Sustainable Investing

April 2024

The Sustainability Data Challenge The Importance of Data Quality in Sustainable Investing

Jennifer Bender, Ph.D. Investment Strategy and Research

Stefano Maffina

Sustainable Investing Research

- We believe data quality is crucial in the world of investment management, and especially so in the area of sustainable investing, where lack of mandatory and consistent reporting of non-financial information by companies makes it challenging for investors to make decisions based on that information.
- Most sustainability data providers employ their own proprietary methodologies, and sustainability scores can differ significantly across providers.
- Sustainability data should be transparent and focus on material criteria. To achieve this, we have built our own data architecture. We partner with best-in-class data sources to create sustainability scores that leverage a transparent materiality map created by the Sustainability Accounting Standards Board (SASB). This platform is used for investment solutions and reporting across asset classes.

Sustainability Data Standards and Reporting

We believe successful investing is heavily reliant on the quality of data inputs, something that holds particularly true in sustainable investing. Demands from investors and others have driven significant improvements in the level of corporate disclosure of sustainability performance data, but disclosures are neither comprehensive nor comparable across firms. This makes investment decision-making based on such information a challenge.

The absence of standardized sustainability reporting has implications for asset owners and their investment managers. We believe understanding companies' performance on sustainability issues is important for investors seeking to mitigate risk, identify drivers of long-term performance, or invest according to their preferences.

STATE STREET GLOBAL ADVISORS

We support market infrastructure initiatives to standardize reporting. In particular, SASB is an independent not-for-profit organization that has developed a set of standards to support companies in identifying and disclosing financially material sustainability information usable by investors. Their standard-setting framework follows a multi-year process that encompasses evidence-based research followed by consultation and engagement with investors and other industry experts. The result is a materiality map that ranks sustainability issues across 77 industries in 11 sectors, and offers companies a clear disclosure framework that aligns with investors' needs. Academic research indicates that investments in companies that score highly when using the SASB materiality map outperform those that score poorly, or that score high on non-material issues.1 Bridging the Gap — Sustainability data providers play an important role in gathering, assessing and scoring companies on their sustainability credentials. These companies have helped to nurture the Sustainability growth of sustainable investing and present asset owners and managers an alternative to **Data Providers** conducting such extensive diligence themselves. But there are important considerations for investors to be aware of when selecting sustainability data providers. There are numerous sustainability data providers in the market, including well-known providers with global coverage such as ISS, Refinitiv, V.E, MSCI, TruValue Labs, and RepRisk, as well as specialized data providers such as S&P Trucost (providing carbon, climate, sector revenue and fossil fuel reserves data) and GRESB (sustainability performance in real estate). **Differences** in Data Sustainability data providers generally develop their own sourcing process and research methodologies; as a result, the rating for a single company can vary widely across different providers. Collection and Scoring As part of an ongoing, multi-year due diligence process in which we have so far looked at more Methodologies than 70 providers, we examined the cross-sectional correlations for five leading data providers' sustainability scores, using the MSCI World Index as the coverage universe. As illustrated in Figure 1, the relatively low correlation of sustainability scores generated by MSCI and Sustainalytics, meaning

Sustainability Scores Are Different Across Providers Cross Sectional Correlation for

Constituents of the MSCI World Index, December 30, 2022. Representation by Country. Based on Latest Available Data.

| | R-FACTOR (%) | ISS (%) | Moody's V.E. (%) | MSCI (%) | Sustainalytics (%) |
|----------------|--------------|---------|------------------|----------|--------------------|
| R-FACTOR | 100 | 70.35 | 77.83 | 44.89 | 20.24 |
| ISS | 70.35 | 100 | 61.28 | 45.19 | 37 |
| Moody's V.E. | 77.83 | 61.28 | 100 | 44.06 | 17.97 |
| MSCI (%) | 44.89 | 45.19 | 44.06 | 100 | 20.9 |
| Sustainalytics | 20.24 | 37 | 17.97 | 20.9 | 100 |

that their ratings of companies are only consistent for about half of that universe.

Moreover, the range of data providers with different sustainable investing methodologies presents an immediate difficulty for investors. In choosing a particular provider, they are in effect aligning themselves with that firm's sustainable investing philosophy, in our view. Additionally the choice is complicated by the desire among providers to keep a proprietary hold on their methodology, meaning that asset owners are taking on board the perspectives of a sustainability data provider without necessarily having a full understanding of how they arrived at those perspectives. Assessing the Differences

Determining the variances between data providers and how best to account for them can be challenging and requires careful examination of their underlying approaches. Some common points of difference between providers include:

Data Acquisition and Estimation In the course of our research we found discernable differences among sustainability data providers on raw data sourcing and acquisition methods. Sustainability data providers combine data from companies using traditional sourcing techniques with statistical models that attempt to estimate data for unreported companies — based on similar industry and company characteristics. Once again, this means that investors are incorporating judgment calls by the provider into their investment processes.

