S&P Dow Jones Indices
A Division of S&P Global

Introducing the S&P Sustainable Development Goals Indices

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Executive Summary

On Jan. 9, 2024, S&P Dow Jones Indices (S&P DJI) announced the expansion of its suite of sustainability-oriented indices with the launch of the S&P 500® SDG Index and the S&P Global LargeMidCap SDG Index. The indices are designed to offer market participants broad-based equity performance measurements and diverse exposures to companies that are collectively more aligned with the United Nations' 17 Sustainable Development Goals (SDGs).

This paper:

- Explains the underlying data used for the index construction.
- Explains the construction of the S&P SDG Indices.
- Summarizes the historical results of the S&P SDG Indices relative to their respective underlying indices. This includes:
  - Improved index-level exposure to positively aligned SDG revenue.
  - Reduced index-level exposure to negatively aligned SDG revenue.
  - Increased index-level exposure to companies that have operational performance aligned to the SDGs (measured by the SDG operation score).
  - Reduced index-level greenhouse gas (GHG, expressed in CO_2 equivalents) emissions intensity.

Introduction

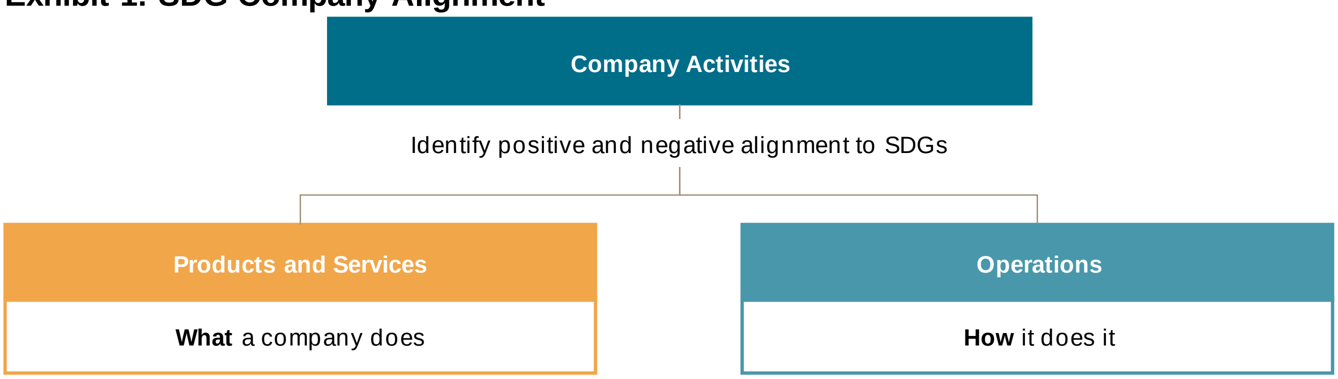
"The 17 Sustainable Development Goals (SDGs), which are an urgent call for action by all countries—developed and developing—in a global partnership. They recognize that ending poverty and other deprivations must go hand-in-hand with strategies that improve health and education, reduce inequality, and spur economic growth—all while tackling climate change and working to preserve our oceans and forests."[1] The 17 goals are a result of more than a decade of work, with each goal encompassing a clearly stated objective and multiple measurable targets. While the SDGs were initially created as a shared roadmap for countries, they can also be used as a framework for investors. This is because the data allows for the identification and measurement of specific impact(s) that a company's activities may have on both society and the environment—regardless of the financial materiality.

Resultingly, S&P DJI has designed a transparent index methodology which looks to provide investors with the opportunity to align their investments to the UN's SDGs and deploy capital toward specific societal and sustainability-focused objectives.[2]

SDG Data

S&P DJI has utilized the corporate SDG alignment data from Impact Cubed.[3] The data provides a quantitative view of SDG alignment by mapping both a company's revenue generating activities through their products and services and their operations. By considering where a company sells its goods and services, and how it operates as a business, the framework creates a quantitative view of how it may be aligned to the SDGs and their net impact on society.

Exhibit 1: SDG Company Alignment



Source: S&P Dow Jones Indices LLC. Data as of April 2024. Chart is provided for illustrative purposes.

[1] https://sdgs.un.org/goals

[2] Our previous SDG paper expands on this.

[3] Impact Cubed Limited ("Impact Cubed") website: Impact Cubed | Investment Advisory

Products and Services Data

Impact Cubed's Sustainable Products and Services dataset maps a company's revenue streams to over 2,300 activities and categorizes their alignment to each individual SDG[4] as either positive, neutral or negative accounting for geolocation where relevant.

For example, SDG 2 Zero Hunger aims to "end hunger, achieve food security and improved nutrition, and promote sustainable agriculture."[5] While the use of fertilizers may be deemed beneficial to food production in certain countries (thus positively meeting Target 2.2 "end all forms of malnutrition" and Target 2.4 to create "sustainable food production and resilient agricultural practices"), if fertilizers and pesticides are overused or used unnecessarily in other countries, they may cause significant environmental impacts and negatively impact Target 2.5, which is to "maintain the genetic diversity in food production."

As a result, Impact Cubed's data accounts for where a company is selling its products and services and the positive or negative impact it has on that specific location.

At a security level, a company can be mapped to one or more revenue stream, and the aggregated SDG revenue alignment is the sum of the revenue streams mapped to each SDG in the positive and negative categories, expressed as a percentage of the issuer's total revenue.

Operations Data

The operations dataset analyzes a company's operations and uses 11 operational ESG factors from Impact Cubed's Corporate Factor model. Each factor is mapped to one or more SDG considering both direct and indirect links.

The mapping is then weighted dependent on each factor's relevance to that SDG. A weighted average is then used to measure the alignment of a company to each SDG.

Climate Data

Carbon Intensity Data

The S&P SDG Indices use Carbon Intensity Data from S&P Global Sustainable1. This dataset provides robust environmental data on more than 16,800 companies.[6] The Carbon Intensity Data provides insights relating to climate change, water use, waste disposal, fossil fuel exposure, land, water and air pollution, and the over-exploitation of natural resources. With

[4] Note that SDG 17 Partnerships for the Goal is not linked to any business activity or specific products and services.

[5] Goal 2: Zero Hunger - The Global Goals

[6] Source: S&P Global Trucost, S&P Global Sustainable1. Data as of Dec. 31, 2022.

quantitative, robust and consistent environmental data, index methodologies can integrate carbon objectives to aid market participants with the ability to better manage their exposure to carbon.

GHG emissions are commonly framed using company revenue in a metric referred to as carbon intensity (CO_2e ton per USD 1 million of revenue). In short, entities with lower carbon intensity values generate less GHG emissions per USD 1 million of revenue compared with entities with higher carbon intensity values. A weighted average carbon intensity (WACI) metric normalizes carbon intensity to account for company weight in the index. This also allows for comparison across companies, industries and sectors.

There are several approaches to measuring the carbon intensity of a portfolio. The EU Regulation 2020/1818 stipulates that the carbon intensity of a company should be measured by dividing its GHG emissions by its enterprise value including cash (EVIC). When using EVIC as the denominator, it allows the ownership of carbon emissions to be apportioned across equity and bondholders per U.S. dollar invested.

