Scope 3 emissions in investment decision-making: An analysis

Insights
July 2025

For institutional/ professional investors use only

Kushal Shah
Climate Specialist
Vice President
Sustainable Investing Strategy

Jean Zhou
Senior Quant and Data Analyst
Sustainable Investing Research

Mohit Rakyan
Senior Quant Researcher
Systematic Equities

Giang Vu
Sustainable Investing Strategist
Sustainable Investing Strategy

As Scope 3 emissions gain prominence in climate discussions, this paper offers an analysis of their current usability for investment decision-making, examining data challenges, regulation, and implications for portfolio construction.

Introduction

Corporate emissions disclosure is a significant area for many sustainability-focused investors. For instance, a climate survey published by State Street Investment Management in September 2024 indicated that 44% of responding asset owners in Europe, Middle East, and Africa monitor corporate disclosures of Scope 1, 2, and 3 emissions in accordance with Task Force on Climate-related Financial Disclosures (TCFD) principles.[1]

As investors incorporate climate objectives into investment portfolios, determining which emissions metric to use for setting portfolio targets is often a key consideration. While Scope 1 and 2 emissions have been widely used, partly because of higher level of data standardization and availability, Scope 3 emissions have gained attention as disclosures have improved and regulatory requirements have increased. However, significant challenges around the quality, reliability, and consistency of Scope 3 data raise the question: can investors confidently incorporate Scope 3 emissions into investment decision-making?

This paper explores the use of Scope 3 emissions data and common normalization factors for portfolio construction, presenting an approach for investors who wish to target an emission-related metric in their portfolios. Ultimately, the analysis conducted herein, taking into account current data limitations, culminates in an approach for setting reliable climate-related targets that prioritizes Scope 1 and 2 emissions data.

Definitions of Scope 1, Scope 2, and Scope 3 emissions categories

Scope 1 emissions are direct greenhouse gas (GHG) emissions that occur from sources owned or controlled by a company, including, for example, on-site fossil fuel combustion and fleet fuel consumption.

Scope 2 emissions are indirect emissions from sources not owned or controlled by a company, including emissions from energy consumption such as the generation of electricity, heat, or steam.

Scope 3 emissions are from sources not owned or directly controlled by a company but are related to the company's activities, often through its value chain or the use of its products. These include, for example, emissions generated by a company's non-electricity supply chain, employee travel and commuting, and emissions associated with contracted solid waste disposal and wastewater treatment. Scope 3 emissions often represent the largest share of many companies' total emissions, yet remain the most challenging to measure accurately.

Scope 3 is typically categorized into "upstream" and "downstream" emissions, further subdivided into 15 categories (see Figure 1).

Figure 1: The 15 categories of Scope 3 emissions

	Category	Name
Upstream	1	Purchased goods and services
	2	Capital goods
	3	Fuel-and-energy-related activities (not included in Scope 1 or 2)
	4	Upstream transportation and distribution
	5	Waste generated in operations
	6	Business travel
	7	Employee commuting
	8	Upstream leased assets
Downstream	9	Downstream transportation and distribution
	10	Processing of sold products
	11	Use of sold products
	12	End of life treatment of sold products
	13	Downstream leased assets
	14	Franchises
	15	Investments

Source: The Greenhouse Gas Protocol. Data as of 30 April 2025.

To facilitate a comprehensive understanding of Scope 3 emissions data usability, this paper first outlines the presented approach and its rationale. It then provides an in-depth examination of the following research aspects:

- Insights from data providers
- Overview of standards and regulations
- Analysis by asset class: equities and fixed income
- Evaluation of normalization factors: enterprise value including cash (EVIC) and revenues
- Point-in-time analysis in index equity portfolios

How do we use emission metrics?

At State Street Investment Management, we utilize Scope 1 and 2 emissions data in various applications and Scope 3 data in specific instances. For example, in response to specific regulatory requirements, such as the European Union's (EU) Climate Transition Benchmarks (CTB) and Paris-aligned Benchmarks (PAB)[2] mandating a certain level of portfolio carbon intensity reduction for Scope 1, 2, and 3 emissions, we seek to comply with those requirements.

In other instances, client preferences guide the use of certain metrics in their portfolios, which can include the use of Scope 1, 2, and 3 data as stipulated. Within our qualitative assessments, such as climate scorecards developed and used by our Fundamental Equity team, Scope 3 data may be incorporated if deemed decision-useful by the investment team.

Furthermore, our reporting capabilities can provide information on all scopes to address certain regulatory requirements or when certain clients specifically request Scope 3 data in their reporting. Scope 3 data may also be used in our research and thought leadership when appropriate, accompanied by relevant disclaimers. Finally, for proprietary investment strategies that specifically target an emission-related metric, our default approach is to use Scope 1 and 2, normalized by revenues.

Rationale for emissions metric selection

Various factors may influence the consideration of Scope 3 data in investment decision-making. Some investors may consider Scope 3 data financially material, noting that it can constitute the largest portion of total emissions for certain sectors.[3] Additionally, corporate disclosures regarding Scope 3 have increased in recent years. This trend has contributed to improved data availability, potentially facilitating broader use.

Furthermore, Scope 3 data has been incorporated into the requirements of the EU CTBs and PABs and the EU Sustainable Finance Disclosure Regulation (SFDR). Under the SFDR, certain investors are required to publish entity-level Principal Adverse Impacts (PAIs) annually regarding their investments. These PAIs include indicators related to Scope 3 emissions, which may prompt some investors to specifically address Scope 3 within their portfolios.

