

## **Corporate Sustainability Metrics: What Investors Need and Don't Get**

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## **Abstract**

Traditional socially responsible investors use environment, social, and governance (ESG) metrics to exclude “bad actor” companies from their portfolios with little regard to the impact on returns. But new interest in sustainable investing has emerged from mainstream investors who hope to match or beat market results. The prevailing wisdom among mainstream investors suggests, however, that corporate sustainability leadership only rarely translates into financial success. This article challenges that conclusion. It argues that a “next-generation” ESG framework could provide the rigor, integrity, and flexibility needed to meet diverse investor needs and might well demonstrate that some aspects of sustainability (but not all) deliver business gains.

## **Acknowledgements**

The authors are co-directors of the Yale Initiative on Sustainable Finance and would like to acknowledge the support of those organizations and individuals that have supported the mission of the Initiative. In particular, we wish to thank the Betty and Gordon Moore Foundation, the World Business Council for Sustainable Development, and Mark DeAngelis for their contributions to this and other research occurring at the Initiative. We would also like to thank Roberta G. Gordon for initial seed funding that supported the launch of the Initiative.

## Introduction

Socially responsible investors (SRI) have long worked to align their portfolios with their *values* – seeking to steer clear of owning shares of corporate bad actors including big polluters. Interest in corporate sustainability has recently emerged among a broader group of mainstream equity investors. Some of these *value* investors (defined by the fact that they *do care* about their portfolio returns) want to put their money into sustainability leaders with an expectation that these companies will outperform the market over time. Others simply want to mitigate risk by dumping shares of companies that they fear will underperform in the years ahead as climate change and other sustainability concerns become more salient. And yet others would like to put their money to work in support of a sustainable future with varying degrees of willingness to have this tilt in their portfolio produce volatility or “tracking error” – and reduced returns compared with benchmark investment vehicles.<sup>1</sup>

Evidence of sustainability’s move from the margins of the investment world to the mainstream can be seen in the groundswell of interest in the United Nations Principles for Responsible Investment (UNPRI). This initiative strives to integrate sustainability, including environmental responsibility, into the financial arena by requiring investors to adopt six guiding principles.<sup>2</sup> In 2016, the UNPRI reported over 1700 signatories including almost 1200 investment managers and asset owners representing over \$59 trillion in assets under management (up from \$4 trillion in 2006) (UNPRI, 2015). In another gauge of this trend, the Global Sustainable Investment Alliance (GSIA) reported that \$6.57 trillion of U.S. assets under management are invested in *sustainable, responsible, or impact* investment strategies. This total represents an increase of 76% since 2012 (GSIA, 2014). In a similar vein, the US Forum for Sustainable and Responsible Investment Foundation identified \$8.10 trillion in US-domiciled assets that apply various environment, social, and governance (ESG) criteria in their investment analysis and portfolio selection (US SIF, 2016). Sustainability in fixed income markets is also growing including the rise of green bonds (Desclée et al, 2016) and associated standards for labeling (Climate Bonds Initiative, 2017).

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<sup>1</sup> Tracking error (sometimes called “active risk”) is defined as the divergence between a particular portfolio and the baseline investment framework against which it is benchmarked.

<sup>2</sup> The Six Principles of Responsible Investing are as follows: 1. We will incorporate ESG issues into *investment analysis* and decision-making processes; 2. We will be active owners and incorporate ESG issues into our ownership policies and practices; 3. We will seek appropriate disclosure on ESG issues by the entities in which we invest; 4. We will promote acceptance and implementation of the Principles within the investment industry; 5. We will work together to enhance our effectiveness in implementing the Principles; 6. We will each report on our activities and progress towards implementing the Principles. “PRI Six Principles,” accessed June 7, 2016, <https://www.unpri.org/about/the-six-principles>.

A range of thought leaders are adding momentum to mainstream investor interest in sustainability. Michael Bloomberg, for example, recently called on companies to report more fully on their climate change impacts (Ralph, 2016). Likewise, Larry Fink, the CEO of BlackRock, the world's largest asset manager, authored a widely disseminated letter to corporate leaders arguing for more attention to environmental and social elements of corporate performance (Turner, 2016).

*Sustainable investments* nevertheless represent a relatively small percentage of total assets under management. For example, the \$8.72 trillion of sustainable investments in the US reported by the GSIA represents only about 21.6% of the estimated \$41 trillion in US assets under management. Moreover, more than, \$4 trillion of these investments are in narrowly cast SRI negative screened or exclusionary funds, leaving only about 10% of assets under management in the US targeted toward more broadly defined sustainable investments (GSIA, 2016).

The focus on sustainable investing thus seems to be more discussion than broad-based action at present. Despite growing *interest* in sustainability, many investors and even more investment advisors remain wary of making sustainability a factor in their portfolio decisions. A BNY Mellon survey suggests that investment managers often perceive a trade-off between ESG emphasis and stock market performance (Stewart et al., 2012). Our own interviews (discussed below) of participants in various aspects of the sustainable investment world corroborate both *rising interest* in sustainability and *ongoing doubt and uncertainty* among mainstream investors about whether and how to bring this interest into their investment decision making.

This tension brings us to the puzzle that lies at the heart of this article: How can the rising mainstream investor interest in sustainability be squared with ongoing skepticism among investors, market analysts, and academics about whether a “sustainability” focus hurts marketplace results? Or to put the point more precisely: Why is there persistent doubt about whether the available ESG metrics cover meaningful sustainability issues, let alone track corporate performance elements, that are *material* to stock market success?

For purposes of clarity, we define “sustainability” to include environmental and socio-economic issues that both affect or are impacted by business – leading to a broad ESG definition:

*“The term that has emerged globally to describe the environmental, social, and corporate governance issues that investors are considering in the context of corporate behaviour. No definitive list of ESG issues exists, but they typically display one or more of the following characteristics: Issues that have traditionally been considered non-financial or not material; a medium- or long-term horizon; qualitative objects that are*

*readily quantifiable in monetary terms; externalities (costs borne by other firms or by society at large) not well captured by market mechanisms; a changing regulatory or policy framework; patterns arising throughout a company's supply chain (and therefore susceptible to unknown risks); a public-concern focus"* (Krosinsky and Robins, 2008).

Our focus on identifying the ESG issues that mainstream investors need to have addressed unfolds in four parts. In Part I, we explore the prevailing wisdom that sustainability leadership will only rarely materially affect a company's market value. We survey a wide range of studies and analyses – and find the data and conclusions about the correlation between sustainability and marketplace success to be divergent. Taken as a whole, these inconsistent results may help to explain the significant skepticism about the stock market payback of sustainability leadership found in the academic literature and reiterated in our interviews with market participants. But we believe the conclusion that has been drawn by many – that sustainability is not a *material* factor in determining financial performance – is wrong, or at least over-stated. On the contrary, we argue that the lack of a robust relationship stems from three “disconnects:”

- Divergent definitions of what sustainability means and a corresponding lack of clarity about the goals of sustainability-oriented investors;
- Methodological weakness both in the analyses of sustainability as a driver of corporate financial results and in many ESG metrics used to gauge sustainability; and
- Regulatory shortcomings which allow corporate externalities (notably pollution) to go uninternalized – permitting companies whose business models build on *unsustainable* practices to outperform their more sustainable peers.

Inattention to these issues results in confusion about *which* ESG metrics matter and to *whom* as well as inconsistency in *how* the numbers are collected, structured, normalized, validated, updated, and used.

In Part II, we pick up the first of these three confusions (lack of definitional clarity) and propose a *next-generation* corporate sustainability metrics framework that would strengthen the analytic foundations for sustainable investing and give mainstream investors confidence in bringing a sustainability lens to their portfolio choices – on whatever terms they wish to do so. Specifically, we suggest: (1) the need for greater conceptual clarity in any discussion that purports to address *sustainability* in the investor

context, and (2) a recognition that different investors will want different types of ESG information. This conclusion argues for a menu of ESG metrics from which individual investors and investment managers choose the elements relevant for their own purposes.

