THE CAPCO INSTITUTE JOURNAL of financial transformation

ESG

The fundamental problem with ESG? Conflicting letters

> CHRISTOS CABOLIS MAUDE LAVANCHY KARL SCHMEDDERS

CRISIS MANAGEMENT

#57 APRIL 2023

a wipro company

THE CAPCO INSTITUTE

JOURNAL OF FINANCIAL TRANSFORMATION

RECIPIENT OF THE APEX AWARD FOR PUBLICATION EXCELLENCE

Editor

Shahin Shojai, Global Head, Capco Institute

Advisory Board

Michael Ethelston, Partner, Capco Farzine Fazel, Partner, Capco Anne-Marie Rowland, Partner, Capco

Editorial Board

Franklin Allen. Professor of Finance and Economics and Executive Director of the Brevan Howard Centre, Imperial College London and Professor Emeritus of Finance and Economics, the Wharton School, University of Pennsylvania Philippe d'Arvisenet, Advisor and former Group Chief Economist, BNP Paribas Rudi Bogni, former Chief Executive Officer, UBS Private Banking Bruno Bonati, Former Chairman of the Non-Executive Board, Zuger Kantonalbank, and President, Landis & Gyr Foundation Dan Breznitz, Munk Chair of Innovation Studies, University of Toronto Urs Birchler. Professor Emeritus of Banking. University of Zurich Elena Carletti, Professor of Finance and Dean for Research, Bocconi University, Non-Executive Director, Unicredit Spa Lara Cathcart, Associate Professor of Finance, Imperial College Business School Géry Daeninck, former CEO, Robeco Jean Dermine, Professor of Banking and Finance, INSEAD Douglas W. Diamond, Merton H. Miller Distinguished Service Professor of Finance, University of Chicago Elrov Dimson. Emeritus Professor of Finance. London Business School Nicholas Economides, Professor of Economics, New York University Michael Enthoven, Chairman, NL Financial Investments José Luis Escrivá, President, The Independent Authority for Fiscal Responsibility (AIReF), Spain George Feiger, Pro-Vice-Chancellor and Executive Dean, Aston Business School Gregorio de Felice, Head of Research and Chief Economist, Intesa Sanpaolo Maribel Fernandez, Professor of Computer Science, King's College London Allen Ferrell, Greenfield Professor of Securities Law, Harvard Law School Peter Gomber, Full Professor, Chair of e-Finance, Goethe University Frankfurt Wilfried Hauck, Managing Director, Statera Financial Management GmbH Pierre Hillion. The de Picciotto Professor of Alternative Investments. INSEAD Andrei A. Kirilenko, Reader in Finance, Cambridge Judge Business School, University of Cambridge Katja Langenbucher, Professor of Banking and Corporate Law, House of Finance, Goethe University Frankfurt Mitchel Lenson, Former Group Chief Information Officer, Deutsche Bank David T. Llewellyn, Professor Emeritus of Money and Banking, Loughborough University Eva Lomnicka, Professor of Law, Dickson Poon School of Law, King's College London Donald A. Marchand, Professor Emeritus of Strategy and Information Management, IMD Colin Mayer, Peter Moores Professor of Management Studies, Oxford University Francesca Medda, Professor of Applied Economics and Finance, and Director of UCL Institute of Finance & Technology, University College London Pierpaolo Montana, Group Chief Risk Officer, Mediobanca John Taysom, Visiting Professor of Computer Science, UCL D. Sykes Wilford, W. Frank Hipp Distinguished Chair in Business. The Citadel

CONTENTS

FINANCIAL

- 08 Managing the uncertainties of cybersecurity Martijn Dekker, Visiting Professor of Information Security, University of Amsterdam, Global Chief Information Security Officer, ABN AMRO Bank N.V.
- 14 Finance in revolutionary times Paul Donovan, Chief Economist, UBS Global Wealth Management
- 20 Fostering digital operational resilience in the financial sector in Europe (DORA compliance) Alexandre Vandeput, Principal Consultant, Capco
- 28 Do AI+VR surveillance technologies improve inclusion or make us boiling frogs? Christine Chow, Head of Stewardship, HSBC Asset Management Nicholas Dowell, Global Equity Portfolio Manager, HSBC Asset Management
- 36 Personal Identity Insurance: Coverage and pricing in the U.S. Daniel W. Woods, Lecturer in Cyber Security, School of Informatics, University of Edinburgh

