



The Need for Impact Transparency and Standardization in Sustainability Measurement

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By most accounts, we are on our way to a climate catastrophe. To successfully combat climate change, clear vocabulary, structure, and measurement are essential. These must be precise and effective.

One of the common terms that has emerged in this context is ESG. Unfortunately, ESG is flawed, as it combines elements as distinct as apples and oranges. Many ratings have been proposed, the UN SDGs featuring early and prominently. However, and admittedly an understatement, the battle against climate change does not appear to be won. Neither will it be as long as we do not have convincing measurement that documents the progress, or lack thereof.

This paper presents a way to right set sustainability measurement and take the entropy, if not greenwashing, out of a multitude of current ratings. Our first proposal amounts to providing society with standard and comparable ratings that leave no doubt on the state of this battle.

Our second proposal is to commit to true impact measures for E and S. Many of the proxy measures that proliferate today are leading us astray in this regard. Nothing is as destructive as purposeful execution driven by wrong or misleading measures. We propose impact measures that are standardized, transparent, and easy to grasp, allowing corporations - and governments - to make proper trade-offs between economic and sustainability performance.

Finally, we argue why the proposed impact measures, particularly when taken jointly, provide a needed clarification and move the sustainability debate beyond its current meanders. We conclude by illustrating how our proposed impact measures can be applied to govern corporations more effectively in quest for greater sustainability.

Key Words: Sustainability; ESG; Governance; Impact; Measurement; Triple Bottom Line; Living Wage; GHG Emissions; Biodiversity; Green Washing.

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Current ESG practice: the good, the bad, and the ugly

ESG is possibly the best-known acronym that has recently been added to the business vocabulary Wikipedia, a good source to start with, confirms:

“Environmental, social, and corporate governance (ESG) is a set of aspects considered when investing in companies, that recommends taking environmental issues, social issues, and corporate governance issues into account. ... The term ESG was popularly used first in (a) 2004 ... In less than 20 years, the ESG movement has grown ... into a global phenomenon representing more than US\$30 trillion in assets under management”.

The emergence of ESG is of course most timely as the climate crisis worsens, its impacts grow increasingly severe and inequitable. The transition will impact people and regions in an unfair way. No need to share pictures, they are everywhere on the internet.

To build awareness and manage the impending catastrophe, vocabulary, grammar, and a syntax are essential. So is measurement.¹ In crisis particularly, these tools better be clear, precise, and performing. To illustrate the point, ESG does not meet that test, as is increasingly recognized.

ESG originated as a useful risk assessment tool for investors and longer-term asset managers looking beyond the financial numbers. That was great, as investments and capital allocation determine our future, and improvements can only be welcomed. Problems arose when ESG was equated with sustainability, particularly at corporate and board levels, leading to confusion that hindered progress. More critical views about ESG investment practices started to emerge.² We will discuss both the risk rating use of ESG, as well as the wider issue of measuring sustainability performance of a corporation.

Plenty has now been written about the green, social, and governance washing stimulated by the pressure on companies to state their impacts on their physical and social environments. We should nevertheless start with a caveat: historically, most technologies – ESG is one - have been abused before humanity learned to properly master these and use them to their benefit. Fossil fuel technologies are no exception. We agreed only recently on how destructive they have been.

Criticisms pave the way for progress by highlighting challenges and risks in implementing concepts that are not the panacea proponents claim. The scientific cycle of creation, examination, validation, qualification, refinement and replacement follows this principle. Scientific debates indeed eliminate outright errors, correct misunderstanding, remove ambiguity, and get us closer to the truth, without ever reaching it fully. History has taught us how destructive the forceful implementation of a bad idea or concept can be. History and science combine to explain and understand the past, without ever predicting the future fully.

¹ See “Crisis Management Reviewed: Dualities, Principles, and Phased Framework,” by S. Abadir, P. Nathaniel, and L. Van der Heyden, INSEAD Working Paper 2023/20/TOM. Available at https://papers.ssrn.com/sol3/papers.cfm?abstract_id=4425436.

² See “The Real Impact of the ESG Backlash,” by B. Masters and P. Temple-West, *Financial Times*, Dec 4, 2023. Available at <https://www.ft.com/content/a76c7feb-7fa5-43d6-8e20-b4e4967991e7>.

Misalignment when Mixing Apples with Oranges (or Farmers): G is about the Governance Process, while E and S are about Impact

Criticisms of the ESG concept are necessary to clarify the contribution of ESG in our quest for sustainability. They regularly miss the point that lies at the root of many of the challenges: ESG is, by definition, an assembly of three components, differing in substance, each furthermore being of a systemic nature. Sukdev, Katell et al. state this clearly: “it would be more credible, and more effective for sustainability transitions, if environmental, human, and social *impacts* were evaluated separately from evaluations of governance *drivers*.”³ Systems are pluri-dimensional, multi-level, and complex. Our understanding of the dynamics of interacting components, generating dreaded non-linearities, is rarely complete.

Measurement issues with each of the three ESG dimensions need to be recognized. But this issue becomes elevated in ESG in that the latter is a systemic notion itself, and one where each of the three components is also systemic. The ESG system must thus not simply be understood as the linear sum of its E, S, and G components, and is possibly of a very distinct nature. Due care and examination of this aggregation are in order: value destruction may not loom far due to insufficiently understood nonlinear consequences of component interactions.

Governance (G) refers to a set of processes guided by rules and is fundamentally different from E and S, which focus on environmental and social impacts. Equating environmental and social performance (E and S) with governance (G) is as misguided as comparing apples and farmers.⁴ At best it represents convoluted thinking; at worst it risks generating confusion, as the ESG pushback by experts these days attests.

Understanding G

When addressing G, it is essential to understand how to conceive of the governance of a corporation. One of the foundations of liberal capitalism is that responsibility for corporations is placed collectively with the board of directors, and not with shareholders, nor with executives, though both can serve as board members. When executives or shareholders serve on boards, their fiduciary board responsibilities are distinct from their interests as executives or shareholders. This is the subject *conflict of interest* which is central to effective governance: the interests governing executives and shareholders regularly differ from the corporate interest, and alignment of executives and shareholders with the corporate interest is a primary task for the board.

Society, for its well-being and survival, requires corporations, which it considers as moral persons, to act responsibly, evidently towards S, and more recently towards E, now that it is recognized how vital E is to the survival of S and to the performance of corporations.⁵ ESG is

³ “Recasting ESG: Separating Drives from Impacts,” by P. Sukdev, K. Le Goulven, V. Sharif, J. Sarvary, S. Maughan, GIST Impact Whitepaper, December 2, 2022. Available at <https://gistimpact.com/news-insights/recasting-esg-separating-drivers-from-impacts/>.

⁴ The reference to farmers is due to Sukdev et al., op.cit.