However, the use of Scope 3 data also presents several potential challenges. First, the disclosure rate remains relatively lower compared to Scope 1 and 2 data across data vendors' coverage universes. Second, the quality of disclosure can vary, influenced by dependency on supply chain data and challenges with data timeliness. Additionally, companies frequently rely on estimation methodologies, which may differ between entities, potentially resulting in notable variations even in company-reported data. Moreover, double or even triple counting at the entity and portfolio levels exists when Scope 3 is incorporated. Finally, analysis conducted for this paper indicates that a significant portion of information provided by Scope 3 data may also be proxied by other climate metrics.

Figure 2: Key factors influencing the consideration and utilization of Scope 3 emissions data

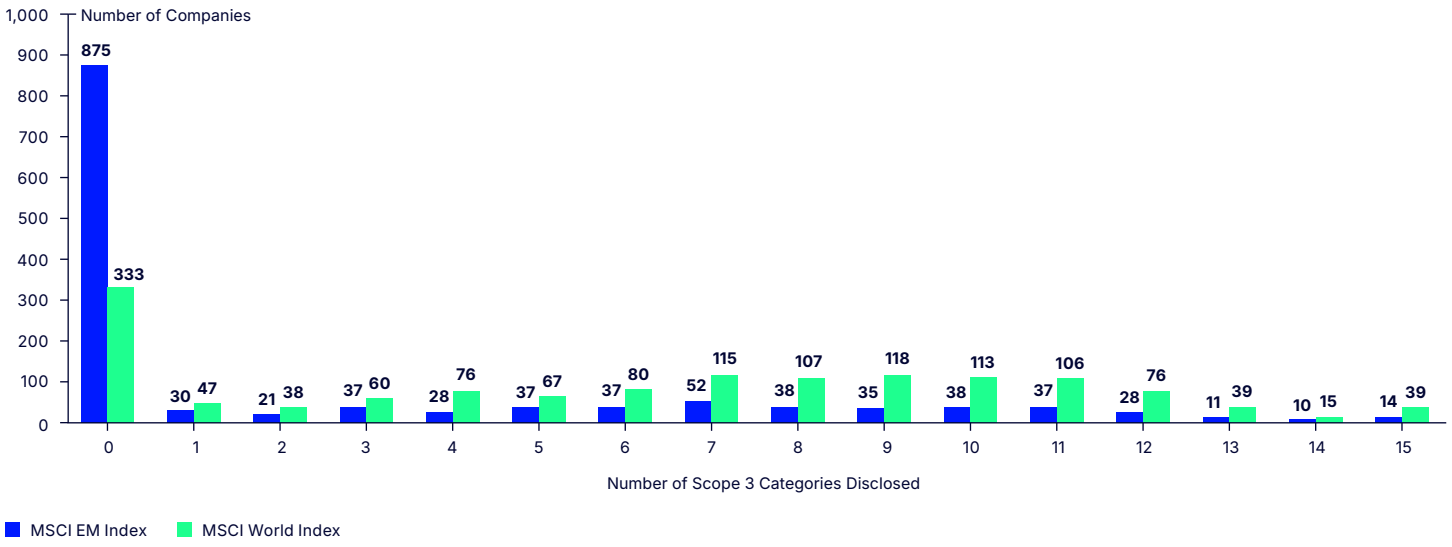
Factors favoring Scope 3 data consideration	Challenges associated with Scope 3 data utilization
Potential financial materiality	Variable quality of disclosed data
Growing corporate disclosures	Lower disclosure rate compared to Scope 1 and 2
Specific regulatory requirements	Double/triple counting at the entity/portfolio level
	Overlap in informational value with other climate metrics

Source: State Street Investment Management analysis. Data as of 30 April 2025.

Based on the analysis of these factors, including the observed characteristics of Scope 3 data discussed above, the approach presented in this paper utilizes Scope 1 and 2 for specific investment decision-making applications. The analysis indicates a potential trade-off between the data quality and reliability of Scope 3 data and the potential additional information value it may offer. The assessment suggests that the current state of Scope 3 data quality and reliability is not yet sufficient to support its use for portfolio construction.

The subsequent sections outline key findings based on this research.

Figure 3: Distribution of companies in MSCI World and MSCI Emerging Markets Indices by number of Scope 3 categories disclosed (2023)



Source: State Street Investment Management analysis. Data from CDP, MSCI. Data as of July 2024.

Insights from data providers

We consulted three climate data providers (ISS, MSCI, and S&P Global Trucost) regarding the quality and usability of Scope 3 data. These consultations indicated that the disclosure rate for Scope 3 data is relatively low compared to that for Scope 1 and 2 data, although Scope 3 disclosures have significantly increased. For example, according to data from one provider, the number of companies reporting Scope 3 emissions doubled between 2020 and 2022. However, this figure represented only half the number of companies reporting Scope 1 and 2 emissions in 2022.

Additionally, disclosures of Scope 3 emissions are often incomplete, as they may not encompass all 15 defined categories. For instance, data as of 2023 indicate that only 39 companies in the MSCI World Index and 14 in the MSCI Emerging Markets Index disclosed all 15 Scope 3 categories (see Figure 3). There is also an absence of standardized guidance concerning the materiality of each Scope 3 category for specific sectors that can result in inconsistent reporting across companies.

In contrast to Scope 1 and 2 emissions, which are generally considered more straightforward to measure, challenges associated with data collection from the value chain and data timeliness contribute to a high reliance on estimation for Scope 3 data. Furthermore, the estimation methodologies used can vary significantly among companies, potentially leading to meaningfully different and incomparable data.[4,5] Consequently, even when Scope 3 data are disclosed, their reliability and consistency may not be adequate for direct utilization in investment decision-making processes.

Reflecting concerns about the quality of disclosed data, one provider reported high rejection rates for collected Scope 3 data. This provider noted that more than 50% of the Scope 3 data it collected in 2022 was rejected, compared to a rejection rate of 1.4% for Scope 1 and 2 data. Another provider, by default, furnishes its own estimates for Scope 3 data, supplying company-reported data as a separate dataset. The majority of data providers utilize proprietary models to estimate Scope 3 data, a practice that can introduce further variations across datasets.

