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THE ESSENTIAL
HANDBOOK FOR
CREATING, DEPLOYING,
AND SUSTAINING
CREATIVE SOLUTIONS
TO SYSTEMIC
PROBLEMS

EDITED BY
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Measuring Corporate Virtue and Vice

Making ESG Metrics Trustworthy

Paul Brest and Colleen Honigsberg

*He knows if you've been bad or good
So be good for goodness sake.*

—John Frederick Coots, “Santa Claus Is Comin’ to Town” (1934)

An increasing number of corporations aspire to meet demands to improve their environmental, social, and governance (ESG) performance. In 2020, one of every three dollars under professional management in the United States was managed according to “sustainable”—a term broadly synonymous with ESG—investing strategies.¹ The stakeholders interested in ESG measures extend well beyond investors and the companies’ own managements. They include employees at the company and in its supply chain, consumers, regulators, and those subject to companies’ environmental and social impacts.² These stakeholders may wish to assess a company’s performance for any number of reasons. For example, they may want to improve performance, reward or punish the company, induce a company to internalize its external environmental and social costs, or predict the company’s future financial and ESG performance.³

It is a cliché, because it is generally true, that you can't manage what you can't measure. There is a broad consensus about the financial metrics used to evaluate a company's balance sheet and its overall value, and these metrics are largely commensurable across a range of industries and geographies. By contrast, ESG factors are dissimilar, the techniques for measuring them are varied and complex, and many are not readily comparable. For these reasons, among others, it is not surprising that the assessments of the various ESG ratings services are poorly correlated with each other⁴ and that the question of whether good ESG ratings predict better returns for investors is perennially controversial.⁵

Despite the huge differences between ESG and financial reporting, we believe that practices developed in financial reporting can contribute to achieving high-quality ESG reporting. In particular, we suggest that a comprehensive framework for ESG reporting must address the following three factors:

1. **A limited set of metrics, primarily concerned with a company's key environmental and social impacts.** Part 1 of this chapter summarizes the current state of the measurement of companies' ESG outcomes—particularly the environmental and social (E&S) factors, sometimes referred to as “planet” and “people”⁶—and the prospects for improvements.⁷ It concludes by describing the requirements of a full-fledged social account-

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EXECUTIVE SUMMARY

To address the interests of a diverse group of stakeholders, an increasing number of corporations aspire to meet demands to improve their environmental, social, and governance (ESG) performance. We suggest that a comprehensive framework for ESG reporting—drawing on practices developed in financial reporting—must address the following three factors: (1) a limited set of metrics, primarily concerned with a company’s key environmental and social impacts; (2) a standard-setting body loosely modeled on the Financial Accounting Standards Board (FASB) to develop and particularize those metrics; and (3) reporting infrastructures that enable companies to collect, report, and verify the relevant metrics accurately.

ing framework. Part 2 samples the existing reporting requirements for some basic environmental and social issues. Our goal is to explore the possibilities for developing a robust framework and scalable system that captures a company’s major E&S effects.

2. **A standard-setting body modeled on the Financial Accounting Standards Board (FASB) to develop and particularize those metrics.** In part 3, we suggest that the lessons from financial accounting are instructive in developing an ESG standard-setting body. Financial accounting went through a series of standard-setting bodies before creating the FASB, and the FASB is commonly thought to be more successful than its predecessors because of its greater financial, industry, and political independence.
3. **Reporting infrastructures that allow companies to collect, report, and verify the relevant metrics.** The reporting framework must produce information that is accurate, objective, and verifiable, but the history of financial reporting has demonstrated the difficulty of generating this type of high-quality data without formal processes and procedures. Thus, in part 4, we show that companies need robust internal and external reporting frameworks (i.e., internal control systems and third-party auditors) to generate the underlying data and verify the reported information.

Part 1: Measuring Environmental and Social Impact

What is the current state of ESG reporting, and would what a comprehensive system look like?

Current Status of ESG Reporting

ESG reporting is still in a primitive stage, akin to financial reporting in the early twentieth century.⁸ In the article “The Current State of Sustainability Reporting,” Jill M. D’Aquila describes the following challenges:⁹

- Competing frameworks and standards designed for different audiences
- Lack of standardization of ESG metrics or performance indicators
- Measurement uncertainty (many types of sustainability information cannot be accurately measured)
- Different definitions of “materiality,” complicated by evolving criteria related to sustainability
- Inconsistent reporting methods
- Disclosures in the form of vague, nonspecific “boilerplate language”¹⁰
- Lack of comparability of disclosures¹¹

The history of efforts to improve E&S outcomes by monitoring companies and their suppliers has been full of disappointments.¹² While this has led at least one thoughtful student of the field to look for radically different proxies based on the quality and stability of business relationships,¹³ it has also motivated several concerted (but not altogether coordinated) efforts to improve the reporting standards:

- Five major sustainability reporting agencies—CDP (formerly Carbon Disclosure Project), CDSB (Climate Disclosure Standards Board), GRI (Global Reporting Initiative), IIRC (International Integrated Reporting Council), and SASB (Sustainability

Accounting Standards Board)—have announced a “Statement of Intent to Work Together Toward Comprehensive Reporting Requirements.”¹⁴

- The trustees of the International Financial Reporting Standards (IFRS) Foundation have proposed to create a Sustainability Standards Board, which would initially focus on the financially material climate risks incurred by corporations but might build incrementally to encompass other environmental issues and “double materiality”—a company’s impact on the wider environment aside from financially material risks.¹⁵
- A report by the World Economic Forum (WEF), produced in collaboration with the Big Four accounting firms (Deloitte, Ernst & Young, KPMG, and PricewaterhouseCoopers) proposes metrics that “reflect not only financial impacts but ‘pre-financial’ information that may not be strictly material in the short term, but are material to society and planet and therefore may become material to financial performance over the medium or longer term.”¹⁶ The title of the WEF report, “Measuring Stakeholder Capitalism: Towards Common Metrics and Consistent Reporting of Sustainable Value Creation,” captures its purpose.
- The International Federation of Accountants (IFAC) has proposed the creation of a new International Sustainability Standards Board that would create “a reporting system that delivers consistent, comparable, reliable, and assurable information relevant to enterprise value creation, sustainable development and evolving stakeholder expectations.”¹⁷
- The Impact-Weighted Accounts Initiative (IWAI) at Harvard Business School is an ambitious effort to establish criteria for measurable E&S factors.¹⁸ Its underlying premise is that the true value of a company is not captured by conventional financial metrics but rather must also account for the external costs imposed and external benefits conferred on major stakeholders.¹⁹
- A paper by Ben Smith and Brad Cooper reports on investors’ strong interest in consistent and reliable impact reports by green bond funds.²⁰

Elements of a Comprehensive System for Assessing a Company's Impacts

Informed by these efforts, we outline the desired requirements of a full-fledged social accounting framework and then ask what's feasible for some common environmental and social issues.²¹ We do not address the costs of implementing the framework other than to note that, although they would be great, so are the potential benefits of improved E&S behaviors.

1. The framework must go beyond the conventional measure of a company's financial value to broadly measure its "*material effects on the economy, environment, and people*" (quoting the GRI) in terms of external costs and benefits. Different stakeholders may be interested in different effects, but if one examines the main standard-setting systems, there is considerable convergence around environmental standards involving greenhouse gas emissions and conventional pollutants, and around social standards involving child labor, forced labor, workplace safety, discrimination, and diversity. The indicators must include a company's significant *positive and negative effects on all stakeholders*, not just investors.
2. Information must be reported in a *timely* manner.
3. In addition to accounting for a *company's own impacts*, the framework should account for the company's contributions to the impacts of *suppliers*, the *consumers* of its products and services, and perhaps *competitors* as well. (In the particular domain of greenhouse gas emissions, these encompass Scope 1, 2, and 3 emissions, which we will discuss.) Accounting for the impacts of consumers is particularly difficult.²²
4. The indicators of E&S factors must be *accurate, valid, and reliable*. *Accuracy* concerns how precisely the indicator measures the variable of interest.²³ *Validity* concerns whether the indicator captures the effects one is really interested in; indicators typically serve as proxies for the variables of interest, and the validity of the proxies can vary greatly.²⁴ *Reliability* concerns whether measurements of the same indicator are consistent across time. For example, is the definition of "serious" workplace accidents the same from one year to the next?

5. The information must be sufficiently *objective and verifiable* for auditors, regulators, institutional investors, and litigants to identify and correct material misreporting.
6. The information must be *accessible* to a wide range of stakeholders, either directly or through trustworthy intermediaries.
7. Although the same reporting methods and metrics must be used consistently across different companies and over time, the standards must be *adaptable* to reflect the evolution of technologies and the standards themselves. To reconcile adaptability with reliability, companies must restate prior years' metrics in terms of the new standard.
8. One must be able to *meaningfully compare the impacts of different companies within and across sectors*. For example, the IAWI initiative uses the concept of “environmental intensity” to reflect a company’s negative environmental impact as a percentage of its operating income from sales.²⁵
9. Ideally, measurements of indicators must be *monetizable*²⁶ or at least be reducible to a *common metric* such as quality-adjusted life years (QALYs).²⁷ Although some stakeholders may only care about one particular indicator, such as greenhouse gas (GHG) emissions, others may care about a company’s aggregate benefits and harms. Just as conventional financial reports are intrinsically monetized, monetization of E&S factors provides a common value for comparing a wide variety of financial, environmental, and social effects. Monetization is essential for understanding the inevitable trade-offs among the goals of various stakeholders. It also “is a necessary condition for the development of capital markets driven by sustainability considerations.”²⁸ This is almost surely the most challenging criterion in the list.
10. Standards should ultimately be set by an organization that is, to the extent reasonably possible, *independent* of political and industry pressure.