In Part III, we address the methodological issues that drive skepticism over the validity of ESG metrics. We propose a taxonomy of ESG data reforms and *best practices* that would make corporate sustainability reporting and analyses more rigorous and useful. While ESG data providers have begun to recognize these issues, we also note the potential value of a government-mandated ESG reporting framework that would standardize (and perhaps simplify) ESG data and presentation methodologies – and provide a greater degree of investor confidence that the metrics have been validated and can be trusted as a basis for cross-company comparisons. Such a structure would give investors what they really *need*: a reliable set of core, mandatory ESG indicators coupled with a carefully specified data reporting methodology that ensures comparability across companies, makes benchmarking possible, and provides confidence to a broad swath of investors about the integrity of ESG metrics. An improved ability to gauge corporate sustainability and to connect it to stock market results would create incentives for greater focus in the business world on environmental, social, and governance performance – and might provide a logic for capital to flow toward more sustainable enterprises.

To the extent that some dimensions of sustainability leadership may be found not to correlate with financial success – or even to be negatively correlated – these findings will put pressure on policymakers to make regulatory changes to ensure that corporate behavior that is socially or environmentally damaging is not rewarded in the marketplace. This push toward an “end to externalities” (Esty, 2017) addresses the third disconnect highlighted above.

In Part IV, we conclude that the foundations for better integration of sustainability into investment decisions are being laid. The realities of divergent sustainability interests and investor preferences are increasingly being acknowledged. Moreover, as ESG data sets and analytic studies improve, specific relationships between *some* corporate sustainability performance indicators and stock market success will likely be demonstrated, inducing a further shift in investment capital toward enterprises that lead on these elements, if not sustainability more generally. Likewise, as regulatory regimes tighten – and polluters are more systematically required to pay for their emissions or other harms they cause – the link between material ESG metrics and financial performance will also tighten.

**Table 1: Key Terms and Definitions**

| <b>Term</b>                   | <b>Definition</b>   |
|-------------------------------|---|
| <b>ESG</b>                    | Environmental, Social, and Corporate Governance – representing the core sub-categories of sustainability issues that investors want tracked and which might affect an investment’s financial performance.   |
| <b>Material (Materiality)</b> | Information that significantly impacts investor decision making. Defined by the US Supreme Court as information that presents “a substantial likelihood that the disclosure of the omitted fact would have been viewed by the reasonable investor as having significantly altered the ‘total mix’ of information made available.” (Bean and Thomas, 1990) |
| <b>Metric</b>                 | In the context of this article, <i>metric</i> refers to a gauge or measurement that tracks company-scale performance of an issue or indicator of interest.  |
| <b>Use Case</b>               | As used here, “use case” refers to the purposes to which sustainability metrics are being put – recognizing that investors, market analysts, and academics may use the same ESG datasets to assess very different dimensions of sustainability.   |

## Methodology

Our analysis and conclusions are based on a comprehensive survey of the existing academic and practitioner literature on ESG metrics and the relationship between sustainability and financial performance. We also reviewed existing ESG metrics and data frameworks and analyzed their methodological processes, standards, and gaps. In addition, we conducted interviews with practitioners to check and deepen the conclusions that emerged from the literature survey. Details on our interview subjects can be found in the Appendix.

These interviews yielded a number of valuable insights. First, it became clear that the term *sustainability* is being used in very diverse ways by different marketplace participants. Second, sustainability-minded investors vary widely in their willingness to accept subpar returns as the price for advancing their environmental, social, or governance values. Such divergent values and sustainable investing strategies mean that investors have wide-ranging ESG data needs. The practitioner interviews further revealed the spectrum of shortcomings that plague today's corporate sustainability metrics reporting and confirmed the hypothesis that, where government regulations allow pollution or other harms to go unaddressed, it is much more difficult to establish that strong ESG performance will translate into marketplace success.

### I. Sustainability and Market Value

The parallel facts of growing demand for corporate sustainability information among mainstream investors and persistent skepticism that sustainability leadership translates broadly into stock market success raise two important questions about ESG reporting. First, does sustainability leadership *systematically* lead to improved business results and thus stock market outperformance? Second, are the available ESG metrics adequate to separate *real* leadership from more superficial and financially immaterial sustainability claims?

Empirical studies of the relationship between corporate sustainability (as measured by various *social* and/or *environmental* metrics) and financial performance diverge widely in their conclusions. Some scholars report finding statistically significant relationships between corporate sustainability (or social responsibility) and financial performance. Orlitzky et al. (2003) conducted a meta-analysis of 52 studies on the topic and concluded that: "corporate virtue in the form of social responsibility and, to a lesser extent, environmental responsibility is likely to pay off." Other academic studies reach similar conclusions. Eccles, Ioannou, and Serafeim (2014), for example, observe that "High Sustainability" companies (based on interviews and adoption of sustainability practices in



1993) significantly outperform other companies in both stock market and accounting results, a conclusion supported by others (Trudel and Cotte, 2009; Friede et al., 2015; Borgers et al, 2013; Cai and He, 2014; Dimson et al, 2015, Gottsman and Kessler, 1998, Herring, 2009). Other studies find a positive correlation between corporate social performance and financial performance (Shazad and Sharfman, 2015; Gartenber, Prat, and Serafeim, 2016). In an attempt to capture the full relationship between ESG and financial results, Oxford University researchers and Arabesque Partners reviewed 190 academic studies then examined the business case for corporate sustainability – and found significant quantitative evidence that strong standards and top-tier ESG performance result in better operational results, lower costs of capital, and improved stock price performance (Clark et al., 2015). The International Integrated Reporting Council has gone further and argued that companies that integrate into strategy and reporting can create value above and beyond financial capital including manufactured, intellectual, human, social and natural “capitals” (IIRC, 2013).

Other prominent studies find no correlation between financial performance and sustainability. Vogel has raised doubts about the payoff from corporate environmentalism for years, arguing that the opportunities for environmental initiatives to make a material difference to a company’s profitability will be few and far between (Vogel, 2005). Marcus provides recent reinforcement for this view. His book, *Innovations in Sustainability*, explores 20 corporate case studies of sustainability-driven innovation and finds that making such efforts pay off is a “formidable task” (Marcus, 2015). He notes, for example, that the much-vaunted investments of Intel Capital and Google Ventures in cutting-edge clean tech projects have not translated into successful financial returns for the parent companies. Flammer, using “close-call” sustainability shareholder resolutions, finds that labor productivity and sales increased following the adoption of these resolutions, but the correlation breaks down when looking beyond these close-call examples (Flammer, 2015). Kim et al. find that corporate socially irresponsible activities actually improve firm financial performance when firm competitive action (to increase competitive positioning) is low (Kim et al, 2015). Barnett (2014) looks specifically at stakeholder reactions to corporate misconduct and finds that response to be inconsistent. Kitzmueller and Shimshack (2012) look across the literature of empirical studies and find a mixture of results, from “consistent empirical evidence” of the effect of corporate social responsibility (CSR) initiatives on consumer markets, to “limited systematic empirical evidence” between CSR and innovation or shareholder preference.

How does one explain these inconsistent results? One possible answer is that the scope of “green to gold” opportunities that Esty and others have identified (Esty and Winston, 2009; Esty and Simmons, 2011; Reinhardt, 2000; Hawkin et al, 2013; McDonough and Baungart, 2010; Savitz, 2012; Anderson and White, 2009, Lovins et al, 1999) is much narrower than

has been posited. It may be that regulatory failures permit externalities to go uninternalized in too many cases, allowing companies operating on an *unsustainable* basis to be more profitable than their competitors who attend more assiduously to their pollution impacts and other sustainability concerns. Or perhaps only a small number of ESG factors have any impact on financial performance. Vogel makes this argument when he notes that CSR and sustainability efforts may only make strategic sense “if virtue pays off” – the circumstances for which he finds rather limited (Vogel, 2005).

