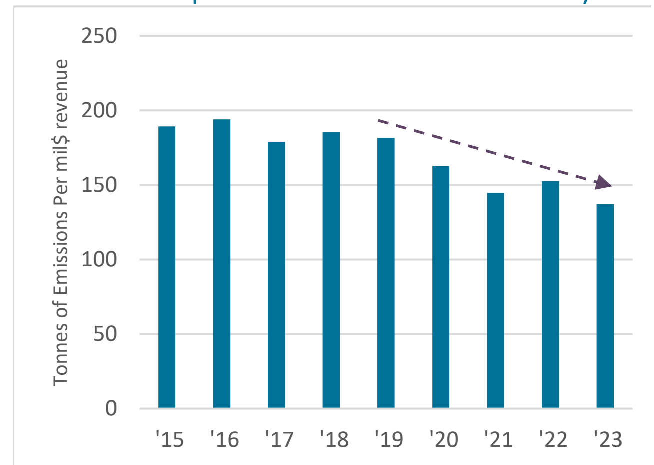
STATE STREET

Introducing The State Street S&P Global Institutional Investor Carbon Indicator

How Have Institutions' Carbon Risk Profiles Evolved? Our Decomposition Reveals The Drivers.

The **State Street S&P Global Institutional Investor Carbon Indicator** captures the degree to which global institutional investors are exposed to carbon risk in their equity portfolio investments.[1] This exposure can increase in three ways: 1) if investors sell shares in companies with a lower emissions profile and buy shares with a higher emissions profile, 2) if underlying companies in the portfolio emit more carbon due to changes in their operations, or 3) if carbon emitters take on greater weight in the portfolio due to price appreciation. Carbon risk is realized when companies incur additional financial costs from emitting carbon into the atmosphere, which could take the form of explicit costs (such as a carbon tax) or implicit costs (such as consumer preferences for greener products or investor preferences for greener stocks) that impact their bottom line. Investors around the world—including some of the world's largest pension funds, sovereign wealth funds, and investment managers—are increasingly taking this risk into account.



Source: State Street Associates, S&P Global

As with other market risks, securities prices (and therefore, portfolio values) move in advance of carbon risk being realized as investor views on the severity and likelihood of outcomes evolve. Imagine that a new bill calling for a $1,000 annual tax on gas-powered cars was introduced in the U.S. Congress. All else being equal, automaker stocks would drop based on the probability that investors, in aggregate, place on the bill's passage. If it secured the requisite votes in Congress, and the President was expected to sign the bill, automaker stocks would drop further as the outcome became more likely. But if the constitutionality of the bill were challenged and appealed to the Supreme Court, automaker stocks might rise again. Whatever their views on climate change, investors need to manage these risks in their portfolios, whether they stem from

[1] We focus on equity investments because realized carbon risk will tend to impact equity investors, who stand to bear the costs of carbon taxes, changing consumer preferences, or changes in the cost of capital before bondholders.

government policy, regulations, corporate responses, or changes in consumer preferences and behavior. The more carbon exposure in a portfolio, the more the portfolio is exposed to carbon risk.

The **Carbon Indicator**, the first bellwether of its kind, will help investors, the media, policymakers, and the public at large understand how some of the world's most influential investors are managing carbon risk. It brings together aggregated and anonymized custodial holdings information from State Street, drawn from a pool of over $36.7 trillion in institutional assets[2], with carbon emissions data from S&P Global, powered by S&P Global Sustainable1. At its highest level, the indicator has two variants: **emissions**, tonnes of carbon emitted by portfolio companies, and **intensity**, calculated as tonnes of carbon divided by company revenue.[3] Whereas emissions captures the overall volume of carbon emitted, intensity measures how efficiently companies "use" carbon to generate revenues. Beneath these headline measures, we can break down movements in the Carbon Indicator into several components to better understand what is driving them:

- **Flow effects** represent the decisions of portfolio managers (investors) to buy and sell specific companies, which changes the overall carbon profile of their portfolios. If a portfolio manager sells a low-emissions company and buys a high-emissions company, the overall carbon exposure of her portfolio will rise.
- **Company effects** represent the decisions of the underlying company management to change their operations, thereby changing the carbon profile of their companies. If the management of one company in the portfolio decides to use new technology in its operations that reduces emissions, this will reduce the overall carbon exposure of the portfolio even though the portfolio manager took no action.
- **Price effects** represent the changing valuations of companies due to a range of market factors, which changes their weight in the portfolio and therefore the weighted-average carbon calculation. If utility stocks rise, this will increase the portfolio's carbon exposure, all else equal, because higher emissions companies now have a larger weight. As a result, if carbon risk is realized, the portfolio is now going to be hit harder than it would have been if those companies had a lower weight. In other words, a larger share of the portfolio's value is exposed to carbon risk. This is akin to the notion that an increase in real estate taxes will have a bigger negative impact on a portfolio that is 75% allocated to real estate than a portfolio that is 25% allocated to real estate.

For more on this topic, see our 2021 working paper on Insights: **"We'll Always Have Paris: How Institutional Exposures to Carbon Emissions Have Evolved Since 2015"** by Alexander Cheema-Fox, George Serafeim and Hui (Stacie) Wang

[2] Assets under custody and administration as of December 31, 2022.

[3] Emissions is the carbon analogue of a firm's earnings in dollars, while intensity can be thought of as analogous to a firm's price to earnings ratio. High intensity means the firm "pays" a high amount (in carbon units) to earn a dollar of revenue, just as a high P/E multiple means an investor must pay a high amount for a dollar of earnings.

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Global Markets Research Disclaimer Supplement [2023.01]

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