Part 2: Examples of Environmental and Social Standards

The organizations concerned with ESG measurement fall into three groups. The first group *defines indicators* relevant to environmental and social matters, such as pollution and workplace safety, but does not prescribe particular levels of behavior with respect to them. The Global Reporting Initiative (GRI)²⁹ is paradigmatic of this approach.

The second group *prescribes acceptable behaviors*. Broadly stated, these organizations fall into one of three subcategories. Some organizations, such as SA8000 and Worldwide Responsible Accredited Production (WRAP), rely on external auditors to *certify* that a company has met particular substantive standards concerning issues such as child labor, forced and compulsory labor, health and safety, freedom of association and the right to collective bargaining, discrimination, disciplinary practices, working hours, and remuneration.³⁰ Other organizations, notably industry-specific groups such as the Fair Labor Association³¹ and companies such as Nike, *sanction or shame firms* in supply chains that violate fair labor standards. Finally, B Lab awards *B Corp certification* to companies that achieve a minimum verified score concerning their impact on their workers, customers, community, and environment.³² The criteria for B Corp certification are broader than those of the other standard-setting organizations, reflected in its complex system of categorization.³³

Third, there are ratings services, such as MSCI and Bloomberg, that provide investors with ESG information about particular companies based largely on the company's sustainability disclosures and other voluntarily provided information.

This section focuses on the first two categories, with the aim of understanding the scope and limits of the primary data that forms the basis for their reports.

Greenhouse Gas Emissions and Other Environmental Impacts

We first examine the current approach to environmental metrics, which concern a corporation's impact on ecosystems, or the "planet." The universal recognition that greenhouse gases³⁴ (GHGs) are major contributors to global warming, which both threatens the planet and puts companies at financial risk, has led to the convergence of outcome indicators.

The Greenhouse Gas Protocol Corporate Accounting and Reporting Standard, the product of a multistakeholder collaboration,³⁵ provides a uniform methodology for the comprehensive disclosure of an organization's emissions. It places GHG emissions in three different categories, designated as "scopes,"³⁶ which together "encourage companies to move from reporting [activities and] outputs alone to capturing the impacts of their operations on nature and society across the full value chain, in more tangible, sophisticated ways, including the monetary value of impacts."³⁷

Scopes 1 and 2, respectively, encompass direct emissions from a corporation's owned or controlled sources and indirect emissions related to the generation of energy purchased by a corporation.³⁸ They are mutually exclusive, thus avoiding the double counting of emissions.

Scope 3 emissions are a "consequence of the activities of the company but occur from sources not owned or controlled by the company."³⁹ They broadly encompass purchased goods and services, business travel, employee commuting, waste disposal, use of sold products, transportation and distribution (upstream and downstream), investments (as distinguished from the company's own business), and leased assets and franchises.⁴⁰

Although the definition of Scope 3 emissions is extremely broad, a company has great discretion to determine which emissions to measure. The recommended criteria for selection include whether the emissions are large relative to the company's Scope 1 and Scope 2 emissions, whether they contribute to the company's GHG risk exposure, whether they are deemed critical by key stakeholders (e.g., customers, suppliers, investors, or civil society), and the company's ability to reduce, or influence the reduction of, those emissions.⁴¹ The GHG protocol rightly notes that "since companies have discretion over which categories they choose to report, Scope 3 may not lend itself well to comparisons across companies." For this reason, we focus on Scopes 1 and 2.

The calculation of all three scopes of emissions requires identifying sources and calculating emissions throughout a company's business activities. To promote standardization, the GHG Protocol includes a set of peer-reviewed tools to enable companies to estimate their emissions of key greenhouse gases (e.g., CO₂, methane, and nitrous oxide) converted into metric tons of CO₂ equivalents.⁴² The disclosures are theoretically objective, transparent, and comparable. Their standardization makes it possible for companies and stakeholders to track progress and compare emissions

across sectors and also—if there is a price on carbon—to capture the *monetary costs* of emissions generated.⁴³ For all these reasons, the Protocol’s framework provides a paradigm for ESG metrics.

Investors and many other stakeholders are concerned with *predicting* a company’s future emissions. While disclosure of a company’s current and past emissions provides essential data for this task, the Task Force on Climate-Related Financial Disclosures (TCFD) takes the further step of asking companies to disclose their plans and governance practices with respect to emissions. These process indicators fit within ESG’s *Governance* category.

The TCFD is concerned with the effects of climate risks and opportunities on a company’s financial value.⁴⁴ Risks include not only those stemming from the company’s own activities but also those imposed on the company by natural causes and other actors. “Opportunities” include efficiencies and new markets accompanying reduced emissions. The TCFD calls for disclosures in four domains:

- **Governance.** The board’s and management’s roles in assessing and managing climate risks and opportunities.
- **Strategy.** Addressing climate-related risks and opportunities over the short, medium, and long runs.
- **Risk management.** Processes for identifying, assessing, and managing climate-related risks.
- **Metrics and targets.** The metrics used to assess climate-related risks and opportunities, including GHG emissions; the targets used to manage those risks and opportunities;⁴⁵ and performance relative to those targets.

These process indicators are precursors to achieving outcomes that minimize GHG emissions. A company’s specification of reduction targets and its reports on progress in meeting them are further steps in this direction. Although these disclosures lack the precision and objectivity of actual emissions, they provide valuable predictive information. Indeed, a company’s disclosure of its targets for future years provides stakeholders with an important baseline with which to compare actual emissions in those years.⁴⁶

Greenhouse gas emissions are more straightforward to measure than many other environmental impacts, as the impacts of the emission of

greenhouse gases are independent of a company's particular situation or geography: a ton of carbon dioxide emitted in one location is identical to a ton emitted in another. By contrast, many other environmental impacts are context dependent. For example, an essential component of GRI standard 303 on Water and Effluents is the amount of water withdrawn from areas with water stress,⁴⁷ which is defined as the "ability, or lack thereof, to meet the human and ecological demand for water." The standard explains that water stress involves "the availability, quality, or accessibility of water" and states that it is "based on subjective elements and is assessed differently depending on societal values, such as the suitability of water for drinking or the requirements to be afforded to ecosystems."⁴⁸ While the contextualization of many environmental impacts is inevitable, it introduces an element that compromises the objectivity and comparability of the metrics.

Occupational Health and Safety

Almost all standards include provisions concerning workplace safety. For example, SA8000 states:

The [company] shall provide a safe and healthy workplace environment and shall take effective steps to prevent potential health and safety incidents and occupational injury or illness arising out of, associated with or occurring in the course of work. It shall minimize or eliminate, so far as is reasonably practicable, the causes of all hazards in the workplace environment, based upon the prevailing safety and health knowledge of the industry sector and of any specific hazards.⁴⁹

GRI standard 403 on Occupational Health and Safety requires these disclosures of *processes*:⁵⁰

- Whether an occupational health and safety management system has been implemented
- The processes used to identify work-related hazards and assess risks and to eliminate hazards and minimize risks
- The processes for worker participation and consultation in the development, implementation, and evaluation of the occupational

health and safety management system, and for providing access to and communicating relevant information on occupational health and safety to workers

- Any occupational health and safety training provided to workers, including generic training as well as training on specific work-related hazards, hazardous activities, or hazardous situations
- Prevention and mitigation of occupational health and safety impacts directly linked by business relationships (e.g., suppliers)
- The number and percentage of employees who are covered by an occupational health and safety management system

GRI disclosure 403-9 focuses on *outcomes*—that is, on work-related injuries.⁵¹ It requires a company to report, with respect to its own employees:

- The number and rate of fatalities as a result of work-related injuries
- The number and rate of high-consequence (i.e., serious) work-related injuries other than fatalities
- The number and rate of other work-related injuries
- The work-related hazards that pose a risk of high-consequence injury, including how these hazards have been determined; which of these hazards have caused or contributed to high-consequence injuries during the reporting period; actions taken or under way to eliminate these hazards and minimize risks; any actions taken or under way to eliminate other work-related hazards and minimize risks (This is a combination of processes and outcomes.)

In many respects, the GRI disclosures parallel the reports that US employers are required to make to the Occupational Safety and Health Administration (OSHA).⁵²

The GRI requires that companies report the number of fatalities or injuries in relation to hours worked.⁵³ This formula allows one to compare a company's work-related fatalities and injuries of different severities with those of other companies, whether in the same industry or across industries.

Although not called for by the standards, workplace injuries and deaths can be monetized.⁵⁴ Companies in the United States and many other

countries are subject to mandatory workers' compensation schemes that provide wage replacement and medical benefits to employees injured in the course of employment.⁵⁵ The regulations include schedules that put a price on injuries that involve the loss of vision or hearing or of a body part.⁵⁶ Of course, the price will vary among different jurisdictions.

