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In focus

SustainEx Methodology Summary

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Since its launch in 2018, SustainEx has become the cornerstone of sustainability research at Schroders.

The backdrop to SustainEx

At Schroders we do not take a 'one size fits all' approach to ESG integration. We understand that different asset classes require different methods to integrate ESG into their investment processes effectively. We have therefore developed a suite of research based and quantitative ESG investment tools which provide insights to empower our investors to make decisions. SustainEx™ is one of our flagship proprietary models from Schroders' Sustainable Investment modelling team.

SustainEx™ provides our investment teams with an estimate of both the positive and negative 'externalities' that companies and countries may create for society or the environment. By understanding a company or sovereign issuers' externality profile we can achieve a nuanced, objective, and comprehensive view of the issuers' sustainability risk profile and the effect the issuer has across its stakeholders. All of this ultimately leads to more sustainable and informed investment decisions. The importance of this measure expands as these societal impacts increasingly transpire into tangible financial costs or benefits.

Figure 1: Exploration of corporate externalities and their effect on stakeholders

Source: Schroders 2024.

Schroders

SustainEx's methodology begins from the premise that companies and countries do not operate within a vacuum: they exist within societies, employing their citizens, selling their products, and operating under their laws. As societal pressures and government interventions are increasingly holding companies and countries accountable for the impacts they impose on society, financial expenses or benefits emerging from these previously unaccounted social issues are starting to have an impact (Figure 1). Measures such as minimum wage legislation, sugar taxes, gambling restrictions, and carbon price increases were once externalised, and are now being internalised on companies' financial statements, and the direction of travel will put costs against more of these in the years to come.

This shift puts pressure on companies and countries which have historically relied on avoiding the costs their products or operations impose on society. Consequently, the profit distribution in many industries is at risk, as winners and losers are redistributed from social externalities to financial costs or income.

Modelling externalities as a 'social value'

SustainEx quantifies the costs or credits which companies and countries would face if all their negative externalities were priced or if their societal benefits were financially recognised. It aggregates all these factors into a net 'social value', expressed as a percentage of companies' revenues or countries' GDP. It is designed to assist our analysts, fund managers, and clients in identifying these risks, enabling them to reflect these considerations in investment decisions and valuations.

We start by identifying the material externalities (both positive and negative) that companies and countries impose on society. We use the stakeholder viewpoint which is common across Schroders' ESG models as a framework, focusing on the constituencies with which companies and countries interact: consumers; communities; employees; regulators and governments; and the environment.

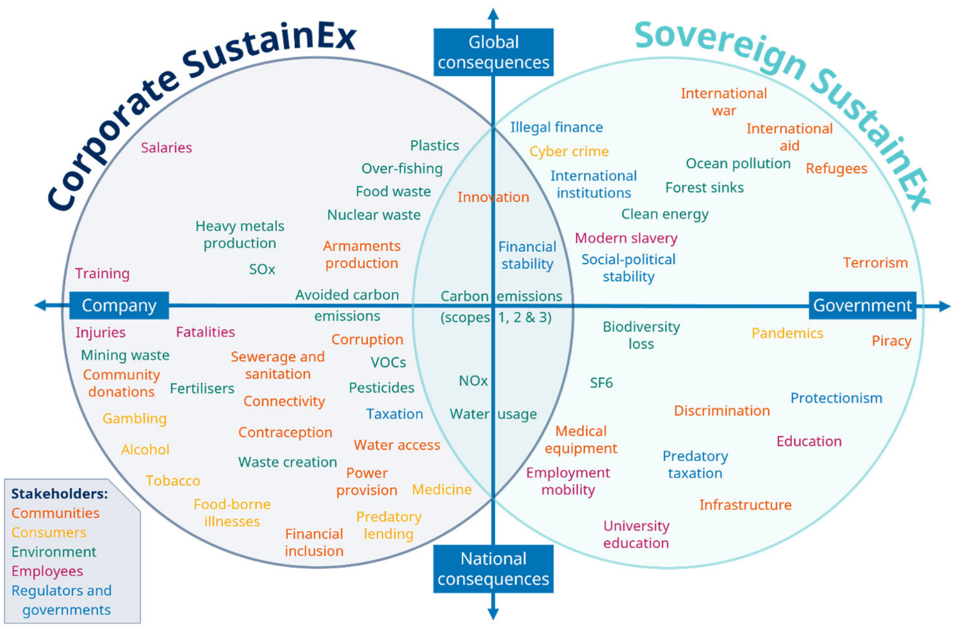
While not every consideration can be robustly modelled, the measures we include in our analysis are:

- Quantifiable, such that costs and benefits can be measured in economic terms
- Attributable, to ensure impacts can be sensibly allocated between companies and/or countries using objective measures
- Transparent, to enable users to understand their meaning
- Disclosed widely enough that meaningful comparison between global companies or countries is possible

Mapping the range of externalities

SustainEx offers a shared framework for the evaluation of both corporate and sovereign issuers of securities. Because the two types of issuer have many differences, we use different – but overlapping – sets of metrics in our evaluation. The Corporate evaluation examines 39 externalities for over 16,000 companies, and the Sovereign evaluation assesses 29 externalities for 150 countries. All of this is based on more than 1,000 academic research papers and models.

Figure 2: Mapping 39 corporate and 29 sovereign externalities as metrics across stakeholders



Source: Schroders 2024.

We strive for systematic, evidence-based, repeatable, and explainable analysis, using academic and industry research as well as exposure data from companies and countries to convert societal costs and benefits into monetary terms and represent each of these as a 'metric' (Figure 2). We apply consistent assumptions across sovereign and corporate measures to enable comparability for those externalities which are shared across both models and focus on global challenges and benefits rather than localised ones.

Quantifying externalities

Before a metric is included in SustainEx, we follow a rigorous process of academic and industry research and data analysis. We then go through methods of standardisation, calculation, aggregation, and testing, to arrive at a measure of externality which meets our requirements of quantifiable, attributable, transparent, and disclosed. This measure becomes our metric, and each metric is supported by a working group made up of research analysts, investors, and data scientists dedicated to critiquing and optimising the methodology. Figure 3 demonstrates the types of values SustainEx typically measures.

Figure 3: Three approaches to measuring social and environmental externalities. Metric approach

Metric approach	Explanation of approach	Required methodology	Output
Unit value	Estimated impact of individual actions (e.g., GHG emissions, NOx emissions…)	Quantify or estimate level of activity for each company / country	Calculate burden associated with company / country actions
Monetary value	Cost estimated directly based on the monetary value of actions (e.g., community donations, education spending)	Determine relationship between benefit or cost and spending	Calculate cost or benefit based on spending on that activity
Global value	Estimated annual and global social burden / benefit (e.g., alcoholism, medical equipment)	Define activity responsible for impact	Share global cost or benefit between companies / countries based on activity

Source Schroders 2024.

The externalities we use in SustainEx are based on our own analysis, drawing as far as possible on existing frameworks, including the UN Sustainable Development Goals, although we note that there are limited precedents to draw on. Our goal with this tool is to be comprehensive rather than to pre-judge the most important externalities: by putting economic costs against impacts, the externalities that are most material for any given issuer emerge from our analysis rather than being imposed as an input into our analysis.

By measuring the externalities related to various sustainability topics and calculating the dollar values of the social cost or benefits, we can combine and compare different types of metrics without having to assume any priors about the importance of different underlying signals.