Materiality As part of a proprietary solution, sustainability data providers typically make their own determination on the issue of materiality. We believe an sustainability score for a company that is simply an amalgam of scores on both material and immaterial issues does not provide the type of transparency and relevance that asset owners require. Some sustainability data can reflect a strong signal for performance by one company but not for another because of the relative importance of that issue in their business.

The academic research behind the SASB materiality framework underscores the importance of the choice of a materiality framework by data providers.² Alongside the low correlation of sustainability scores provided by sustainability providers, differences by provider in how materiality is defined and unveiled adds to the difficulty asset owners and managers have in selecting an 'off-the-shelf' provider.

Aggregation and Weighting Each sustainability data provider has developed a method to aggregate and weight particular sustainability factors for its summary scores. However, without knowing the aggregation and weighting methodology, users of this data are buying a subjective point of view rather than a product that provides full transparency of the method.

Consider the challenge facing investors by comparing two of the leading sustainability providers in the market. Both MSCI and Sustainalytics are widely used across the asset management industry and each of them offers global sustainability product suites — including sustainability ratings and carbon products. But as Figure 2 illustrates, there are distinct differences in the way the two firms handle sustainability data challenges, ranging from how they define materiality to the number of metrics used.

| | MSCI | Sustainalytics | |
|---------------|---|--|--|
| Materiality | Proprietary definition of materiality | Material ESG Issues are characterized by having a significa effect on the enterprise value of a typical company within a given subindustry and its presence/absence in financial reporting and how that influences the investor | |
| Normalization | Score is normalized relative to ESG Rating Industry Peers | Score is rooted in beta indicators and signals which is then normalized via the subindustry correction factor | |
| Weighting | Weighted Average of individual environmental and social key issue scores and then the governance score | 3 different scoring schemes; cluster E, S, and G scores are then compiled and weighted with a beta factor based on subindustry scores | |
| Aggregation | 35 Key Issues (106 key metrics) | 20 MEIS; 40 thematic risk groups | |

For illustration purposes only.

Case Study: MSCI versus Sustainalytics

Figure 2

Comparison of MSCI and Sustainalytics Approaches to Sustainability Scores

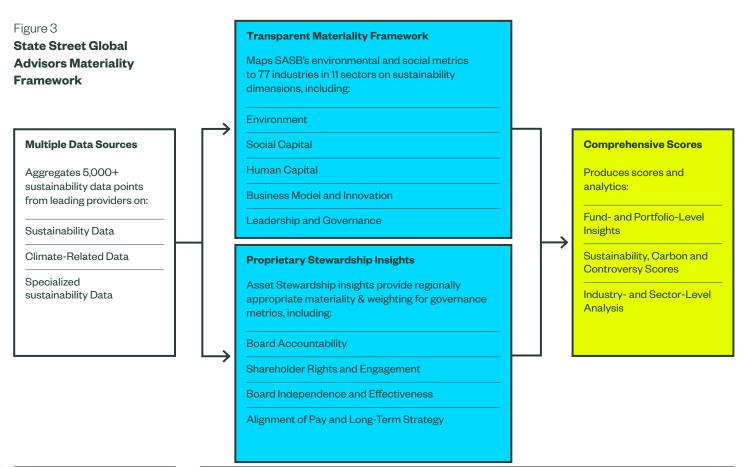
Sustainability Scoring at State Street Global Advisors

At State Street Global Advisors, we believe that the data that supports our products should align closely with our perspectives. Our approach to sustainable investing is fully transparent and is guided by our conviction that material sustainability considerations, including environmental and social (E&S) issues, can present risks and/or opportunities that impact long-term value creation. Consequently, we are committed to integrating sustainability metrics into our investment processes where appropriate and where we are making active investment decisions in managing a portfolio and delivering a trasparent solution for our clients. Our asset stewardship efforts highlight our belief that asset managers can and should drive greater disclosure in material investor-relevant data that companies provide using a standardized and consistent framework. We believe this creates a positive cycle that allows for more thorough information inputs into investment decision-making.

The State Street Global Advisors sustainability data architecture leverages multiple data sources, and draws on our systematic investment management expertise to offer deeper insights and stronger solutions to our clients. We have incorporated the 'materiality map' developed by SASB into our transparent framework because of their consultative approach and the strong academic evidence that supports the implementation of such standards.³ By aligning to the SASB guidelines, we support and facilitate the development of market infrastructure to make material sustainability data available to investors.