Others take this line of logic even further, arguing against specific aspects of corporate social responsibility as valuable or responsible endeavors for business (Crane et al., 2014; Bannerjee, 2008; Peter and Jones, 2013). Kotchen and Moon (2011), for example, note a correlation between CSR activities and corporate *irresponsibility* – suggesting that companies that have misbehaved may initiate CSR efforts as a counterbalance to their perceived problems. Orlitzky suggests that the disconnect may arise because CSR is not related to financial value, but rather creates *noise* in the marketplace leading to volatility. Under conditions of volatility, investors more frequently fall back on common perceptions in assessing corporate value (e.g., giving higher valuations to consensus sustainability leaders) even though these factors, including CSR leadership, may not systematically result in improved financial performance (Orlitzky, 2013). Even those who think that sustainability outperformance may translate into sales success or other business gains acknowledge that this relationship does not seem to be consistently recognized in stock market valuations. Eccles et al. (2013), in particular, concede that, in many cases, capital markets do not reward firms for their ESG efforts.

A second possible answer is that many of the existing studies have not been carefully framed. Some are unclear on theory and fail to specify which elements of sustainability are hypothesized to correlate with marketplace success – and why. Others fail to disentangle the range of elements of sustainability and control for interdependent variables that might confound the reported results (Lourenço et al., 2014; Kurapatskie and Darnall, 2013; Ameer and Othman, 2012). Endrikat (2015) finds, for example, correlations between negative and positive environmental events and financial valuations. Klassen and McLaughlin (1996) similarly identify correlations between stock market performance and environmental awards. But neither study controls for other potential sustainability drivers such as corporate governance, environmental performance, or management strength. Ueng (2015) likewise finds a strong correlation between financial performance and corporate governance structures such as board strength, compensation policies, accounting practices, and formal governance policies – all of which are inter-related aspects of sustainability.

These methodological shortcomings make it difficult to draw useful conclusions from the studies as a group. What these studies *actually* seem to say is that some aspects of ESG performance correlate with financial results – and others do not. But the broad framework of these studies makes it impossible to determine which aspects are which. Indeed, several authors point to this variance and conclude that the data do not allow testing of specific causal factors (Cai and He, 2014; Kim and Statman, 2012). Even within the population of market analysts and corporate ratings, there is enormous variability in which companies are deemed “responsible” or “green” (Rintoul, 2016). For example, the ESG rankings of the two leading data providers — MSCI and Sustainalytics — show only a 32% correlation, suggesting significant discrepancies in how they score companies.<sup>3</sup>

## II. Moving Toward a More Investor-Focused ESG Reporting Framework

Our analysis suggests equivocal results in the relationship between sustainability and financial performance may well stem in part from conceptual confusion about what *sustainability* means.

### A. *Definitional Confusion*

Much of the debate over the link between sustainability and business success appears to be a function of loose use of the term *sustainability*. Indeed, *sustainability* covers many issues across a broad spectrum of environment, social, and governance concerns (Elkington, 1997; Krosinsky and Robins, 2008). Many of the ESG data providers offer hundreds of separate scores in their corporate ESG databases (Table 3), including global issues such as greenhouse gas emissions and energy sources, as well as more localized impacts such as air and water pollution, water consumption, protection of biodiversity, and energy efficiency. The range of social issues covers an even broader scope, including: human rights, workplace diversity, consumer protection, animal welfare, poverty, employment, safety, health, and community development. Many databases will also track external economic impacts such as benefits of tax payments, employee wages, economic support to communities, and charitable contributions. Governance metrics includes board composition and performance, executive leadership, management systems, corruption, fraud, employee relations, and executive compensation metrics – among other things.

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<sup>3</sup> <http://sustainability.thomsonreuters.com/2016/10/25/executive-perspective-second-generation-esg-metrics-will-affect-tens-of-thousands-of-companies/>

**Table 2: Sample of ESG and Sustainability Frameworks Offered by Major Data Providers**

| <b>Provider</b>        | <b>Product</b>                          | <b>Metrics</b>   |
|------------------------|---|--|
| <b>MSCI</b>            | Sustainable Impact Metrics <sup>4</sup> | Six social themes (Nutrition, Disease Treatment, Sanitation, Affordable Real Estate, SME Finance, Education) and five environmental themes (Alternate Energy, Energy Efficiency, Green Building, Sustainable Water, Pollution Prevention)  |
| <b>MSCI</b>            | ESG Fund <sup>5</sup>                   | Includes metrics “across three dimensions: Sustainable Impact (to measure fund exposure to companies that address core environmental & social challenges); Values Alignment (to screen funds for investments that align with ethical, religious or political values); and Risk (to understand fund exposure to ESG-related risks)” |
| <b>MSCI</b>            | ESG Rating <sup>6</sup>                 | Includes “80 Exposure Metrics (business segment and geographic risk exposure” and “129 Management Metrics (based on policies, programs, & performance data).”  |
| <b>MSCI</b>            | Carbon Solutions <sup>7</sup>           | Includes “a comprehensive range of data on fossil fuel reserves, carbon emissions and sector application”  |
| <b>Bloomberg</b>       | ESG Disclosure Scores <sup>8</sup>      | Over 120 Environmental, social and governance indicators keyed to the Global Reporting Initiative list of performance indicators   |
| <b>Thomson Reuters</b> | ESG Data <sup>9</sup>                   | Includes “over 70 Key Performance Indicators” in three categories: Environmental (Resource Use, Emissions, Innovation); Social (Community,   |

<sup>4</sup> MSCI ESG Research Inc., “MSCI ESG Sustainable Impact Metrics,” (2016) [https://www.msci.com/documents/1296102/1636401/ESG\\_ImpactMetrics-2016.pdf/0902a64f-af8d-4296-beaa-d105b7d74dc3](https://www.msci.com/documents/1296102/1636401/ESG_ImpactMetrics-2016.pdf/0902a64f-af8d-4296-beaa-d105b7d74dc3).

<sup>5</sup> MSCI ESG Research Inc., “MSCI ESG Research Fund,” (2016) [https://www.msci.com/documents/10199/242721/MSCI\\_ESG\\_FundMetrics\\_Productsheet.pdf/731c6d72-3c21-4aae-8fc1-5b864b057da3](https://www.msci.com/documents/10199/242721/MSCI_ESG_FundMetrics_Productsheet.pdf/731c6d72-3c21-4aae-8fc1-5b864b057da3).

<sup>6</sup> MSCI ESG Research Inc., “MSCI ESG Ratings,” (2016) [https://www.msci.com/documents/1296102/1636401/MSCI\\_ESG\\_Ratings.pdf/9f0a999b-4419-4a0a-b6ef-0248f40ca2c9](https://www.msci.com/documents/1296102/1636401/MSCI_ESG_Ratings.pdf/9f0a999b-4419-4a0a-b6ef-0248f40ca2c9).

<sup>7</sup> MSCI ESG Research Inc., “MSCI Carbon and CleanTech Tools,” (2016) [https://www.msci.com/documents/1296102/1636401/MSCI\\_ESG\\_Carbon\\_Metrics\\_June2015.pdf/42211287-241c-4344-8b36-628501499f54](https://www.msci.com/documents/1296102/1636401/MSCI_ESG_Carbon_Metrics_June2015.pdf/42211287-241c-4344-8b36-628501499f54).

<sup>8</sup> Bloomberg Professional, (2016) <http://www.bloomberg.com/professional/equities/>.

|  |  |   |
|--|--|---|
|  |  | Workforce, Human Rights, Product Responsibility); and Governance (Management, Shareholders, CSR Strategy) |
|--|--|---|

Some of these *sustainability* metrics have clear theoretical ties to financial results or stock market performance. Investing in energy efficiency, for example, often lowers costs and produces “eco-advantage” (Esty and Winston, 2009; McKinsey and Company, 2010). But other indicators have no clear link to better business outcomes, or are even negatively correlated with marketplace success. Providing the most generous child care benefits or reducing greenhouse gas emissions ahead of legal requirements may well win corporate leaders plaudits for sustainability, but these initiatives are likely to result in added costs that the competition does not bear – and thus may well produce diminished business results.

***B. Divergent Sustainability Interests and Expectations among Investors***

Investors range widely in how much they prioritize optimizing financial returns versus having their portfolios aligned with their environmental values, social justice views, and other issues. Many SRI investors have screened out companies operating in certain industries, such as alcohol, gaming, gun-making, or other categories that generate opprobrium, without regard to the impact of these exclusions on their returns (Renneboog et al., 2008).