Index Mechanics

The index aims to be a broad and diversified measure of companies that collectively have greater alignment to all 17 SDGs through their activities and operations when compared to the underlying index, as well as reducing index-level GHG (expressed in CO_2 equivalents) emissions intensity compared to the underlying index. To meet the index objectives, S&P DJI utilizes a transparent “glass-box” optimization process that minimizes deviations from the underlying index. Utilizing this process has historically resulted in broad and diversified indices with similar performance to their underlying index.[7]

The starting point is the underlying universe, in this case, the S&P 500 or the S&P Global LargeMidCap.

[7] How Glass-Box Optimization Brings Transparency to Sustainability, Glass-Box Optimization: Bringing Clarity to Sustainability Indices (spglobal.com)

Apply Exclusions

The underlying index securities are excluded based on undesirable exposures. These include:

- Business activities that may be deemed controversial including tobacco, controversial weapons, military contracting, small arms, thermal coal and oil sands. For more details on the threshold, please see the S&P Sustainable Development Goals Indices Methodology.
- Companies classified as violators or non-compliant with the 10 principles of the United Nations Global Compact (UNGC).[8, 9]
- Companies involved in relevant ESG controversies, as determined by the S&P Global Media and Stakeholder Analysis (MSA) Overlay.
- Companies whose net revenue is negatively aligned to sustainable goals.
- Companies whose operations fall within the bottom 5% of SDG operational score in the S&P Global LargeMidCap.

If a constituent has no coverage by S&P Global's Business Involvement Screening, Impact Cubed nor S1 GHG emissions data, it won't be eligible. Total GHG emissions data coverage includes Scope 1, Scope 2 and Scope 3 data.

Minimize Active Share

At each rebalancing reference date eligible companies are reweighted through an optimization process that seeks to reduce the number of deviations from the original weight subject to several constraints.

The optimization process ensures that the index remains broad and diversified while tilting toward companies that are better aligned to the SDGs through their revenues and operations. This process also ensures that index construction also accounts for SDG, climate and index construction constraints. For further information, please refer to the S&P Sustainable Development Goals Indices Methodology.

[8] The UN Global Compact, which was established in 2000, commits it signatories—companies and nations from around the world—to abide by principles related to human rights, labor, the environment and anti-corruption. For more information, see www.unglobalcompact.org.

[9] Please refer to www.sustainalytics.com for more information.

Exhibit 2: Index Mechanics

Step 1: Underlying Universe

S&P 500, S&P Global LargeMidCap

Step 2: Apply Exclusions

Net Negative SDG Revenue Alignment	Worst 5% Percentile by Operational SDG Score	UNGC	Business Activities	MSA

Step 3: Optimize

Minimize Active Share

The optimizer applies:

Stock penalties

To maintain minimum deviations from the broad underlying index which allows for sector, industry and country bias toward SDG's while providing cleaner weight transparency.

Apply Constraints

1. SDG Revenue Targets
2. SDG Operation Score Targets
3. Decarbonization Targets
4. Index Construction Constraints

Source: S&P Dow Jones Indices LLC. Data as of April 2024. Chart is provided for illustrative purposes.

The objective function is as follows:

$$Minimize\left(\frac{1}{n}\sum_{i=1}^{n}\left[\frac{(\text{Underlying Index Weight}_i - \text{Optimized Weight}_i)^2}{\text{Underlying Index Weight}_i}\right]\right)$$

Apply Constraints

SDG Groups

The index methodology utilizes group level constraints to ensure that any improvements to the revenue and operation scores are not derived from one single SDG category. This provides increased assurance that any improved SDG metrics created by the index are derived from across all 17 SDGs.

The UN Department of Economic and Social Affairs has “recognized three dimensions of sustainable development: the economy, society and the environment.”[10] Academic research

[10] Transforming our world: the 2030 Agenda for Sustainable Development

sub-categorizes those three dimensions further to account for each of the 17 SDGs[11] (see Exhibit 3).

Exhibit 3: Sustainable Development Goals Grouping

Society	Economy	Environment
1 | No Poverty	8 | Decent Work and Economic Growth	13 | Climate Action
2 | Zero Hunger	9 | Industry, Innovation and Infrastructure	14 | Life Below Water
3 | Good Health and Well-Being	10 | Reduced Inequalities	15 | Life on Land
4 | Quality Education	12 | Responsible Consumption and Production	
5 | Gender Equality	17 | Partnerships for the Goals	
6 | Clean Water and Sanitation		
7 | Affordable and Clean Energy		
11 | Sustainable Cities and Communities		
16 | Peace, Justice and Strong Institutions		

Source: S&P Dow Jones Indices LLC. Data as of April 2024. Chart is provided for illustrative purposes.

SDG Revenue Targets

The index aims to increase exposure to companies that have positive revenue alignment to the SDGs and reduce exposure to companies that have negative revenue alignment. It achieves this by reweighting companies.

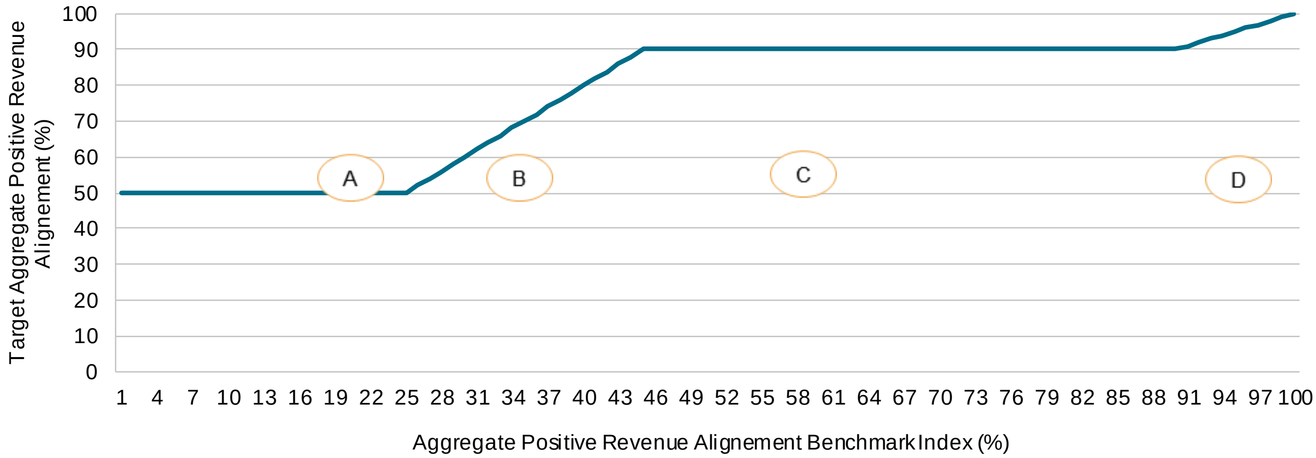
Positively Aligned SDG Revenues

Where a company’s total positive revenue equals 45% or less, the optimizer will reweight the company until its aggregate revenue is either doubled or reaches at least 50%.

Where a company’s total positive revenue is equal to or greater than 45%, the optimizer will adjust the company’s benchmark weight until the percentage of positive revenue reaches a minimum of 90% or matches that of its benchmark.

[11] https://doi.org/10.1038/s41467-019-14108-y

Exhibit 4: Target Aggregate Positive Revenue Alignment



Company	SDG Index Revenue (%)	Target SDG Index Revenue (%)	Reasoning
A	20.0	50.0	The target SDG revenue reaches at least 50%
B	30.0	60.0	The target SDG revenue is doubled
C	60.0	90.0	The target SDG revenue reaches at least 90%
D	96.0	96.0	The target SDG revenue reaches that of its benchmark

Source: S&P Dow Jones Indices LLC. Data as of April 2024. Chart and table are provided for illustrative purposes.