REGULATION

48 Sustainable finance regulation – authoritative governance or market-based governance for fund management?

Iris H-Y Chiu, Professor of Corporate Law and Financial Regulation, University College London

- 62 The danger of linear thinking in regulatory oversight: Financial regulators must improve risk-detection systems amid digital transformation Jo Ann S. Barefoot, CEO, Alliance for Innovative Regulation
- 70 Understanding beneficial ownership disclosure Paul M. Gilmour, Lecturer in Criminal Justice and Policing, University of Portsmouth
- 78 Regulatory reporting the road ahead Tej Patel, Partner, Capco Mehak Nagpal, Principal Consultant, Capco
- 84 Did insurers become risk-loving during "low-for-long"? The role of returns, ratings, and regulation Jeroen Brinkhoff, Senior Economist, De Nederlandsche Bank, The Netherlands Juan Solé, Principal Economist, European Stability Mechanism (ESM)
- 94 Open Finance in Europe: What is coming and why it matters Emanuel van Praag, Professor of Financial Technology and Law, Erasmus School of Law, Erasmus University Rotterdam, and attorney-at-law, Kennedy Van der Laan Eugerta Muçi, PhD Candidate – Open Finance, Erasmus School of Law, Erasmus University Rotterdam

ESG

- 110 The fundamental problem with ESG? Conflicting letters Christos Cabolis, Chief Economist, IMD World Competitiveness Center Maude Lavanchy, Research Fellow, IMD Karl Schmedders, Professor of Finance, IMD
- 118 Transitioning to a low carbon economy (re)insuring climate change and potential business risks and opportunities Jonathan Gale, Chief Underwriting Officer, Reinsurance, AXA XL

Andrew MacFarlane, Head of Climate, AXA XL

- 124 Prudential treatment of ESG risk Guillaume Campagne, Executive Director and Financial Risk Practice Lead, Capco Lea Rizk, Consultant, Capco
- 130 ESG commitment, social impact, and a strong focus on climate: The Business Plan formula sets out Intesa Sanpaolo's new strategy Elena Flor, Group Head of ESG and Sustainability, Intesa Sanpaolo
- 138 Is climate change another obstacle to economic development? Marion Amiot, Head of Climate Economics, S&P Global Ratings Satyam Panday, Chief Emerging Market Economist, S&P Global Ratings



DEAR READER,

Recent events in the U.S. banking sector, and broader concerns around instability and contagion within the global financial services industry, have meant that crisis management is once more front of mind for many institutions.

In addition, the world of business and finance is facing broader geopolitical and socioeconomic challenges, ranging from conflict, climate change, inflationary pressures, and precarious energy resources. Factor in heightened regulatory and competitive pressures, and it becomes clear that financial institutions must prioritize risk management, within their own organizations and with their counterparties.

The papers in this edition of the Journal address the theme of crisis management through various lenses, including regulatory compliance and traditional risk management, as well ESG, the low carbon economy, and sustainable finance. Our authors also explore topics such as the impact of social change on the world of finance, the rise of artificial intelligence and virtual reality technologies, and cybersecurity.

Contributions in this edition come from a range of world-class experts across industry and academia, and showcase some of the very best expertise, independent thinking, and strategic insights within the financial services sector.

As ever, I hope that you find the latest edition of the Capco Journal to be engaging and informative. Thank you to all our contributors, and thank you for reading.

Lance Levy, Capco CEO

THE FUNDAMENTAL PROBLEM WITH ESG? CONFLICTING LETTERS¹

CHRISTOS CABOLIS | Chief Economist, IMD World Competitiveness Center MAUDE LAVANCHY | Research Fellow, IMD KARL SCHMEDDERS | Professor of Finance, IMD

ABSTRACT

The term ESG – short for environmental, social, and governance – is routinely used to capture organizations' efforts to be more climate friendly and socially inclusive and to employ sound governance practices and processes. Although ESG criteria are well-meaning, the term lumps together concepts that are profoundly different on at least three dimensions: (1) the excludability of the benefits of an action, (2) the temporal gap between investment and the realization of its returns, and (3) the uncertainty surrounding any given action's outcome. In addition to these differences, E frequently goes head-to-head with S (both within and across countries). We propose a path forward, on the way investigating the solutions that businesses can explore in order to build a more sustainable future.