But mainstream investors – those who prioritize having their investments generate strong returns – need clarity on what *sustainability* means in a particular investment context. They need a framework of sustainability metrics that are relevant, material, accurate, and comparable – covering the full spectrum of sustainability issues that might be of interest to them. More importantly, mainstream investors increasingly want to know which ESG metrics correlate with financial performance and how strongly (Hayat and Orsagh, 2015).

Alongside these practical challenges, sustainability presents complex conceptual issues. Even when two investors agree on a topic’s salience, they may differ on what constitutes the *sustainable* position. For example, some environmental advocates, such as Michael Shellenberger of Environmental Progress, view nuclear power as critical to a low-carbon future and would put utilities with nuclear generation portfolios on the positive side of the ledger. Other environmentalists and NGOs, such as the Sierra Club, see nuclear power as dangerous and would want utilities operating nuclear power plants placed in a negative

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<sup>9</sup> Thomson Reuters, “Thomson Reuters ESG Data,” (2016) <http://financial.thomsonreuters.com/content/dam/openweb/documents/pdf/financial/esg-research-brochure.pdf>.

category. Likewise, some investors see stem cell research as a critical technology for the future while others would put companies involved in this line of research on their blacklist.

The diversity of indicators considered by different organizations to be within the bounds of sustainability has been documented in several analyses of corporate sustainability reports.<sup>10</sup> Roca and Searcy (2012) examine the corporate sustainability reports of 94 Canadian companies and identify 585 different indicators of sustainability performance. Comparisons of the reports show little in the way of issue overlap, meaning that the companies have very divergent views as to what indicators constitute the core measures of sustainability. Locke and Seele (2016) point to this diversity of indicators when discussing the lack of credibility in reporting from 237 company reports in Europe. Monteil and Delgado-Ceballos (2014) argue, based on literature reviewed between 1995 and 2013, that this lack of clarity on the indicators within sustainability pervades both academic and practitioner articles. Without agreement on what constitutes *sustainability*, and with so many issues and divergent values in play, it is unsurprising that the correlations between generic *sustainability* performance and stock market results do not seem meaningful. Perhaps the most significant evidence in support of this conclusion is the low correlation (14% for Governance and 31% for Environment) between the sustainability scores of MSCI and Sustainalytics (Barclays, 2016).

Our review of the ESG metrics available to investors and interviews with market participants suggest that the data providers understand the gaps just described as do the various groups developing sustainability reporting frameworks, such as the Global Reporting Initiative (GRI) and the Sustainability Accounting Standards Board (SASB). Virtually all of the entities involved in the ESG arena are working to improve their conceptual frameworks, data collection methods, and the analytic tools they deploy to make their ESG metrics more reliable, comparable, and responsive to investor needs. MSCI, for example, now offers a low-carbon index as well as the MSCI ACWI Sustainable Impact Index – which looks across multiple factors of sustainability to identify stand-out companies. SASB has undertaken extensive stakeholder engagement to sharpen the focus

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<sup>10</sup> For example, a recent McKinsey survey found that, among executives whose company had articulated a definition of sustainability, 55 percent defined sustainability as environmental management, 48% defined sustainability to include governance issues, and 41% said sustainability included social issues, such as labor standards. The report suggests that these varying conceptions of sustainability reflect inherent ambiguities in the definition of the word. McKinsey & Company, *How Companies Manage Sustainability: McKinsey Global Survey Results* (2010), <http://www.mckinsey.com/business-functions/sustainability-and-resource-productivity/our-insights/how-companies-manage-sustainability-mckinsey-global-survey-results>. A 2014 study produced by Columbia University's Earth Institute similarly concludes that companies diverge in their understanding of sustainability. In particular, the researchers report: "Each company we interviewed had different measures to operationalize the broad concept of sustainability." Steven Cohen, Satyajit Bose, Dong Guo, Alison Miller, Kelsie DeFrancia, Olin Berger, Brian Filiatraut, Maureen Loman, Wen Qiu, and Cheng Hang Zhang, "The Growth of Sustainability Metrics," *Sustainability Metrics White Paper Series* (Earth Institute, Columbia University, 2014), [http://spm.ei.columbia.edu/files/2015/06/SPM\\_Metrics\\_WhitePaper\\_1.pdf](http://spm.ei.columbia.edu/files/2015/06/SPM_Metrics_WhitePaper_1.pdf).

on a core set of sustainability issues that are most *material* in each major industrial sector.<sup>11</sup> Ceres provides a “Roadmap for Sustainability” that seeks to assist companies to better understand material environmental and social considerations<sup>12</sup>. The World Business Council for Sustainable Development (WBCSD) has been working to develop ESG indicators and metrics that can be integrated into financial reports for investors based on enterprise risk management processes (WBCSD, 2017). And the Betty and Gordon Moore Foundation Conservation Financial Markets Initiative (CFMI) is funding a set of projects that aim to better integrate ESG and financial reporting.<sup>13</sup>

Asset managers are also working to refine their understanding and responsiveness to different investor types (BlackRock, 2016). Bank of America (2016) and MorganStanley (2017), for example, both offer multiple social-impact investment funds targeting specific aspects of ESG ranging from environmental sustainability to human rights. The work of these organizations as well as the International Integrated Reporting Council (IIRC),<sup>14</sup> the World Federation of Stock Exchanges,<sup>15</sup> and a number of scholars (see, e.g., Kahn et al., 2015) are providing valuable contributions to the creation of an ESG metrics *menu* -- which is what we believe is needed to meet the diverse set of investor use cases. As discussed below, however, many of the needs of mainstream investors are not yet fully addressed by these efforts.

### ***C. Classifying the Investor Perspective***

Our research reveals that investors vary widely in what they want from an ESG screen. Indeed, we have identified at least five distinct categories of sustainability-minded investors – each with different criteria for sustainability:

1. SRI or *values* investors who wish to exclude “bad actor” companies from their portfolios with little concern about the effect on returns;
2. *Impact* or Social Return on Investment (SROI) investors who want to change the world with their capital deployment. They therefore emphasize measurable *social* or *environmental* impacts of their investments *on the community* as well as (or in some cases instead of) financial returns;

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<sup>11</sup> See the SASB website for more information: “Sustainability Accounting Standards Board,” accessed June 8, 2016, <http://www.sasb.org>.

<sup>12</sup> <https://www.ceres.org/roadmap/how-use-ceres-roadmap-sustainability>

<sup>13</sup> See a description of the CFMI at <https://www.moore.org/initiative-strategy-detail?initiativeId=conservation-and-financial-markets-initiative>

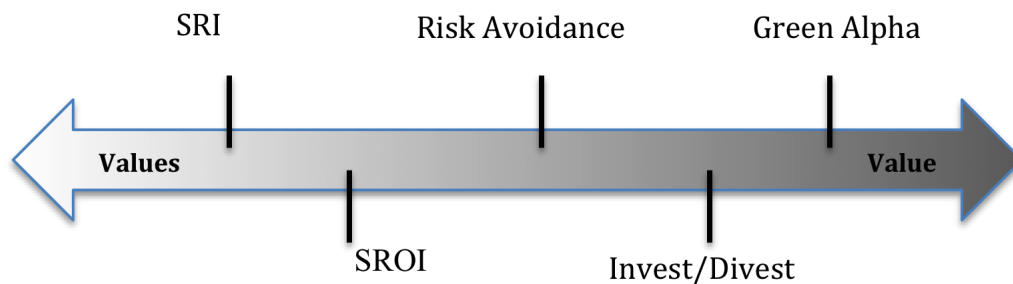
<sup>14</sup> See the Integrated Reporting website for more information: “Integrated Reporting,” accessed June 8, 2016, <http://www.integratedreporting.org>.

<sup>15</sup> See the Sustainability Insights Page for more information: “World Federal of Exchanges,” accessed June 8, 2016, <http://www.world-exchanges.org>.

3. Risk-oriented mainstream investors who perceive that sustainability issues are becoming more salient and want to mitigate potential losses from being invested in *unsustainable* companies — or even fully divest from such stocks;
4. Mainstream investors who want to tilt their portfolios away from unsustainable companies and, in other cases to *invest* in sustainability leaders (with wide variations in how strong a sustainability tilt the investor wants and how much risk of diminished returns she is willing to accept);
5. Green Alpha investors who believe sustainability leaders will out-perform the market.