Worked unit value metric example: Carbon Emissions

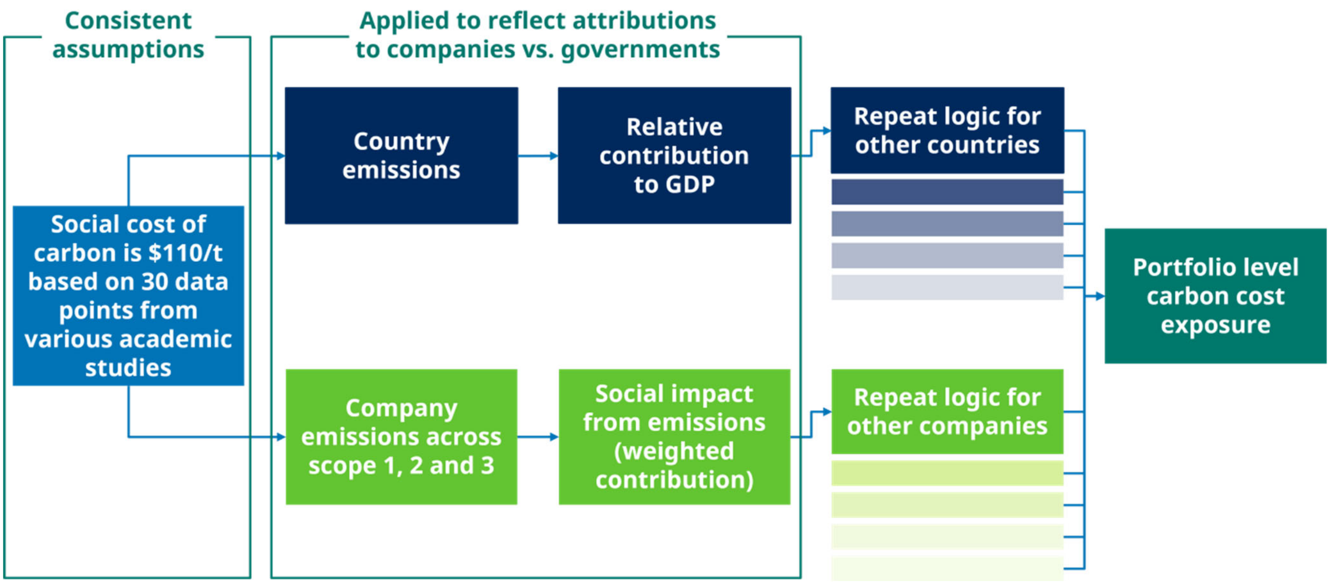
One of the biggest market failures of the past 200 years is the externality produced by carbon emissions. When a company burns fossil fuels and emits carbon dioxide, it does not pay for the damage that its emissions cause to the environment and human health. This leads to a situation where the social cost of carbon emissions is much higher than the private cost, and the market equilibrium is inefficient and socially suboptimal; in other words, there is too much carbon emitted and too little done to mitigate its impact. This is why governments and international organisations are beginning to intervene and regulate carbon emissions, either by imposing taxes, setting caps, or creating markets for carbon credits. By internalising the externality, these policies aim to align the private and social costs of carbon emissions and create incentives for more sustainable behaviour.

Studies, academic papers, and statistical models were examined, through which we determined that the global social cost of emitting one additional tonne of carbon dioxide into the atmosphere is USD 110[1]. Furthermore, the academic research enabled us to determine that the risks of internalisation of these costs is high given the increasing urgency and impact of these emissions on society as the effects of climate change intensify.

[1] NGFS Scenarios Portal in combination with Schroders research covering 12 different data points to a carbon pricing model.

SustainEx combines the unit cost of each company and sovereign with its carbon dioxide emissions in order to estimate the societal cost per issuer, as the simplified methodology in Figure 4 demonstrates.

Figure 4: Carbon emissions as an example of SustainEx's "unit value" methodology



Source: Schroders 2024.

For each company within SustainEx, their assessed responsible global carbon emissions in tonnes (across all three scopes of emissions) are multiplied by the global social cost ($110 per tonne) to arrive at the social cost of carbon attributed to each company; this is further adjusted to reflect scope 1, 2 and 3 emissions.

Similarly, we attribute the social cost of CO2 to each country using GHG emissions data; where country data is missing, it is estimated based on the country's GDP, applying a penalty to reflect non-disclosure. We multiply the unit cost by each country's emissions, typically attributing around 25% of a country's total CO2 emissions to governments, where the figure used reflects the public sector's share of national GDP as a measure of its contribution to the country's emissions, and then dividing this number by the country's GDP.

At a high level, the above demonstrates the overarching methodology used for one metric, and similar practices are used across the models, refined for their specific metrics and methodologies and subject areas, and aggregated such that an overall SustainEx score is achieved. The resulting 'net social value' of companies or countries is expressed as a percentage of their revenue or GDP. For instance, a company or a country with a 2% positive score generates $2 of societal benefit for each $100 of revenue / GDP.

Worked global value example: Innovation

The Innovation metric is an example of SustainEx's global value methodology. Innovation has a positive social value as the results of research and development (R&D) spend invariably delivering significant benefits to consumers and businesses alike, as well as contributing to broader socioeconomic value. As one of the crossover metrics between the Corporate and Sovereign models, Innovation is reflected as being a positive force for governments and countries to be investing in also as it is a key driver of economic growth, knowledge enhancement, and increased productivity for the country.

For corporates, we attribute the social cost of innovation to individual companies based on their R&D spend. We use a total global social value of $566 billion, derived from numerous academic studies through the Innovation Working Group, of which we estimate 25% comes from publicly listed companies.

To reflect this in the sovereign framework, the same patents applications information and $566 billion social value is used. 50% of the social value is attributed to sovereigns, and the number of patent applications per country is calculated. The 50% social value is then attributed in proportion to each country's share of global patent applications for the year, and this number is divided by the country's GDP to give a relative social value.