Regarding applications, all consulted providers indicated that Scope 3 data is considered useful for reporting purposes. Two of the three providers expressed the view that Scope 3 data may not yet be suitable for primary investment decision-making and suggested that if Scope 3 data are incorporated, their analysis should be distinct from that of Scope 1 and 2 data. The third provider posited that the informational value of Scope 3 data could outweigh existing data quality challenges.

Standards and regulations overview

Disclosure requirements are anticipated to increase, primarily driven by national adoptions of the International Sustainability Standards Board (ISSB) standards, specifically International Financial Reporting Standards (IFRS) Sustainability Disclosure Standard 1 (IFRS S1), *General Requirements for Disclosure of Sustainability-related Financial Information,* and *Sustainability Disclosure Standard 2 (IFRS S2), Climate-related Disclosures*.

These are voluntary corporate reporting standards for sustainability-related financial information, which can be adopted by individual jurisdictions and mandated as national regulations. Countries such as Australia, Malaysia, and Singapore have incorporated IFRS S2 into their respective disclosure regulations, which will include requirements for companies to report Scope 3 emissions. These requirements are scheduled for phased implementation, with an anticipated improvement in disclosures over the coming years. It is also important to note that all disclosures under the IFRS standards are subject to a materiality assessment, allowing companies to omit Scope 3 disclosures if these are deemed immaterial.

Concerning investment-related regulations, the EU CTBs and PABs incorporate specific carbon reduction targets utilizing the Scope 1+2+3/EVIC metric (defined as a company's total Scope 1, 2, and 3 emissions divided by its enterprise value including cash). This regulation acknowledged the limited availability of Scope 3 data at the time of its formulation. When it was first published in 2020, it provided for a phased introduction of Scope 3 requirements by December 2024, anticipating an improvement in data quality. Conversely, it is noteworthy that current prominent net-zero investor frameworks, such as the Net Zero Asset Owners Alliance (NZAOA) and the Net Zero Investment Framework (NZIF), do not currently stipulate the use of Scope 3 emissions for target-setting purposes.

Figure 4: Overview of Scope 3 emissions requirements in selected disclosure regulations and standards

Name	Scope 1&2	Scope 3	Notes
TCFD	✓	?	While not required, the TCFD encourages organizations to consider disclosing Scope 3 when they are a significant part of their total emissions.
IFRS — S2	✓	✓	Nominally required, with one year grace period for Scope 3. All disclosures are subject to a materiality assessment. See also national adoption below.
EU CSRD	✓	✓	Nominally required. All disclosures are subject to a materiality assessment.
PCAF	✓	✓	For disclosure related to investee companies, Scope 3 to be phased in by sector, all sectors required from 2025.
EU SFDR (for Funds)	✓	✓	Required under Principal Adverse Impact (PAI) reports.
California	✓	✓	Scope 1&2/3 required from 2026/2027. Applies to companies that do business in California with over $1 bn in revenues.
Australia	✓	✓	Based on IFRS S2. Scope 1&2/3 required from 2025/2026.
Hong Kong	✓	✓	Based on IFRS S2. For large caps, Scope 1&2/3 required from 2025/2026.
Malaysia	✓	✓	Based on IFRS S2. For large caps, Scope 1&2/3 required from 2025/2027.
Singapore	✓	✓	Based on IFRS S2. For large caps, Scope 1&2/3 required from 2025/2026.

Source: State Street Investment Management analysis. Data as of November 2024. For illustration only.

Figure 5: Overview of Scope 3 emissions requirements in selected disclosure regulations and standards

Name	Scope 1&2	Scope 3	Notes
EU Benchmark Regulation	✓	✓	Scope 3 to be phased in by sector, all sectors required from 12/2024. Specifically requires Scope 1+2+3/EVIC
Net Zero Asset Owner Alliance (NZAOA)	✓	?	Scope 3 to be tracked, but targets not required (based on Fourth Edition of the Target Setting Protocol)
Net Zero Investment Framework (NZIF)	✓	?	Scope 3 to be monitored, but targets not required (based on NZIF 2.0)

Source: State Street Investment Management analysis. Data as of November 2024. For illustration only.

Analysis of Scope 3 emissions data in equity portfolios

To better understand the characteristics of Scope 3 data within the equity universe, an analysis was conducted on the MSCI World Index, utilizing emissions data from various data providers. The analysis indicates a high correlation for Scope 1 and 2 emissions data among the three providers, whereas combined Scope 1, 2, and 3 emissions data exhibit considerable divergence (see Figure 6).