1. INTRODUCTION

Environmental, social, and governance (ESG)² themes are one of the main topics of conversation in business circles. This popularity has been partly fueled by increasing concerns in society and by alarming reports from the scientific community, each putting further pressure on companies to act. By October 2022, more than 8,000 companies had joined United Nations Framework Convention on Climate Change's Race to Zero campaign, committing to take rigorous actions to limit the environmental impact of their activities. Currently ESG is mentioned on average nine times a quarter in earnings calls of S&P companies (compared to an average of at most one mention per quarter in 2017).³ ESG ratings, which assess corporations against a variety of criteria, have proliferated. According to Bloomberg Intelligence, the value of investments in ESG assets could exceed U.S.\$50 trillion by 2025.⁴ Although ESG criteria are well-meaning, they suffer from several flaws. There is little consensus on what ESG means and how it can be measured. This has two implications. On the one hand, this lack of transparency vis-à-vis measurement allows companies to engage in greenwashing.⁵ On the other, this absence of uniformity with regard to measurement introduces noise to any attempt to rate companies. For instance, the average correlation between the overall ESG ratings of six prominent ratings providers is low (0.54), and values are even lower for individual criteria (0.53 for E, 0.42 for S, and 0.3 for G – see Figure 1). Research has shown that this lack of consensus between raters can be explained by their use of different survey items, scales, and weights, as well as by "rater-specific" bias.

We believe that a fundamental challenge underlying ESG is that it lumps together concepts that are profoundly different. In this paper we highlight the discord that exists between

¹ We are very grateful to loannis loannou for helpful discussions and to Dave Brooks for outstanding editorial support on previous versions of this manuscript.

² https://bit.ly/3WDTLCb

³ https://econ.st/3HanddB

⁴ https://bloom.bg/3XCwl1q

⁵ https://econ.st/3XCWcGL; https://bloom.bg/3JcYQ1r



E on the one hand and S/G on the other. Frequently, the improvement of one component, say E, leads to the worsening of another, say S, the result depending on the balance that the decision-maker strikes between potentially contradictory goals. We present solutions that businesses that wish to tackle environmental problems can explore.

We begin by examining the differences between the three components of ESG, in particular by contrasting the publicgood characteristic of E with the private-good characteristic of S and G.

2. WHY E IS DIFFERENT FROM S AND G

Environmental considerations are fundamentally different from social and governance considerations in at least three dimensions. First, whether the benefits of a good or a service related to the individual components of ESG are excludable in consumption. Second, with regard to the time lag between an investment in one of these three components and the realization of the return on that investment. Third, regarding how uncertain any given action's outcome is.

2.1 Tragedy of the commons

In economics, a key dimension with which we classify a good is its excludability (i.e., can we exclude others from access and use?). This distinction has implications for how goods are produced, used, and managed. Fisheries is a typical example of a non-excludable resource. Given the migratory nature of most fish species and the fact that most fish stocks are in international waters, rules and property rights are hard to establish and enforce. Access to fish is thus mostly open and the rule of capture prevails. A negative consequence of this non-excludability is that no one has incentives to use the resource, fish, in a conservative manner. When such a resource is finite, a lack of sustainable management can lead to the tragedy of the commons: in this case, the rate of fishing exceeds the rate of reproduction, potentially leading to the extinction of the resource, the collapse of the fishing industry, and the reduction of food available to human populations as well as to other animals who rely on fish as a food source. Overfishing is one of the greatest threats facing the oceans.⁷ Other resources clearly related to E, such as air, rivers, and forests, all suffer from a similar problem.

Because an organization cannot exclude its competitors from benefiting from its efforts with regard to E (e.g., efforts to reduce its carbon footprint) it has little incentive to pay the costs of those efforts. Most efforts with regard to S and G, meanwhile, are excludable. Improving the diversity of an organization's workforce (i.e., improving S), for example, leads to tangible benefits for that organization (e.g., positive effect on performance, creativity, and innovation, etc.), but not for its competitors. Likewise, a study by one of the authors of the present paper shows that better shareholder protection and accounting standards (i.e., improving G) lead to higher merger premia.⁸

2.2 Tragedy of the horizon

Another aspect of how E stands out from S and G is its temporal horizon. In the case of S and G, there is little temporal gap between an investment and its return. Take the example of a company offering its employees onsite daycare – something that comfortably belongs in the S dimension. Research has shown that such an initiative leads to numerous benefits, such as reduced absenteeism, improved employee retention, and stress reduction.⁹ Investing in providing one's employees with onsite daycare quickly makes a concrete positive impact that will be reflected in the bottom line. For the G dimension as well, investments can generate returns that fall within the typical temporal horizon of political and top-management-team tenure. For instance, moving away from a "corruption"