Negatively Aligned SDG Revenues

Despite removing all companies that have “net negative” revenues within the exclusions, as described above, there may still be companies with negatively aligned revenues that are eligible for selection. The index methodology aims to reduce the SDG index’s negatively aligned SDG revenue to half of that of the underlying index, or to 10%, whatever is lower. The index also targets aggregate negative aligned revenue per SDG group that is lower than or equal to the benchmark, therefore aiming to reduce exposure to companies that have negatively aligned SDG revenue.

SDG Operation Targets

The S&P SDG Indices aim to improve the SDG operational performance relative to the underlying index.[12] By ensuring that the improvement is either equivalent to or higher than removing the lowest 20% of SDG operation scores by weight, the optimizer can ensure that the constraint is not affected by the distribution of the operation scores in the local universe.

Decarbonization Targets

Inspired by the initial decarbonization of Climate Transition Benchmarks, the S&P SDG Indices have a 30% decarbonization target as measured by Scope 1 and 2 WACI and 30% decarbonization target as measured by Scope 1, 2 and 3 WACI.

This ensures the indices account for both the emissions that companies can control directly and those in their supply chains.

Index Construction Constraints

The S&P SDG Indices incorporate several index construction constraints to ensure the indices remain diversified and reflect local fund regulations.

The diversification constraints include:

1. A relative company weight. A company cannot be more than 2% greater than its weight in the underlying index.
2. An absolute maximum company weight. A company's weight cannot be more than 5%, or company's weight in the underlying index, in the case that the latter is greater.
3. Consistent with European UCITS 20/35 rule. The index permits the maximum company weight to reach 31.5% while no other constituent should exceed 18%.[13]

Index Characteristics and Historical Performance

The first value date for the S&P 500 SDG Index and S&P Global LargeMidCap SDG Index is aligned to the availability of the SDG data. Historically, the S&P SDG Indices have outperformed their benchmarks over both the one- and three-year periods (see Exhibit 5).

[12] Improvement is measured at the index level using the SDG Operation Score

[13] The Undertakings for the Collective Investment in Transferable Securities (UCITS) is the European Commission's regulatory framework for managing and selling mutual funds. The 20/35 diversification rule was designed to ensure that a UCITS investment fund's maximum concentration of a single risk is 35%, with none of the other risks exceeding a maximum of 20%.

Exhibit 5: Risk/Return Profile

Metric	S&P 500	S&P 500 SDG Index	S&P Global LargeMidCap	S&P Global LargeMidCap SDG Index
Launch Date	March 4, 1957	Dec. 18, 2023	Dec. 31, 1997	Dec. 18, 2023
Stock Count	503	330	3506	1247
Annualized Return (%)				
1-Year	26.3	32.0	22.9	27.1
3-Year	10.0	10.3	6.1	6.0
Annualized Risk (%)				
3-Year	17.5	18.8	16.3	17.3
Returns/Risk (%)				
3-Year	0.6	0.5	0.4	0.3
Tracking Error (%)				
1-Year	-	2.1	-	1.7
3-Year	-	2.4	-	2.0
Active Share (%)		**25.8**		**29.6**

Source: S&P Dow Jones Indices LLC. Data as of Dec. 31, 2023. Index performance based on total return in USD. The S&P 500 SDG Index was launched Dec. 18, 2023. The S&P Global LargeMidCap SDG Index was launched Dec. 18, 2023. All data prior to index launch date is back-tested hypothetical data. Past performance is no guarantee of future results. Table is provided for illustrative purposes and reflects hypothetical historical performance. Please see the Performance Disclosure at the end of this document for more information regarding the inherent limitations associated with back-tested performance.

The stock count for both indices remains broad, with the S&P 500 SDG Index including around 66% of the S&P 500 (330 out of 503 constituents) and the S&P Global LargeMidCap SDG Index maintaining around 36% of the S&P Global LargeMidCap (1247 of 3506 stock count) as of Dec. 31, 2023.

Total exclusions for the S&P 500 SDG Index represent 18% of the S&P 500 Float Adjusted Market Cap (FMC) while for the S&P Global LargeMidCap SDG Index total exclusions represent 21% of S&P Global LargeMidCap Index FMC.[14]

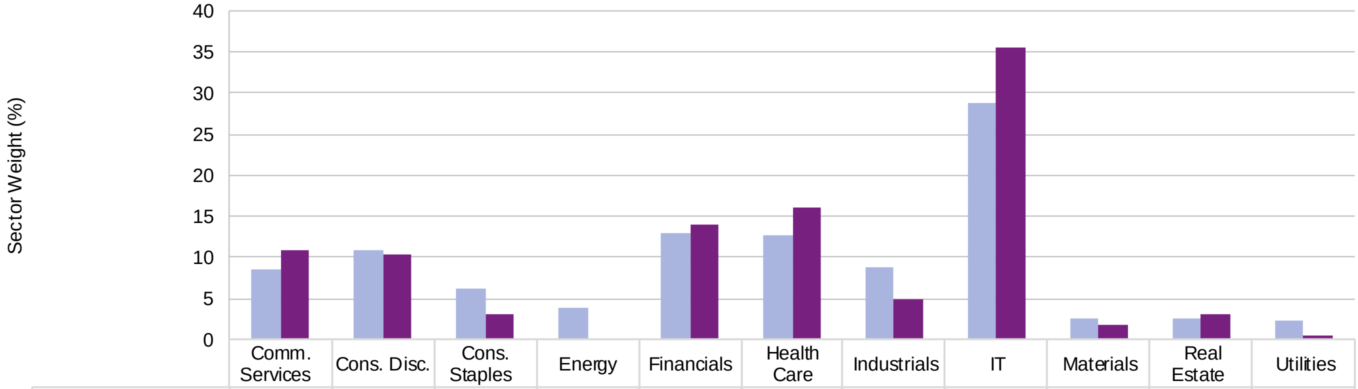
Tracking error and active share for both the S&P 500 SDG Index and S&P Global LargeMidCap SDG Index are moderate (see Exhibit 5) considering that the index methodology targets a number of improvements related to the sustainable development goals.

[14] Source: S&P DJI as of Nov. 17, 2023

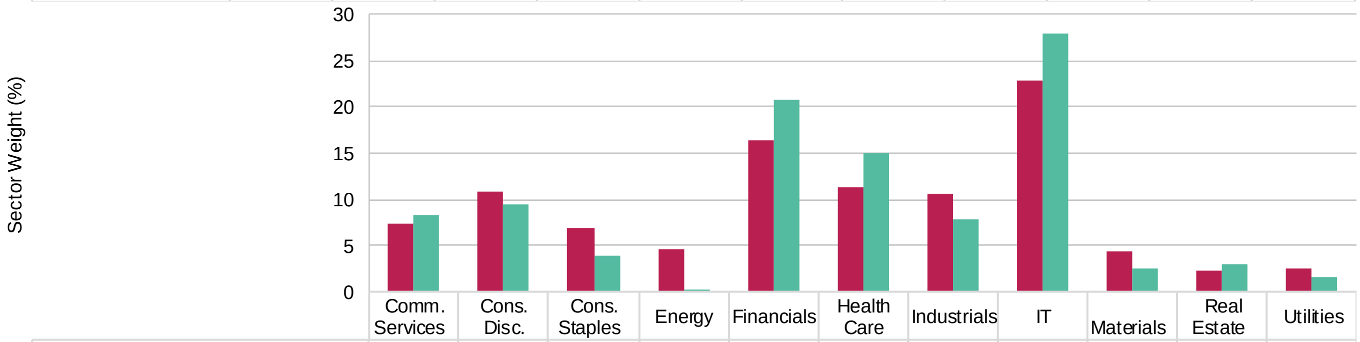
Sector Composition

Impact Cubed's SDG approach to analyzing companies is dependent on industry affiliation. The S&P SDG Indices allow for that industry bias by controlling the active share on a stock level and not on a sector or country level. Exhibit 6 illustrates active sector exposure in both universes as of Dec. 31, 2023. The S&P 500 SDG Index had an active share of 13.95% whereas the S&P Global LargeMidCap SDG Index had an active share of 14.82%.