Beyond the schedules of workers' compensation programs, there are two widely used measures of the value of health and life: quality-adjusted life years (QALYs) and disability-adjusted life years (DALYs). Both multiply a person's life expectancy by a number between 1 (perfect health) and 0 (death) to represent different degrees of disability or pain.⁵⁷ Both measures are ultimately grounded in the concept of the value of a statistical life (VSL),⁵⁸ which assigns a fixed monetary value to every human life in a certain population based on people's willingness to pay (WTP) to avoid health and safety risks.⁵⁹

Workplace injuries and deaths fit many of the core elements of an ESG reporting framework described earlier in this chapter. Among other things, the events are auditable, comparable, and monetizable. Also, in principle, such reporting could be extended to include the company's supply chain, though the difficulties of assurance in this context are formidable.⁶⁰

Child Labor

GRI standard 408⁶¹ is typical of international standards in defining a "child" as "a person under the age of 15 years, or under the age of completion of compulsory schooling, whichever is higher." The standard states that "abolishing child labor is a key principle and objective of major human rights instruments and legislation and is the subject of national legislation in almost all countries." The key rationales for prohibiting child labor, as stated by SA8000, are that "childhood should be dedicated to education and development, not to work; child labor often jeopardizes children's chances of becoming productive adults; and child labor perpetuates poverty and social inequality."⁶²

With respect to *outcomes*, SA8000 provides that a company "shall not engage in or support the use of child labor" and "shall not expose children . . . to any situations—in or outside of the workplace—that are hazardous or unsafe to their physical and mental health and development."⁶³ With respect to *procedures*, it requires that companies communicate their policies to workers and interested parties, have procedures

for verifying age, and have written procedures for the remediation of child labor.⁶⁴

The GRI standard is essentially *procedural*. It requires that companies report on “operations and suppliers considered to have significant risk for incidents of child labor” and on measures taken by the company “intended to contribute to the effective abolition of child labor.”

As with workplace injuries, incidents of child labor by the company itself or by suppliers are in principle auditible, and the numbers are comparable across companies. Although prohibitions of child labor are rooted in value judgments about the importance of childhood, there have been various efforts to monetize its costs. For example, a 2004 study by the International Labor Office (ILO) provides estimates of “the added productive capacity a future generation of workers would enjoy due to their increased education, and the economic gains anticipated from improved health due to the elimination of the worst forms of child labor.”⁶⁵ Of course, the costs of child labor vary from one country to another depending on available educational and posteducational opportunities. Nonetheless, it should be feasible to come up with a country-specific, or even region-specific, estimate of the costs per child per year that could be used for social accounting purposes.

Discrimination and Diversity

Accounting for discrimination seems considerably more difficult than accounting for workplace safety and child labor. GRI standard 406 defines discrimination as “the act and the result of treating people unequally by imposing unequal burdens or denying benefits, instead of treating each person fairly on the basis of individual merit,” and states:

An organization is expected to avoid discriminating against any person on any grounds, including avoiding discrimination against workers at work. It is also expected to avoid discriminating against customers with respect to the provision of products and services, or against any other stakeholder, including suppliers or business partners.⁶⁶

Under GRI standard 406, the company must report the “total number of incidents of discrimination during the reporting period,” where “an ‘incident’ refers to a legal action or complaint registered with the com-

pany or competent authorities through a formal process, or an instance of non-compliance identified by the company through established procedures.” The report must describe the status of the incidents and actions taken with respect to them.

In contrast to workplace injuries, what constitutes “discrimination” varies greatly among countries, and determining whether an employer discriminated often entails a complex and protracted process. GRI standard 406 defines an “incident” as including a formal complaint, regardless of whether it was adjudicated or how it was resolved. But complaints alone are likely a weak proxy for actual discrimination, and this expansive definition of “incident” limits the comparability of the reporting across companies, since different companies have different internal reporting and recordkeeping processes.

A potentially less problematic approach would be to limit the definition of “incident” to those instances where a court or cognizant government agency has concluded that an employer engaged in discrimination. After such a determination, applications of GRI standard 406 would be readily comparable across US companies, many of which are subject to Title VII of the Civil Rights Act of 1964.⁶⁷ However, this approach would not capture the many complaints that are resolved through arbitrations or settlements, especially when they are subject to nondisclosure agreements.

Violations of some aspects of discrimination are monetizable—after all, courts and administrative agencies regularly award compensatory damages for actions of discrimination. But given the intangible nature of some harms from discrimination and the vagaries of judicial and other dispute resolution systems, the outcomes of contested discrimination claims seem weakly correlated with the magnitude of the actual injuries.

Another related but broader approach to capturing discriminatory practices can be found in GRI disclosure 405-1, which requires disclosure of the percentage of individuals within the organization’s governance bodies and workforce by gender, age group, and “other indicators of diversity where relevant (such as minority or vulnerable groups).”⁶⁸ Although these disclosures may provide some surface-level information, they fall far short of providing information about the adequacy of a company’s diversity and inclusiveness—an increasing concern of institutional investors and other stakeholders. This requires a deep understanding of the industry and the nature of its governance structure and workforce—something that cannot readily be determined, even by adjudication.

Our hypothesis before undertaking the analysis described in this section was that environmental standards would be more likely than social standards to meet the criteria of effective ESG reporting that we outlined in part 1. However, this generalization turns out to be unfounded. Although Scope 1 and 2 greenhouse gas emissions set a benchmark for precision, not all environmental standards meet that benchmark,⁶⁹ while some social standards do.

For those standards that do meet the criteria, the next questions involve how they will be created and updated and how to ensure that the reported information is accurate. In particular, there are questions regarding the quality of the company's internal processes for gathering, analyzing, and reporting relevant data, and the ability of outsiders to verify that the data is materially correct. We now turn to those issues.

Part 3: The Need for a Standard-Setting Body

Any ESG reporting framework must have the capacity to evolve and adapt. Even today's best framework will soon be incomplete, and the field needs a standard-setting body to develop a uniform, comprehensive set of metrics and to provide the necessary updates for those metrics.⁷⁰ To the degree reasonably possible, the standard setter must be independent of political and financial pressure, and its standards must be uniform and used pervasively. The history of financial accounting provides some insight into how to establish such a body.

Contemporary financial accounting began in the aftermath of the stock market crash of 1929, when Congress adopted the Securities Act of 1933 and the Securities Exchange Act of 1934. The latter created a new agency, the Securities and Exchange Commission (SEC), with the authority to set financial accounting standards for public companies. Rather than prescribing such standards itself, however, the SEC decided to rely on the private sector to establish Generally Accepted Accounting Principles (GAAP).⁷¹ In the roughly eight decades since that decision, we have seen three different private standard setters for financial reporting, as each morphed into the next following internal disagreements and political pressures.

The first private standard-setting organization was a committee of the American Institute of Accountants known simply as the Committee on Accounting Procedure (CAP), which was in place from 1938 to 1959. It was composed of part-time accounting academics and practitioners and

was soon criticized as overly flexible by commentators who believed that it did not mandate sufficiently uniform standards. This criticism and resulting reorganization led to the second private standard-setting organization, the Accounting Principles Board (APB), which was in place from 1959 to 1973.

Like the CAP, the APB included accounting academics and practitioners who served on a part-time basis. However, the APB made a deliberate decision to include representatives from all the eight biggest accounting firms at the time so that each firm would ensure that its clients followed the APB's accounting standards and norms. Unfortunately, the inclusion of these representatives created other conflicts, as the accounting firms' clients lobbied for standards favorable to their interests.⁷² In the end, three of the eight accounting firms stated they had lost confidence in the APB, leading to the establishment of a study group that recommended that the APB be replaced with an independent, full-time standard-setting body.

The Financial Accounting Standards Board (FASB) began in 1973 and still exists today. Although still subject to criticism and by no means perfect, FASB has been considerably more successful than its predecessors.⁷³ Some key differences include a smaller board with full-time members,⁷⁴ a large research staff, and a considerable budget. The board members represent a broad swath of users of accounting information, including auditors, government regulators, investors, and accounting academics. To minimize the conflicts that plagued the APB, FASB's members are required to sever all ties with their prior firms or institutions upon joining the organization.⁷⁵ Its sizable budget allows it to compensate board members for this loss. For example, in 2019, FASB's parent organization received funding of almost \$57 million, coming from publication and subscription revenues and fees from public companies and brokerages.⁷⁶ Although FASB has not been immune from either industry or political pressures,⁷⁷ its relative financial independence and political insulation as a private entity have allowed it to survive and enact meaningful standards. As with its predecessors, FASB sets the standards, but the SEC mandates that US public companies follow them.

If financial reporting is politically controversial and subject to immense lobbying, imagine the potential controversies related to ESG reporting. At a minimum, any ESG standard setter must be a financially independent institution with significant research capacity and full-time, well-compensated board members who represent a broad swath

of stakeholders. For all the current interest in creating common standards, we have not seen any significant movement to create an independent standard-setting body.

Part 4: The Need for Reporting Infrastructure

Thus far, we have discussed ESG reporting standards and the standard-setting body, but the focus on standards alone is incomplete. To produce high-quality metrics also requires concurrent improvements in internal and external ESG reporting infrastructures.⁷⁸ Internal reporting infrastructure refers to the reporting systems and internal controls that companies rely on to produce data; external reporting infrastructure refers to the auditing and regulatory enforcement mechanisms that verify reporting accuracy and correct misreporting.

Internal Mechanisms

Much evidence from financial reporting demonstrates the need for strong internal reporting infrastructure. In the context of financial disclosures, companies rely on financial reporting software and internal controls to generate the inputs for financial statements.