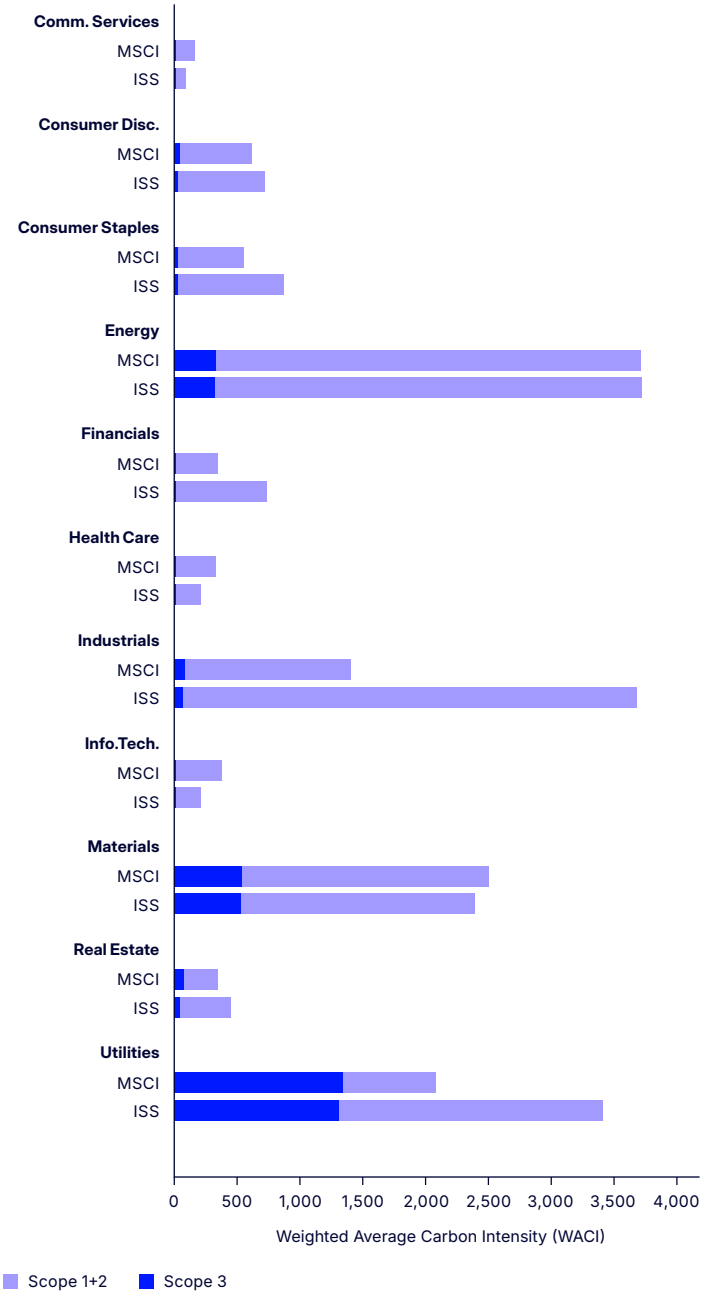
A comparison of emissions intensity of Scope 1 and 2 versus Scope 1, 2, and 3 reveals consistency in the identification of the top four carbon-intensive sectors across both MSCI and ISS datasets. These sectors are Energy, Utilities, Materials, and Industrials. However, for the Financials, Materials, and Industrials sectors, combined Scope 1, 2, and 3 emissions data show notable differences between the two data providers (see Figure 7), illustrating the variability in estimated Scope 3 data.

Figure 6: Correlation analysis of carbon emissions metrics across MSCI, ISS, and S&P Global Trucost

	MSCI 1+2/Rev	ISS 1+2/Rev	S&P 1+2/Rev	MSCI 1+2+3/Rev	ISS 1+2+3/Rev
MSCI 1+2/Rev	1.00	0.94	0.93	0.68	0.45
ISS 1+2/Rev	0.94	1.00	0.92	0.66	0.47
S&P 1+2/Rev	0.93	0.92	1.00	0.67	0.41
MSCI 1+2+3/Rev	0.68	0.66	0.67	1.00	0.50
ISS 1+2+3/Rev	0.45	0.47	0.41	0.50	1.00

Source: State Street Investment Management analysis. Data from MSCI, ISS, S&P Global Trucost. Data as of July 2024.

Figure 7: Comparison of Weighted Average Carbon Intensity (WACI) by sector (Scope 1+2 vs. Scope 3) for MSCI World Index — MSCI and ISS Data (GICS Sector by Data Provider)

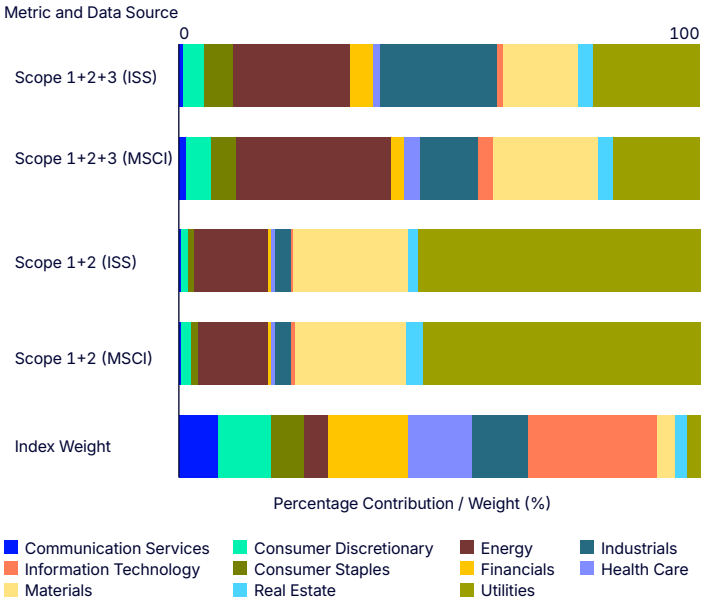


Source: State Street Investment Management analysis. Data from MSCI, ISS. Data of July 2024. Chart for illustrative purposes.

Further analysis indicates that the MSCI World Index weighted average carbon intensity (WACI) based on Scope 1 and 2 emissions is predominantly concentrated in the Utilities, Materials, and Energy sectors (see Figure 8). On the other hand, the Scope 1, 2, and 3 WACI appears less concentrated and other sectors have a meaningful contribution to the overall total (e.g., Industrials, Consumer Discretionary, Consumer Staples). Moreover, while the sectoral contribution to WACI from Scope 1 and 2 emissions appears broadly similar between the two data providers, the distribution based on combined Scope 1, 2, and 3 emissions shows notable differences.