Our approach is enriched by assessments from our Asset Stewardship team. Their active engagement with companies allows us to leverage their expertise to map hundreds of governance metrics and assign custom weightings for each metric across six global regions.

This data architecture is a powerful investment tool and delivers transparent sustainability scores that enable the creation of fund- and portfolio-level insights for assets managed by State Street Global Advisors.



Clients may be able to reap the benefits of the State Street Global Advisors approach through a suite of products that offers exposure to equity and fixed income markets.

We hope this look into the many considerations for evaluating sustainability data providers supplies you with ideas to leverage when considering sustainable investing decisions. As you move forward, you may wish to use the sample resources described below. As always, we invite you to contact your State Street Global Advisors Relationship Manager or access our sustainable investing website at ssga.com/esg to learn more about these resources and our sustainable investing capabilities.

Endnotes

Mozaffar Khan, George Serafeim and Aaron Yoon, Corporate Sustainability: First Evidence on Materiality (November 9, 2016).

1

- 2 Khan, Serafeim and Yoon.
- 3 Khan, Serafeim et al. "Corporate Sustainability: First Evidence of Materiality." Harvard Business Review, 2016.

ssga.com

State Street Global Advisors Worldwide Entities

Australia: State Street Global Advisors. Australia, Limited (ABN 42 003 914 225) is the holder of an Australian Financial Services License (AFSL Number 238276). Registered office: Level 14, 420 George Street, Sydney, NSW 2000, Australia T: +612 9240-7600 F: +612 9240-7611 Belgium: State Street Global Advisors Belgium, Chaussée de La Hulpe 185, 1170 Brussels, Belgium, T: +32 2 663 2036, State Street Global Advisors Belgium is a branch office of State Street Global Advisors Europe Limited, registered in Ireland with company number 49934, authorised and regulated by the Central Bank of Ireland, and whose registered office is at 78 Sir John Rogerson's Quay, Dublin 2. Canada: State Street Global Advisors, Ltd., 1981 McGill College Avenue, Suite 500, Montreal, Qc, H3A 3A8, T: +514 282 2400 and 30 Adelaide Street East Suite 1100. Toronto. Ontario M5C 3G6. T: +647 775 5900. Dubai: State Street Global Advisors Limited, DIFC branch is regulated by the Dubai Financial Services Authority (DFSA). This document is intended for Professional Clients or Market Counterparties only as defined by the DFSA and no other person should act upon it. State Street Global Advisors Limited, DIFC Branch, OT 01-39. 1st Floor, Central Park Towers. DIFC PO Box 507448 Dubai United Arab Emirates. Regulated by the DFSA. Telephone: +971 4 871 9100. France: State Street Global Advisors Europe Limited, France Branch ("State Street Global Advisors France") is a branch of State Street Global Advisors Furope Limited registered in Ireland with company number 49934, authorised and regulated by the Central Bank of Ireland, and whose registered office is at 78 Sir John Rogerson's Quay, Dublin 2. State Street Global Advisors France is registered in France with company number RCS Nanterre 899 183 289. and its office is located at Coeur Défense - Tour A - La Défense 4, 33e étage, 100, Esplanade du Général de Gaulle, 92 931 Paris La Défense Cedex, France. T: +33144454000. F: +33144 45 4192. Germany: State Street Global Advisors Europe Limited, Branch in Germany, Brienner Strasse 59, D-80333 Munich, Germany ("State Street Global Advisors Germany"). T: +49 (0)89 55878 400. State Street Global Advisors Germany is a branch of State Street Global Advisors Europe Limited, registered