⁵ It is increasingly recognized that “saving the planet” is the wrong framing of the sustainability debate, for one major reason: the planet will continue to transform, the real question is what life on this transforming planet will be and whether life will indeed be sustainable. The correct framing was provided early on by Robert Ayres and Allen Kneese, in their article: “[Production , Consumption, and Externalities](#),” *American Economic Review*, vol. 59(3), pages 282-297. These two authors observed that economic transactions require energy and that economic models do not properly account for the physical aspects of economic transformations, including the

thus a recognition or a formal reminder how irresponsible corporations as moral persons can be. Liberal capitalism was remarkably wise to place the legal responsibility for a corporation not with its shareholders, nor with its executives, but with the board of directors, collectively. Board members thus have a fiduciary duty to act in the corporation's best interest and not their own. It is always useful to remind individuals that they can only assume one fiduciary duty at a time.

Two observations confirm the remarkable wisdom of this institutional arrangement. Most shareholders do not fully or even partially agree on the corporate purpose or objectives, nor do they share time or risk preferences. Given their limited or partial alignment, their typically large number, and the potential sale of their shares, it would indeed be difficult to place corporate responsibility on shareholders. Second, if shareholders bore some responsibility, equity markets could not function as they do today. Indeed, shares would need to be priced, which would require pricing the cost of responsibility. Given the Knightian uncertainty surrounding responsibility, such pricing is simply not possible.⁶

So far for the legal theory. In practice, the possibility for the corporate interest to become subjugated or influenced by shareholder or executive interests is always there, particularly with shareholders or executives sit on the board of directors. This was one of the principal motivations of Milton Friedman in his fundamental paper *"The Social Responsibility of Business is to Increase its Profits."*⁷ The point is often missed, and the paper is regularly misquoted. One of Friedman's principal motivations was to point out that too many US CEOs were running the firm for their own interests, at the expense of value creation, including for shareholders. Friedman's solution for alignment of interests was to hold CEOs accountable for profitability which he considered a clear measure allowing boards to control and monitor CEOs (even though boards are hardly mentioned in this pre-financial crisis paper).

Friedman's premise – one that deserves repeating and recognizing - is that the corporation is a remarkable social institution. Corporations create value for the stakeholders of a company. Shareholders are stakeholders, so are employees, customers, suppliers, creditors, communities, and governments. Micro-economic theory refers to this as firms creating *consumer and producer surplus*, which is value captured by stakeholders above what they pay for or earn in market transactions. A company thus creates a whole bundle of values for its stakeholders, and not just for its shareholders. Even when a corporation is governed to maximize shareholder value, the liberal market system ensures that many stakeholders gain benefits from their involvement with the company through labour, capital, or other resource exchanges. Positive benefits are indeed required for actors in a liberal market economy to engage.⁸ Surplus, as defined earlier, provides the economic inducement to do so.

production of physical wastes (like particles) and the release of heat to the environment. The article was largely ignored by mainstream economists for several decades, closed economic models proving greatly more tractable.

⁶ Frank H. Knight (1921). *Risk, Uncertainty, and Profit*. Houghton Mifflin Company, Boston (MA) and New York (NY). Knight distinguishes risk, which is defined by an exhaustive list of possible outcomes, whose likelihood is measured through a probability, from uncertainty, where outcomes are not known in advance, rendering infeasible any calculation of probabilities.

⁷ M. Friedman (1970). « The Social Responsibility of Business is to Increase its Profits, » by M. Friedman, in: *The New York Times Magazine*, September 30, 1970.

⁸ Economic theory underlines that, even if it is true that at the market price the last (or marginal) supplier breaks even, all suppliers before him or her have a lower supply cost and thus make a profit, which is their benefit. Similarly, most employees get positive value from being employed and, hence, would continue to work in the company even if their salaries were reduced a little. Hence, stakeholders that have a free choice to

Turning to shareholders, they are the last stakeholders to earn their benefits since dividends are paid after all other stakeholders are paid. This makes shareholders rightfully concerned, if not anxious, about the return from the capital they invested into the business. This spurs shareholders to take a close interest into governance and boards, since it is their means to get paid. This interest takes the form of appointing trustworthy board members, but also of shareholder agreements, corporate charters, and the general assemblies that elect board members. Always more reassuring for them is to sit directly on the board of directors so they can check for themselves – or through their board nominees - that executives and other stakeholders do not benefit improperly from the firm and the equity shareholders put in. The temptation for “owner managers” to steer the corporation into areas where they might gain personal benefit at the expense of the corporation is thus considerable.

Shareholders understand that the stock market obeys a fundamental risk-return relationship. Traditional financial risk analysis forecasts cash flows under different scenarios, and computes probability distributions for outcomes that are expected under “known unknown” scenarios. Given the turbulence experienced over the last decades, financial investors and especially long-term asset managers concluded that financial risk analysis was biased, and too conservative, unknown scenarios being naturally ignored and given a zero probability in their analysis. The ESG framework grew out of a desire to complement traditional risk analyses of share prices and other economic indicators with a more macro-type analysis of the environmental and societal factors not captured by micro-economic models.

ESG reflected the realization that the planet, unlike economic models, is not stationary, and keeps transforming itself, including due to human activities. All transformations require energy and release energy in degraded form, as Ayres and Kneese already pointed out in the 60’s. Their observation is not integrated into mainstream economic thinking until recently.⁹ The governance of externalities – so-called public goods or bads - was long considered a responsibility of government, as Milton Friedman noted.¹⁰ ESG refers to the governance of the corporation, for sure, but also to the need for corporations to govern their impact on our societies and our planet. Corporations are central in this debate as they collectively contribute much more to global warming and societal welfare than individual citizens might. ESG thus clearly posits the interrelationship between corporate, societal, and environmental governance. Stated differently, society’s first requirement on the corporation as a moral person is not performance, but responsibility. That implies, amongst others, not harming others, and not acting against the public interest.¹¹ It also implies that the legal responsibility for sustainability measurement falls upon the board of directors, and not on the shareholders.

To sum up, governance is a balancing act between the typically diverging interests of the different stakeholders, aimed at aligning their interests with the interests of the corporation, including its sustainability. The latter is a necessary condition for corporate stakeholders to

associate or not with a firm enjoy benefits from their association with the firm above the cost of their transaction with the firm. Economists refer to these benefits as *consumer and producer surplus*. The understanding that stakeholders “break even” and that there is no profit at equilibrium is wrong: the statement only applies to the last, marginal stakeholder who, at equilibrium, is indeed indifferent to associate or not. Hence, economic theory recognizes that the firm is a social institution that produces a multiplicity of values for its stakeholders.

⁹ R. Ayres and A. Kneese, op. cit.

¹⁰ Milton Friedman therefore has little to say about ESG and climate change, which are, in traditional micro-economic thinking, assumed away.

