The role of environmental, social, and governance (ESG) issues in the corporate world is growing fast, but that growth has come with controversy. In June, the CEO of DWS Group, one of Germany's leading asset management firms, resigned after the company's Frankfurt offices were raided by police amid claims of greenwashing, or deceiving people about an organization's true environmental commitments and actions. DWS stands accused by one of its former executives of misleading investors about how much of its $900 billion assets under management were invested using ESG criteria.

This was followed in the United States by reports that the Securities and Exchange Commission is scrutinizing Goldman Sachs in light of the regulator's proposal to establish disclosure requirements for funds and advisers that market themselves as having an ESG focus.

Such controversies result in part from a lack of standardized metrics by which regulators, investors, and other stakeholders can evaluate companies' ESG initiatives. Currently, ESG reporting is something of a Wild West, without clear measurements of impact and performance.

In recent years, companies have increasingly talked about their commitment to ESG, and the environmental component is particularly urgent since climate change is an existential threat. But if their commitment to the climate amounts to more than mere lip service—and if regulators are to prevent greenwashing, rather than responding after the fact—the first step will be to measure accurately the corporate sector's level of greenhouse gas emissions.

A range of big companies (including BP, Google, Microsoft, Unilever, and United Airlines) have pledged to cut their carbon emissions, but they are in the minority. In 2019, less than 2,000 companies globally shared their emissions either to the Carbon Disclosure Project or in their annual or ESG reports, according to S&P Global Trucost data. Much of corporate emissions reporting worldwide remains voluntary and unaudited. For this reason, it is important for governments to mandate that companies—both public and private—report their greenhouse gas

emissions and have these disclosures audited. This will enable policy makers and the public to get a picture of the corporate sector's impact on the problem.

But how should we measure emissions?

At this point, the debate is moving on from *whether* to compel companies to report their emissions; the focus has become *how best* to measure those emissions. Regulators in the US, UK, and EU are preparing for a world in which at least publicly traded companies make regular disclosures. And the International Financial Reporting Standards Foundation has created the International Sustainability Standards Board in order to set global reporting standards.

The ISSB has put forward two important prototype standards. One of these standards proposes that companies be required to disclose their climate-related risks and opportunities, spelling out the effects these would have on their financial position, as well as management's strategy in response, including plans to adapt the business model accordingly. The standard would also require organizations to report their impact on climate change by measuring and disclosing their carbon emissions.

This twin-track approach to reporting—providing information on both an organization's climate risks and its environmental impact—has also been proposed by the SEC with regard to regulating publicly listed companies in the US.

Establishing a yardstick for climate impact is critical. It would help investors, policy makers, and others understand the extent of companies' contributions to overall emissions as well as assess the associated climate damages, perhaps even monetarily. It would also enable investors and stakeholders to compare the performance of different companies. This benchmarking could ultimately create incentives for voluntary reductions as well as lend credibility to emissions-reduction commitments. Lastly, it could help spur green innovation as companies try

to lower their footprint not by manipulating the figures but by adjusting their activities and investing in technology that would help them be more energy efficient or otherwise reduce emissions.

To be effective, such a metric would have to be clear, simple, and hard to manipulate. It would also have to be audited or verified, and the disclosure would have to be enforced. The more complex the measurement system, the more vulnerable it would be to the kind of creative accounting that undermines trust and accountability.

Three types of emissions reporting

What exactly should companies be mandated to report? Broadly speaking, there are three scopes of carbon emissions, as outlined by the international Greenhouse Gas Protocol developed by the World Resources Institute, a global research nonprofit.

Scope 1 emissions reporting is the most straightforward. It essentially details that a reporting organization disclose its direct emissions, those from sources that it directly owns or controls. For example, a delivery company would report the emissions produced by its trucks and jets; a manufacturing plant would count the carbon emitted by its smoke stacks.

Scope 2 emissions reporting accounts for some “indirect emissions,” meaning those that are produced as a consequence of the activities of the reporting organization, but which occur at sources owned or controlled by another organization. Scope 2 emissions are from purchased energy. Thus, a company would report the emissions that were produced by its power supplier in generating energy for it.

Scope 3 expands indirect-emissions reporting further to include an organization’s entire supply chain. These “upstream emissions” would extend beyond energy to all the organization’s clients,

partners, and suppliers. For example, a phone maker would have to report the carbon emissions produced by all the suppliers that manufacture the components that go into the final product. Scope 3 also includes “downstream emissions” that are produced by users of the final product. A carmaker would have to account for the emissions produced by drivers.

Asking companies to report each of these mutually exclusive levels has its pros and cons, which is perhaps why the scope of emissions reporting is still extensively debated. So which measurement and reporting system should we adopt?