⁶ Berg, F., J. Koelbel, and R. Roberto, 2022, "Aggregate confusion: the divergence of ESG Ratings," Review of Finance 26, 1315–1344

⁷ https://reut.rs/3HzaX7R

⁸ Bris, A., and C. Cabolis, 2008, "The value of investor protection: firm evidence from cross-border mergers," Review of Financial Studies 21:2, 605-648

⁹ https://bit.ly/3wy3orK

culture" (measured as the shared values and beliefs of a firm's employees) is associated with a reduction in corporate misconduct (e.g., the receipt of kickbacks, accounting fraud, etc.).¹⁰ Greater transparency in accounting also enables better decisions, ultimately producing rapid returns on investment.¹¹

Unfortunately, the story is different for E. Following through on climate targets requires a long-term view. Scientists at the Intergovernmental Panel on Climate Change have raised the alarm: if we want to limit global warming, it is "now or never." In other words, actions should be taken now to ensure a livable future. But taking rigorous action (e.g., changing practices or acquiring technology) to limit environmental impact is costly. Most of these costs must be paid now, while the benefits are likely to materialize in a distant future. This gap between the timing of investment and its return has led to what Mark Carney has called the "tragedy of the horizon". Because the typical horizon of politicians and top management teams is just a few years (the average tenure of a CEO is seven years),¹² the temptation to leave the tough decisions to one's successor is high – and that is the tragedy.

2.3 Higher uncertainty of impact

The third reason why the E dimension is different from S and G is the higher uncertainty surrounding its impact. Pindyck (2022) suggests that "the extent of climate change and its impact on the economy and society more generally is far more uncertain than most people think."¹³ For instance, climate sensitivity (the link between an increase in CO_2 levels in the atmosphere and an increase in temperature) and the likely economic and social effects of warming, rising sea levels, and other aspects of climate change are all highly uncertain. Higher uncertainty makes prediction, and thus business planning, much harder.

There is, meanwhile, much more clarity on the impact of the S and G dimensions. For instance, there are a large number of empirical studies that evaluate the impact of improved diversity, governance, and access to education. Reviews of the scientific literature have revealed the link between diversity and firm performance and the mechanism through which firms can extract benefits (or incur losses) from diversity.¹⁴ A commitment to good corporate governance makes firms more attractive to investors and boosts performance.¹⁵ Table 1 summarizes the above discussion.

These differences sometimes even manifest themselves in a completely opposing manner, by which improvement in one component results in decline in another.

	E	S & G
TRAGEDY OF THE COMMONS	Non-excludable Everyone can benefit from a company's efforts to reduce pollution, even polluters.	Can be excludable Organizations can exclude their competitors from benefiting from their investments in S and G (e.g., onsite daycare for employees only; transparent accounting methods).
TRAGEDY OF THE HORIZON	Short- versus long-term trade-off The cost of reducing environmental impact must be paid now, while the benefits of such actions will mostly materialize in the long term.	Little temporal gap The rewards of investments in S and G are mostly reaped within the typical horizon of political and top- management-team tenure.
UNCERTAINTY OF IMPACT	High uncertainty The extent of climate change and its impact on the economy and society is highly uncertain.	Strong business cases There is a large academic literature documenting the positive impact of S and G policies in general practice (e.g., equity, diversity and inclusion, child labor, access to education, corruption, and business ethics).

Table 1: Why E is different from S and G – a summary

¹⁰ Xiaoding, L., 2016, "Corruption culture and corporate misconduct," Journal of Financial Economics 122:2, 307-327

11 https://bit.ly/3R6lEki

12 https://bit.ly/3RbPDIQ

¹³ Pindyck, R. S., 2022, Climate future: averting and adapting to climate change, Oxford University Press

¹⁴ Roberson, Q., O. Holmes, and J. L. Perry, 2016, "Transforming research on diversity and firm performance: a dynamic capabilities perspective," Academy of Management Annals 11:1, 189-216

15 https://bit.ly/3JiFlVk

3. THE INTERNAL CONFLICTS BETWEEN E AND S/G

Compounding the fundamental differences between E, S, and G, they frequently go head-to-head with one another. The most salient of these conflicts is that between E and S, and we observe it both within and across countries.

