrawal per unit of revenue (in million USD). Water withdrawal differs from water consumption or water usage and is defined as the total volume (in cubic meters) of water withdrawn or diverted from various water sources, such as groundwater, lake, municipal supplies, and so on (including sea water).

Involvement Breakdown

Portfolio involvement is categorized in one of the following five revenue ranges: less than 5% involved, between 5% and 10% involved, between 10% and 25% involved, between 25% and 50% involved, or over 50% involved in the corresponding theme or SDG. Only holdings with the relevant underlying data can be used in the calculation. Morningstar calculates the weighted average value of the holdings.

Percentage of Portfolio With Less Than 5% Involved

The percentage of the portfolio involved less than 5% to one of the five themes or 12 SDGs. It includes the holdings whose revenue percentage is under 5% but above 0%.

[17]

$$Portfoliowithlessthan5\%Involved_R = \sum_{i=1}^{CI5} W_{Ri}$$

Where

$Portfoliowithlessthan5\%Involved_R$	=	The proportion of the adjusted portfolio that is held in securities that are less than 5% involved in the relevant theme/SDG.
$\mathrm{i = 1, CI5}$	=	Securities in the adjusted portfolio that are less than 5% involved in the relevant theme/SDG.

Percentage of Portfolio With 5% to 10% Involved

The percentage of the portfolio involved between 5% and 10% in one of the five themes or 12 SDGs. This includes the holdings whose revenue percentage is under 10 % but above 5%.

[18]

$$Portfoliowith5to10\%Involved_R = \sum_{i=1}^{CI10} W_{Ri}$$

Where

$Portfoliowith5to10\%Involved_R$	=	The proportion of the adjusted portfolio that is held in securities that are involved between 5% and 10% in the relevant theme/SDG.
$\mathrm{i} = 1, \mathrm{CI10}$	=	Securities in the adjusted portfolio that are involved between 5% and 10% in the relevant theme/SDG.

Percentage of Portfolio With 10% to 25% Involved

The percentage of the portfolio involved between 10% and 25% in one of the five themes or 12 SDGs. This includes the holdings whose revenue percentage is under 25% but above 10%.

[19]

$$Portfoliowith10to25\%Involved_R = \sum_{i=1}^{CI25} W_{Ri}$$

Where

$Portfoliowith10to25\%Involved_R$	=	The proportion of the adjusted portfolio that is held in securities that are involved between 10% and 25% in the relevant theme/SDG.
$\mathrm{i} = 1, \mathrm{CI25}$	=	Securities in the adjusted portfolio that are involved between 10% and 25% in the relevant theme/SDG.

Percentage of Portfolio With 25% to 50% Involved

The percentage of the portfolio involved between 25% and 50% in one of the five themes or 12 SDGs. This includes the holdings whose revenue percentage is under 50% but above 25%.

[20]

$$Portfoliowith25to50\%Involved_R = \sum_{i=1}^{CI50} W_R$$

Where

$Portfoliowith25to50\%Involved_R$	=	The proportion of the adjusted portfolio that is held in securities that are involved between 25% and 50% in the relevant theme/SDG.
$\mathrm{i} = 1, \mathrm{CI50}$	=	Securities in the adjusted portfolio that are involved between 25% and 50% in the relevant theme/SDG.

Percentage of Portfolio With Over 50% Involved

The percentage of the portfolio over 50% involved in one of the five themes or 12 SDGs.

[21]

$$Portfoliowithover50\%Involved_R = \sum_{i=1}^{CI100} W_R$$

Where

$Portfoliowithover50\%Involved_R$	=	The proportion of the adjusted portfolio that is held in securities that are over 50% involved in the relevant theme/SDG.
$\mathrm{i} = 1, \mathrm{CI100}$	=	Securities in the adjusted portfolio that are over 50% involved in the relevant theme/SDG.

Category Averages

For a selection of Morningstar Portfolio Impact Metrics, category averages are computed in order to enable comparison of funds against their peer group. The peer groups used are the standard Morningstar Categories.