Exhibit 6: Sector Exposure



	Comm. Services	Cons. Disc.	Cons. Staples	Energy	Financials	Health Care	Industrials	IT	Materials	Real Estate	Utilities
S&P 500	8.58	10.85	6.15	3.89	12.97	12.62	8.81	28.86	2.41	2.52	2.34
S&P 500 SDG Index	10.75	10.39	3.02	--	13.99	16.06	4.79	35.63	1.85	3.07	0.44



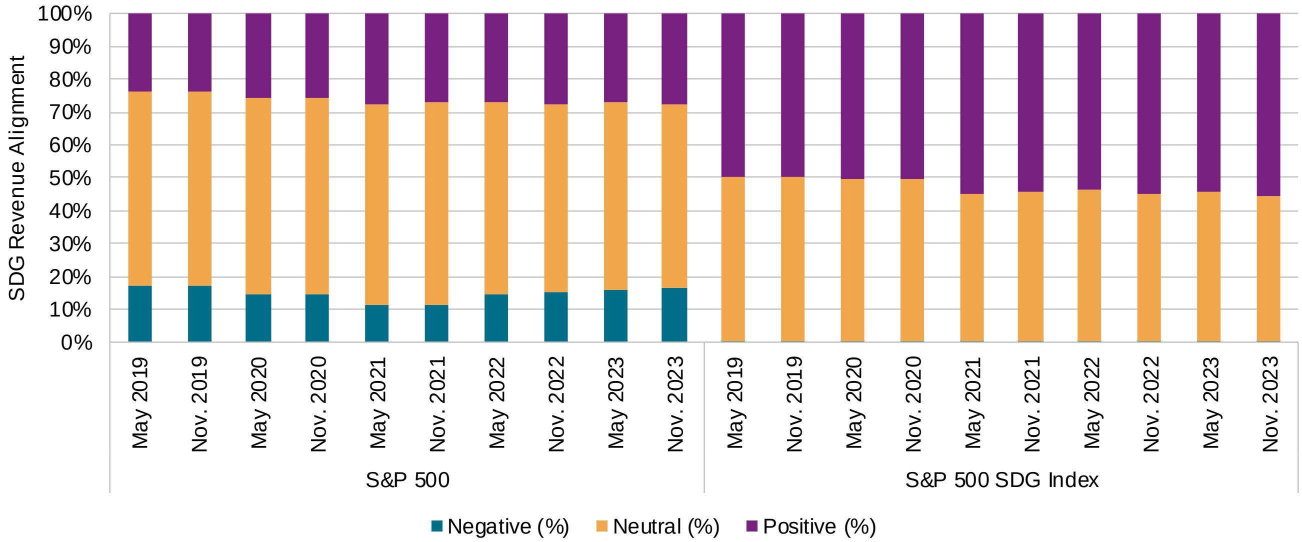
	Comm. Services	Cons. Disc.	Cons. Staples	Energy	Financials	Health Care	Industrials	IT	Materials	Real Estate	Utilities
S&P Global LargeMidCap	7.29	10.87	6.78	4.55	16.38	11.20	10.69	22.87	4.45	2.29	2.61
S&P Global LargeMidCap SDG Index	8.39	9.33	3.78	0.04	20.79	15.03	7.83	27.77	2.49	2.87	1.68

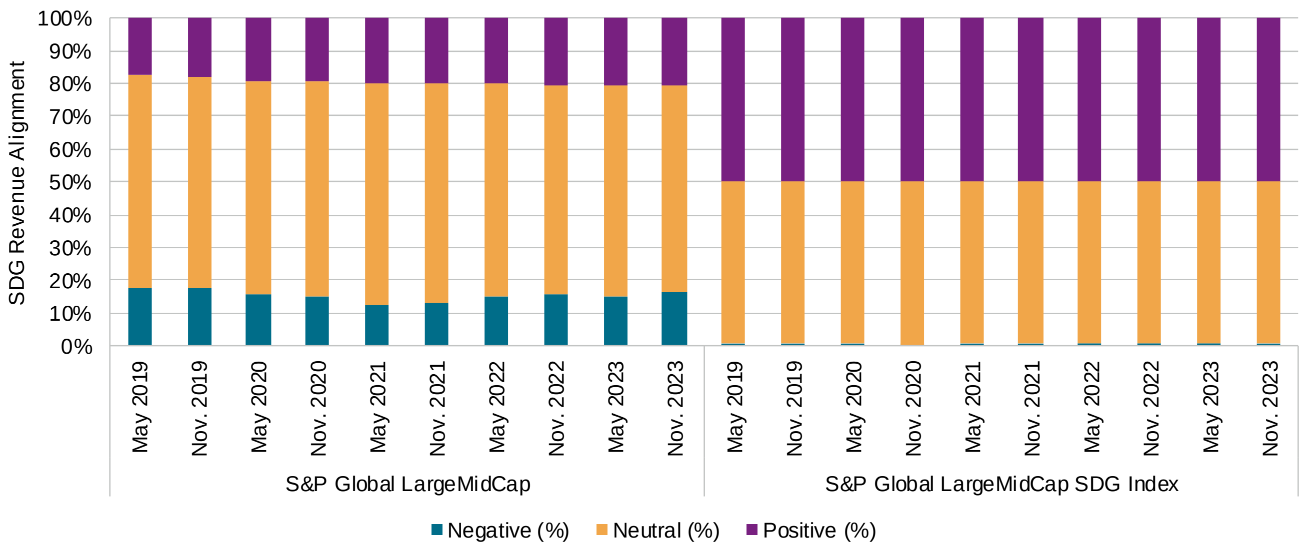
Source: S&P Dow Jones Indices LLC. Data as of Dec. 31, 2023. The S&P 500 SDG Index was launched Dec. 18, 2023. The S&P Global LargeMidCap SDG Index was launched Dec. 18, 2023. All data prior to index launch date is back-tested hypothetical data. Charts are provided for illustrative purposes and reflect hypothetical historical performance. Please see the Performance Disclosure at the end of this document for more information regarding the inherent limitations associated with back-tested performance.