3.1 Within countries: Social 1, Environmental 0

Initiatives to protect the environment (E) can have negative consequences for more vulnerable populations (S). Take the example of the yellow vests movement in France. The French government's decision to implement a carbon tax on fossil fuels triggered significant unrest in 2018. Although the tax was essentially "green" and aimed to incentivize consumers and producers to switch to more climate friendly alternatives, the French population did not find it socially acceptable. For many, the financial implications of this tax (it was to hit lower income groups hardest as a larger share of their disposable income is spent on energy, housing, and food) were more important than a green policy that would produce climate benefits in a distant future.¹⁶ The unrest was further fueled by a sense of inequity, as consumers were paying €44/tCO₂ while industry would pay around €25/tCO₂ in the E.U. Emissions Trading System. A misunderstanding of the monetary impact on households' finances and of the environmental effectiveness of the measure has also been shown to have contributed to aversion to the carbon tax.¹⁷ Overall, because this initially well-intended policy to improve E inadequately addressed the impact on S, the government was forced to suspend the tax, ultimately granting a win to S over E.

Local community resistance to renewable energy projects (e.g., wind turbines, solar farms, and dams) is another example of conflict between E and S, but this time relevant to the private sector. While renewable energy projects intend to reduce reliance on fossil fuels and lead to positive environmental impacts, they can also have unintended negative social consequences (e.g., displacement of local communities, loss of access to land and resources, and being harmful to wildlife). Unjust transition can be very costly for companies: protests and strikes can stall projects and tarnish a company's reputation, increase staff turnover, and create investor distrust.

3.2 Across countries: A just transition or no transition

As the examples from the previous section illustrate, efforts regarding E are unlikely to be successful unless there is a "just transition," where no one is disadvantaged by climate change action (hence, where efforts regarding E are not undertaken at the expense of low-income individuals or countries). This issue is at the heart of the loss and damage fund for vulnerable countries hit hard by climate disasters recently discussed at COP27.¹⁸

If companies do not want their E policies to be labeled antisocial, they need to understand the implications of these policies for S and engage in social dialogue. The wide acceptability of climate policies (at the local and the global level) will be crucial to ensuring success and continuity. The G of corporate governance can act as a referee in this E versus S battle, for instance by ensuring a fair redistribution of benefits and costs. In 2022, at a time of rising energy prices, some countries (including France) decided to freeze gas prices and cap electricity prices. Denmark, meanwhile, opted for a different approach. To maintain the incentive to switch to more climate-friendly energy alternatives (e.g., heat pumps or solar panels), the Danish government let prices rise but paid out a "heat cheque" to lower-income households to help them with their energy bills. This policy has led Danish households to significantly reduce their use of gas compared to the French.¹⁹ Likewise. Unilever's commitment to Rainforest Alliance certification is an example of how it is possible to tackle E (in this case, sustainable tea production) without jeopardizing S (the social development of local communities).²⁰

There are profound differences between E and S/G, and conflicts may arise between E and S both within and across countries. With this in mind, the next section explores a way that businesses might reconcile these differences.

18 https://bit.ly/3ZX1kqy

¹⁶ According to a survey sponsored by the French Haut Conseil pour le Climat, 91 percent of respondents acknowledged the urgency of acting against climate change but only 72 percent supported the "polluter pays" principle (including via a carbon tax, which would affect their purchasing power).

¹⁷ Douenne, T., and A. Fabre, 2022, "Yellow vests, pessimistic beliefs, and carbon tax aversion," American Economic Journal: Economic Policy 14:1, 81–110

¹⁹ https://econ.st/3kB0ijM

²⁰ https://bit.ly/3WBNqHv

4. UNPACK FOR REAL IMPACT

The discussion thus far has shown that the business case for companies' ESG efforts is very different for environmental (E) than it is for social (S) and governance (G) issues. While many companies enjoy rapid private net gains from addressing S- and G-related problems, they all too often do not benefit from costly environmental projects during the planning horizon of their senior management and board members. This is probably why many companies are making long-term emission reduction pledges (such as net zero targets by 2050) but often fall short on these promises in the short term (e.g., they refrain from making the costly investment necessary today if these promises are to be fulfilled). An analysis of the climate strategies of 25 major global companies reveals that the net zero commitments of the majority lack substance (they commit to reducing aggregate emissions by 40 percent on average instead of by 100 percent and report very few interim climate targets).21

In response to this fundamental difference between E, S, and G, companies need to acknowledge their differences, while making sure each does not conflict with the other. In the following, we propose four solutions that businesses can explore to tackle environmental problems.