The categories of sustainability-minded investors described above can be arrayed on a spectrum from those driven fundamentally by their values (and thus willing to sacrifice returns) to those who focus entirely on maximizing returns (Lewis et al, 2016).

**Figure 1:** Spectrum of Sustainability Investor Types



As noted above, investors diverge significantly in their fundamental understanding of what sustainability means and what aspects of corporate behavior should be included within an ESG analysis. Investors range even more widely on how the various ESG aspects should be prioritized. They further diverge on how much portfolio volatility, and thus diminished returns, they are willing to accept. It can be little wonder that the current set of ESG metrics disappoint so many investors. Careful scholars, we should note, never claimed that *all* company sustainability efforts succeed or produce positive business outcomes (Bose and Springsteel, 2017; Esty and Winston, 2009; Rangan et al., 2015; Schendler, 2001; King and Lenox, 2001).

Given the multiple dimensions of sustainability and the range of opinions and preferences about which elements are important and even which direction is positive, no single definition of *sustainability* will work in all circumstances. We therefore conclude that investors need the ability to define *sustainability* for themselves – and tools that will allow



them to align their portfolios with their *own values* and priorities. ESG data providers should therefore offer a *menu* of sustainability metrics that provide a framework from which individual investors can construct their own analyses tailored to their own interests and investment strategies.

### III. Moving Toward More Robust Sustainability Data

The equivocal empirical results regarding the relationship between ESG leadership and financial performance might also be the result of flawed data – metrics that are too narrowly focused or data that is so methodologically weak they provide no useful signal to investors.

Our careful review of the existing ESG data finds that most metrics were created in past decades to meet the needs of SRI investors who simply wanted the ability to *negatively* screen out certain industries from their portfolios. To these investors, aligning their portfolios with their values was the over-riding concern. They paid little concern to increased volatility or diminished returns – simply excluding industry categories that they defined as problematic. But as we have spelled out, the new mainstream sustainability-minded investors care about *both* values alignment and returns. So a different ESG framework that goes way beyond *negative screening* by industry category is now required.

One of our core observations is that repurposing ESG metrics that worked for the “values” investors of the past does not work for the sustainable investors of today. Mainstream investors now want a more comprehensive and carefully curated perspective on the companies in their portfolios – which existing ESG data sets to often cannot provide. Below, we lay out a range of problems that have emerged around ESG metrics as *value*-minded investors have come into the sustainable investing arena.

The ESG metrics available today are almost entirely backwards-looking rather than oriented to future results. They track *reputational* issues, not *operational* factors that might deliver lower costs, reduced risks, faster growth, improved productivity, or enhanced innovation capacity. Likewise, much of the existing data focus on ESG *risks* rather than the promise of sustainability-enabled *growth* or *productivity*. Thus, ESG data that are available to investors provide little foundation for identifying the companies whose sustainability strategies offer the promise of delivering marketplace upside (Yates-Smith, 2013) or results based on a “value driver” model (Lubin and Esty 2014; Lubin and Krosinsky 2013).

More remarkably, the available ESG data have so many gaps and errors that they do not provide clear guidance on which companies are delivering superior environmental results. Indeed, Chatterji et al. (2009) found, using environmental data from one of the leading ESG

analytic firms, that the metrics used are a poor predictor of environmental performance except under a very narrow set of circumstances. Likewise, Matisoff et al. (2013) show that data reported to the Carbon Disclosure Project (CDP) suffer from inconsistencies, lack of standardization, and mixed results in terms of transparency. A 2012 Rate the Raters survey found only 40% of investors are “very” or “extremely” satisfied with ESG ratings. Their unhappiness stems in large part from poor data quality and opaque methodologies (SustainAbility, 2012). A recent investor survey by Amel-Zadeh and Serafeim (2017) found that the lack of comparability across company reports represents a major impediment to ESG confidence. A recent summary of ESG data provider products reaches a similar conclusion: that the variance in data quality, metrics utilized, applied models and reporting is creating confusion in the marketplace (Douglas et al, 2017).

Developing the *next generation* of corporate sustainability data that meet the expanded *use cases* to which investors are interested requires improvements in both *methodological rigor* and *theoretical logic* of the underlying data. Fundamentally, investors need to have confidence in the reliability of the metrics. Without *trust*, capital will not flow based on sustainability performance. We also see a need for new *empirical analysis* of the full range of ESG metrics so as to provide clarity on which elements of sustainability show a relationship with financial performance. We discuss each of these recommendations below.

#### ***A. Theoretical Logic for Next-Generation Data***

A series of ESG data reforms would make the available corporate sustainability metrics more useful and reliable. We spell out below a set of *best practices* that our analysis and interviews with participants in the sustainable investing world have highlighted:

**Table 3: Data Recommendations – Theoretical Logic**

| <b>Gap</b>                                       | <b>Summary</b>   |
|--|--|
| <b>Operational vs Reputational Metrics</b>       | In the absence of quantifiable performance metrics, much of the current data focuses on stakeholder perceptions of companies drawn from media reports on controversies and reputation rather than operational performance.                               |
| <b>Forward vs Backward-looking Metrics</b>       | Most sustainability metrics measure past impacts while relatively few assess future potential for performance.   |
| <b>Footprints vs Handprints</b>                  | While a company’s own environmental impact (footprint) is useful, it is incomplete. To assess a company’s contribution to a sustainable world, investors also need to be able to track the impact of the company’s products and services.                |
| <b>Upside Opportunities vs Downside Exposure</b> | Much of the current data looks backwards to measure impact, while much of the potential value of sustainability to financial performance lies in the ability of the company to recognize and take advantage of opportunities to become more sustainable. |
| <b>Materiality</b>                               | To make corporate sustainability metrics more meaningful, much more focus needs to be given to what really matters in terms of environmental impacts – and the structure of metrics needs to be re-gearred to reflect this <i>materiality</i> analysis.  |
| <b>Broad Frameworks vs Narrow Focus</b>          | Most guidelines for data disclosure are broad to be inclusive of many sectors and many issue areas. What is needed is a mix of core issues broadly applicable combined with additional industry-specific metrics.  |
| <b>Policy Alignment</b>                          | Policy makers will play a key role in improving ESG data through a discreet set of core metrics, methodological standard regulation and continuing to internalize detrimental externalities.   |

## Operational versus Reputational Metrics

Is Dow Chemical a sustainable company? From a reputation point of view, Dow has a long legacy of pollution, including dioxin contamination, and a troubled image based on its role as a major manufacturer of Agent Orange during the Vietnam War. It might well be excluded therefore from sustainability-screened portfolios. But in recent years, Dow has become a recognized leader in sustainable operations. The company reported in 2016 that 10% of sales (\$5.8 billion) came from products that were “highly advantaged by sustainable chemistry” (Dow, 2015). Dow also won a 2015 Heroes of Chemistry Award (Bandlow and Schikorra, 2015) and was named one of the top 10 “impact” Companies to Work For by Net Impact (HIP Investor Team, 2015). But little of the widely available ESG datasets focused on reputation or legacy issues would capture these accomplishments or Dow’s potential to benefit from delivering sustainability solutions for its customers.

We think additional ESG metrics that help distinguish companies that are using their sustainability strategies to deliver value through *eco-efficiency* (or productivity) initiatives and growth need to be developed and standardized. In this regard, Lubin and Esty (2014) highlight a process for gauging sustainability-oriented *value drivers*. Porter and colleagues (2011) similarly offer a framework for determining metrics that create *shared value* between companies and stakeholders (Kramer, 2011).

## Forward-Looking versus Backwards-Looking

Many ESG metrics currently available look at past performance rather than future plans and their market-place promise. Of course, measurements of past results are much easier to acquire than projections about a company’s future performance. But backwards-looking metrics (especially ones that go back decades) may not be relevant as investors seek to understand which elements of sustainability offer the prospect of future stock market success.