Internal controls are the processes and procedures that companies put in place to provide reasonable assurance that the reported numbers are correct. At the simplest level, internal controls separate duties related to recordkeeping (e.g., an individual who uses petty cash should not be the one to record the receipt for their purchases) and safeguarding assets (e.g., putting that petty cash in a locked safe). The vast majority of financial restatements⁷⁹ result from internal errors rather than fraud,⁸⁰ and there is strong evidence that internal controls improve the quality of reported information.⁸¹ Indeed, in the financial context, they are so important that large public companies must provide a separate audit attestation regarding the quality of their internal controls.⁸²

Internal controls are equally essential for ESG reporting. As a simple example, imagine employees at different manufacturing plants within the same company recording emissions. Without formal processes and procedures, the reported data may be inaccurate because employees used inconsistent measurement methods.⁸³ Yet, despite their importance, companies often lack the internal control mechanisms necessary to produce accurate ESG information. For example, consider the

difficulties companies face in reporting under the “conflict minerals” standard required by Section 1502 of the Dodd-Frank Act. Although companies were given three years to prepare for this disclosure, one study found that nearly 80 percent of the 1,300 corporations that reported in 2014 and 2015 were unable to trace the country of origin for conflict minerals in their supply chain.⁸⁴ By 2018, these disclosures had improved, but problems still remained; a Government Accountability Office study of one hundred randomly selected companies found that “almost all companies reported that, after conducting due diligence, they could not determine whether their conflict minerals financed or benefited armed groups.”⁸⁵

The difficulties related to internal data management are not limited to supply chains. For example, when Section 953(b) of the Dodd-Frank Act required that companies report the ratio of the median employee’s pay to that of the CEO, companies objected, saying that it would be extremely expensive to identify the median employee’s pay. Indeed, the SEC estimated that this rule could cost \$1.3 billion in initial compliance costs and \$526 million annually in ongoing costs.⁸⁶ This seemingly simple disclosure highlights the inability of companies’ internal data systems to analyze ESG data in the way that users demand.⁸⁷

There is reason to believe that technology could improve companies’ internal reporting systems. In the realm of financial accounting, there is evidence that reporting software has increased the accuracy of reported information and improved business operations based on this information.⁸⁸ We are not aware of any comparable software for ESG reporting, which is instead compiled through separate, ad hoc systems;⁸⁹ but it seems likely that such a system will be developed as demand for ESG information increases. In addition, blockchain technology has the potential to improve reporting quality in accounting in general and with respect to social issues such as supply chain management in particular. Although these technologies will likely lead to long-term improvements,⁹⁰ they ultimately rely on the quality of data that is fed into them.

External Mechanisms

The most prominent external mechanisms are assurance (i.e., auditing) and regulatory enforcement, which serve to verify reported data.⁹¹ There is ample evidence that properly conducted audits can improve the quality of reported information.⁹² Yet it is unclear whether ESG audits will

provide these benefits, as many such audits are of much lower quality than their financial counterparts.⁹³ Unlike financial reporting, which is currently dominated by the Big Four accounting firms, there are many ESG accounting firms, and it is difficult for consumers to know the reputation associated with each firm. Standards vary across the industry, as does the training (and auditing) of auditors. Although the industry is attempting to professionalize and develop more consistency, much work remains.

Furthermore, even the most highly qualified auditors face an uphill battle. Without reliable internal data, companies cannot establish a reliable audit trail, which is a significant challenge for any external auditor. Thus, the weaknesses of internal data systems inevitably compromise external mechanisms. The lack of quality internal information is likely the reason for the high frequency of “limited assurance” audits in publicly available ESG reports. Because the auditors are unable to access reliable internal data, their audits provide a standard of assurance far below that provided in financial audits. In other words, the low-quality internal reporting environment reduces the effectiveness of one of the most effective mechanisms for inducing compliance with standards.

Next to auditing, regulatory enforcement of financial reporting is the most prominent external mechanism. In this context, enforcement refers to regulatory sanctions brought against companies and individuals who do not adhere to reporting standards. As an example of the value of enforcement, in the early years of the twenty-first century, many European countries unified their financial reporting standards by mandating that companies follow International Financial Reporting Standards (IFRS). This unification was thought to be a huge advancement in financial reporting since a greater number of companies were expected to make comparable, high-quality disclosures. Yet adherence to the standards, and the resulting benefits, turned out to be highly dependent on the strength of each country’s regulatory enforcement. Countries that lacked sufficient legal and regulatory enforcement to ensure that companies adhered to the new standards saw few if any benefits.⁹⁴

These studies are among the many indicating that the regulatory landscape, particularly the strength of local enforcement practices, significantly affects the implementation of reporting standards. In the context of US financial reporting, public enforcement most commonly occurs through regulatory actions by the SEC, with assistance from other agencies, such as the Department of Justice. However, although

the SEC has deep financial accounting expertise, it lacks the environmental and social expertise necessary for strong regulatory enforcement of ESG reporting. Therefore, if the SEC is to take the lead in ESG reporting as it has with financial reporting, the agency must either develop internal expertise in ESG-related areas or coordinate with other agencies such as the Environmental Protection Agency.

In theory, private litigation could be an additional tool to increase the quality of reported information. In the context of financial reporting, shareholders almost always sue company managers and directors following a material accounting error, plausibly incentivizing managers to avoid such errors. However, given that it is exceedingly rare for managers to pay out-of-pocket for such errors,⁹⁵ it is not terribly surprising that the empirical evidence is inconsistent about whether litigation risk improves financial reporting outcomes.⁹⁶ Assuming that private litigation functions similarly for ESG reporting, there is every reason to think that such litigation would be frequent and costly, but it is uncertain whether it would significantly improve the quality of the disclosed information.

Of course, litigants, regulators, and auditors are only some of the external actors that play a role in enforcement. There are two emerging forces worth noting. First, environmental activism, in which shareholders pressure management to improve a firm's environmental impact, is becoming increasingly common. Recent work suggests that these campaigns are effective in reducing target firms' air pollutants.⁹⁷ Second, proxy advisors, whose recommendations carry great weight with institutional investors, have become increasingly ESG focused. For example, Institutional Shareholder Services (ISS) issues annual sustainability proxy voting guidelines.⁹⁸

Conclusion

The preceding discussion suggests one obvious reason why the correlation of a company's ESG metrics with its financial value is uncertain and the correlation among ratings services is extremely weak. One cannot escape the phenomenon of garbage in, garbage out. Indeed, given their multifarious natures, ESG metrics as a whole will never have the accuracy, validity, reliability, and commensurability of financial metrics.

Yet the considerable efforts to improve ESG metrics described here reflect the increasing interest in them as indicators not only of companies' financial performance but also their impact on people and the

planet. In the spirit of not letting the perfect be the enemy of the good, it makes sense to rely on the particular metrics that have reached maturation while working to bring the others up to their level, and to treat the integration of the widely disparate E&S metrics as highly aspirational. However, the burden of the last sections of the chapter is that without an independent standard setter to update metrics, and strong reporting infrastructure to induce compliance and accuracy, a company's reports on its metrics cannot be taken at face value. These features are essential components of a robust and useful ESG framework.

FOR FURTHER READING

For readers interested in the current state of ESG reporting and proposed approaches for improving reporting, we suggest several articles. In “The Current State of Sustainability Reporting: A Work in Progress” (*CPA Journal*, July 30, 2018), Jill M. D’Aquila provides a critical survey of existing reporting standards and their implementation. For a short, accessible description of the measurable dimensions of a company’s social and environmental impacts, see Ronald Cohen and George Serafeim, “How to Measure a Company’s Real Impact” ([hbr.org](https://hbr.org/2020/09/how-to-measure-a-companys-real-impact), September 3, 2020, <https://hbr.org/2020/09/how-to-measure-a-companys-real-impact>). For an excellent academic paper that summarizes the empirical literature on the costs and benefits of imposing a mandatory ESG reporting regime, see Hans B. Christensen, Luzi Hail, and Christian Leuz, “Adoption of CSR and Sustainability Reporting Standards: Economic Analysis and Review” (SSRN working paper, 2019, https://privpapers.ssrn.com/sol3/papers.cfm?abstract_id=3427748). The IFRS Foundation has written a detailed description of a proposed ESG standards board and priorities for such a board (“Consultation Paper on Sustainability Reporting,” IFRS Foundation, September 2020, <https://cdn.ifrs.org/-/media/project/sustainability-reporting/consultation-paper-on-sustainability-reporting.pdf>). For readers interested in learning about a proposed collaboration among global disclosure and reporting organizations, see Impact Management Project, “Statement of Intent to Work Together towards Comprehensive Corporate Reporting” (Impact Management Project, 2020, <https://impactmanagementproject.com/structured-network/statement-of-intent-to-work-together-towards-comprehensive-corporate-reporting/>). For those attempting to anticipate the SEC’s actions in the ESG space, a speech delivered by acting chair Allison Lee, “A Climate for Change: Meeting Investor Demand for Climate and ESG Information at the SEC” (March 15, 2021, Securities and Exchange Commission), provides the best roadmap. A description of efforts to monetize social and environmental impacts is provided in George Serafeim, T. Robert Zochowski, and Jen Downing, “Impact-Weighted Financial Accounts: The Missing Piece for an Impact Economy”

(Harvard Business School, 2019, <https://www.hbs.edu/impact-weighted-accounts/Documents/Impact-Weighted-Accounts-Report-2019.pdf>). Finally, fairly detailed suggestions for ESG disclosures have been assembled by the World Economic Forum, “Measuring Stakeholder Capitalism: Towards Common Metrics and Consistent Reporting of Sustainable Value Creation” (World Economic Forum, 2020, http://www3.weforum.org/docs/WEF_IBC_Measuring_Stakeholder_Capitalism_Report_2020.pdf).