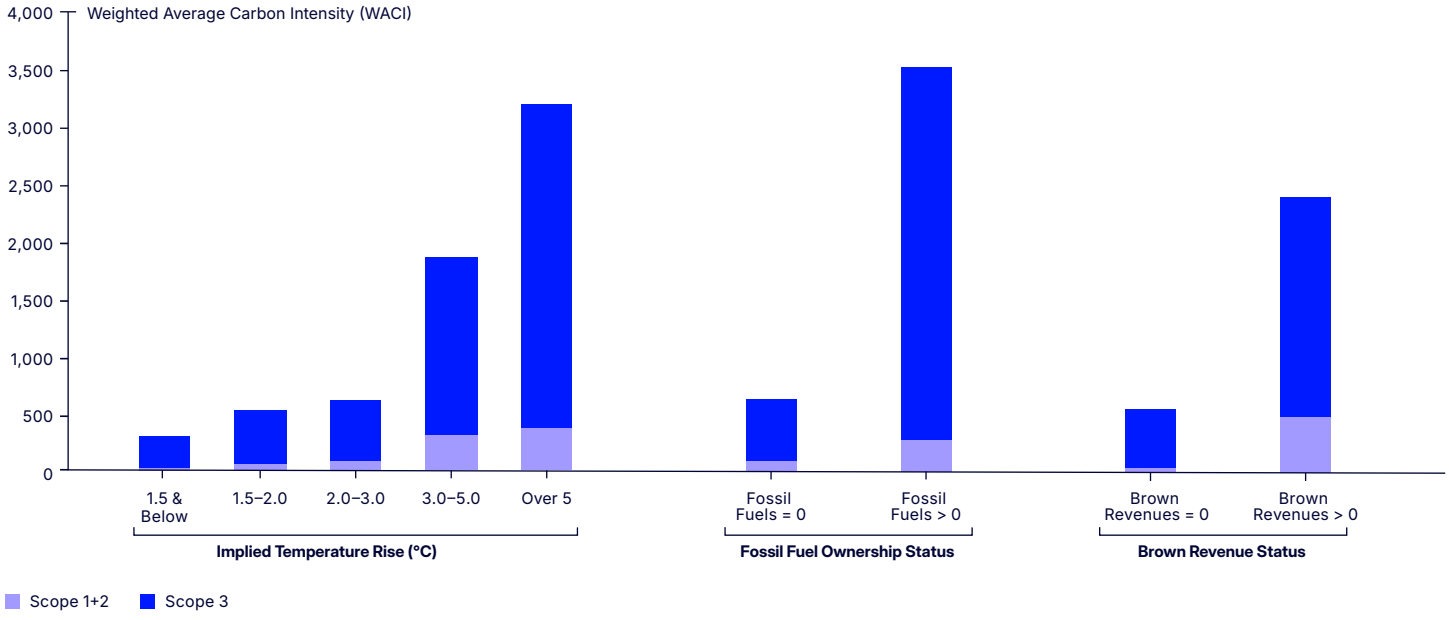
Finally, an examination of the relationship between Scope 3 emissions intensity and other carbon-related metrics — specifically, fossil fuel revenues, brown revenues, and Implied Temperature Rise (ITR) — indicated a positive correlation (see Figure 9). Companies with fossil fuel ownership or brown revenue sources exhibit notably higher Scope 3 WACI compared to those without such exposures. Similarly, companies with higher ITR values demonstrate higher Scope 3 emissions intensity relative to companies with lower ITR values. This observation suggests that these metrics may serve as correlative indicators, potentially capturing some of the informational content otherwise provided by detailed Scope 3 data. This finding is further supported by a regression analysis, details of which are available on request.

Figure 8: Sector contribution to WACI for MSCI World Index — comparison of Scope combinations and data providers



Source: State Street Investment Management analysis. Data from MSCI, ISS. Data of July 2024. Chart for illustrative purposes.

Figure 9: WACI by Scope type in relation to implied temperature rise/fossil fuel ownership/brown revenues

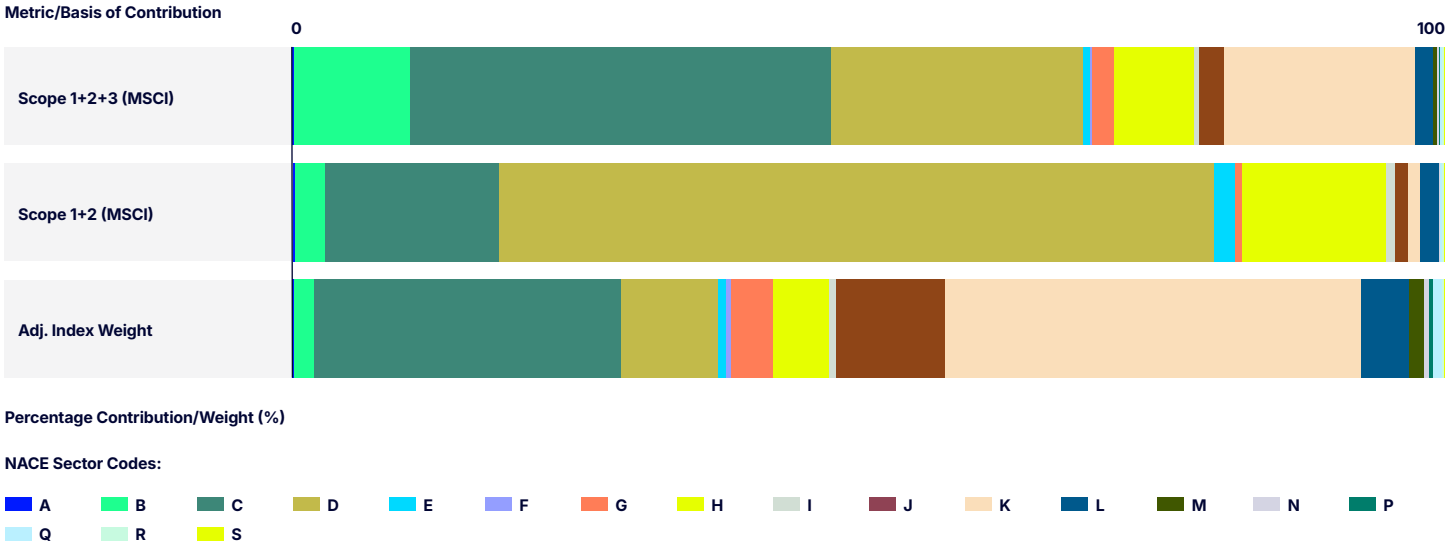


Source: State Street Investment Management analysis. Data from MSCI, ISS. Data of July 2024. Chart for illustrative purposes.