GE, for example, gets black marks on its sustainability scorecard for dumping PCBs in the Hudson and Housatonic Rivers in the middle of the last century (DePalma, 2007). But isn’t it more useful to investors to know where the company is going with its efforts to make jet engines more fuel efficient or expand wind power? A new set of ESG metrics that gauge management vision and capacity for execution on sustainability issues is urgently needed.<sup>16</sup>

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<sup>16</sup> See, for example, David Lubin and Daniel Esty, “Sustainability: Bridging the Sustainability Gap,” MIT Sloan Management Review (June 2014). Others have echoed this call for forward-looking performance indicators. Sean Gilbert and James O’Loughlin, “Reaching Investors: Communicating Value through ESG Disclosures, Global Reporting Initiative” (2009), <https://www.globalreporting.org/resourcelibrary/Reaching-Investors.pdf>.

## Handprints versus Footprints

To the extent that the current ESG framework offers metrics on present performance, almost all of the data centers on the environmental impacts – or *footprint* – of the companies being scored. These data sets offer a gauge of energy and water use, waste generation, and carbon emissions. Although it can be significantly more difficult to measure, it may be more important to know a company's sustainability *handprint* (sometimes referred to as “product impact”), which might be orders of magnitude larger than its sustainability footprint. Alcoa, for example, helped Ford in 2015 redesign its iconic F-150 pick-up truck around an aluminum frame. This shift in materials dramatically lowered the vehicle's weight and increased its fuel efficiency (Voelcker, 2014), a fact that should be captured in ESG assessments of Alcoa. Salesforce.com likewise makes the case that its network IT solutions can reduce the carbon emissions of its customers by 95% compared to on-premises applications (Salesforce, 2011). As these examples demonstrate, one of the most important aspects of sustainability leadership centers on a company's ability to solve the energy and environmental problems of its customers.

## Upside Opportunities versus Downside Exposure

To the limited extent that ESG providers offer future-oriented data, most of these metrics are *risk-focused*. Carbon footprints, for instance, are now widely available – and allow investors to identify which corporations or sectors might suffer losses if CO<sub>2</sub> emissions were priced or faced more severe regulation. But there is little information available on *upside* climate change *exposure* that might allow investors to put money into companies or sectors that will thrive as carbon pricing becomes more widespread. We believe there is particular demand for metrics on sustainability-derived *growth* including both top-line expansion of sales (from goods or services that provide sustainability solutions) and bottom-line profitability (combining both growth and improved eco-efficiency and resource *productivity*) (Lubin and Esty, 2014). Lubin and Esty (2014) and Lubin and Krosinsky (2013) have proposed such a *value driver* model that would capture these elements. But this line of thinking has not been translated into widely available metrics. In line with this thinking, conceptualization of risk has expanded to move away from specific elements of behavior that might create risk (systematic risk) to assessments of external market risks that can be addressed by companies to create greater opportunity and consistent returns (idiosyncratic risks) (Funk and Powell, 2017).

## Materiality

Work is being done to bring a materiality lens to sustainability reporting. Organizations such as GRI and AccountAbility have long recommended that companies undertaking sustainability reporting and management should reflect on those issues that are most

material to the company and its stakeholders.<sup>17</sup> More recently, the Global Environmental Management Initiative (GEMI) released its “Quick Guide: Materiality” in an effort to give corporations a simple tool to identify and prioritize sustainability issues (GEMI, 2015). SASB has linked materiality to reporting specifically through the eyes of the investor by referencing the US Supreme Court’s definition of materiality, based on the perspective of a “reasonable investor” (SASB, 2016a). SASB is parlaying this materiality-centered approach into a set of industry-specific, comparable sustainability metrics that investors can more easily access and analyze. Our analysis suggests however, that the SASB structure which identifies a small number of material issues for each industry and labels all other issues as immaterial is too narrow.

Over the last year, a number of groups have focused on materiality in ESG and its relationship with Enterprise Risk Management processes. The WBCSD, Ceres, the Committee of Sponsoring Organizations of the Treadway Commission (COSO) and others in collaboration with the Moore Foundation have been working to understand how materiality of ESG indicators fits within the context of financial reporting. If successful, this work may lead to a more complete and refined understanding of which ESG issues impact financial value and under what circumstances. We discuss this work in Part IV of this paper.

A sharper focus on materiality needs to be central to the *next-generation* ESG metrics framework. We believe that there will be a small set of issues of over-arching concern that will be material in all industries. But many other issues need to be judged on an industry-specific basis. We further argue that the materiality cannot be seen as a yes-no question. Rather materiality should be judged in tiers, with each industry having a set of top-tier issues, second-tier concerns, third-tier challenges, etc. Who, for example, would have expected Uber to be humbled by human resources issues? Perhaps not a top-tier issue, but a range of second- or even third-tier human resource management issues have put the company in peril.

### **Broad Frameworks versus Narrow-Focus**

The increasing interest in materiality highlights another tradeoff in corporate sustainability data: whether the reporting framework should be extensive, covering many factors, or more targeted on a core set of metrics. For instance, the GRI, one of the most widely recognized reporting structures, expanded its reporting frameworks over the past two decades; today, companies are asked to assess up to 58 “General Standard Disclosures” and 82 “Specific Standard Disclosures” as well as additional disclosures described in one of the

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<sup>17</sup> For more information, see the Global Reporting Initiative’s website: “GRI,” accessed on June 8, 2016, <https://www.globalreporting.org/Pages/default.aspx>. Also see Marcy Murningham and Ted Grant, “Redefining Materiality II: Why it Matters, Who’s Involved, and What It Means for Corporate Leaders and Boards” (AccountAbility, 2013), [http://www.accountability.org/images/content/6/8/686/aa\\_materiality\\_report\\_aug2013%20final.pdf](http://www.accountability.org/images/content/6/8/686/aa_materiality_report_aug2013%20final.pdf).

10 Sector Supplements (GRI, 2014). Even though GRI has emphasized the need for materiality assessments to narrow this list, the practice has largely been meant to “cover as many bases as possible” to achieve stakeholder recognition and thresholds of performance defined by the GRI Guideline. The exhaustiveness of the reporting framework has been seen as excessively burdensome by many companies and in tension with GRI’s stated goal of highlighting the most *material* issues<sup>18</sup>. Moreover, our interviews with ESG marketplace participants suggests that the sheer workload of producing sustainability reports against the GRI framework is considered counter-productive.<sup>19</sup>

## **Policy Alignment**

Public interest in and focus on sustainability will continue to evolve, as will the sustainability priorities of the political world. ESG reporting practices will need to evolve in parallel. The global community’s new emphasis on the UN’s Sustainable Development Goals (SDGs) will inevitably lead to questions about corporate performance in supporting the SDG agenda (Cann and Fries, 2016). Metrics to track these issues at the corporate scale are thus being developed.

We see three key alignments of policy and ESG metrics. First, we anticipate an alignment of the top-priority ESG issues with matters of significant global importance. For example, the imminent and significant impacts of climate change suggest that this issue should be one of a handful of universal sustainability metrics – applied to disclosure for all companies. Second, the policy world should support the needs of investors for more robust, comparable and trusted ESG data to facilitate the movement of capital toward more sustainable companies and investments. Finally, policy needs to internalize externalities which otherwise threaten to undermine market incentives for responsible environmental and social performance.

## ***B. Methodological Standards for Next-Generation Data***

Not only do questions of *what* ESG data is being collected arouse concern, but so do questions of *how* it is being collected. As the Big Data Revolution sweeps the world, statistical techniques have improved and, in many contexts, methodological rigor has increased in many contexts. But little progress has been made on a series of basic

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<sup>18</sup> As a former Chief sustainability Officer at Intel and AMD, GRI’s new CEO, Tim Mohin, understands the reporting burden from a company perspective — and promises that GRI will address it. Esty interview with Mohin (7 May 2017).