Funds need to have at least 67% of their portfolio covered to be included in the category average calculation. A category average is computed for a given Morningstar Category only when at least five funds meet the coverage requirement within this category. The number of funds included in the calculation is also provided.

Category averages will be calculated for each of the five themes and 12 SDGs and available for the following fields: percentage of portfolio involved (percentage revenue involved - category average) and average revenue percentage (revenue percentage - category average).

[22]

$$CategoryAverage_R = \frac{\sum_{i=1}^{F} Impact\ Value_f}{Number\ of\ Funds}$$

Where

$Impact\ Value_f$	=	The relevant impact value for fund f.
Number of Funds	=	The number of funds in the category that meet the relevant criteria to be included in the category average calculation.
$\mathrm{i} = 1, \mathrm{F}$	=	All funds in the category that meet the relevant criteria

Conclusion

We expect that, as the Sustainalytics ESG Impact Framework evolves over time, we will enhance our Morningstar Portfolio Impact Metrics offering. We will note methodological changes in this document as they are made.

Methodology History

Version: 1.0 31st Dec 2021 Original publication

Notes

1 See Sustainalytics ESG Ratings product page, https://www.sustainalytics.com/esg-ratings/
2 See UN Sustainable Development Goals, https://sustainabledevelopment.un.org/sdgs/
3 See EU Taxonomy, Final report of the Technical Expert Group on Sustainable Finance, March 2020 https://ec.europa.eu/info/sites/info/files/business_economy_euro/banking_and_finance/documents/200309-sustainable-finance-tegfinal-report-taxonomy_en.pdf

Appendix

Impact Themes

The five social and environmental themes are defined as follows:

1. Climate Action: This theme is concerned with the global effort to curb the Earth's temperature rise and cope with unavoidable consequences. It includes measures to promote clean energy, limitations on greenhouse gas emissions, and climate change adaptation measures.
2. Healthy Ecosystems: This theme is concerned with the safeguarding of ecologically sound environments on land, air, and water. It does not include GHG emissions and water consumption as these are covered under other themes.
3. Resource Security: This theme is concerned with the contribution to resource security through efficient use and circular economies. Resources of concern include water, timber, metals, minerals, gases, and all types of manufactured materials.
4. Basic Needs: This theme is concerned with addressing the basic needs of humans and focuses particularly on lower-income individuals. Basic needs include providing access to food, housing, essential healthcare concerning major and neglected diseases, clean water, and energy for underserved populations. It also addresses human safety, including safe workplaces and communities.
5. Human Development: This theme is concerned with enhancing human capabilities and promoting human progress. It includes measures that support education, improve equality, provide employment opportunities, and advance healthcare.

The 12 United Nations Sustainable Development Goals selected for this data set (out of 17):

SDG #	SDG Name	Definition
2	Zero Hunger	End hunger, achieve food security and improved nutrition, and promote sustainable agriculture
3	Good Health and Well-Being	Ensure healthy lives and promote well-being for all at all ages
4	Quality Education	Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all
6	Clean Water and Sanitation	Ensure availability and sustainable management of water and sanitation for all
7	Affordable and Clean Energy	Ensure access to affordable, reliable, sustainable, and modern energy for all
9	Industry, Innovation, and Infrastructure	Build resilient infrastructure, promote inclusive and sustainable industrialization, and foster innovation
10	Reduced Inequalities	Reduce inequality within and among countries
11	Sustainable Cities and Communities	Make cities and human settlements inclusive, safe, resilient, and sustainable

12	Responsible Consumption and Production	Ensure sustainable consumption and production patterns
13	Climate Action	Take urgent action to combat climate change and its impacts
14	Life Below Water	Conserve and sustainably use the oceans, seas, and marine resources for sustainable development
15	Life on Land	Protect, restore, and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, halt and reverse land degradation, and halt biodiversity loss

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