4.1 Property rights

A classical approach to addressing the tragedy of the commons in economics is the assignment of private property rights for a common resource to a single economic agent. The underlying idea is that a single owner will manage the resource such that the owner's "best" actions coincide with those of a planner choosing a "socially optimal" policy for the use of the resource. As a result, the single owner can avoid the tragedy of the commons. Returning to the fisheries example we discussed earlier, assigning property rights for a lake to local fishermen would likely lead to a sustainable management of fish stocks. It would indeed be in their own interests to ensure that the catch rate does not exceed the rate of reproduction (as failure to do so would affect their future revenues significantly). Emissions trading schemes (ETSs) (also known as the capand-trade system) are an example of the property rights approach. The government sets a maximum level of carbon emissions and allocates permits for each unit of emissions allowed. These permits can then be traded on a market. The idea underlying this system is that these permits will incentivize emitters to lower their emissions (for instance by investing in low-carbon technologies). One of the pioneers of the property rights approach, Ronald Coase, has noted that an efficient allocation of resources can be achieved under certain conditions (the Coase theorem). The most important of these are zero transaction costs and perfect information: the parties understand and agree on the issue at hand and are willing and able to talk to each other, and the implementation of any agreement can easily be monitored. Unfortunately, these conditions are usually not satisfied when dealing with a global problem such as climate change, which requires dialogue and agreement from hundreds of countries and hundreds of thousands of companies. For instance, there are 46 cap-and-trade systems across the world for CO₂ emissions and many are criticized for making too many allowances relative to their stated environmental ambitions.²² For instance, the ETS in the E.U. only covers 45 percent of global E.U. emissions and has an equilibrium price that does not correspond to the present value of marginal climate damages generated by the corresponding emission. Hence, as a mechanism it does not sufficiently induce companies to internalize the social cost of their pollution.

The concept of property rights, therefore, does not offer a solution to the most pressing global environmental problem – the steady increase of greenhouse gas emissions and the global warming that results. Moreover, in cases where it could potentially apply (including fisheries, forestry, and rangelands), current scientific evidence on the effect of property rights regimes on environmental outcomes is insufficiently robust to draw firm conclusions (positive results are nevertheless more likely to be reported when the resource systems include monitoring and enforcement systems, when there is low resource use pressure, and when rights are clear, stable, and legitimate).²³

²¹ https://bit.ly/3WHSjil

²² https://bit.ly/406NG40

²³ Ojanen, M., W. Zhou, D. C. Miller, S. H. Nieto, B. Mshale, and G. Petrokofsky, 2017, "What are the environmental impacts of property rights regimes in forests, fisheries and rangelands?" Environmental Evidence 6:1, 1–23

4.2 Environmental regulation

Somewhat remarkably, in ESG-themed sessions in IMD's executive management programs many business leaders call for more environmental regulation. These managers recognize the tragedy of the commons. They argue that their fiduciary duties to their companies' owners do not allow them to unilaterally engage in more environmentally-friendly business practices: the resulting rise in costs and reduction in market share would hurt their companies' bottom line and would eventually cost them their jobs. At the same time, many business leaders would very much like to pursue greener business ideas even if they resulted in higher cost and smaller margins. But since they cannot move first, they want policymakers to force green policies upon them and their competitors.

Of course, emissions-intensive businesses in many countries are well versed in dealing with environmental regulation. For example, the U.S. Clean Air Act of 1963 (with numerous later amendments) and the 2008 E.U. directive 2008/50/ EC on cleaner air for Europe set air quality standards that required many companies to make costly investments in order to reduce their emissions. It does not take a crystal ball to predict that in the face of ever-growing greenhouse gas emissions and further global warming many regulators will continue to impose ever higher environmental standards in their jurisdictions.

An extreme form of regulation may occur in the face of severe environmental degradation. As a result of warming waters in the Bering Sea, the numbers of Alaskan snow crabs dropped by more than 80 percent between 2018 and 2022. In October 2022 – for the first time in its history – the Alaska Department of Fish and Game forbade the harvesting of snow crabs. In addition, and for the second year running, the harvesting of red king crabs was also halted. These regulatory measures were a big blow to the industry concerned, which as recently as 2016 harvested snow and red king crabs valued at more than Can \$250 million (approximately U.S.\$187 million).