<sup>19</sup> Ebrahim and Rangan have argued that an overload of measurements provided for funders may help, but “it runs the risk of being counterproductive in the long run, both by drawing precious resources away from services and by putting too much emphasis on outcomes for which the causal links are unclear...” Alnoor Ebrahim and V. Kasturi Rangan, “What Impact?: A Framework for Measuring the Scale and Scope of Social Performance,” *California Management Review* 56 (2014): 118-141.

methodological challenges in the sustainability domain. The *next-generation* ESG framework needs to address a range of fundamental issues including:

**Table 4:** Data Recommendations – Methodological Standards

| <b>Gap</b>                        | <b>Summary</b>   |
|-----------------------------------|--|
| <b>Self-Reported Data</b>         | While mandatory metrics of performance in sustainability continue to grow, the majority of material issues remain voluntary resulting in gaps and inconsistencies.                         |
| <b>Verification and Assurance</b> | Although a growing number of companies now provide third-party validation of their sustainability reports, many do not, meaning their data is simply self-reported.                        |
| <b>Estimated Data</b>             | Very little sustainability data comes from actual measurements. The majority of ESG metrics are modeled or estimated using assumptions of varying validity.                                |
| <b>Coverage</b>                   | Significant gaps in disclosure remain despite the growth in corporate sustainability reports over the years.   |
| <b>Gap-filling</b>                | Where critical data are not disclosed, the companies selling data streams will often attempt to fill the data gap using proxy metrics, imputed results, or non-transparent extrapolations. |
| <b>Normalization</b>              | Many data sets require normalization to a common benchmark to allow for meaningful (“apples to apples”) comparison – but a surprising number are not normalized.                           |
| <b>Timeframes and Updating</b>    | The collection of data and the updating of data in analyst databases is inconsistent and generally infrequent compared to the expectations of mainstream investors.                        |

### **Self-Reported Data**

The existing ESG datasets build on a patchwork of mandated environmental reporting and company self-disclosure. Environmental data in the United States reported to the Environmental Protection Agency (EPA) and Energy Information Agency (EIA) offer some of the most solid data in the existing ESG frameworks. To the extent that these data are publicly available, the ESG analytics companies take advantage of them. But beyond these narrow categories, companies report when and how and to whom they deem it to be convenient. In addition, because much of the data in the ESG arena comes from voluntary



company responses to surveys, additional inconsistencies and gaps plague the data sets (Clarkson et al, 2011).

## **Verification and Assurance**

While many of the leading companies in sustainability use some form of assurance and data verification (WBCSD, 2016a), only half of the companies in the world that produce sustainability reports pursue any form of third-party audit, verification or assurance – collectively referred to as “audits” (KPMG, 2013). Of these, most audits cover only a small portion of the information in the reports (Hubbard, 2009). A requirement for audited data could easily be embedded in a government-led data standard, just as corporate accounting and SEC filings must be verified. But even in the absence of government-mandated methodological standards for ESG data, we believe that verification of ESG metrics should be seen as a best practice. We would urge ESG data providers to be more diligent in flagging unverified metrics and in validating the information that they report. Likewise, we believe that data platforms, such as GRI and CDP, should “certify” audited data points to allow those users to be clear on how much trust to place in various numbers. WBCSD has argued that carefully constructed assurance of sustainability reports can create additional value. WBCSD thus proposes an *Assurance Maturity Model* to guide companies toward greater value from the assurance process (WBCSD, 2016b).

The primary argument against mandatory ESG data quality auditing has focused on the costs of such validation.<sup>20</sup> While a narrower focus on *material* issues might mitigate some of this cost compared to strategies that cover a broad range of sustainability issues, lessons from the Sarbanes Oxley experience suggest that the costs of additional mandatory auditing could be significant, particularly in the first years after adoption (Zhang, 2007). However, empirical evidence on sustainability reporting in China, Denmark, Malaysia, and South Africa, where mandatory data auditing has recently been required, showed no adverse impacts on shareholder value. This finding suggests that the additional costs, at least for basic ESG data, are not significant (Ioannou and Serafeim, 2014). A recent study by Grewal et al. (2017) suggests mandated reporting (and associated auditing) would positively affect companies already engaged in non-financial disclosure and negatively impact those with poor performance and little existing ESG disclosure.

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<sup>20</sup> See for example Steve Lydenberg, Jean Rogers, and David Wood, From Transparency to Performance: Industry-Based Sustainability Reporting on Key Issues, The Hauser Center for Nonprofit Organizations at Harvard University, [http://www.sasb.org/wp-content/uploads/2012/03/IRI\\_Transparency-to-Performance.pdf](http://www.sasb.org/wp-content/uploads/2012/03/IRI_Transparency-to-Performance.pdf): “The arguments most often made against mandatory reporting, and in favor of continuing the current regime of voluntary reporting, are typically ones of practicality and costs—it is difficult for regulators or stock exchanges to determine what data should be required and how to monitor the adequacy of its reporting; and it is expensive for companies to compile sustainability data.”

## Estimated Data

Another weakness of existing ESG data frameworks is that many of the indicators provided are modeled or estimated rather than reflecting actual measurements. Moreover, those using the data often cannot tell whether a particular ESG metric comes from measurement or from estimations. In some cases, the data providers do not even make clear which metrics are based on company reports and which derive from their own modeling and gap filling. For the sake of comparison and analysis, metrics work best when the underlying data come from *actual* measurement, but measurement-based data on many critical environmental factors are scarce.

As noted above, some environmental datasets derive from legal requirements and are therefore *actual* rather than *estimated*. Air emissions data from industrial facilities in the United States, for example, must follow strict measurement requirements using in-line monitors that record the presence of chemicals such as sulfur dioxide, nitrous oxides, and volatile organic compounds. However, even these data sets can present serious methodological issues. Smaller smokestacks and combustion sources, for instance, are allowed to estimate emissions based on fuel type and volume burned while some sources are exempt from providing any data. Even for highly regulated sources like large smokestacks, a single company might report emissions from operations in multiple countries where the sampling protocols, error rates, and boundaries of reporting vary significantly. Once again, as the importance of ESG analysis becomes more widely recognized, we argue for standardization of reporting rules – and transparency about which data are measured (and how carefully) and which are estimated (and on what basis).

## Coverage

As of 2016, slightly over 1,000 predominantly public corporations worldwide report their greenhouse gas emissions to CDP (CDP, 2016), representing approximately 2% of listed companies globally (World Federation of Exchanges, 2017). Even fewer provide metrics on other critical issues. GRI, the largest voluntary reporting guideline, offers a database listing the number of companies that have reported against each of its disclosure recommendations (based on companies that submit their report to GRI). As of late 2015, the database included 1,395 companies (less than 2% of publicly traded companies). Even those reporting *something* often ignored important sustainability issues: 19% did not report on water consumption, 58% did not report on water withdrawals, and 72% did not report on their water discharges.<sup>21</sup> This spotty coverage limits the accuracy and usefulness of the existing ESG datasets and makes intra-industry comparative analysis difficult. Indeed, there exists a constant risk that those reporting more robustly will *look* more

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<sup>21</sup> See the Global Reporting Initiatives' database on sustainability disclosures for full list: <http://database.globalreporting.org/benchmark>.

problematic from a sustainability perspective than those who report little – simply because they put forward some numbers.

### **Gap filling**

In the absence of good data on actual environmental outcomes, ESG data companies provide the *best available* data they can find. They may use proxy metrics to gauge performance or use statistical techniques, including extrapolation and interpolation, to fill data gaps. A variety of gap-filling strategies can be employed and will sometimes, but not always, be disclosed in a methodological appendix. Some companies fill gaps based on imputation from other data that is available and careful analysis of which related indicators best predict the missing data points. Many others give non-reporters an average score – or sometimes the average score of similarly situated companies. But these techniques induce hidden biases – including incentives not to report if one’s actual numbers are below average. A few of the most reliable data providers, such as Oekom, use averages to fill gaps but penalize non-reporters by placing them at the 20<sup>th</sup> percentile, not the average (50<sup>th</sup> percentile), which creates an incentive for those who have not provided data to do so in the future. We believe that non-reporters should be placed at the 1% level so that there is *never* an incentive to avoid reporting.

### **Normalization**

Even if everyone were equally committed to accuracy, the lack of consistency in the scope of data would be a problem. With regard to greenhouse gas emissions, some companies report just Scope 1 (emissions resulting from direct burning of fuels), others report Scopes 1 and 2 (adding emissions resulting from purchased energy such as electricity or steam), and a small number report Scopes 1, 2, and 3 (including supplier emissions and all other indirect emissions, beyond Scope 2, that occur in the value chain of the company). The lack of consistency makes benchmarking difficult as those who report just Scope 1 may appear to be better performers than those reporting Scopes 1 and 2.