¹¹ OECD (2023), *G20/OECD Principles of Corporate Governance 2023*, OECD Publishing, Paris, <https://doi.org/10.1787/ed750b30-en>.

continue to benefit from their association with the corporation and to look positively at the corporation. The corporate interest and its sustainability thus lie at the heart of governance, until the corporation disbands (having delivered on its purpose) or is terminated (typically due to persistent harmful or negligent conduct).

The Distinct Challenges of Measuring G as well as E and S

In ESG E and S refer to impacts of a firm on its physical and social environments. As we argued above, G is of a different nature being a balancing act determining which stakeholders and how much each of them will be impacted by corporate decision making and behaviours. This process is heavily influenced by the executive leadership, as a line of command internally governs every corporation, ending with core business and supply chain partners, and finally customers. Decision making along this line is, as stated earlier, heavily driven by economic trade-offs, yet also may introduce constraints on these trade-offs, for example by considerations of E and S. All this makes it impossible to conceive of ESG through one single measure. Furthermore, any effort at linking these three realities into a single risk factor only obfuscates the issue and generates the mistaken view that bundling the three terms into one term can magically resolve the issue, as is the case when one refers to “ESG measurement.”

Rendering things even more complex is that these three dimensions are systemic, of very different natures, and interdependent. As we have witnessed over the last decades, the requirements introduced by considerations of E (e.g. climate change) and S (e.g. societal agendas) increasingly influence the governance of the firm. G thus requires not only an understanding of the economic linkages that drive behaviour within firms, and across firms in its input and output markets – already a huge challenge by itself as of these often are hidden or implicit - but also a correct understanding of a firm’s impact on S and E. A lot of work is devoted to this currently, which will gradually refine the picture and our understanding. At this stage, it can only be concluded that the measurement of a firm’s impact on E and S is not fully clear, nor correct, with the humble implication that G cannot be considered effective.

The measurement of E, S, and G – individually and combined – thus present major logical issues and opportunities for biases, if not errors. This observation appears to us as nearly fatal when it comes to the effective measurement of G, and especially of any direct application of ESG ratings on the firm’s governance.

The “triple bottom line” (TBL), attributed to John Elkington,¹² is in that sense conceptually cleaner and intellectually more satisfactory. It proposes an “ESE”-type accounting, the second E referring to economic impact in replacement of G, too different in nature from E, S, as well as to economic measurement. We very much follow this line of reasoning in this paper.

The need for considering G distinctly from impact measures such as TBL led Elkington to issue his famous “product recall”.¹³ There he expressed regret at his TBL concept having been reduced to a mere accounting tool when it foremost aimed to have an impact on the governance of firms. Elkington was hoping to a review of the corporate purpose through the introduction of new lenses. He intended that the TBL lenses would shed light on the

¹² John Elkington (1998). *Cannibals with forks: the triple bottom line of 21st century business*. New Society Publishers, Canada, and USA.

¹³ John Elkington (2018). 25 Years ago, I Coined the Phrase “Triple Bottom Line.” Here’s why It’s Time to Rethink It. *Harvard Business Review*, June 25, 2018. <https://hbr.org/2018/06/25-years-ago-i-coined-the-phrase-triple-bottom-line-heres-why-im-giving-up-on-it>

responsibility of our corporations to contribute to greater sustainability, and, over time, to the regeneration of our governance systems. Not seeing the latter happen, or at least not fast nor decisively, Elkington issued his product recall. In this paper, we propose to continue Elkington's quest, by bringing greater standardization to the quest which was missing or too implicit in Elkington's TBL proposal.

Measuring E and S impacts, at least by proxy, in clear and standardized ways

The second major issue with ESG measurements concerns the E and S components. Conceptually, the measurement of the environmental and social impacts of a company poses no issue. In practice, however, this measurement is done through proxy measures, as E and S are too big, too complex, and too systemic, each consisting of a great many interacting components. Business life, as well as economics and science, have accustomed us to the use of proxy measures, and the value of improving them.

As a case in point, we now have *EVA*, or *Economic Profit*, as the standard for measuring a firm's economic performance. The EVA crowd¹⁴ identified a major error in Friedman's earlier proposal to measure corporate value added by its profitability. Their argument was simple and convincing: profitability itself could be value destroying when it was obtained at a cost of invested capital (CIC) exceeding (financial) profit. Economic Profit was then defined by subtracting CIC from profit. Doing so, many acquisitions were suddenly shown to be value destroying: these acquisitions had indeed increased profit, sometimes enormously, but at a cost of capital that exceeded the increase in profitability. This is exactly what motivated Friedman to write his famous article, where he stated that many CEOs were running the firm for their personal interests, and not for the good of the company and its shareholders.¹⁵ The introduction of EVA was the new proxy measure that confirmed Friedman's statement, by improving the proxy measure – profitability - that Friedman had proposed and which they showed was leading to M&As that were destroying economic value, when the profitability proxy indicated the opposite.

Accurate measurement directly contributes to value creation. As another application of this principle, the quality of corporate governance depends on the quality of the measurement of corporate governance. ESG arose to correct the excessively economic bias that EVA induced. Perhaps paradoxically, if we are to make greater progress in this direction, we must follow the path travelled by economists who proposed GDP – even if biased - as a proxy for measuring a nation's welfare and productivity. The proliferation of ESG measurements is therefore not helping us to make progress on the path to sustainability, and there are arguments to indicate that the opposite may be true. On the contrary, we must standardize our ESG measurements, in a hopefully not too biased or incorrect manner. That is our objective here.

Standardization follows the scientific method, where theories and their proxies are improved or replaced over time. This is the point we have now reached: EVA has become a standard for measuring a firm's economic performance, but some of that performance is spurious due to the cost of social and environmental externalities that EVA does not account for. This has fuelled the current challenge to ESG. Time thus for a major upgrade, along TBL lines. Elkington, with his TBL, sought a revision in mindsets governing corporations. What our paper

¹⁴ <https://sternvaluemanagement.com/about-us/our-history>

¹⁵ M. Friedman, op.cit.

adds is a proposal for a proxy to TBL which might be widely adopted and allows us to be more precise in measuring whether the battle for sustainable life on our planet is being won or lost, how quickly and by how much? That should help us build greater awareness of the current state of affairs and build a more precise – we could say more performing – vocabulary, grammar and syntax, all fundamental for victory in this battle.