in Ireland with company number 49934. authorised and regulated by the Central Bank of Ireland, and whose registered office is at 78 Sir John Rogerson's Quay, Dublin 2. Hong Kong: State Street Global Advisors Asia Limited, 68/F, Two International Finance Centre 8 Finance Street, Central, Hong Kong. T: +852 2103-0288. F: +852 2103-0200. Ireland: State Street Global Advisors Europe Limited is regulated by the Central Bank of Ireland. Registered office address 78 Sir John Rogerson's Quay, Dublin 2. Registered Number: 49934. T: +353 (0)1776 3000. F: +353 (0)1776 3300. Italy: State Street Global Advisors Europe Limited, Italy Branch ("State Street Global Advisors Italy") is a branch of State Street Global Advisors Europe Limited, registered in Ireland with company number 49934, authorised and regulated by the Central Bank of Ireland, and whose registered office is at 78 Sir John Rogerson's Quay, Dublin 2. State Street Global Advisors Italy is registered in Italy with company number 11871450968 - REA: 2628603 and VAT number 11871450968. and its office is located at Via Ferrante Aporti, 10 - 20125 Milan, Italy. T: +39 02 32066 100. F: +39 02 32066 155. Japan: State Street Global Advisors (Japan) Co., Ltd., Toranomon Hills Mori Tower 25F 1-23-1 Toranomon Minato-ku Tokyo 105-6325 Japan T: +81-3-4530-7380. Financial Instruments Business Operator, Kanto Local Financial Bureau (Kinsho #345), Membership: Japan Investment Advisers Association. The Investment Trust Association Japan Japan Securities Dealers' Association. Netherlands: State Street Global Advisors Netherlands, Apollo Building 7th floor, Herikerbergweg 29, 1101 CN Amsterdam, Netherlands. T: +31 20 7181 000. State Street Global Advisors Netherlands is a branch office of State Street Global Advisors Europe Limited, registered in Ireland with company number 49934, authorised and regulated by the Central Bank of Ireland, and whose registered office is at 78 Sir John Rogerson's Quay, Dublin 2. Singapore: State Street Global Advisors Singapore Limited, 168, Robinson Road, #33-01 Capital Tower, Singapore 068912 (Company Reg. No: 200002719D, regulated by the Monetary Authority of Singapore). T: +65 6826-7555. F: +65 6826-7501. South Africa: State Street Global Advisors Limited is regulated by the Financial Sector Conduct Authority in South Africa under license number 42670. Switzerland: State Street Global Advisors AG. Beethovenstr. 19, CH-8027 Zurich. Registered with the Register of Commerce Zurich CHE-

105.078.458. T: +41 (0)44 245 70 00. F: +41 (0)44 245 70 16. **United Kingdom:** State Street Global Advisors Limited. Authorised and regulated by the Financial Conduct Authority. Registered in England. Registered No. 2509928. VAT No. 5776591 81. Registered office: 20 Churchill Place, Canary Wharf, London, E14 5HJ. T: 020 3395 6000. F: 020 3395 6350. **United States:** State Street Global Advisors, 11ron Street, Boston, MA 02210-1641. T: +1 617 786 3000.

The information provided does not constitute investment advice and it should not be relied on as such. It should not be considered a solicitation to buy or an offer to sell a security. It does not take into account any investor's particular investment objectives, strategies, tax status or investment horizon. You should consult your tax and financial advisor. All information has been obtained from sources believed to be reliable, but its accuracy is not guaranteed. There is no representation or warranty as to the current accuracy, reliability or completeness of, nor liability for, decisions based on such information.

The returns on a portfolio of securities which exclude companies that do not meet the portfolio's specified sustainability criteria may trail the returns on a portfolio of securities which include such companies. A portfolio's sustainability criteria may result in the portfolio investing in industry sectors or securities which underperform the market as a whole.

Responsible-Factor (R Factor) scoring is designed by State Street to reflect certain sustainability characteristics and does not represent investment performance. Results generated out of the scoring model is based on sustainability and corporate governance dimensions of a scored entity.

The views expressed in this material are the views of the Sustainable Investing Research team through the period ended March 1, 2023, and are subject to change based on market and other conditions. This document contains certain statements that may be deemed forward-looking statements. Please note that any such statements are not guarantees of any future performance and actual results or developments may differ materially from those projected.

Investing involves risk including the risk of loss of principal.

The whole or any part of this work may not be reproduced, copied or transmitted or any of its contents disclosed to third parties without State Street Global Advisors' express written consent.

The information contained in this communication is not a research recommendation or 'investment research' and is classified as a 'Marketing Communication' in accordance with the Markets in Financial Instruments Directive (2014/65/EU) or applicable Swiss regulation. This means that this marketing communication (a) has not been prepared in accordance with legal requirements designed to promote the independence of investment research (b) is not subject to any prohibition on dealing ahead of the dissemination of investment research.

This communication is directed at professional clients (this includes eligible counterparties as defined by the appropriate EU regulator) who are deemed both knowledgeable and experienced in matters relating to investments. The products and services to which this communication relates are only available to such persons and persons of any other description (including retail clients) should not rely on this communication.

The trademarks and service marks referenced herein are the property of their respective owners. Third-party data providers make no warranties or representations of any kind relating to the accuracy, completeness, or timeliness of the data and have no liability for damages of any kind relating to the use of such data.

© 2024 State Street Corporation. All Rights Reserved. ID2386600-2392452.10.1.GBL.RTL 1024 Exp. Date: 10/31/2025

STATE STREET GLOBAL ADVISORS