On the face of it, reporting all emissions (so adopting Scopes 1, 2, and 3) may appear the most attractive, best suited to address the global climate challenge and best placed to reduce incentives for companies to shift activity elsewhere. If regulatory regimes were to adopt just Scopes 1 and 2, companies might be able to manipulate their carbon footprints by outsourcing the dirtier parts of their business. Scope 3, by contrast, includes upstream emissions and hence cannot create the appearance of a small carbon footprint by shifting production to other firms and suppliers.

However, there are at least two significant problems with Scope 3 reporting. First, it would force companies to report on behavior over which they have little to no control. An oil producer, for example, undoubtedly has a significant role in carbon emissions but does not control the many ways in which its oil is used by all of its downstream customers and end users. In this sense, Scope 3 reporting could be misleading, since these emissions are not solely its responsibility but also the responsibility of those who use the oil.

Secondly, measuring Scope 3 emissions is difficult to do. It would require the aforementioned oil producer to correctly anticipate or track who buys its oil and what these customers do with it, as emissions differ across uses. Moreover, Scope 3 reporting entails significant double counting:

many upstream and downstream emissions would be reported multiple times along the supply chain and thereby produce an exaggerated measure of overall emissions.

Combining Scope 1 and 2 would again have the advantage of being more comprehensive than just Scope 1. It would treat a manufacturer that purchases energy and one that produces it similarly. However, it would still create incentives for organizations to outsource their production to foreign companies rather than make their products themselves, be it with purchased or self-generated energy. They could disclose lower total emissions, yet could have an even bigger overall effect on the environment when they, for example, purchase their inputs in markets with more lax environmental standards.

Limiting the reporting regime to Scope 2 should reduce the double-counting issue, but it wouldn't eliminate it since both energy providers and their corporate customers would have to report their emissions. A manufacturer's Scope 2 emissions for the power it buys would also be included in the Scope 1 emissions of the utility that sold the electricity. However, Scope 2 could force companies to examine their energy supply chains more carefully, which could lead them to pursue greener options.

I acknowledge that Scope 2 and Scope 3 emissions can provide useful information in some contexts. Say a consumer wants to know the total carbon footprint of a phone, including the amount of carbon released during production. Asking a company to report all upstream emissions that went into the product on its label would be helpful. But when it comes to a reporting regime for corporate entities rather than individual products, the drawbacks described above, such as complexity and double counting, become more significant (or the benefits less obvious).

The best solution may be the simplest

The simplest and clearest measure is Scope 1. To be sure, by being the narrowest emissions-reporting option, it creates the strongest incentives for shifting activities. However, it doesn't include other companies' emissions, so avoids double counting at the aggregate level. Moreover, if all companies worldwide, public and private, were to report their Scope 1 emissions, all corporate emissions would be accounted for somewhere, and one could add up reported emissions to obtain the total corporate emissions of a sector or an economy.

Thus, Scope 1 reporting should result in the most accurate picture of aggregate corporate emissions across both a single economy and the global economy. And it is the easiest system to audit and verify, which is critical if mandatory emissions reporting is to have the intended effects, including reliable across-firm benchmarking by investors and other stakeholders.

If regulators can put in place a reliable and trustworthy Scope 1 emissions-reporting regime, the data could become the bedrock of the burgeoning "green finance" sector. Asset managers and banks increasingly have to report emissions for the companies that they include in their portfolios or provide emissions disclosures for their financial products. In this way, a well-regulated emissions-reporting regime could help restore trust after greenwashing scandals and prevent future ones.

Scope 1 is not perfect. However, regulators cannot let perfect be the enemy of good. In a straightforward comparison, Scope 1 emerges as the most practical and most accurate.

The suggested principle for a Scope 1 system would be "broad participation, narrow scope." Making the system simple but widely applied to include all public and private companies would be a good first step to establishing a robust emissions-reporting regime. The same principle applies to verification: better to be serious about verification than to broaden the scope but give companies slack on accuracy and independent auditing. This "broad participation, narrow scope" reporting system would still deliver the critical inputs for many other reporting

requirements, including those that fall on intermediaries, such as asset managers, private-equity firms, and financial institutions. And it would cover private companies that are not currently included in the SEC proposal but for which the intermediaries need emissions data.

Accurate and standardized emissions-reporting rules will not, in themselves, solve the climate crisis. But the transparency will help investors better understand how to allocate capital, enable stakeholders to put pressure on organizations to make meaningful changes to their environmental impact, and encourage companies to innovate and use more green technology to reduce their carbon footprints.