If the environmental conditions for crabs in the Bering Sea do not improve – and this appears likely at the time of writing – then the industry will not survive. Not only will some crabbing companies go out of business, many of the industry's assets will become stranded.²⁴

Clearly, business leaders want neither environmental disasters that eliminate business-critical resources nor regulation that forces the outright closure of their businesses. Meanwhile, many regulators prefer - based on economic principles systems of charges. For instance, even the mere threat of carbon regulation may push organizations to act. A 2020 report from the World Bank states, "companies that perceive higher risk from external carbon regulations are over five times more likely to implement an internal carbon price."25 Yet, instruments such as the carbon tax have suffered from a "social acceptability problem" (including that of the yellow vests in France), as discussed in Section 2 above. A recent example of a company engaging in environmental regulation can be found in BP and the U.S. state of Washington. Although the company initially spent large sums of money advocating against the imposition of a carbon tax, it supported a state bill for an overall cap on carbon emissions.²⁶

4.3 Technological innovation

Technology is routinely cited as a solution to global warming. Such technological innovations usually belong to one of two strategies – mitigation and adaptation. Mitigation involves finding ways to cut our carbon emissions, while adaptation involves taking measures to better cope with climate change.

While many cleantech innovations - including air carbon capture, green hydrogen, nuclear fusion, and sustainable aviation fuels - are still in the development phase, renewable energies are a mitigation technology that is already available and ready to be deployed. Several issues, though, have prevented mass implementation. The cost of these technologies is an important hurdle. The first wave of cleantech (now referred to as cleantech 1.0, which started around 2006, at the same time as AI Gore's documentary "An inconvenient truth" appeared) was diminished by the then availability of cheap fossil fuels. Scaling (in terms of the infrastructure needed and the regulatory hurdles to the construction of new renewable power plants) has also been proven to be critical if we want to increase our reliance on renewables. Although the energy crisis sparked by the war in Ukraine should be seen as an opportunity to switch to renewables, uncertainty around the war's implications has resulted in much hesitation from market participants. The adoption of mitigation technologies can also be impeded by market competitiveness issues. A

²⁴ https://bit.ly/3Y1yuU8

²⁵ https://bit.ly/3Y2t5wj

²⁶ https://bit.ly/3WG8LzH

representative of one airline told one of the coauthors of the present paper that the company had developed a sustainable fuel but could not use it because doing so would put the company at a cost disadvantage compared to its fossil fuelusing competitors. In other words, until everyone is forced to play by the same rules (for example, due to the introduction and enforcement of international regulations) the company will not implement the new technology it has developed.

Policymakers initially focused on mitigation. Our interactions with hundreds of corporate leaders reveal that many companies are also under pressure from the public and investors to pursue mitigation. Thus, past corporate and policy efforts have both focused almost exclusively on mitigation measures. This must change, as it is now clear that both adaptation and mitigation are needed and should be pursued in parallel. If we want companies and consumers to be more resilient to climate variability, adaptation will be key. For instance, Unilever has implemented mitigation measures to reduce the volume of water used in its manufacturing processes (in particular in plants located in water-stressed sites) and invested in adaptation through the development of "water-smart products," which require less water than traditional products. These include hair conditioners that do not need to be rinsed off, dry wash sprays to refresh clothes (thus reducing washing frequency), and a washing detergent bar that needs less water for rinsing.²⁷ These and other water-smart products can be interpreted as both mitigation (they require less water and energy today) and adaptation (they are suitable for a future with less water and thus preserve the company's market share and profits). Water resilience is seen as one of the key areas for adaptation in Africa, as investment in water management and water reuse technologies can help the continent adapt to the unpredictability of droughts and higher temperatures.²⁸ For instance, investments in desalination stations and wastewater recycling plants by global fertilizer producer the OCP Group has reduced water pollution and improved both the water resilience of the company's production systems and the livelihoods of communities in North Africa (hence also having a positive impact on the S dimension).²⁹ Building redundancy and improving emergency responses is another approach to adapting to climate change. The French utility company EDF

has invested in adapting existing facilities to make them less sensitive to climatic conditions and more resilient to extremes, including heatwaves, rising sea levels, and drought.³⁰

In the future, humanity not only needs to strengthen its mitigation efforts, it also needs to increase the attention it gives to adaptation. And as COP26 President Alok Sharma put it: "The annual adaptation costs are expected to reach at least U.S.\$ 140 billion a year by 2030. And frankly, public finance is not going to be enough. We are going to need private finance."