Notes

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1. Although the term “sustainable” connotes “environmental,” it is commonly used to refer to social performance as well. As of year-end 2019, \$17.1 trillion in assets were managed according to sustainable investing strategies, a 42 percent increase from the \$12.0 trillion two years earlier. See US Sustainable Investing Foundation (USSIF), *Report on US Sustainable and Impact Investing Trends 2020*, USSIF, 2020, 1, https://www.ussif.org/files/Trends/2020_Trends_Highlights_OnePager.pdf.
2. Business Roundtable, “Statement on the Purpose of the Corporation,” press release, August 19, 2019, <https://www.businessroundtable.org/business-roundtable-redefines-the-purpose-of-a-corporation-to-promote-an-economy-that-serves-all-americans>; BlackRock, “A Sense of Purpose: Larry Fink’s 2018 Letter to CEOs,” <https://www.blackrock.com/corporate/investor-relations/2018-larry-fink-ceo-letter>.
3. Prior research has shown that ESG-related disclosures can lead to real benefits regarding these measures. See Hans B. Christensen, Eric Floyd, Lisa Yao Liu, and Mark Maffett, “The Real Effects of Mandated Information on Social Responsibility in Financial Reports: Evidence from Mine-Safety Records,” *Journal of Accounting and Economics* 64 (2017): 284–304. See also Benedikt Downar, Juergen Ernstberger, Stefan Reichelstein, Sebastian Schwenen, and Alexander Zaklan, “The Impact of Carbon Disclosure Mandates on Emissions and Financial Operating Performance,” working paper, November 2020.
4. Studies have shown weak correlations among ratings services and IWAI’s explanation that they rate activities rather than outcomes or impact. See Aaron K. Chatterji, Rodolphe Durand, David I. Levine, and Samuel Touboul, “Do Ratings of Firms Converge? Implications for Managers, Investors and Strategy Researchers,” *Strategic Management Journal* 37 (2016): 1597–1614, <https://doi.org/10.1002/smj.2407>.

5. At least some ratings agencies retroactively readjust their own ratings. See Florian Berg, Kornelia Fabisik, and Zacharias Sautner, “Rewriting History II: The (Un)Predictable Past of ESG Ratings,” European Corporate Governance Initiative Working Paper Series in Finance, January 2021, <https://dx.doi.org/10.2139/ssrn>

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.3722087; Goldman Sachs, “2021 US Equity Outlook: Roaring ’20s Redux,” November 11, 2020, 29 (discussing pros and cons, noting that “investors currently assign a modest but statistically insignificant valuation premium to E&S scores” but stating that their impact on stock valuations has increased sharply).

6. World Economic Forum, *Measuring Stakeholder Capitalism: Towards Common Metrics and Consistent Reporting of Sustainable Value Creation* (Cologny, Switzerland: World Economic Forum, 2020), http://www3.weforum.org/docs/WEF_IBC_Measuring_Stakeholder_Capitalism_Report_2020.pdf. Although we focus on E&S, some aspects of G play important roles as well. Traditionally, the criteria for governance have centered on factors that directly or materially affect its financial performance. As E&S outcomes emerge as having independent value, however, good governance encompasses the accuracy and transparency of those factors as well.

7. Though the G, or governance, factors encompass a broad range of issues, we will focus on their role in supporting E&S outcomes.

8. See part 3.

9. Jill M. D’Aquila, “The Current State of Sustainability Reporting: A Work in Progress,” *CPA Journal*, July 2018, <https://www.cpajournal.com/2018/07/30/the-current-state-of-sustainability-reporting>.

10. Sustainability Accounting Standards Board, *The State of Disclosure 2017: An Analysis of the Effectiveness of Sustainability Disclosure in SEC Filings* (San Francisco, CA: Sustainability Accounting Standards Board, 2017), <https://www.sasb.org/wp-content/uploads/2017/12/2017State-of-Disclosure-Report-web.pdf>.

11. Martha C. Wilson, “A Critical Review of Environmental Sustainability Reporting in the Consumer Goods Industry: Greenwashing or Good Business?,” *Journal of Management and Sustainability* 3, no. 4 (2013): 1–13, <http://dx.doi.org/10.5539/jms.v3n4p1>.

12. For criticisms of SA8000, see Richard M. Locke, Fei Qin, and Alberto Brause, “Does Labor Monitoring Improve Labor Standards? Lessons from Nike,” *Industrial and Labor Relations Review* 61, no. 1 (2007): 3–31, <https://doi.org/10.1177/001979390706100101>.

13. Casey O’Connor, “A New Approach to Evaluating Company Social Performance,” *Center for Business and Human Rights* (blog), Stern School of Business, New York University, June 14, 2018, <https://bhr.stern.nyu.edu/blogs/2018/6/14/a-new-approach-to-evaluating-company-social-performance>.

14. Impact Management Project, *Statement of Intent to Work Together towards Comprehensive Corporate Reporting* (Stamford, CT: Impact Management Project, 2020).

15. IFRS Foundation, “Consultation Paper on Sustainability Reporting,” September 2020, <https://cdn.ifrs.org/-/media/project/sustainability-reporting/consultation-paper-on-sustainability-reporting.pdf>.

16. World Economic Forum, *Measuring Stakeholder Capitalism*, 14 (noting that “[m]ateriality is a dynamic concept, in which issues once considered relevant only to social value can rapidly become financially material. In this sense, sustainable value creation lies at the intersection of social and corporate value”).

17. International Federation of Accountants, *Enhancing Corporate Reporting: The Way Forward* (Geneva, Switzerland: IFAC, September 2020), <https://www.ifac.org/system/files/publications/files/IFAC-Enhancing-Corporate-Reporting-The-Way-Forward.pdf>.
18. Harvard Business School, “Impact-Weighted Accounts,” accessed January 12, 2021, <https://www.hbs.edu/impact-weighted-accounts/Pages/default.aspx>.
19. Sir Ronald Cohen and George Serafeim, two leaders of IWAI, note that “many companies are creating environmental costs that exceed their total profit (EBITDA). . . . Of the 1,694 companies [in IWAI’s database] which had positive EBITDA in 2018, 252 firms (15%) would see their profit more than wiped out by the environmental damage they caused, while 543 firms (32%) would see their EBITDA reduced by 25% or more. For certain industries, including airlines, paper and forest products, electric utilities, construction materials, containers and packaging, almost all firms would see more than a quarter of their EBITDA eliminated.” See Ronald Cohen and George Serafeim, “How to Measure a Company’s Real Impact,” *hbr.org*, September 3, 2020, <https://hbr.org/2020/09/how-to-measure-a-companys-real-impact>.
20. Ben Smith and Graham Cooper, *Green Bond Funds: Impact Reporting Practices* (London: Environmental Finance, 2020), <https://www.environmental-finance.com/content/focus/creating-green-bond-markets/publications/green-bond-funds-impact-reporting-practices-2020.html>.
21. While many of the elements parallel those described by IWAI, our terminology is not always identical. IWAI describes the ultimate goals of such a framework as (1) a company’s impact can be measured and compared, (2) impact should be measured within an accounting framework with the aim of harnessing our economy to improve our society and planet, (3) impact measurement must be scalable, and (4) to be scalable, the measurement of impact must be actionable and cost-effective. See George Serafeim, T. Robert Zochowski, and Jen Downing, *Impact-Weighted Financial Accounts: The Missing Piece for an Impact Economy* (Boston: Harvard Business School, 2019), 30, <https://www.hbs.edu/impact-weighted-accounts/Documents/Impact-Weighted-Accounts-Report-2019.pdf>.
22. George Serafeim and Katie Trinh, “A Framework for Product Impact-Weighted Accounts,” Harvard Business School Accounting & Management Unit Working Paper Series, January 2020, <http://dx.doi.org/10.2139/ssrn.3532472>.
23. For example, a thermometer that measures tenths of a degree is more accurate than one that measures only degrees.
24. For example, the amount of a company’s carbon dioxide emissions is a valid indicator of its contribution to global warming, but the number of employee complaints about a company’s unsafe working conditions is less so, because the number of complaints may be affected by matters other than safety.
25. David Freiberg, D. G. Park, George Serafeim, and T. Robert Zochowski, “Corporate Environmental Impact: Measurement, Data and Information,” Harvard Business School Accounting & Management Unit Working Paper Series, April 2020, <http://dx.doi.org/10.2139/ssrn.3565533>. This seems a plausible common metric for comparing companies in the same industry, and one that can be extended

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beyond environmental costs. Unless the products of different industries are reasonably substitutable, however, the comparisons are limited to a particular industry; for example, there seems little point in comparing the environmental intensity of an airline to that of an apparel manufacturer.