SDG Revenue Alignment

The positive SDG revenue alignment of the S&P 500 ranges between 23%-28%, with the highest alignment at 27.9% as of Nov. 17, 2023. The positive aggregate revenue alignment for the S&P 500 SDG Index ranges between 50% and 56%, illustrating that the S&P 500 SDG Index includes a greater number of companies whose revenues are positively aligned to the SDGs. This can also be seen in the S&P Global LargeMidCap SDG Index, where the positive aggregate revenue alignment is 50% versus its underlying index, whose positive SDG revenue alignment ranges between 17% and 21%.[15]

Exhibit 7: Aggregate SDG Revenue Alignment





Source: S&P Dow Jones Indices LLC. Data as of Nov. 17, 2023. The S&P 500 SDG Index was launched Dec. 18, 2023. The S&P Global LargeMidCap SDG Index was launched Dec. 18, 2023. All data prior to index launch date is back-tested hypothetical data. Charts are provided for illustrative purposes and reflect hypothetical historical performance. Please see the Performance Disclosure at the end of this document for more information regarding the inherent limitations associated with back-tested performance.

For the positively aligned SDG revenue per SDG group and the negatively aligned SDG revenue per SDG group, the optimization has resulted in better alignment by groups as shown in Exhibit 8.

[15] The index uses EVIC to allocate each dollar of revenue to the equity index, corresponding to how many dollars of revenue there are in the index per dollar invested. Aggregated figures in Exhibit 7 and Exhibit 8 are using this adjustment.

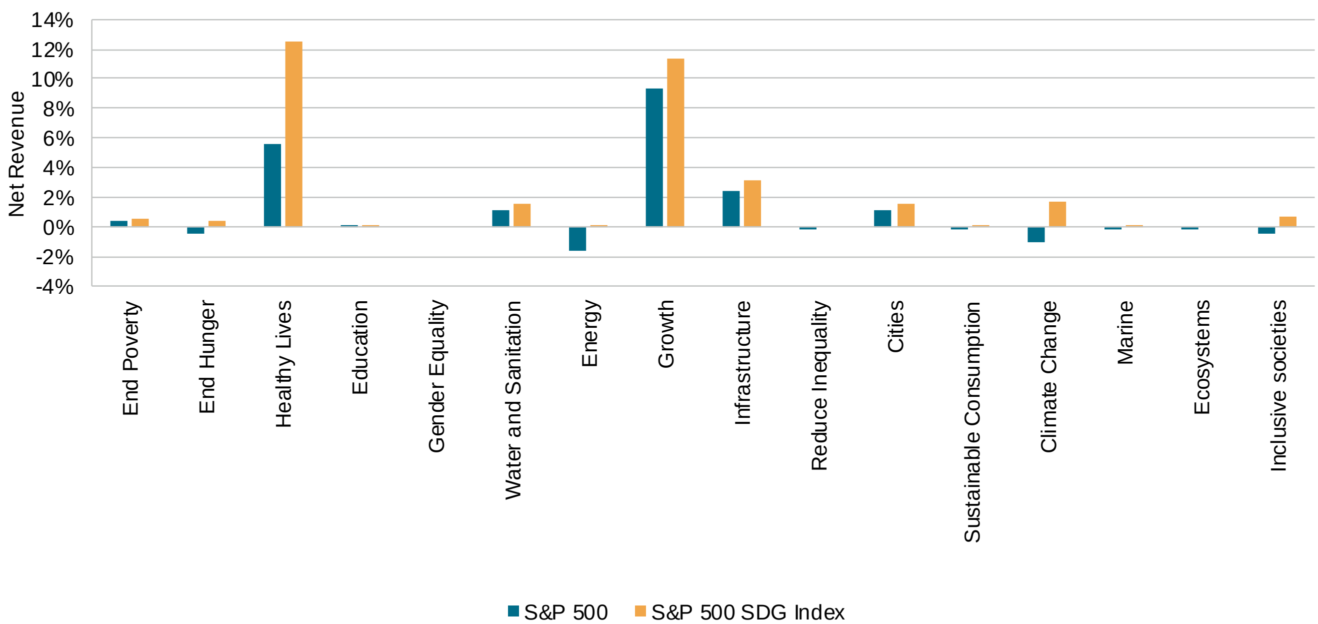
Exhibit 8: Average SDG Revenue Alignment by Groups

Index	SDG Revenue Alignment by Groups (%)					
	Society Positive	Economy Positive	Environment Positive	Society Negative	Economy Negative	Environment Negative
S&P 500	21	4	1	8	1	6
S&P 500 SDG Index	46	6	1	0	0	0
S&P Global LargeMidCap	14	4	1	8	1	6
S&P Global LargeMidCap SDG Index	42	6	2	0	0	0

Source: S&P Dow Jones Indices LLC. Data as of Nov. 17, 2023. The S&P 500 SDG Index was launched Dec. 18, 2023. The S&P Global LargeMidCap SDG Index was launched Dec. 18, 2023. All data prior to index launch date is back-tested hypothetical data. Table is provided for illustrative purposes and reflects hypothetical historical performance. Please see the Performance Disclosure at the end of this document for more information regarding the inherent limitations associated with back-tested performance.

An example based on the S&P 500 universe (see Exhibit 9) illustrates that the net revenue[16] improvements happen across goals[17] and are not relying on a single goal. Please note that there are no constraints related to individual goals in this index methodology.

Exhibit 9: Net Revenue Alignment by Goal



Source: S&P Dow Jones Indices LLC. Data as of Nov. 17, 2023. The S&P 500 SDG Index was launched Dec. 18, 2023. The S&P Global LargeMidCap SDG Index was launched Dec. 18, 2023. All data prior to index launch date is back-tested hypothetical data. Chart is provided for illustrative purposes and reflects hypothetical historical performance. Please see the Performance Disclosure at the end of this document for more information regarding the inherent limitations associated with back-tested performance.

[16] Net Revenue alignment by goal not transformed by EVIC.

[17] Note that SDG 17 Partnerships for the Goal is not linked to any business activity or specific products and services. Its revenue alignment will always be zero.

SDG Operational Alignment

While the aggregate operations SDG score is improved versus the benchmark, it's not enough for the S&P 500 universe to pass to the positive side. On the other hand, for the S&P Global Large Midcap universe, all cases changed from the negative side to the positive.

Exhibit 10 shows the aggregate SDG operation scores from May 2019 to November 2023. The S&P 500 aggregate SDG operation score is negative for all periods, with its lowest in November 2023 at -0.33. The S&P 500 SDG Index improved the score, the majority of the time reducing the negative impact to half or less, and in a couple of cases even turning to a positive score. Meanwhile, the S&P Global LargeMidCap started off with a negative aggregate SDG operation score, while the S&P Global LargeMidCap SDG Index improved the score and was positive.