4.4 Think global, act local, work together

Climate change is a global problem that will not be solved without business, government, and society working together toward a common goal. Embracing partnerships is thus another way forward.

Businesses can collaborate with their peers to establish some baseline rule or practice (within the limits of antitrust law).³¹ For instance, the Consumer Goods Forum brought the world's largest consumer goods retailers and manufacturers together to develop sustainable packaging.³² Likewise, companies in the fashion and textile industry created The Fashion Pact, an initiative that includes common core goals on stopping global warming, restoring biodiversity, and protecting the oceans. One of its targets is to remove single-use plastics from B2C by 2025 and from B2B by 2030.³³ Such partnerships can improve the resilience of entire industries, and allow companies to take bolder action and to scale their positive environmental impact.

Working with governments, NGOs, and civil society can also help companies improve their environmental performance. The collaboration between Swiss Re and Oxfam to develop insurance against climate change risks for Ethiopian farmers is one example of this.³⁴ The complementarities between Oxfam's knowledge of Ethiopia and long presence in the country and Swiss Re's expertise in insurance were key to the success of the partnership. Collaboration began with a pilot project in one village but rapidly expanded to include three other countries in West Africa and the development of other insurance products. It has since been rebranded the R4 Rural Resilience Initiative.³⁵

²⁷ https://bit.ly/3Jim0s7

²⁸ https://bit.ly/3DhjYQo

²⁹ https://bit.ly/3wwCwbr

³⁰ https://bit.ly/3Hw4dYm ³¹ https://bit.ly/3wwzVhL

³² https://bit.ly/3j98eZa

³³ https://bit.ly/3Dh1W0y

³⁴ https://bit.ly/3j5Bgce

³⁵ https://bit.ly/3XDzbmN

5. CONCLUSION

Many decision-makers use the term ESG without giving much thought to the interdependence of the three letters. It is not because certain criteria of E, S, and G overlap that each should necessarily be bound together. The economic forces operating behind E are different from those operating behind S and G. By focusing on ESG in the aggregate, we may hit the target but miss the point. While acknowledging the distinctions between E, S, and G, it is important to note that we do not advocate for siloed solutions that fail to consider the interconnected nature of these issues. The first step in solving a problem is acknowledging its existence. Awareness is, therefore, of paramount importance to our work toward a solution. The way the term ESG became part of our daily vocabulary is both fascinating and intriguing. As soon as researchers started peeling off the obvious first level concepts, the complexity of the relationship between the three variables became obvious. It is time to explore the differences and, most importantly, the complementarities of the components of ESG if we are to achieve a sustainable outcome. Maintaining a dialogue with governmental authorities and other companies in and across industries will also be crucial to the success of this endeavor.

 $\ensuremath{\mathbb{C}}$ 2023 The Capital Markets Company (UK) Limited. All rights reserved.

This document was produced for information purposes only and is for the exclusive use of the recipient.

This publication has been prepared for general guidance purposes, and is indicative and subject to change. It does not constitute professional advice. You should not act upon the information contained in this publication without obtaining specific professional advice. No representation or warranty (whether express or implied) is given as to the accuracy or completeness of the information contained in this publication and The Capital Markets Company BVBA and its affiliated companies globally (collectively "Capco") does not, to the extent permissible by law, assume any liability or duty of care for any consequences of the acts or omissions of those relying on information contained in this publication, or for any decision taken based upon it.

ABOUT CAPCO

Capco, a Wipro company, is a global technology and management consultancy focused in the financial services industry. Capco operates at the intersection of business and technology by combining innovative thinking with unrivalled industry knowledge to fast-track digital initiatives for banking and payments, capital markets, wealth and asset management, insurance, and the energy sector. Capco's cutting-edge ingenuity is brought to life through its award-winning Be Yourself At Work culture and diverse talent.

To learn more, visit www.capco.com or follow us on Facebook, YouTube, LinkedIn and Instagram.

WORLDWIDE OFFICES

APAC

Bangalore Bangkok Dubai Gurgaon Hong Kong Kuala Lumpur Mumbai Pune Singapore

EUROPE Berlin Bratislava Brussels Dusseldorf Edinburgh Frankfurt Geneva London

London Munich Paris Vienna Warsaw Zurich

NORTH AMERICA

Charlotte Chicago Dallas Hartford Houston New York Orlando Toronto Washington, DC

SOUTH AMERICA São Paulo



www.capco.com