26. Serafeim, Zochowski, and Downing, *Impact-Weighted Financial Accounts*, 27.
27. Goldman Sachs has attempted to reduce a host of E&S factors to a single score. See Goldman Sachs, “2021 US Equity Outlook,” 25.
28. Serafeim, Zochowski, and Downing, *Impact-Weighted Financial Accounts*, 5.
29. Global Reporting Initiative, “Our Mission and History,” accessed January 2, 2021, <https://www.globalreporting.org/about-gri/mission-history/>.
30. Social Accountability Accreditation Services, “SA8000 Certification,” accessed January 2, 2021, <http://www.saasaccreditation.org/certification>; Worldwide Responsible Accredited Production, “Certification Process,” accessed January 2, 2021, <https://wrapcompliance.org/certification/>.
31. Fair Labor Association, “Safeguards,” Transparency, accessed January 2, 2021, <https://www.fairlabor.org/transparency/safeguards>.
32. B Lab, “Certification,” accessed January 2, 2021, <https://bcorporation.net/certification>. To receive certification, companies must also make their impact reports public and their legal governing documents must “require their board of directors to balance profit and purpose.” See generally Christopher Marquis, *Better Business: How the B Corp Movement Is Remaking Capitalism* (New Haven, CT: Yale University Press, 2020).
33. See, for example, B Lab, “B Impact Assessment of Seventh Generation,” B Impact Report, accessed January 11, 2021, <https://bcorporation.net/directory/seventh-generation>.
34. “Greenhouse gases” generally refers to the seven gases covered by the Kyoto Protocol: carbon dioxide (CO₂), methane (CH₄), nitrous oxide (N₂O), hydrofluoro-carbons (HFCs), perfluorocarbons (PFCs), sulfur hexafluoride (SF₆), and nitrogen trifluoride (NF₃). See United Nations Framework Convention on Climate Change (UNFCCC), *Kyoto Protocol Reference Manual* (Bonn, Germany: UNFCCC, 2008), 106, https://unfccc.int/sites/default/files/08_unfccc_kp_ref_manual.pdf.
35. The protocol was jointly convened in 1998 by the World Resources Institute and the World Business Council for Sustainable Development. The steering group was comprised of members from environmental groups and industry. See Greenhouse Gas Protocol, “About Us,” accessed December 21, 2020, <https://ghgprotocol.org/about-us>.
36. World Resources Institute and World Business Council, *GHG Protocol: A Corporate Accounting and Reporting Standard*, revised edition (Washington, DC, and Geneva, Switzerland: WRI and WBC, 2004), <https://ghgprotocol.org/sites/default/files/standards/ghg-protocol-revised.pdf>.
37. World Economic Forum, *Measuring Stakeholder Capitalism*, 14.
38. The specific distinction between direct and indirect emissions is beyond the scope of this chapter.
39. World Resources Institute and World Business Council, *GHG Protocol*, 25.
40. Ibid., 29.

41. Ibid., 30.
42. Greenhouse Gas Protocol, “Calculation Tools,” accessed January 2, 2021, <https://ghgprotocol.org/calculation-tools>. Calculations of Scope 1 emissions (direct consumption of fuels) are based on standard CO₂, CH₄, and NO₂ emission factors applied to consumption of various fuels. These direct emissions will likely not apply to most office-based organizations but may be substantial for many manufacturing-oriented organizations. Scope 2 emissions (indirect emissions from electricity consumption) are based on regularly updated emission factors specific to individual utility subregions, reflecting the fuel composition used to generate electricity in any given subregion.
43. While the specific price of emissions is a product of regulatory decisions and market regimes, investors and other stakeholders can value a company’s relevant emission levels. Recent research has found a statistically significant relationship between higher levels of emissions (for all three scopes) and higher required equity returns, implying that investors are pricing a “carbon premium” into the market as they evaluate the risk exposure associated with carbon emissions. See Patrick Bolton and Marcin Kacperczyk, “Do Investors Care about Carbon Risk?,” European Corporate Governance Initiative Working Paper Series in Finance, June 2019, <http://dx.doi.org/10.2139/ssrn.3398441>.
44. The TCFD was created by the Financial Stability Board (FSB) at the request of the G20 finance ministers and central bank governors and charged with developing climate-related disclosures that “could promote more informed investment, credit [or lending], and insurance underwriting decisions” by enabling financial stakeholders “to understand better the concentrations of carbon-related assets in the financial sector and the financial system’s exposures to climate-related risks.” See TCFD, *Recommendations of the Task Force on Climate-Related Financial Disclosures* (New York and London: TCFD, 2017), 2, <https://assets.bbhub.io/company/sites/60/2020/10/FINAL-2017-TCFD-Report-11052018.pdf>. In the several years since the TCFD was established, many major corporations have begun to meet its disclosure standards.
45. See, for example, World Economic Forum, *Measuring Stakeholder Capitalism*, 55 (recommending that a company disclose whether it has set GHG emission targets in line with the goals of the Paris agreement, including a plan to achieve net-zero emissions before 2050 and meet interim emission reduction targets).
46. Perhaps some third-party provider will eventually develop the capacity to assess TCFD disclosures and develop a rating system that makes it possible to compare companies, but the notoriously poor correlation of ratings by conventional ESG ratings firms does not provide cause for optimism. See Chatterji et al., “Do Ratings of Firms Converge?”; F. Berg, J. F. Koelbel, and R. Rigobon, “Aggregate Confusion: The Divergence of ESG Ratings,” Cambridge, MA, MIT Sloan School of Management Working Paper 5822-19, 2019.
47. Global Sustainability Standards Board, *GRI 303: Water and Effluents* (Amsterdam, Netherlands: GRI, 2018), 7, <https://www.globalreporting.org/standards/media/1909/gri-303-water-and-effluents-2018.pdf>.
48. Ibid., 22.

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49. Social Accountability International, *Social Accountability 8000: International Standard* (New York: Social Accountability International, June 2014), 9, <https://sa-intl.org/wp-content/uploads/2020/02/SA8000Standard2014.pdf>.
50. Global Sustainability Standards Board, *GRI 403: Occupational Health and Safety* (Amsterdam, Netherlands: GRI, 2018), 9, <https://www.globalreporting.org/standards/media/1910/gri-403-occupational-health-and-safety-2018.pdf>.
51. Ibid., 19.
52. Occupational Safety and Health Administration, US Department of Labor, “OSHA Injury and Illness Recordkeeping and Reporting Requirements,” accessed January 11, 2021, <https://www.osha.gov/recordkeeping>.
53. The fraction is multiplied by 200,000 or 1,000,000 (based on the approximate size of the workforce) to avoid difficult-to-read small numbers.
54. For social accounting purposes, it may be useful to separate costs borne by the company itself and external costs imposed by the company on employees and others. With respect to the former, even if a company fully compensates employees for workplace injuries, whether directly or through insurance, a high injury rate may adversely affect its reputation to the detriment of its ability to recruit employees or may reduce its financial value in the eyes of investors who are concerned with the company’s ability to manage risks.
55. “Workers’ Compensation,” US Department of Labor, accessed January 11, 2021, <https://www.dol.gov/general/topic/workcomp>.
56. Standards for child labor and forced labor, covered by GRI 408 and 409, respectively, have many of the same features. At least with respect to child labor, it is feasible to estimate the costs per child per year for social accounting purposes. See Global Sustainability Standards Board, *GRI 408: Child Labor* (Amsterdam, Netherlands: GRI, 2016), 9, <https://www.globalreporting.org/standards/media/1023/gri-408-child-labor-2016.pdf>. For example, a 2004 study by the International Labor Organization estimates “the added productive capacity a future generation of workers would enjoy due to their increased education, and the economic gains anticipated from improved health due to the elimination of the worst forms of child labor.” See International Program on the Elimination of Child Labor, *Investing in Every Child: An Economic Study of the Costs and Benefits of Eliminating Child Labor* (Geneva, Switzerland: International Labor Organization, 2004), 3, https://www.ilo.org/wcmsp5/groups/public/-dgreports/-dcomm/-webdev/documents/publication/wcms_071311.pdf. The report (p. 67) notes that “there are many other benefits of eliminating child labor, such as enhanced opportunities for personal development and social inclusion, that are resistant to economic quantification.”
57. EUFIC, “Measuring Burden of Disease: The Concept of QALYs and DALYs,” last modified December 1, 2011, <https://www.eufic.org/en/understanding-science/article/measuring-burden-of-disease-the-concept-of-qalys-and-dalys>.
58. With respect to monetization, it should be noted that VSL varies significantly among countries based on their levels of wealth. The current VSL in the United States is estimated to be \$8–10 million, but the VSL in poor countries is as low as \$100,000. Compare Jonathan M. Lee and Laura O. Taylor, “Randomized Safety Inspections and Risk Exposure on the Job: Quasi-experimental Estimates of

the Value of a Statistical Life,” *American Economic Journal: Economic Policy* 11, no. 4 (2019): 350–374 at 352, <https://doi.org/10.1257/pol.20150024>; W. Kip Viscusi and Clayton J. Masterman, “Income Elasticities and Global Values of a Statistical Life,” *Journal of Benefit-Cost Analysis* 8, no. 2 (2017): 226–250 at 244, <https://doi.org/10.1017/bca.2017.12>.

59. Paul Brest and Linda Hamilton Krieger, *Problem Solving, Decision Making and Professional Judgment* (New York: Oxford University Press, 2010), 377. Willingness to pay (WTP) can be determined through surveys of people’s stated preferences or through revealed preferences based on actual trade-offs between compensation and workplace injuries. Although WTP is commonly used for contingent valuation, it is highly vulnerable to psychological biases (p. 421).

60. Global Sustainability Standards Board, *GRI 403*, 16. For this reason, the GRI states that the company “has a responsibility to make efforts, including exercising any leverage it might have, to prevent and mitigate negative occupational health and safety impacts that are directly linked to its operations, products or services by its business relationships. In these cases, the organization is required, at a minimum, to describe its approach to preventing and mitigating significant negative occupational health and safety impacts and the related hazards and risks.”