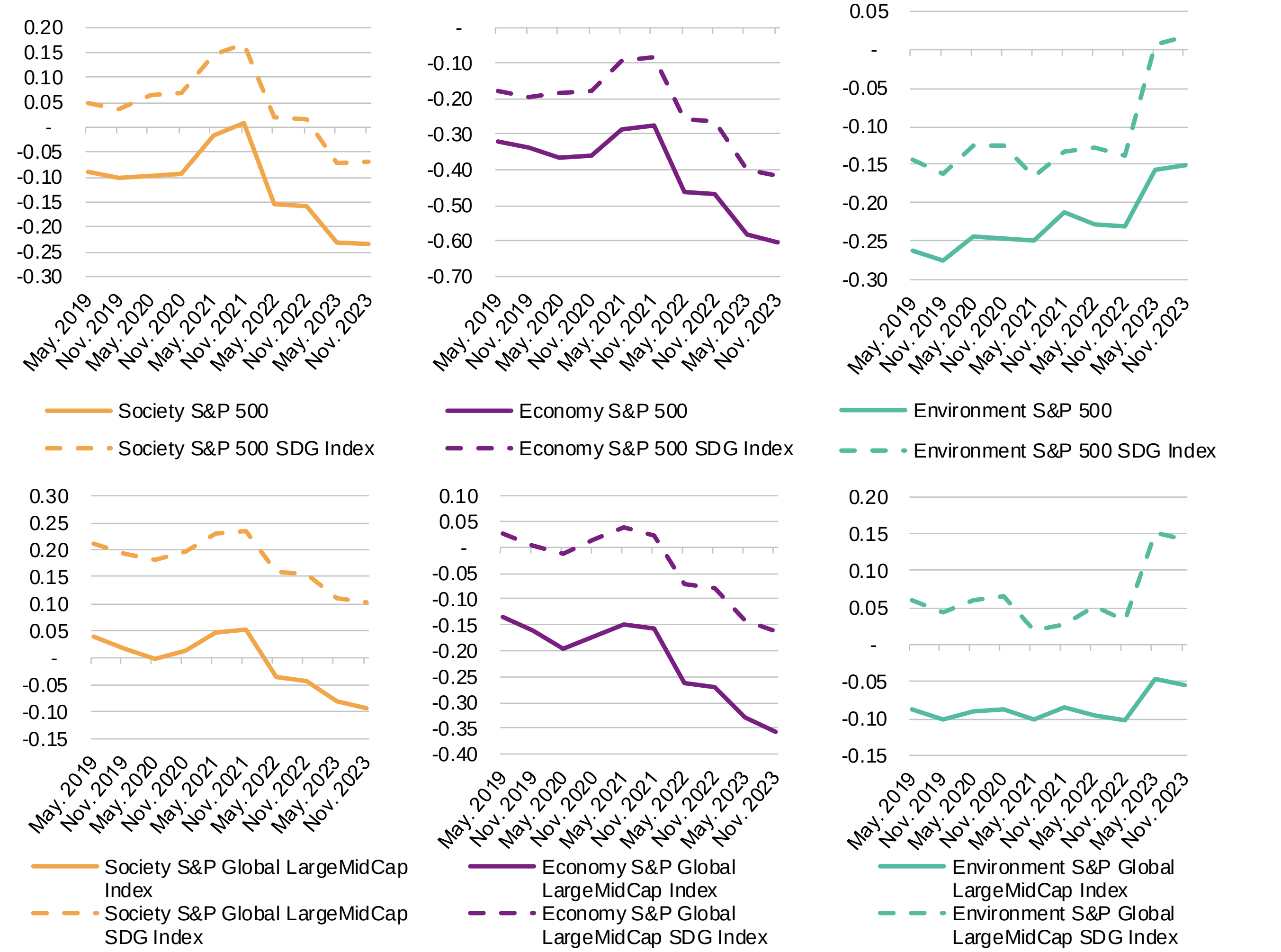
Exhibit 10: Aggregate SDG Operation Score

Date	S&P 500	S&P 500 SDG Index	S&P Global LargeMidCap	S&P Global LargeMidCap SDG Index
May 2019	-0.19	-0.05	-0.03	0.13
Nov. 2019	-0.20	-0.07	-0.06	0.11
May 2020	-0.20	-0.04	-0.07	0.10
Nov. 2020	-0.20	-0.04	-0.06	0.12
May 2020	-0.14	0.02	-0.04	0.14
Nov. 2021	-0.11	0.04	-0.03	0.14
May 2022	-0.26	-0.09	-0.11	0.07
Nov. 2022	-0.26	-0.09	-0.12	0.06
May 2023	-0.32	-0.15	-0.15	0.04
Nov. 2023	-0.33	-0.16	-0.16	0.03

Source: S&P Dow Jones Indices LLC. Data as of Nov. 17, 2023. The S&P 500 SDG Index was launched Dec. 18, 2023. The S&P Global LargeMidCap SDG Index was launched Dec. 18, 2023. All data prior to index launch date is back-tested hypothetical data. Table is provided for illustrative purposes and reflects hypothetical historical performance. Please see the Performance Disclosure at the end of this document for more information regarding the inherent limitations associated with back-tested performance.

The constraint around operation score target by group is using the weighted-average SDG operation score per SDG Group to be greater or equal to that of the benchmark. Exhibit 11 illustrates how the objective of improving the group level SDG operation score has been achieved.

Exhibit 11: SDG Operation Score Groups



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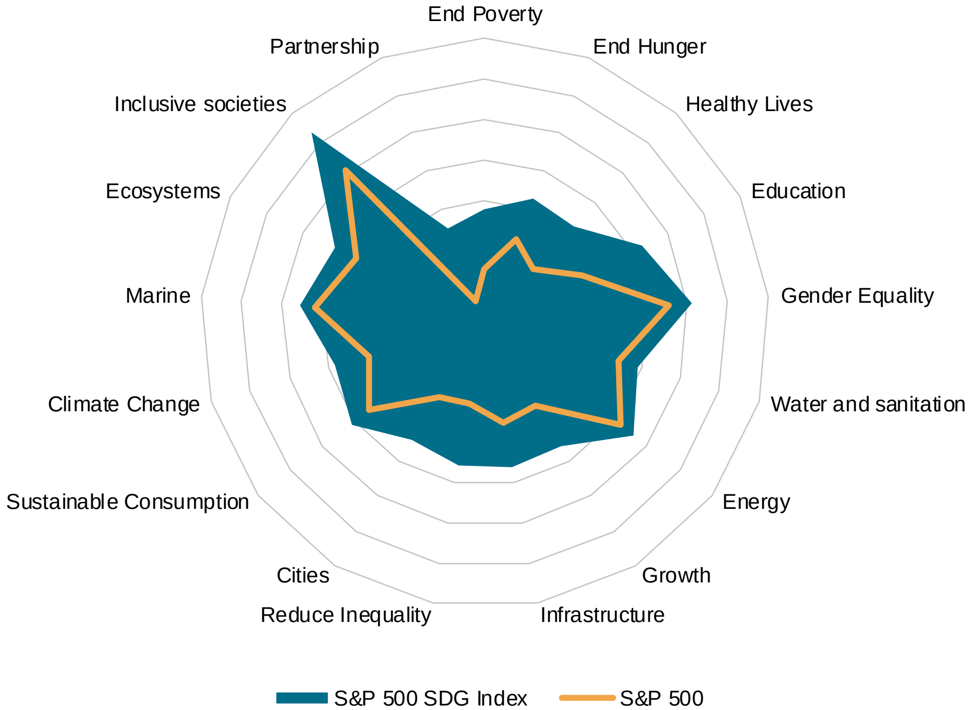
As described in the previous section, the group constraints are implemented in the index to ensure the improvements to the revenues/scores are not overwhelmingly coming from one SDG category. Exhibit 11 illustrates (based on the S&P 500 SDG case) that this is being achieved, as we have improvement in each of the 17 SDGs, including SDG 17 Partnerships for the Goal, and we are not relying on just one of them through the operational lens. Please note that there are no constraints related to individual SDGs in this index methodology.