Analysis of Scope 3 emissions data in fixed income portfolios

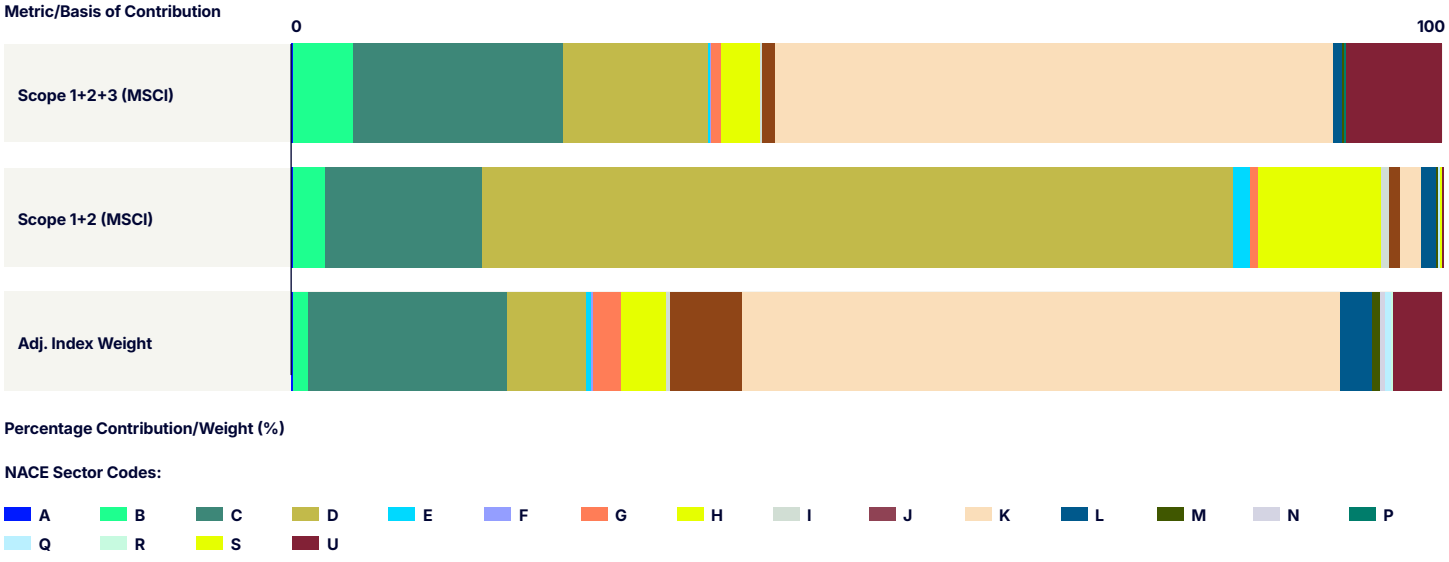
In corporate fixed income, the Financials and Industrials sectors typically represent substantially higher index weights compared to their representation in equity indices. Consequently, sector contributions to the index WACI exhibit a distinct profile relative to equities, which can influence outcomes when emissions metrics are targeted at the portfolio level. Furthermore, an analysis of the Global Aggregate Index (excluding treasuries) indicates that the majority of its WACI (derived from Scope 1, 2, and 3 emissions) originates from the Financial sector, which includes development banks and multilateral banks. In contrast, the WACI (derived from Scope 1 and 2 emissions) is predominantly constituted by the Utilities sector, an observation consistent with general expectations, in our view.

Figure 10a: NACE sector contribution to WACI in Global Aggregate Bond Index — Corporates



Source: State Street Investment Management analysis. Data from MSCI, Bloomberg. Data as of July 2024. Chart for illustrative purposes. Note: NACE refers to the Statistical Classification of Economic Activities in the European Community. Refer to Figure 11 for full NACE sector descriptions.

Figure 10b: NACE sector contribution to WACI in Global Aggregate Bond Index ex. Treasuries



Source: State Street Investment Management analysis. Data from MSCI, Bloomberg. Data as of July 2024. Chart for illustrative purposes. Note: NACE refers to the Statistical Classification of Economic Activities in the European Community. Refer to Figure 11 for full NACE sector descriptions.

Figure 11: Key to NACE sector codes used in Figures 10a and 10b

NACE Code	Sector Name
A	Agriculture, Forestry And Fishing
B	Mining And Quarrying
C	Manufacturing
D	Electricity, Gas, Steam And Air Conditioning Supply
E	Water Supply; Sewerage, Waste Management And Remediation Activities
F	Construction
G	Wholesale And Retail Trade; Repair Of Motor Vehicles And Motorcycles
H	Transportation And Storage
I	Accommodation And Food Service Activities
J	Information And Communication
K	Financial And Insurance Activities
L	Real Estate Activities
M	Professional, Scientific And Technical Activities
N	Administrative And Support Service Activities
P	Education
Q	Human Health And Social Work Activities
R	Arts, Entertainment And Recreation
S	Other Service Activities
U	Activities Of Extraterritorial Organizations And Bodies

Note: NACE refers to the Statistical Classification of Economic Activities in the European Community.