61. Global Sustainability Standards Board, *GRI 408*, 8.

62. Social Accountability International, *Guidance Document for Social Accountability 8000* (New York: Social Accountability International, 2016), 7, <https://sa-intl.org/wp-content/uploads/2020/02/SA8000-2014-Guidance-Document.pdf>. SA8000 adds that child labor “can jeopardize a country’s reputation and productivity, as well as global acceptance of its exports.” GRI 408 similarly states that “child labor is work that ‘deprives children of their childhood, their potential and their dignity, and that is harmful to their physical or mental development including by interfering with their education.’” See Global Sustainability Standards Board, *GRI 408*, 4.

63. Social Accountability International, *Social Accountability 8000*, 8.

64. Ibid., 8.

65. International Program on the Elimination of Child Labor, *Investing in Every Child*, 3. The report notes that “there are many other benefits of eliminating child labor, such as enhanced opportunities for personal development and social inclusion, that are resistant to economic quantification.”

66. Global Sustainability Standards Board, *GRI 406: Non-discrimination* (Amsterdam, Netherlands: GRI, 2016), 4, <https://www.globalreporting.org/standards/media/1021/gri-406-non-discrimination-2016.pdf>. See also SA8000 standard 5.1, which specifies prohibited forms of discrimination. An employer “shall not engage in or support discrimination in hiring, remuneration, access to training, promotion, termination or retirement based on race, national or territorial or social origin, caste, birth, religion, disability, gender, sexual orientation, family responsibilities, marital status, union membership, political opinions, age or any other condition that could give rise to discrimination.” See Social Accountability International, *Social Accountability 8000*, 10.

67. Many other countries have similar laws and analogous procedures. For a discussion of equal treatment legislation and enforcement in the European Union,

see Tamas Kadar, “Equality Bodies: A European Phenomenon,” *International Journal of Discrimination and the Law* 18, nos. 2–3 (2018): 144–162, <https://doi.org/10.1177/1358229118799231>. However, it would be difficult for a US company to apply the standard to foreign suppliers because of the vast differences in what different countries treat as discrimination as well as in their enforcement procedures. Although a US company certainly can demand some minimal standards of its suppliers, it would be difficult to enforce all US standards in developing countries with very different cultures and traditions.

68. Global Sustainability Standards Board, *GRI 405: Diversity and Equal Opportunity* (Amsterdam, Netherlands: GRI, 2016), 6, <https://www.globalreporting.org/standards/media/1020/gri-405-diversity-and-equal-opportunity-2016.pdf>.

69. For example, although the GRI has comprehensive standards regarding energy (GRI 302), water use (GRI 303), biodiversity (GRI 304), emissions (GRI 305), and waste (GRI 306), their applications depend on contextual factors that are not readily comparable among businesses. See Global Sustainability Standards Board, *GRI Standards Glossary* (Amsterdam, Netherlands: GRI, 2020), 2, <https://www.globalreporting.org/standards/media/2594/gri-standard-glossary-2020.pdf>.

70. At present, firms currently face myriad standards and reporting frameworks. The introduction of a centralized and, ideally, global standard-setting body could reduce confusion over which framework to select, particularly for multinational firms that currently face different reporting norms in different regions.

71. Although the SEC has relied on the private sector to set the standards, it has retained a pivotal role. Among other things, it advises on changes in FASB’s advising and disclosure standards, provides guidance on interpreting those standards, and enforces compliance with such standards. It has threatened to establish its own standards when the private standard setters were moving too slowly, has on occasion declined to fully endorse standards with which it disagrees, and has attempted to preserve FASB’s independence when industry and political leaders sought to exert more control. See Stephen A. Zeff, “Evolution of US Generally Accepted Accounting Principles (GAAP),” working paper, Rice University, 2004, <https://www.iasplus.com/en/binary/resource/0407zeffusgaap.pdf>.

72. Zeff, “Evolution of US Generally Accepted Accounting Principles (GAAP).” In one year alone, 1971, the APB was successfully pressured not to proceed with three accounting opinions after members of industries that expected to be affected by the new standards lobbied their accounting firms and Congress.

73. For example, some commentators argue that fair value accounting exacerbated the 2008–2009 financial crisis. See, for example, Jennifer Hughes and Gillian Tett, “An Unforgiving Eye: Bankers Cry Foul over Fair Value Accounting,” *Financial Times*, March 13, 2008, <https://www.ft.com/content/19915bfc-f137-11dc-a91a-0000779fd2ac>; Nicholas Rummell, “Fair Value Rules Get More Blame for Crunch,” *Financialweek.com*, March 24, 2008, <https://web.archive.org/web/20080327092504/http://www.financialweek.com/apps/pbcs.dll/article?AID=/20080324/REG/854569832>. Although academic work largely disputes this account, FASB is by no means perfect. See Robert M. Bowen and Urooj Khan, “Market Reactions to Policy Deliberations on Fair Value Accounting and Impairment Rules

during the Financial Crisis of 2008–2009,” *Journal of Accounting and Public Policy* 33, no. 3 (2014): 233–259, <https://doi.org/10.1016/j.jaccpubpol.2014.02.003>. Some GAAP standards are incomplete, confusing, or present information in a form that does not reflect economic reality. Even aside from political interference, which seems likely to increase the risk of error, it is inevitable that any ESG standard setter will likewise be imperfect.

74. FASB has seven full-time board members, whereas the APB had eighteen to twenty-one part-time members. Each FASB board member is paid close to \$1 million annually. See Non Profit Light, “Financial Accounting Foundation,” accessed January 11, 2021, <https://nonprofitlight.com/ct/norwalk/financial-accounting-foundation>.

75. Financial Accounting Standards Board, “About the FASB,” last modified July 2020, <https://www.fasb.org/jsp/FASB/Page/SectionPage&cid=1176154526495>.

76. Financial Accounting Foundation, *2019 Annual Report* (Norwalk, CT: Financial Accounting Foundation, May 2020), 29.

77. Perhaps the most well-known example of political interference in accounting standards concerns accounting for stock options. In 1972, the APB issued ABP Opinion 25, which allowed companies to issue stock options without a corresponding expense, provided that the strike price of the option was equal to the current stock price (i.e., the standard did not value the option characteristic that makes the option valuable to its owner). It soon became abundantly clear that allowing companies to issue at-the-money options without an accounting charge did not reflect financial reality. Recognizing fault with its earlier standard, in 1984 FASB initiated a review of stock option accounting and in 1993 was ready to require companies to take an annual expense for the value of stock options. However, that proposed revision met Senator Joe Lieberman, who argued that expensing stock options would harm high-growth technology firms. Senator Lieberman sponsored a nonbinding resolution opposing the revision, and the resolution passed by a vote of eighty-eight to nine. Following that success, Senator Lieberman proposed legislation forcing the SEC to vote on every statement issued by FASB, a proposal that would have effectively killed FASB’s independence and reason for existence. Rather than make itself obsolete, FASB caved. In 1995, it issued SFAS 123, a revised standard requiring only that companies disclose the expense associated with stock options in the footnotes to the financials, not in the actual financial statements. It was not until roughly one decade later that, in the wake of a scandal related to stock option backdating, FASB was finally able to require that companies take a charge for options in their financial statements. See Nicholas G. Apostolou and D. Larry Crumbley, “Accounting for Stock Options: Update on the Continuing Conflict,” *CPA Journal*, August 2005, <http://archives.cpajournal.com/2005/805/essentials/p30.htm>.

78. For example, with respect to financial standards, Ray Ball, Ashok Robin, and Joanna Shuang Wu state that they view “the focus on standards as substantially and misleadingly incomplete.” See Ray Ball, Ashok Robin, and Joanna Shuang Wu, “Incentives versus Standards: Properties of Accounting Income in Four East Asian Countries,” *Journal of Accounting and Economics* 36, nos. 1–3 (2003): 235–270 at 236,

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<https://doi.org/10.1016/j.jacceco.2003.10.003>. For a summary of this literature, see Hans B. Christensen, Luzi Hail, and Christian Leuz, “Economic Analysis of Widespread Adoption of CSR and Sustainability Reporting Standards: Structured Overview of CSR Literature,” SSRN working paper, November 2018, <http://dx.doi.org/10.2139/ssrn.3313793>. These authors and others have noted that financial reporting is profoundly affected by economic and political forces (e.g., compensation, firm capital requirements, and external pressure from stakeholders) and that companies need internal and external mechanisms to constrain these forces.

79. A financial restatement is a revision of a company’s previous financial statements to correct a misstatement.

80. Marlene A. Plumlee and Teri Lombardi Yohn, “An Analysis of the Underlying Causes Attributed to Restatements,” SSRN working paper, June 2009, 11, <http://dx.doi.org/10.2139/ssrn.1104189>.

81. See, for example, Jeffrey T. Doyle, Weili Ge, and Sarah E. McVay, “Accruals Quality and Internal Control Over Financial Reporting,” *Accounting Review* 82 (2007): 1141–1170 at 1166, <http://dx.doi.org/10.2139/ssrn.789985>; Peter Iliev, “The Effect of SOX Section 404: Costs, Earnings Quality, and Stock Prices,” *Journal of Finance* 65 (2010): 1163–1196 at 1166, <https://doi.org/10.1111/j.1540-6261.2010.01564.x>.