Exhibit 12: Average SDG Revenue Alignment by Goal

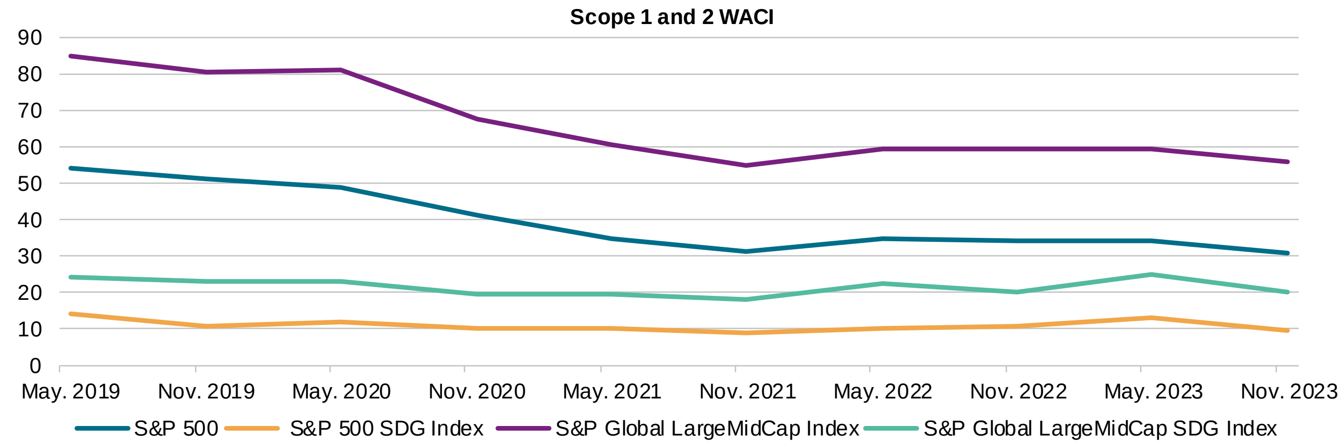


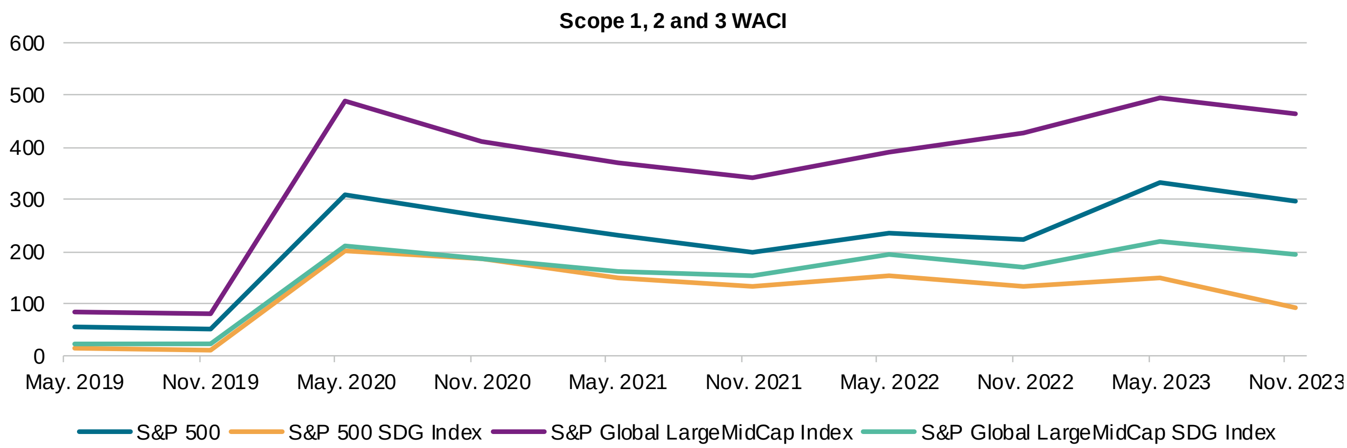
Source: S&P Dow Jones Indices LLC. Data as of Nov. 17, 2023. The S&P 500 SDG Index was launched Dec. 18, 2023. All data prior to index launch date is back-tested hypothetical data. Chart is provided for illustrative purposes and reflects hypothetical historical performance. Please see the Performance Disclosure at the end of this document for more information regarding the inherent limitations associated with back-tested performance.

Decarbonization

Decarbonization targets look to reduce carbon intensity by at least 30%. The average improvement of the Scope 1 and 2 WACI for the S&P 500 SDG Index was 71% and for the S&P Global LargeMidCap SDG Index was 67%. When considering Scope 1, 2 and 3 WACI, the average improvement was 49% and 59% for the S&P 500 SDG Index and S&P Global LargeMidCap SDG Index, respectively.

Exhibit 13: Historical Carbon Intensity





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Case Studies

Below are company-level examples of the reweighting attribution model used to explain the S&P SDG Indices, according to different SDG factors for eligible companies. Exhibit 14 aims to provide transparency by depicting examples of how an individual stock is reweighted in the S&P SDG Indices relative to its underlying index, based on revenue and operations SDG alignment score as well as carbon figures.

The table employs a color-coding system, in which blue shades represent relatively positive SDG or climate metric exposure, while orange tones depict weaker values compared with the underlying index.

Exhibit 14: Reweighting of Individual Stocks in the S&P 500 SDG Index Based on SDG and Climate Factors

Company	GICS Sector Name	Revenue (%)					
		Net	Negative	Positive	Positive - Society Group	Positive - Economy Group	Positive - Environment Group
Nvidia Corp	Information Technology	0	0.00	0	0	0	0
Tesla, Inc	Consumer Discretionary	100	0.00	100	34	32	34
Visa Inc A	Financials	14	0.00	14	7	7	0
Microsoft Corp	Information Technology	48	0.00	48	0	48	0
Apple Inc.	Information Technology	1	0.00	1	0	1	0
JP Morgan Chase & Co	Financials	0	0.00	0	0	0	0
AbbVie Inc.	Health Care	5	0.00	5	5	0	0
Amazon.com Inc	Consumer Discretionary	16	0.00	16	0	16	0

Company	GICS Sector Name	Operations Score			
		Aggregate Original	Society Group	Economy Group	Environment Group
Nvidia Corp	Information Technology	-0.14	-0.18	-0.29	0.24
Tesla, Inc	Consumer Discretionary	0.03	0.04	0.02	0.01
Visa Inc A	Financials	0.20	0.24	0.22	0.06
Microsoft Corp	Information Technology	0.22	0.30	0.19	0.04
Apple Inc.	Information Technology	0.10	0.16	-0.02	0.14
JP Morgan Chase & Co	Financials	-0.33	-0.27	-0.52	-0.19
AbbVie Inc.	Health Care	-0.55	-0.57	-0.78	-0.10
Amazon.com Inc	Consumer Discretionary	-0.31	-0.31	-0.48	-0.01

Company	GICS Sector Name	WACI		Total Return (%)	
		Scope 1 and 2	Scope 1, 2 and 3	S&P 500	S&P 500 SDG Index
Nvidia Corp	Information Technology	0.96	9.65	3.1	4.8
Tesla, Inc	Consumer Discretionary	0.19	59.95	1.7	3.0
Visa Inc A	Financials	9.11	12.14	1.0	1.9
Microsoft Corp	Information Technology	5.32	56.80	7.0	7.0
Apple Inc.	Information Technology	55.95	207.15	7.0	7.0
JP Morgan Chase & Co	Financials	7.38	29.18	1.2	1.0
AbbVie Inc.	Health Care	92.23	301.86	0.7	0.3
Amazon.com Inc	Consumer Discretionary	2.30	22.07	3.5	3.0

Source: S&P Dow Jones Indices LLC. Weights as of Dec. 29, 2023, SDG revenue, operations and carbon metrics data as of Nov. 17, 2023. SDG revenue alignment not rescaled by EVIC. The S&P 500 SDG Index was launched Dec. 18, 2023. The S&P Global LargeMidCap SDG Index was launched Dec. 18, 2023. All data prior to index launch date is back-tested hypothetical data. Table is provided for illustrative purposes and reflects hypothetical historical performance. Please see the Performance Disclosure at the end of this document for more information regarding the inherent limitations associated with back-tested performance.