Analysis of normalization factors: EVIC versus revenues

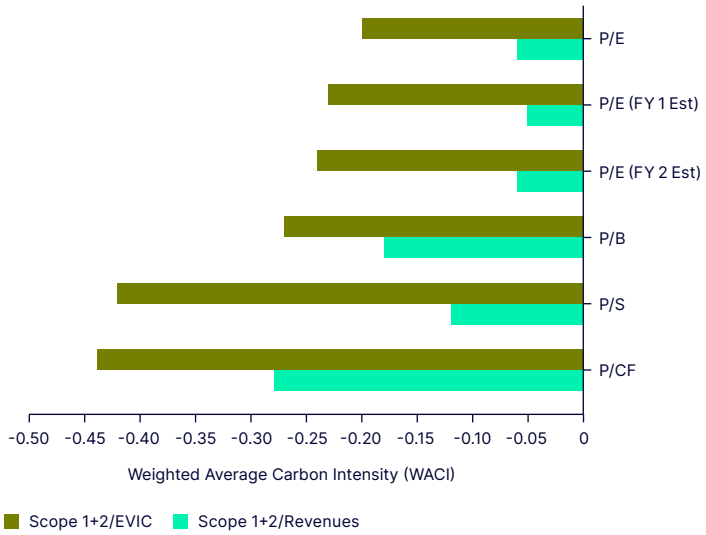
Another consideration in the selection of an emissions metric involves the choice of normalization factor. Commonly utilized normalization factors include market value, EVIC, and revenues. Absolute emissions data provide information on the scale of carbon emitted; however, these data can present challenges for inter-sector comparisons and portfolio-level aggregation. Normalization by one of these factors produces a common unit (e.g., tons of CO_2 per unit of revenue), facilitating comparisons. This derived metric is referred to as emissions intensity.

In recent years, EVIC has gained prominence as a normalization factor relative to market capitalization, partly due to its applicability across different asset classes. This trend is supported by its utilization in the EU CTB and PAB requirements, and its recommendation by the Partnership for Carbon Accounting Financials (PCAF) for calculating financed emissions attributable to investors.

A comparison between revenues and EVIC as normalization factors indicates that revenues exhibit certain characteristics (see Table 2), which are considered in the selection of a normalization factor within the analytical framework presented. Revenues are considered more aligned with the emissions measurement period, as revenues represent a flow over a reporting period, analogous to how emissions data typically represent flows.

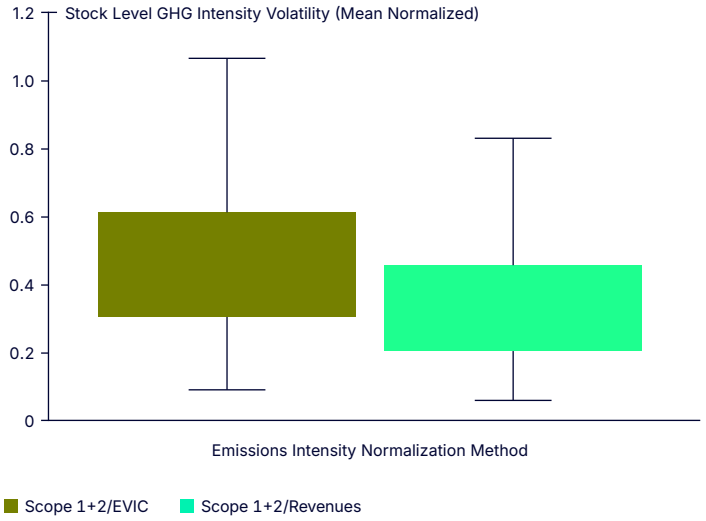
Conversely, EVIC is a point-in-time metric. Our analysis suggests that emissions intensity normalized by EVIC may exhibit a growth bias, as indicated by observed correlations with certain commonly used growth and value measures (see Figure 12). Furthermore, emissions intensity normalized by revenues demonstrates comparatively greater stability over time (see Figure 13).

Figure 12: Correlation of emissions intensity (normalized by EVIC vs. revenues) with Selected Financial Valuation Ratios



Source: State Street Investment Management analysis. Data from MSCI, FactSet. Data as of July 2024. Chart for illustrative purposes.

Figure 13: Volatility of company-level emissions intensity (normalized by EVIC vs. revenues) for MSCI World Constituents (2013–2024)



Source: State Street Investment Management analysis. Data from MSCI, FactSet. Data as of July 2024. Chart for illustrative purposes.

Figure 14: Comparative characteristics of revenues and EVIC as normalization factors for emissions intensity

Name	Scope 1&2	Scope 3
Enables comparison across company sizes	✓	✓
Can be used across equity and fixed income	✓	✓
Aligned with the period of emissions measurement	✓	✗
More stability over time	✓	✗
Lower growth bias	✓	✗
Aligned with PCAF and CTB/PAB	✗	✓
Aligned with TCFD	✓	✓

Source: State Street Investment Management analysis. Data as of November 2024.

Index Equity Portfolios — A point-in-time analysis

This section presents a point-in-time case study on constructing portfolios that track the MSCI World Index and the MSCI Emerging Markets Index while applying a carbon reduction objective. The objective utilizes either Scope 1 and 2 emissions or combined Scope 1, 2, and 3 emissions, with both metrics normalized by revenues. Key parameters for these carbon reduction strategies are outlined in Figure 15.

The resulting simulated portfolios exhibit higher ex-ante tracking errors across various carbon reduction target levels when incorporating the combined Scope 1, 2, and 3 metric, compared to those utilizing only Scope 1 and 2 emissions (see Figure 9). For example, at a 70% reduction target for portfolio carbon intensity, the simulation using Scope 1 and 2 emissions resulted in ex-ante tracking errors of 0.17% for the MSCI World Index and 0.18% for the MSCI Emerging Markets Index, respectively. When incorporating Scope 3 emissions (i.e., Scope 1+2+3), the corresponding simulated ex-ante tracking errors increased to 1.05% and 0.95%, respectively (see Figure 16). This difference may be attributable to the broader sectoral distribution of combined Scope 1, 2, and 3 emissions, as discussed in previous sections. Consequently, achieving an equivalent level of carbon reduction with the combined Scope 1, 2, and 3 metric necessitates greater deviations from the benchmark index.