In this way, we can quantify both how companies and countries are investing in innovation, research and development, and go some way to attributing the resulting social value to them.

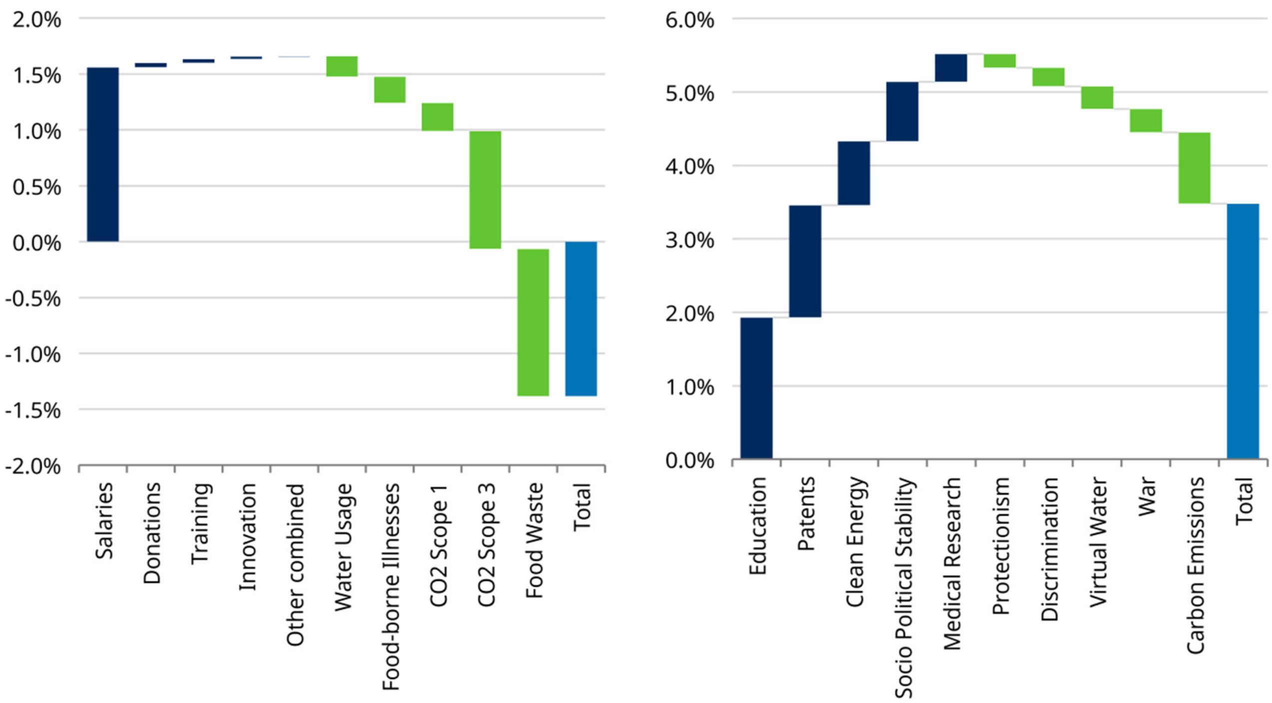
Worked issuer examples

This document has provided a high-level overview of the methodology behind Schroders' proprietary SustainEx model for measuring the impacts of companies and countries from a social sustainability perspective through attributing costs to social values. To conclude this framework, Figure 5 shows examples demonstrating this theory in practice, without delving into the specifics of each calculation.

Figure 5: Worked examples – assessing a company or a country's overall social value

Danone
SV to Sales (%)

South Korea
SV to GPDP (%)



Source: Schroders 2023.

This demonstrates the key positive and negative impacts of Danone and South Korea. The overall impact measure is determined starting from a baseline of zero, to which positive contributions are added (dark blue) and negative impacts deducted (green), to reach a net impact measure, shown here as a percentage of sales or GDP (bright blue). Using the Corporate SustainEx framework, Danone has an overall social value cost of around -1.3%, indicating that it detracts around $1.30 of social benefit for every $100 of revenue it generates; while it contributes positively to society through salary generation, its Scope 3 CO_2 emissions and food waste reduce the overall score. South Korea, using the Sovereign SustainEx framework, contributes positives within its society primarily through education and patents, while similarly having negatives from carbon emissions, though overall as a country it contributes around $3.60 of social benefit for every $100 of GDP it generates.

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