Having an exact attribution to each of the SDG and climate factors is challenging due to the number of constraints targeted simultaneously, however one can notice that:

- For Nvidia, the high SDG operation score for the environment group combined with the carbon figures result in an overweight of 1.75% compared to the benchmark.
- When analyzing the Information Technology sector, we can see neutrality in the Microsoft and Apple weights, where index construction constraints played an important role. While Microsoft presented better positive revenue alignment and operations alignment, it was capped to the weight in the underlying index.
- In the case of Tesla, the revenues alignment is driving the 1.32% overweight compared to the benchmark.
- In the same sector, Consumer Discretionary, Amazon has been underweighted by 5%, most likely due to the negative alignment on the operational side.

What Sets the Indices Apart?

- The index objective considers broad exposure, targeting a reasonable amount of improvements from the benchmark.
- Greater alignment to all 17 SDGs through their activities and operations compared to the benchmark.
- SDG revenue alignment and operational data from the market-leading Impact Cubed that Identifies positive and negative SDG-aligned companies in relation to investees operations, products and services.
- Exclusions are applied to remove controversial business activities, including companies involved in controversial weapons, military contracting, tobacco products, small arms, thermal coal and oil sands.
- The indices exclude UNGC violators and integrate ongoing ESG controversy monitoring via the S&P Global MSA to ensure that any constituent that experiences a significant ESG incident between rebalances can quickly be removed from the index.
- The indices use the S&P DJI’s glass-box optimization, which seeks to minimize deviations from the underlying index while integrating multiple SDG objectives, such as a meaningful aggregate positive revenue alignment, operational improvements and a 30% decarbonization target.

- The indices embed diversification constraints to prevent concentration and adhere to UCITS 20/35 guidelines.
- The semiannual rebalance and quarterly constituent reviews help to ensure that the indices better reflect the constituents in the underlying indices and do not hold companies that have breached exclusion rules.

Conclusion

The S&P SDG Indices enhance the alignment to the UN's 17 goals and reduce the carbon footprint at the index level compared to the underlying indices. Alignment is measured holistically through the companies' revenues (positive and negative) and how they operate their business. The index methodology allows industry affiliation to appear at a moderate tracking error cost of around 200 bps over the analyzed periods (1- and 3-year periods as of Dec. 31, 2023).

Performance Disclosure/Back-Tested Data

The S&P 500 SDG Index and the S&P Global LargeMidCap SDG Index were launched Dec. 18, 2023. All information presented prior to an index's Launch Date is hypothetical (back-tested), not actual performance, and is based on the index methodology in effect on the index launch date. However, when creating back-tested history for periods of market anomalies or other periods that do not reflect the general current market environment, index methodology rules may be relaxed to capture a large enough universe of securities to simulate the target market the index is designed to measure or strategy the index is designed to capture. For example, market capitalization and liquidity thresholds may be reduced. In addition, forks have not been factored into the back-test data with respect to the S&P Cryptocurrency Indices. For the S&P Cryptocurrency Top 5 & 10 Equal Weight Indices, the custody element of the methodology was not considered; the back-test history is based on the index constituents that meet the custody element as of the Launch Date. Also, the treatment of corporate actions in back-tested performance may differ from treatment for live indices due to limitations in replicating index management decisions. Complete index methodology details are available at www.spglobal.com/spdji. Back-tested performance reflects application of an index methodology and selection of index constituents with the benefit of hindsight and knowledge of factors that may have positively affected its performance, cannot account for all financial risk that may affect results and may be considered to reflect survivor/look ahead bias. Actual returns may differ significantly from, and be lower than, back-tested returns. Past performance is not an indication or guarantee of future results.

Please refer to the methodology for the Index for more details about the index, including the manner in which it is rebalanced, the timing of such rebalancing, criteria for additions and deletions, as well as all index calculations. Back-tested performance is for use with institutions only; not for use with retail investors.

S&P Dow Jones Indices defines various dates to assist our clients in providing transparency. The First Value Date is the first day for which there is a calculated value (either live or back-tested) for a given index. The Base Date is the date at which the index is set to a fixed value for calculation purposes. The Launch Date designates the date when the values of an index are first considered live: index values provided for any date or time period prior to the index's Launch Date are considered back-tested. S&P Dow Jones Indices defines the Launch Date as the date by which the values of an index are known to have been released to the public, for example via the company's public website or its data feed to external parties. For Dow Jones-branded indices introduced prior to May 31, 2013, the Launch Date (which prior to May 31, 2013, was termed "Date of introduction") is set at a date upon which no further changes were permitted to be made to the index methodology, but that may have been prior to the Index's public release date.

Typically, when S&P DJI creates back-tested index data, S&P DJI uses actual historical constituent-level data (e.g., historical price, market capitalization, and corporate action data) in its calculations. As ESG investing is still in early stages of development, certain datapoints used to calculate S&P DJI's ESG indices may not be available for the entire desired period of back-tested history. The same data availability issue could be true for other indices as well. In cases when actual data is not available for all relevant historical periods, S&P DJI may employ a process of using "Backward Data Assumption" (or pulling back) of ESG data for the calculation of back-tested historical performance. "Backward Data Assumption" is a process that applies the earliest actual live data point available for an index constituent company to all prior historical instances in the index performance. For example, Backward Data Assumption inherently assumes that companies currently not involved in a specific business activity (also known as "product involvement") were never involved historically and similarly also assumes that companies currently involved in a specific business activity were involved historically too. The Backward Data Assumption allows the hypothetical back-test to be extended over more historical years than would be feasible using only actual data. For more information on "Backward Data Assumption" please refer to the FAQ. The methodology and factsheets of any index that employs backward assumption in the back-tested history will explicitly state so. The methodology will include an Appendix with a table setting forth the specific data points and relevant time period for which backward projected data was used.

Index returns shown do not represent the results of actual trading of investable assets/securities. S&P Dow Jones Indices maintains the index and calculates the index levels and performance shown or discussed but does not manage actual assets. Index returns do not reflect payment of any sales charges or fees an investor may pay to purchase the securities underlying the Index or investment funds that are intended to track the performance of the Index. The imposition of these fees and charges would cause actual and back-tested performance of the securities/fund to be lower than the Index performance shown. As a simple example, if an index returned 10% on a US $100,000 investment for a 12-month period (or US $10,000) and an actual asset-based fee of 1.5% was imposed at the end of the period on the investment plus accrued interest (or US $1,650), the net return would be 8.35% (or US $8,350) for the year. Over a three-year period, an annual 1.5% fee taken at year end with an assumed 10% return per year would result in a cumulative gross return of 33.10%, a total fee of US $5,375, and a cumulative net return of 27.2% (or US $27,200).

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