An upgrade is needed because ESG, though valid as a risk management framework, was too eagerly and uncritically adopted by proponents, many of whom were biased and lacked sufficient grounding for their measures. For example, ESG enthusiasts looked at board diversity and especially gender diversity as a proxy measure for G and started to advocate ESG related bonus targets. The PG&E governance disaster¹⁶ attests to the danger of such practices when not really related with value creation: the firm had to file for bankruptcy after being praised by ESG raters like *Sustainalytics* for good governance.¹⁷ Dieselgate is another ominous example. While VW earned “green car of the year”¹⁸ awards, its internal and external governance were clearly not up to snuff. Yet, few seemed to pay attention to this possibility, including shareholders. Nor was there much measurement to signal the risk of the toxicity of VW car emissions.¹⁹ Again, emission measurements were misleading – due to the cheating devices installed by VW – and allowed the criminal endeavour by the company. Boeing’s current governance issues stem from a similar governance bias, that of an obsessive clinging to shareholder primacy (bias in G) and not paying sufficient attention particularly to safety (bias in S). While admittedly trying to deal with its sustainability issues, the efforts by the Boeing board of directors truly lacked force and depth, comforted by a performance measurement that was too dominated by EVA considerations, and insufficiently noting the lack of force in addressing the safety issues affecting its 777 and 778 jets.

The evaluation of G from the outside remains challenging, if not outright infeasible. Otherwise, observers could have spotted the governance shortcomings in PG&E, Volkswagen, and Boeing. Or in Enron, Bear Stearns, Wells Fargo, WorldCom, and Madoff, to name just a few others.

Not being able to reliably and consistently measure the governance practices of a company from the outside is a big empirical problem: it turns ESG accounting into a virtual exercise, at times falsely reassuring, at others outright erroneous. It presents the risk of turning the ESG ambition into a quixotic quest: one that is conceptually valid, but one where the theory and the empirics fall short.

A powerful argumentation against ESG metrics was provided by Bebchuk and Tallarita in their article *The Perils and Questionable Promise of ESG-based Compensation*.²⁰ These authors pointed out that while ESG related incentives for executives have now become quite common, these incentives in themselves remain questionable. They warn us that – just like profitability before the EVA correction - they risk pushing firms to travel the path of value destruction:

¹⁶ On April 15, 2021, the CPUC placed PG&E into the first step of an Enhanced Oversight and Enforcement Process. The CPUC’s action was based on PG&E’s failure to sufficiently prioritize clearing vegetation on its highest-risk power lines as part of its wildfire mitigation work in 2020.

¹⁷ <https://www.bloomberg.com/view/articles/2019-01-24/pg-e-exposes-the-pitfalls-in-virtuous-investing>

¹⁸ https://en.wikipedia.org/wiki/Green_Car_of_the_Year

¹⁹ Jack Ewing (2017). *Faster, Higher, Farther: The Inside Story of the Volkswagen Scandal*. W.W. Norton & Company, New York (NY).

²⁰ https://papers.ssrn.com/sol3/papers.cfm?abstract_id=4048003

“ ... current practices regarding the use of ESG metrics, and the trend to increase their use, represent a serious setback in the attempt to address and mitigate the agency problems of executive compensation.”

Their analysis is based on the work by Nobel Laureate Bengt Holmstrom, a forceful critic of incentive systems. Holmstrom summarized these views very well in his Nobel Prize Lecture, *Pay for Performance and Beyond*.²¹ The two main arguments of Bebchuk and Tallarita are:

“ESG metrics currently tend to focus on narrow dimensions of a subset of relevant stakeholders. The ... current practice disincentivizes corporate leaders from focusing on many other important aspects of stakeholder welfare and fails to improve overall incentives ... the current use of ESG metrics exacerbates the agency problems with respect to executive pay ... shareholders commonly are unable to assess effectively whether the use of ESG metrics provides beneficial incentives or largely operates to enhance executive payoffs. As a result, the current practice weakens shareholder oversight, which is widely viewed as an important constraint on insider-favouring design of executive pay.”

The charge is radical and fatal: the current use of ESG targets for bonus schemes is creating agency problems, weakens governance practices, and is not enhancing the environmental or social performance of companies. The conclusion is clear: using inappropriate instruments as proxy for good governance is only furthering improper sustainability governance. Examples of ESG-washing abound. Such practice is wrong and value destructive, including in the ESG sense.

The above arguments all build to a simple and sorry conclusion: the ESG concept, as currently practiced, is flawed, both conceptually and empirically. That admission opens a path for right setting ESG measurement.

How then should we right set ESG?

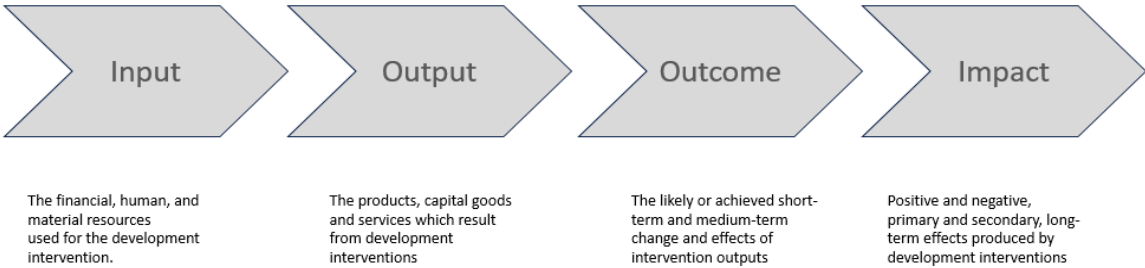
As the King said gravely in *Alice in Wonderland*, *“let us start at the beginning.”* The first question is whether it is at least valid to look at E&S performance when governing? The answer to that is a resounding and straightforward yes, as convincingly argued by Elkington. We know how to measure economic impacts, by proxy, and understand how to appreciate economic network effects and multipliers. Proper corporate governance requires that we juxtapose economic impact measurement with proper measurements of a firm’s environmental and societal impacts. With proper economic, as well as E and S impact measurements, capital can then be deployed towards a more sustainable economy. As E and S impact measurements become more viable and more widely practiced, boards will

²¹ <https://www.nobelprize.org/uploads/2018/06/holmstrom-lecture.pdf>

increasingly be able to make the correct trade-offs, and a more effective sustainability governance will result.

Regrettably, today too many ratings remain insufficiently rigorous, mixing judgements about impacts with judgements about processes, outcomes, and intentions or specific process and outcome features. Some clarifications of vocabulary are in order here.

Figure 1 shows the standard OECD definitions pertaining to the relation between input versus output, outcome, and impact. Looking at how many suppliers a company is auditing for sustainability or judging whether these have an anti-corruption policy, or an ISO 14000 (environmental process) certification, might be considered progress. But these are measures commenting on activities within the firm or with the firm’s suppliers. Such activities do not give any concrete data on how, for example, people in the company’s value chain are treated, or how much the company and its supply chain pollute the environment. Good process frameworks and good process data do not automatically translate into effective wider performance measurement which must rest on evaluating impact.



Source <https://www.oecd.org/dac/results-development/what-are-results.htm>

Figure 1 Input vs. Impact of Development Interventions (OECD)

The United Nations have provided remarkable leadership in the sustainability debate by the issuance of the UN Sustainable Development Goals (SDG).²² The UN has succeeded in developing a global framework, consisting of 17 measures, that provides a taxonomy allowing the measurement of progress in sustainability, with a focus on materiality regarding both financial and sustainability impacts. This framework was adopted by the UN Global Assembly, and the business community shortly after. Remarkably, and perhaps logically because of competitive behaviours, business was a follower in the matter. It is now catching up and is generating a vital global movement in adopting the UN vocabulary of SDGs.