Figure 15: Comparative characteristics of revenues and EVIC as normalization factors for emissions intensity

Parameter	Carbon Reduction Strategy (Scope 1+2/Revenues)	Carbon Reduction Strategy (Scope 1+2+3/Revenues)
Simulated Portfolio AUM	$1 billion	$1 billion
Liquidity	100% of 60-day MDV buy or sell max	100% of 60-day MDV buy or sell max
Holdings	Active: -2% to +2% relative to benchmark Max: Less than or equal to 10x benchmark weight	Active: -2% to +2% relative to benchmark Max: Less than or equal to 10x benchmark weight
Sector/Country/ Currency Weight	-1% to +1% relative to benchmark	-1% to +1% relative to benchmark
Carbon Intensity	-10% to -90% relative to the benchmark in steps of 10%	-10% to -90% relative to the benchmark in steps of 10%
Target Metric	MSCI Scope 1+2 normalized by revenues	MSCI Scope 1+2+3 normalized by revenues

Source: State Street Investment Management analysis. Data as of 30 September 2024. Note: The above targets are estimates based on certain assumptions and analysis made by State Street for illustrative simulation purposes. There is no guarantee that the above will be achieved.

Conclusion

The selection of an emissions metric and its corresponding normalization factor can have notable implications for portfolios designed with carbon reduction objectives. This paper examined the characteristics and limitations of Scope 3 emissions data in the context of its utilization for portfolio construction.

While corporate disclosures of Scope 3 emissions have been improving and regulatory frameworks increasingly mandate their disclosure and incorporation, the analysis indicates that the quality and consistency of this data generally remain lower compared to Scope 1 and 2 emissions data.

The research presented also indicated that the application of multiple climate-related metrics, including ITR, fossil fuels reserves, and brown revenues, may allow for the capture of certain informational aspects otherwise associated with Scope 3 data. This approach could contribute to the construction of portfolios aligned with certain carbon-related objectives.

Based on the considerations of data quality, consistency, and analytical findings discussed throughout this paper, the framework presented herein illustrates an approach for portfolio decarbonisation objectives that prioritizes the use of Scope 1 and 2 emissions, normalized by revenues.

The authors are grateful to the following individuals for their contributions and feedback in the development of this research article: Stefano Maffina, Benjamin Leale-Green, Chen He, Xiaole Sun, Patrick Bernard, Shaman Srivastava, Abhishek Kumar, Konstantin Nemnov, Alexis Royer and Devika Kaul.

Figure 16: Simulated Ex-Ante Tracking Errors (in %) for Varying Carbon Reduction Targets (WACI) in MSCI World and MSCI Emerging Markets Portfolios

	Carbon Reduction	0 (%)	-10 (%)	-20 (%)	-30 (%)	-40 (%)	-50 (%)	-60 (%)	-70 (%)	-80 (%)	-90 (%)
MSCI World	**Scope 1+2/Rev**	0.01	0.01	0.03	0.04	0.06	0.08	0.12	0.17	0.28	0.69
	Scope 1+2+3/Rev	0.01	0.04	0.09	0.15	0.22	0.33	0.52	1.05	3.33	—
MSCI EM	**Scope 1+2/Rev**	0.00	0.02	0.04	0.06	0.09	0.11	0.14	0.18	0.30	1.08
	Scope 1+2+3/Rev	0.00	0.03	0.06	0.10	0.17	0.27	0.45	0.95	3.46	—

Source: State Street Investment Management analysis; data from Axioma, MSCI, as of 30 September 2024. Note: The tracking error data presented are from a hypothetical, point-in-time simulation for illustrative purposes and are not indicative of past or future performance of any investment product. Simulated results do not represent actual trading and outcomes may differ substantially. Index information is actual but not indicative of future results. Benchmarks are the MSCI Word Index and the MSCI Emerging Markets Index.

Endnotes

1 "The Climate Opportunity". State Street Investment Management, September 2024.

2 Commission Delegated Regulation (EU) 2020/1818 of 17 July 2020 supplementing Regulation (EU) 2016/1011 of the European Parliament and of the Council as regards minimum standards for EU Climate Transition Benchmarks and EU Paris-aligned Benchmarks.

3 CDP Technical Note: Relevance of Scope 3 Categories by Sector

4 Solving the Scope 3 conundrum.

5 Jia, Jimmy and Ranger, Nicola and Chaudhury, Abrar, Designing For Comparability: A Foundational Principle of Analysis Missing In Carbon Reporting Systems (October 25, 2022). Available at SSRN.

About State Street Investment Management

At State Street Investment Management, we have been helping to deliver better outcomes to institutions, financial intermediaries, and investors for nearly half a century. Starting with our early innovations in indexing and ETFs, our rigorous approach continues to be driven by market-tested expertise and a relentless commitment to those we serve. With over $4 trillion in assets managed*, clients in over 60 countries, and a global network of strategic partners, we use our scale to create a comprehensive and cost-effective suite of investment solutions that help investors get wherever they want to go.

*This figure is presented as of March 31, 2025 and includes ETF AUM of $1,553.58 billion USD of which approximately $106.42 billion USD in gold assets with respect to SPDR products for which State Street Global Advisors Funds Distributors, LLC (SSGA FD) acts solely as the marketing agent. SSGA FD and State Street Global Advisors are affiliated. Please note all AUM is unaudited.

statestreet.com/investment-management