82. Section 404(b) of the Sarbanes-Oxley Act of 2002. Despite research on the benefits of internal controls, this requirement has been heavily criticized because of its implementation costs. See, for example, Joseph A. Grundfest and Steven E. Bochner, “Fixing 404,” *Michigan Law Review* 105, no. 8 (2007): 1643–1676, <https://repository.law.umich.edu/mlr/vol105/iss8/2>.

83. In theory, a software system could address some of these concerns by, for example, requiring users to input the unit of measurement.

84. Yong Kim and Gerald F. Davis, “Challenges for Global Supply Chain Sustainability: Evidence from Conflict Minerals Reports,” *Academy of Management Journal* 59, no. 6 (2016): 1896–1916 at 1897, <http://dx.doi.org/10.5465/amj.2015.0770>.

85. Cydney Posner, “GAO Issues Annual Report on Conflict Minerals Filings,” Cooley PubCo, Cooley LLP, October 16, 2019, <https://cooleypubco.com/2019/10/16/gao-annual-report-conflict-minerals/> (“as in prior years, almost all companies reported that, after conducting due diligence, they could not determine whether their conflict minerals financed or benefited armed groups”).

86. LaDawn Naegle and R. Randall Wang, “SEC Adopts Pay Ratio Rule,” *Lexology*, August 7, 2015, <https://www.lexology.com/library/detail.aspx?g=c2d34e09-4ccb-4194-8582-19a614b7df1c-19a614b7df1c>. In response to these concerns, the SEC adopted a watered-down rule that allowed companies to identify the median employee’s pay using an array of approaches. This approach is cheaper for companies to implement but limits comparability. See US Securities and Exchange Commission, “SEC Adopts Interpretive Guidance on Pay Ratio Rule,” press release, September 21, 2017, <https://www.sec.gov/news/press-release/2017-172>.

87. To understand why it is so difficult to identify the median employee’s compensation, consider that compensation includes many different buckets

(e.g., wages paid, equity, benefits). The systems tracking each component of compensation are often independent and not easily linked. This process becomes more difficult when using a broader definition of employees. For example, if part-time and international employees are included, linking the systems to calculate median pay is even more arduous.

88. To study the effect of reporting systems, most research examines the introduction of such a system. Because established US companies have had systems in place for decades, most research is international and examines firms in countries that have more recently introduced such systems. See, for example, A. T. Moghadam, S. H. Baygi, R. Rahmani, and M. Vahediyan, “The Impact of Information Technology on Accounting Scope in Iran,” *Middle-East Journal of Scientific Research* 12, no. 10 (2012): 1344–1348, <http://dx.doi.org/10.5829/idosi.mejsr.2012.12.10.1643>; Ahmad Adel Jamil Abdallah, “The Impact of Using Accounting Information Systems on the Quality of Financial Statements Submitted to the Income and Sales Tax Department in Jordan,” *European Scientific Journal* 1 (2013): 41–48, <https://doi.org/10.19044/esj.2013.v9n10p%25p>; Olive Chepkorir Sugut, “The Effect of Computerized Accounting Systems on the Quality of Financial Reports of Non Governmental Organizations in Nairobi County, Kenya” (thesis, Masters of Business Administration University of Nairobi, October 2014).

89. Brendan O’Dwyer, “The Case of Sustainability Assurance: Constructing a New Assurance Service,” *Contemporary Accounting Research* 28 (2011): 1259–1260, <https://doi.org/10.1111/j.1911-3846.2011.01108.x>.

90. For a discussion of the potential of blockchain technology in financial accounting, see David Yermack, “Corporate Governance and Blockchains,” *Review of Finance*, 21, no. 1 (2017): 24–28, <https://doi.org/10.1093/rof/rfw074> (describing the potential implications of blockchain for financial recordkeeping and corporate governance generally); Enrique Bonson and Michaela Bednárová, “Blockchain and Its Implications for Accounting and Auditing,” *Meditari Accountancy Research* 27, no. 5 (2019): 725–736, <https://doi.org/10.1108/MEDAR-11-2018-0406> (describing the history and potential difficulties with blockchain in financial reporting). For a discussion of the benefits and limitations of blockchain and social audits, see Axfood, Axfoundation, and SIM Supply Chain Information Management, “Blockchain for Social Compliance in the Moroccan Strawberry Supply Chain,” Spring 2019, <https://www.simsupplychain.com/wp-content/uploads/2020/03/Blockchain-Moroccan-strawberry-supply-chain.pdf>.

91. In financial reporting, auditors are tasked with assuring that the reported results are in compliance with prevailing accounting standards and free from material misstatement. Auditors are not tasked with correcting errors, as this is the company’s responsibility, and it is a violation for them to prepare financial statements themselves. However, they may help to correct misreporting indirectly (e.g., by helping the company interpret the applicable standard).

92. See, for example, Ross L. Watts and Jerold L. Zimmerman, “Agency Problems, Auditing, and the Theory of the Firm: Some Evidence,” *Journal of Law and Economics* 26, no. 3 (1983): 613–633, <https://doi.org/10.1086/467051>; Randolph P. Beatty, “Auditor Reputation and the Pricing of Initial Public Offerings,”

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Accounting Review 64, no. 4 (1989): 693–709, <https://www.jstor.org/stable/247856>; David W. Blackwell, Thomas R. Noland, and Drew B. Winters, “The Value of Auditor Assurance: Evidence from Loan Pricing,” *Journal of Accounting Research* 36, no. 1 (1998): 57–70, <https://doi.org/10.2307/2491320>; Michael Willenborg, “Empirical Analysis of the Economic Demand for Auditing in the Initial Public Offerings Market,” *Journal of Accounting Research* 37, no. 1 (1999): 225–238, <https://doi.org/10.2307/2491405>; Joseph Weber and Michael Willenborg, “Do Expert Informational Intermediaries Add Value? Evidence from Auditors in Microcap Initial Public Offerings,” *Journal of Accounting Research* 41, no. 4 (2003): 681–720, <https://doi.org/10.1111/1475-679X.00120>; Michael Minnis, “The Value of Financial Statement Verification in Debt Financing: Evidence from Private U.S. Firms,” *Journal of Accounting Research* 49, no. 2 (2011): 457–506, <https://doi.org/10.1111/j.1475-679X.2011.00411.x>; Mark DeFond and Jieying Zhang, “A Review of Archival Auditing Research,” *Journal of Accounting and Economics* 58, nos. 2–3 (2014): 275–326, <https://doi.org/10.1016/j.jacceco.2014.09.002>; Colleen Honigsberg, “The Case for Individual Audit Partner Accountability,” *Vanderbilt Law Review* 72, no. 26 (2019): 1871–1922, <http://dx.doi.org/10.2139/ssrn.3470414>.

93. Samantha Ross and Gordon Seymour, “The Developing World of Assurance on Sustainability Reporting” (unpublished manuscript, July 15, 2019), Microsoft Word file.

94. For a summary of the many papers on IFRS adoptions, see Christian Leuz and Peter D. Wysocki, “The Economics of Disclosure and Financial Reporting Regulation: Evidence and Suggestions for Future Research,” *Journal of Accounting Research* 54, no. 2 (2016): 525–622, <https://doi.org/10.1111/1475-679X.12115>. For two specific, well-done studies showing that regulatory enforcement was a necessary condition to experience the benefits of IFRS adoption, see Hans B. Christensen, Lizi Hail, and Christian Leuz, “Mandatory IFRS Reporting and Changes in Enforcement,” *Journal of Accounting and Economics* 56, nos. 2–3 (2013): 147–177, <http://dx.doi.org/10.1016/j.jacceco.2013.10.007>; Wayne R. Landsman, Edward L. Maydew, and Jacob R. Thornock, “The Information Content of Annual Earnings Announcements and Mandatory Adoption of IFRS,” *Journal of Accounting and Economics* 53, nos. 1–2 (2012): 34–54, <https://doi.org/10.1016/j.jacceco.2011.04.002>.

95. Bernard Black, Brian Cheffins, and Michael Klausner, “Outside Director Liability,” *Stanford Law Review* 58 (2006): 1055–1159.

96. For a survey of this literature, see Ahsan Habib, Haiyan Jiang, Md. Borhan Uddin Bhuiyan, and Ainul Islam, “Litigation Risk, Financial Reporting and Auditing: A Survey of the Literature,” *Research in Accounting Regulation* 26, no. 2 (2014): 145–163, <https://doi.org/10.1016/j.racreg.2014.09.005>. However, litigation over misreporting in ESG reports is an important topic worthy of consideration. ESG disclosures are likely relevant to a broader base of stakeholders than financial disclosures, and it is not clear which of those stakeholders will have standing to sue.

97. See S. Lakshmi Naaraayanan, Kunal Sachdeva, and Varun Sharma, “The Real Effects of Environmental Activist Investing,” working paper, London Business School, September 2020, 32, <http://dx.doi.org/10.2139/ssrn.3483692>; Carrie Driebusch, “The Next Wave in Shareholder Activism: Socially Responsible

Investing," *Wall Street Journal*, March 8, 2020, <https://www.wsj.com/articles/the-next-wave-in-shareholder-activism-socially-responsible-investing-11582892251>.

98. Institutional Shareholder Services, *United States Sustainability Proxy Voting Guidelines: 2020 Policy Recommendations* (Rockville, MD: Institutional Shareholder Services, December 2019), <https://www.issgovernance.com/file/policy/active/specialty/Sustainability-US-Voting-Guidelines.pdf>.