One shortcoming of the UN framework was the breadth of dimensions (17 in total) which allowed companies to “pick” the SDG dimensions on which they were doing well, if not excelling. That led to a certain amount of “SDG-washing” which has been recognized since. Addressing too many goals allows biased selection, dilutes efforts, and does not allow sufficient progress sector by sector. Unfortunately, few industries have truly come together and committed to a collective progress at the industry level. Responsibility cannot rest solely

²² <https://sdgs.un.org/goals>

with individual firms, as competition largely limits their scope of action. This was eloquently addressed by Hardin in his *Tragedy of the Commons*.²³

Collective responsibility and action at the industry level – and not just at the national and firm levels - is a must if liberal capitalism is going to come to grips with the sustainability challenge. The industrial sector is a key variable that needs to be accounted for. Rating the sustainability performance of companies in different industries and using this as comparative data for investment decisions is problematic. Let us take a pharmaceutical firm, a mining company, and a bank: their carbon footprint, their impact on the communities they operate in, and their potential benefits to society are vastly different. Industries differ greatly in terms of environmental and societal impact. What is material for E & S is surely more distinct across sectors than what is good G in these sectors.

Standards bodies like SASB²⁴ have tried to adjust or overcome this by looking at the materiality of different sectors to identify the most material ones. For a pharma company this could be a society's access to medicine; for a mining company, this could be material contamination, biodiversity loss, and community welfare; for a bank, carbon footprint of their loan and investment portfolio. Relevant comparisons using the same measurement are meaningful within a sector, but not across such diverse sectors as mining, pharma, and banking.

Financial economics has understood this difference by controlling expected profitability figures for the risk investments in these sectors entail. Industry is one of the controls investors examine when doing so. Sustainability should follow a similar logic when evaluating E & S impacts.

The result of a limited recognition of industry-level factors is what we are experiencing currently in sustainability ratings which must recognize that industries are unequally positioned when it comes to sustainability. Commitment to sustainability is too diverse, insufficiently cumulative, and the result falls short. There is no clear sense on which path we are travelling, where we wish or might end up, what battles we are winning, or, at least, must win to win the entire campaign. The result is that there is little assurance that Armageddon will be avoided. On the contrary, we are now increasingly clear that for parts of the globe, Armageddon indeed is the future we are racing toward.

In that context, the definition of *Sustainability* provided early on by Brundtland²⁵ - considered the (female) Moses of this effort - is still relevant and must continue to guide us:

“Sustainable development is the development that meets the needs of the present without compromising the ability of future generations to meet their own needs.”

Current ESG investment practices are struggling to deliver their promises. Sustainability requires a longer-term perspective and a global approach, if not a global strategy. Strategy requires clear trade-offs. With clear targets that measure what future we are racing toward, and with clarity on whether current efforts are needed to “win this campaign,” or,

²³ <https://www.jstor.org/stable/1724745>

²⁴ <https://sasb.org/standards/materiality-map/>

²⁵ <https://sustainabledevelopment.un.org/content/documents/5987our-common-future.pdf>

alternatively, with clear indications that we are further falling into an abyss from which we, or many of us, will not recover.

For all these reasons, our conclusion is that an immediate priority for current sustainability approaches is to follow economic practice and agree on standard measures, defined uniformly. EBIT and GDP are such measures when it comes to describing economic performance. Standard measurements for sustainability are currently missing and hamper the fight that humanity's sustainability requires. If this primary need is not met, we will continue to pursue diverse directions, entertain procrastinated debates about progress, or the lack thereof, discuss the relevance of specific measures, and allow trade-offs that are not aligned and do not produce sufficient progress.

The next section makes simple proposals regarding standardizing sustainability measurement. More than presenting these proposals as the final measures the world ought to adopt, our aim is humbler. We limit ourselves to show that such standard measures do exist and could beneficially be agreed upon.

Standardizing the Measurement of E, S, and G

It is widely agreed that the UN Sustainable Development Goals²⁶ (UN SDGs) provide the best currently available scope definition of sustainable development. They define enablers, transition levers, and give a clear indication of the desired future state with regards to sustainability. Each of the 17 goals come with concrete targets. The aim behind each of these goals is to return to a more balanced relation between economic activity and environmental and societal health. The underlying philosophy is akin to Kaplan and Norton's widely known and practiced balanced scorecard.²⁷

The UN SDGs were developed to support the definition of medium-term agendas for countries. Unfortunately, they do not lend themselves easily for corporations to set their agendas, including because of the industrial factor described earlier. They leave companies to develop and follow their own balanced scorecard approach, each with its own goals and biases. More critically, this hap hazard approach limits societal understanding, which in turn limits awareness, resolve, and collective action.

Nevertheless, progress can be envisaged when we consider that there are three areas where companies directly or indirectly impact E and S through their externalities: release of greenhouse gases (GHG), welfare of workers in their extended value network, and the loss of biodiversity. These three dimensions taken jointly encompass many important aspects of fighting the climate crisis and managing a just transition to a carbon free future. They are material, enable comparison of efforts, and are measurable and auditable. They are not elements of E&S, but essential. They furthermore allow a measurement of G, through the impacts of a firm's governance on our three measures. If a corporation were to show positive impacts on GHG, Living Wage, and Biodiversity, all while also demonstrating positive economic impacts, should we not view that company's governance as effective, if not highly effective?

²⁶ <https://sdgs.un.org/goals>

²⁷ Robert S. Kaplan and David P. Norton (1996). *The Balanced Scorecard: Translating Strategy into Action*. Harvard Business School Press, Boston (MA).

It is this realization that identifies a way forward in our efforts to simplify and standardize E, S, and G measurement. We now turn to each of the three proposed dimensions.

Measuring the release of Greenhouse Gases (GHG)

An increasing number of corporations are now supporting the GHG Protocol²⁸ that segments their GHG footprint into three areas – or scopes - as depicted in Figure 2. These organizations are engaged in serious attempts to measure their GHG footprint.

Scope 1 are the emissions that come from a company’s own operations, Scope 2 emanate from purchased energy, and Scope 3 emissions are the result of operations in the company’s extended value network, both up- and downstream. The number of companies already reporting GHG data now exceeds 10,800, which is remarkable.²⁹

The Carbon Disclosure Project (CDP) whilst welcoming the development, states:

*“While disclosure grew by 24% in 2023, ... more must respond with the high quality and comprehensive data needed to pick up the pace towards urgent environmental action”.*³⁰

While evaluating such emissions is not easy, these companies show that it can be done relatively precisely.³¹ With further experience, the accuracy and reliability of this practice will only improve. An immediate priority is to extend this practice to Scope 3 emissions pertaining to the company’s value chain and to widen the realm of reporting companies. These dual objectives have been agreed, and we do not see major issues here if standardization on these is agreed.

The price of carbon will unavoidably go up globally. Renewable energy is today already the cheapest source of electricity. Reducing GHG emissions therefore will result in lower cost in the long run. Moving out of fossil fuels as a major source of energy for companies is not just a nice thing to do, it is the necessary preparation to stay competitive in the transition journey to a more sustainable future all companies now contemplate.

GHG emissions is increasingly accepted as a good proxy for measuring a company’s impact on climate change. It also is cumulative and easily yields sectorial and national GHG emissions. We should replicate, with GHG emissions as a measure, the global success in reducing and phasing out CFC emissions. This safeguarded the ozone layer and reversed its depletion, as agreed under the Montreal Protocol, signed on September 16, 1987.

²⁸ <https://ghgprotocol.org/>

²⁹ <https://www.cdp.net/en/data/corporate-data>

³⁰ <https://www.cdp.net/en/articles/companies/scores-press-release-2023>

³¹ <https://www.conference-board.org/pdfdownload.cfm?masterProductID=40001>

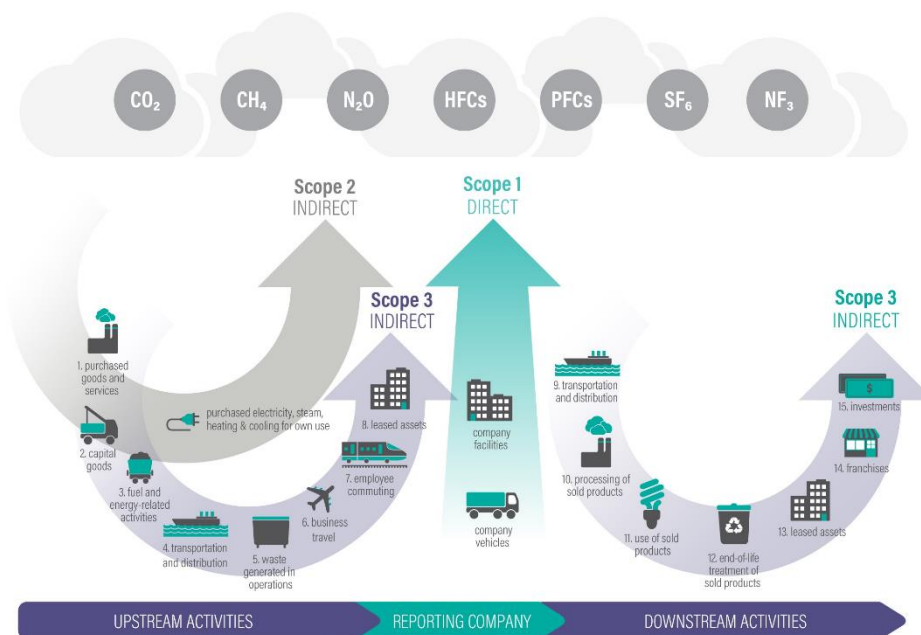


Figure 2 GHG Protocol Scope Definitions

Measuring Corporate Social Value Add

Turning the extended value network of a company and its human dimension, it is feasible - possibly challenging, but not impossible - to measure the welfare of workers involved in a firm's operations and in the up- and downstream activities. Here too - as in the GHG domain - there are largely agreed standards, such as health, education, D&I, etc... "Living Wage" is generally considered a good proxy for worker welfare and subsumes other commonly considered standards. It can be defined as follows:

*"The remuneration received for a standard workweek by a worker in a particular place sufficient to afford a decent standard of living for the worker and her or his family. Elements of a decent standard of living include food, water, housing, education, health care, transportation, clothing, and other essential needs including provision for unexpected events."*³²

The calculation of Living Wage³³ is not yet standardised. ILO and the UN might be spurred to urgently address this question and make it a matter of priority. So far, the ILO in their 2022 International Labour Conference resolution article 45b has only stated:

"Contributing to a better understanding of Living Wages by undertaking peer reviewed research on concepts and on estimations in that respect, and by providing assistance to Member States, upon request."

Living wages can be considered a good proxy for the welfare of workers and their families. Living wages contribute to better quality of life by enabling workers to meet their basic needs,

³² <https://www.globallivingwage.org/about/what-is-a-living-wage/>

³³ For small hold farmers and others not in an employment relationship one needs to consider Living Income instead

such as housing, food, and healthcare. Higher wages are associated with better health outcomes. Increased income allows workers to afford healthier food, better healthcare, and live in safer environments. This, in turn, reduces stress and improves overall well-being. Living wages can lead to greater economic stability for families. When workers earn enough to cover their basic expenses, they are less likely to fall into debt and more likely to invest in their children's education and future, creating a positive cycle of economic stability and growth. Living wages are still a subject of social research, already several studies have shown these positive effects.³⁴

We need to go further and faster. ILO is there to help and support companies, and providing a motivation to join a global sustainability effort might provide good motivation. The *Sustainable Trade Initiative* (IDH) provides companies with its IDH Living Wage platform, and a roadmap for applying this concept.³⁵ The Capitals Coalition and Shift have started an encouraging project 'Accounting for a Living Wage' which can help creating a broader adoption of this important impact measure.³⁶ Living Wage/Income is a practical and measurable proxy for many aspects of the social impacts of a company not only linked to income, but also to affordable education and health care, for example. The experience gained by looking into and computing GHG Scope 3 emissions will support a comparable approach to Living Wage coverage in the ecosystem of a company. Other proxies are available and should for sure be discussed before wider generalization and standardization. Our main point, restated, is that progress comes from standardization. To foster collective effort, we rapidly need to agree on a common acceptable standard for measuring companies' social impacts.

In the developed world movements like 40-hour work week and minimum wages have been fought at their inception as cost drivers. History has shown that they ultimately were drivers for improved productivity and not increased cost, as John Penceval attests:

*"... at the levels of working hours in 1915 and 1916 ..., hours reductions would have had small or no damaging effects on output."*³⁷

Driving for Living Wages a company will not end up with a cost disadvantage if done right. It is much more likely to lead to improved productivity and a supply more resilient against social unrest. Disruptions due to disease issues and social unrest stem more from precarious work condition than anything else. An International Labour Organisation (ILO) report states:

*"But workers in NSE (non-standard employment) have an even higher risk of seeing their health negatively affected by work or work-related conditions compared to standard workers"*³⁸.

Measuring Biodiversity Impact

GHG and Living Wages appear to be satisfactory proxies for environmental and social impacts of corporations. Even taken jointly, they nevertheless fall short as sufficient proxies for life on the planet. That is where a third measure appears important to us as a complement to our first two measures: *biodiversity*.

³⁴ One example is Carr, S.C., Maleka, M., Meyer, I. et al. (2018). How can wages sustain a living? By getting ahead of the curve. *Sustain Sci* **13**, 901–917.

³⁵ <https://www.idhsustainabletrade.com/living-wage-platform/>

³⁶ <https://capitalscoalition.org/project/accounting-for-a-living-wage/>

³⁷ <https://www.jstor.org/stable/24738007>

³⁸ https://www.ilo.org/wcmsp5/groups/public/---dgreports/---dcomm/---publ/documents/publication/wcms_534326.pdf

Biodiversity loss and climate crisis are interlinked. One cannot combat one without addressing the other. More simply, biodiversity is an excellent predictor of the quality of life on earth, humans being just one of the species to inhabit the planet. As biodiversity reduces, the risk of human extinction increases. That simple argument justifies the measure as an excellent proxy for our own survival (as already stated, the planet will survive without us).

Biodiversity is currently the least developed measure for measuring the E and S impacts of companies. Admittedly, there is insufficient experience and knowledge on how driving for improved biodiversity impact will influence the operating cost of companies. Today, however, we increasingly understand the large costs associated with monocultures in agriculture or forestry, or in the costs of overfishing. It is highly likely that managing for improved biodiversity will reduce the negative environmental impact of a company.

It is likely, however, that major impact will require collective and coordinated actions taken collectively at industry and regional levels. Otherwise, we will continue to face attacks from shareholders complaining about sustainability trade-offs that go against the economic interests of the firm. Even Friedman agreed with this point, suggesting that firms should compete on a level playing field in terms of the rules of the sustainability game.

Minimally companies should be asked to report their performance on common and agreed yardsticks. The EU has supported attempts to recommend good practice for how much corporations impact biodiversity, and this is indeed the direction which we need to pursue.³⁹ The Task Force on Nature-related Financial Disclosure proposals⁴⁰ and Kunming-Montreal Global Biodiversity Framework⁴¹ are steps in the direction of a generally applicable, meaningful yet practical biodiversity measurement system for corporate biodiversity impact.

The Sustainability Trinity: GHG Emissions, Living Wage, Biodiversity

The main point of this article is that, whilst more work needs to be done, it is necessary to get started in the domain of simple sustainability measurement. The three measures evoked, when taken jointly and standardized in reporting, will allow a greatly improved comprehensive approach and discussion of the sustainability challenge and our progress in meeting the challenge.

When companies will start to focus on these three areas (GHG reduction, Living Wages, and Biodiversity), it is likely that it will become apparent that significant modifications to current business practices and business models will be required.⁴² Each corporate case is different, and the analysis of implication needs to be done, with care.

Our proposed approach does not exclude the necessity for companies to address further material issues specific to their industry and market circumstances and to behave as good citizen prohibiting bribery, modern slavery, or tax evasion. At a general level driving for a positive impact will require companies to make short-term investments that may result in cost increases and potential losses of competitiveness. That is the trade-off that boards, their owners, and other stakeholders will need to consider.

³⁹ https://capitalscoalition.org/wp-content/uploads/2021/03/330300786-Align-Report_v4-301122.pdf

⁴⁰ https://tnfd.global/wp-content/uploads/2023/08/Guidance_on_the_identification_and_assessment_of_nature-related_Issues_The_TNFD_LEAP_approach_V1.1_October2023.pdf

⁴¹ <https://www.cbd.int/article/cop15-final-text-kunming-montreal-gbf-221222>

⁴² <https://academic.oup.com/book/11032/chapter-abstract/159375108?redirectedFrom=fulltext>

Small trade-offs will precede bigger trade-offs. But at least there would be a shared language and shared yardsticks generating comprehensiveness, order, and consistency in the sustainability debate, and in the contributions firms, as well as industrial sectors and countries make. Longer term it should prove prudent to do so, and the cost-benefit ratio seems eminently right when one envisages the collective impact of economic activity on our physical and social environments.

Such measurement would allow all stakeholders, including shareholders and governments, to clearly see the progress, to focus progress on the most beneficial areas, and better appreciate the trade-offs to be made between sustainability and economic performance, which is the sore point of current efforts. This would have the additional benefit of measuring the quality of G through the progress on the sustainability and economic fronts. Certain efforts would clearly be legislated, others would fall into choices at board level. Companies, and the boards that are responsible for them, could then be more easily rated in terms of the sustainability targets they were able to achieve. And partial and needless efforts to measure the governance progress would become the indicators they truly are.

Our proposal then is to move forcefully in the direction of impact measurement. This is vital to bring clarity and alignment in the current debate. Further changes can always be made as appropriate. But in our view, these three measures cover a lot of ground and provide the clarity that is currently needed for more decisive forward movement.

Having outlined three standardized focus areas for corporate impacts on E and S (GHG for E, Living Wage for S, and Biodiversity for both E and S), one could envisage all corporations – and certainly the bigger ones - thus measuring their environmental and social impacts as well in a manner that is conceptually like their economic impacts. This shared and comparative practice will allow and induce them to seek improved trade-offs geared to real improvement in sustainability, certainly compared with the case where these trade-offs are attempted without such measurements.

The American philosopher Dale Jamieson already stated in 2014 that climate change is currently our defining issue:

*“Climate change can be seen as presenting us with the largest collective action problem that humanity has ever faced, one that has both intra-and inter-generational dimensions.”*⁴³

Some call the last ten years the lost decade when it comes corporate sustainability.⁴⁴ While recognising the lack of progress in corporate sustainability, we would not venture that far. However, we would admit that part of the loss is the absence of good impact measures for rating progress on the path to sustainability. We believe our proposed measures may help overcome the collective action failure, as suggested by Kallhof (2023):

*“Collective action problems can be alleviated when the intention to achieve a shared goal governs action, and when this is supported by and coupled with schemes of cooperation that follow and reward the principles of joint agency.”*⁴⁵

⁴³ Jamieson, D. (2014). *Reason in a dark time. Why the struggle against climate change failed—And what it means for our future*. Oxford University Press.

⁴⁴ <https://www.r3-0.org/wp-content/uploads/2023/08/The-Lost-Decade-Sustainability-Standards-Sabotage-Sustainability.pdf>

⁴⁵ Annette Kallhoff (2013). *Handbook of the Philosophy of Climate Change*, pp.1180-1191.

Our proposal does not only help companies face rapidly changing externalities, the joined-up focus targets should help putting the weight of corporations behind the desired collective agenda, with clear terminology and impact yardsticks. Let us not forget that 50 % of global GHG emissions come from industry and transport⁴⁶ whereas ca. 80 % of all employees are paid by the private sector.⁴⁷

A New Approach to Sustainability Measurement at par with Economic Measurement

The question to conclude this paper with is whether and how the outlined approach might lead to better corporate evaluations than ‘black box’ methods or biased proxies advocated by today’s ESG raters.

We already stated that internal governance cannot reliably be judged from the outside. It simply is too complex, subtle, and systemic. Most people agree that it is very hard to evaluate a board unless one attends board meetings, and one can debrief with board members afterwards, and confidentially.

Under such conditions, a better approach is the one used in economics and finance, which is to examine output data of the three proposed dimensions to infer the quality of internal governance processes and organizational functioning. A further point we make is that if one is ready to look at real impact data, and not simply at output data, the need to guess internal governance practices is greatly reduced, as the environmental, social, and biodiversity performances then speak for themselves by a record of the impacts generated. Such approach would allow corporate leadership, industry leaders, stakeholders, and regulatory and governmental authorities to reach their conclusions. And so will “the people.”

This approach judges the overall performance of a company by complementing the classical EBIT data with transparent Social and Environmental Impact data. This approach moves away from rating a company’s sustainability practices based on possibly spurious methods, but rather evaluates the material impact of the company in the areas of GHG Emissions, as well as Living Wage and Biodiversity, in a way that is akin to traditional economic impact measures.

A six-stage process for doing so might look as follows:

1. The company baseline data for GHG, Living Wage, and Biodiversity are established. This requires a stakeholder supported materiality assessment followed by board decisions on targets for these three impact measures. For those targets the baseline can be established following GHG protocol methodology, applying it to all three areas. We believe that Scope 3 footprint, Scope 3 Living Wage coverage, and Biodiversity impacts are relevant for many companies. Methodologies exist for these and once standardization on these measures is accepted, measurement will be greatly facilitated, and companies will find the exercise much more manageable. Specific industry sectors will, as we already indicated, likely aim for different targets.
2. Longer-term corporate ambitions of improvement for the three areas can then be defined, making appropriate trade-offs with short-term and longer-term economic performance. These trade-offs will be core to the governance of corporations and

⁴⁶ <https://www.iea.org/data-and-statistics/data-tools/energy-statistics-data-browser?country=WORLD&fuel=Energy%20consumption&indicator=TFCShareBySector>

⁴⁷ <https://ilostat ilo.org/topics/employment/>

corporations will be judged on how they will be able to progress on both the sustainability and economic fronts. Whilst ESG ratings currently look at best at a company's risk profile, the proposed method will make it possible for companies to define an ambitious long-term economic performance balanced with improved E and S impacts.

3. Short-term sustainability targets, aligned with medium and longer-term goals can then be established. A roadmap of steps required to reach these goals, based on current knowledge and feasibility studies, should follow.
4. Risks – including economic ones – incurred in achieving the longer-term goals are then analysed and fall-back options evaluated, and mitigating actions committed to. All too often we have seen ambitious plans without any realistic risk evaluation. These are then typically changed as time goes by, usually reducing ambitions. What needs to be done instead is to maintain credibility by openly discussing the risk for achieving the announced plan, and potential mitigation of the key risks identified.
5. E and S corporate plans are then published along with economic plans and committed to by the corporate leadership team. Transparency is vital in this context as clear and public commitments to the impact targets for all stakeholders to hear can only help the approach to be understood, committed to, and supported.
6. Detailed results in relation to the stated step goals can be audited by independent parties, with results published. Instead of black box appraisals changing in hindsight, this methodology will allow all stakeholders to evaluate their relationship with the company in question on an annual basis.

This proposal would render disconnected ESG reporting obsolete and lead to balanced revenue, profit, and sustainability impact reporting, allowing investors to base their capital deployment on real Social, Environmental, and Biodiversity impacts. Instead of judging companies on more dubious ESG 'merit', investors could define, for example, how much GHG emissions or biodiversity they wish to reduce in their portfolio and select companies to be invested in based on the respective impact numbers directly.

The approach has other benefits. The method lends itself to a more effective long-term incentive system as suggested by Alex Edmans:⁴⁸

"...a simple closed-form contract that yields clear predictions for how the level and performance sensitivity of pay vary over time and across firms. The contract can be implemented by escrowing the CEO's pay into a "Dynamic Incentive Account" that comprises cash and the firm's equity. The account features state-dependent rebalancing to ensure its equity proportion is always sufficient to induce effort, and time-dependent vesting to deter short-termism."

Using an escrow account mentioned before can be clearly linked to a fixed longer-term goal with pay-out exceeding the tenure of the C-suite, thus discouraging lofty but unachievable long-term goals combined with easy short-term pay-out targets.

⁴⁸ <https://onlinelibrary.wiley.com/doi/abs/10.1111/j.1540-6261.2012.01768.x>

Let us conclude this section with a final comment on the assessment of a company's governance. Committing to an externally audited measurement system and ambitious sustainability are signs of a well-governed and well-managed company. Falling behind those targets in one, and certainly in two consecutive years, should raise the right questions about the management and governance of the company, and much more so than unrealistic attempts to judge the governance structure and practice from outside the corporation.

Conclusion

Our proposal aims at engaging supervisory boards on material and clear sustainability practices, decision making, and target setting. The proposal replaces the current practice of doing so using flawed external ESG ratings.

This proposed shift to economic performance and sustainability impact measurement solves the problem of current green/social washed ESG ratings, which are insufficiently scientific, subjective, and biased, if not manipulable. Such a shift even allows to build executive incentive pay schemes for effective corporate steering allowing corporations and industries to contribute in clear and meaningful ways to make collective progress in meeting our sustainability challenge.

Until now the financial world is judging corporate sustainability based on ESG ratings. This has created considerable noise and disagreement particularly from shareholders. We have argued that part of this negativity stems from conceptually wrong ESG rating premises and that governance and sustainability performance should not be aggregated into a single composite rating.

The governance of a company can be much better judged by the successful balance of economic and sustainability performance (measured by the three proposed impact measures (GHG reduction, penetration of Living Wage and biodiversity) than looking from the outside at flawed proxies like board diversity.

We propose moving away from current ESG ratings by separately measuring a company's economic, social, and environmental sustainability. We further suggested that there already are simple ways to do so, namely GHG footprint, Living Wage coverage in the extended supply chain, and Biodiversity impact. Our proposal allows the design of implementable long-term C-suite bonus schemes based on performance that furthermore can be subjected to audits.

What is needed next is to standardize sustainability ratings along these lines. Over time applying these measures the methodology will be refined further supporting standardization. If accepted, this proposal further would allow more truthful sustainability performance comparisons across companies and sectors. This standardization has been missing from current debates and ratings. It will increase readability of corporate contributions. It will facilitate the public discussion on sustainability and should generate greater and deeper sustainability awareness and commitments by business actors, stakeholders, and governments. It also will move us away from the tyranny of measuring societal welfare by GDP. It clearly calls for adjusting GDP to account more accurately both for the value produced by the earth and our societies, and the harm done to them.

The proposal represents an improvement in public debate that is necessary and goes way beyond the three specific measures that we suggested.