Company structure can also affect results and the accuracy of comparisons. For example, unless everyone in an industry reports on Scopes 1, 2, and 3 greenhouse gas emissions, a vertically integrated company will likely have much higher reported emissions than one that has been structured to focus on downstream (marketing) activities. Indeed, those who have hived off their emissions-intense manufacturing operations may be particularly problematic. We know of cases where companies reduced their emissions overnight by 75% by restructuring and outsourcing their manufacturing.<sup>22</sup>

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<sup>22</sup> Esty interview with Tim Mohin (7 May 2017), noting that AMD cut its GHG emissions by 75% when it outsourced its production.

Normalization is required – and often not done – in the construction of many other datasets. For instance, MSCI, one of the most respected ESG data companies, reports on corporate controversies as part of its Intangible Value Assessment Methodology for the companies in its data matrix (MSCI, 2014). Other companies, such as RepRisk, similarly look at negative media mentions as a core metric. But there is no indication that the count or severity of the controversies or negative media mention is normalized against company characteristics (notably size) or the source of data (media, social media, regulatory response, etc.). Thus, Coca-Cola, which has global sales of \$45.91 billion and five controversies mentioned in the press, would score worse than a \$1 billion company with two controversies of similar impact, even though Coca-Cola’s normalized negative media score per dollar of sales would be almost 20 times better.<sup>23</sup> Nor is it clear how long controversies “count” against the company. Should, GE, for instance, continue to be penalized for its dioxin releases in the first half of the 20<sup>th</sup> century?

### **Timeframes and Updating**

One of the most important questions is the consistency of the timeframes of the data being put forward (i.e., when was the data collected by the company). The methodology statements for three of the most common ESG-weighted Indices (the MSCI ACWI Sustainable Impact Index, Dow Jones Sustainability Index, and Vigeo Eiris Ethibel Sustainability Index Excellence Global) do not specify the span of timeframes for data that can be included for an evaluated company. While it may not be possible in every case for the data on each company to cover the same time period, such consistency should be the goal. A team of graduate students at Columbia University recently published the results of a series of interviews with 10 major data analytics firms (Chan et al, 2014). The reported frequency of data updating ranged from annual to “based on alerts from webcrawlers.” While the right timeframe for updates will vary depending on the metric in question, a principle of regular refreshment of all datasets should be on the list of ESG metrics best practices as should transparency about data vintage.

### ***C. Refined ESG Empirical Studies***

As our discussion in Part I revealed, the analytic foundations for bringing ESG metrics into mainstream investor decisions are shaky. Sweeping statements about whether sustainability leadership correlates with stock market or other financial performance are unhelpful. Given the range of elements that might be embedded in any one definition of *sustainable* or *socially responsible* companies, it is no surprise that empirical studies come to divergent conclusions. What is needed is more granular focus and detailed empirical

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<sup>23</sup> Global sales value found at: “Coca-Cola,” Forbes, last updated May, 2016, <http://www.forbes.com/companies/coca-cola/>.

analysis of specific elements of sustainability leadership that have a theoretical link to business success and, therefore, stock market valuations.

This analytic ground has just begun to be plowed. For example, companies that try to improve their energy efficiency should be able to reduce costs – and improve their profitability. But do such initiatives systematically translate into improved financial results? We have little evidence to answer this question. Likewise, recent business theory suggests that having a more diverse workforce allows a company to better connect with diverse customers (Thomas, 2004). But does greater diversity produce better business outcomes in practice? More robust analysis is needed. And does separation of the roles of CEO and Board Chair lead to better decision making and greater profitability? Again, empirical work on such questions is essential and just starting to appear. We thus conclude (as have prior studies) that more careful statistical studies will reveal more nuanced ESG conclusions (Vo, 2010).

ESG data providers should be urged to do more (and more careful) correlation studies so as to begin illuminating the relationship between the metrics they report and various gauges of corporate financial performance. Multivariate regression analyses that control for interactions among ESG metrics would be especially useful to determine which dimensions of ESG are materially linked to market performance.

#### ***D. The Path Forward***

Our interviews in the sustainable investing arena makes it clear that many mainstream investors do not trust the available ESG data. Without confidence in the numbers reported, movement of capital based on sustainability performance will continue to be slow in comparison to the global aggregate of assets under management. Two movements are needed to grow comparability, trust and utility of ESG metrics. First, a standardized *menu* of ESG metrics is needed that provides a perspective across a broad array of companies. A small number of these metrics will likely be universal to all reporting organizations, while the majority would create comparability across industry sectors and regions. Second, it is time to move from a world of informally developed *Data Quality Principles* such as those codified by the GRI (2016) covering Balance, Comparability, Accuracy, Timeliness, Clarity, and Reliability, to a more systematic and unified set of *ESG Methodological Standards* supported by a government-mandated framework and more rigorous requirements for validated data.

The requisite trust would be most easily established if the ESG metrics menu and methodological standards were prescribed by a governmental body and made part of a formal reporting structure such as the SEC's 10-K requirements. The "legal" underpinnings of such a system would be the quickest and most reliable way to ensure data consistency,

comparability, and integrity.<sup>24</sup> There have been movements in this direction, in part due to investor pressure (Fleming, 2016; Vittorio, 2016), including the SEC Regulation S-K Concept Release (SEC, 2016; DavisPolk, 2016); the SEC guidance on climate related disclosure (SEC, 2010); regulations in the UK under the 2006 Companies Act; and the EU Directive 2014/95/EU, which all call for varying levels of reporting against climate change risk. However, these regulatory efforts, as well as others the European Union, India, Norway, United Kingdom, Finland, Japan, Korea, Pakistan, Malaysia and Canada fall short of prescribing a limited set of metrics or dictating specific methodological standards for data collection that ensures comparability.

The push for a regulated methodological standard can be guided by the numerous data quality and methodological standards present in the world of finance, including internal control guidelines from FASB, the International Monetary Fund (IMF, 2001), and the Bank of England (2014). These standards also provide procedures for statistical analysis; processes for data management; strategies for avoiding data collection problems; guidelines for the use of proxy metrics, data aggregation, and weighting; and protocols for the normalization of divergent metrics and reporting (Kahn et al, 2015).

In the near-term, and as regulation evolves, there is substantial movement underway in voluntary efforts to better define material ESG issues for companies and investors, and to create more meaningful disclosures of ESG issues in financial reporting. Landmark efforts such as the Task Force for Climate-related Financial Disclosures (TCFD) and the Climate Disclosure Standards Board (CDSB) have created methodologies for reporting financial material data on climate mitigation and adaptation to investors through the annual and quarterly financial reporting mechanisms. TCFD released its Final Recommendations Report on June 29, 2017 in which it calls for disclosures in governance, strategy, risk management and metrics/targets with regard to climate risk, climate opportunity and financial impacts from climate change (TCFD, 2017). The TCFD recommendations also provide guidance on disclosure, but stop short of prescribing metrics or data collection methods. In fact, the Report highlights the need for data quality and availability as part of its “Key Issues Considered and Areas for Further Work” section.

SASB has recommended that companies adopting their standard integrate sustainability data collection into existing internal financial data controls and procedures (SASB, 2016b). In practice, this might be done through the use of the COSO Internal Control-Integrated

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<sup>24</sup> See Benjamin Hulac, “SEC Considers Overhaul to Climate Rule,” E&E News, April 15, 2016, accessed June 8, 2016, <http://www.eenews.net/climatewire/2016/04/25/stories/1060036172>. Here, Hulac describes the SEC’s April announcement that “it is considering modernizing disclosure requirements in a regulation called S-K to help investors see how companies approach social issues like global warming.”

Framework.<sup>25</sup> In fact, COSO, in partnership with WBCSD, Ceres and others and in cooperation with the Conservation and Financial Markets Initiative effort, is due to release an updated framework that explicitly integrates ESG in Enterprise Risk Management processes including internal control procedures for data handling. This framework could be a substantial step forward in comparability of material ESG data and a model for regulation in the future.

Stock exchanges are also moving forward to better define material ESG indicators for listed companies. We note that while stock exchange rules for sustainability disclosure have expanded dramatically over the last five years (SSE, 2012; Sustainable Stock Exchanges Secretariat, 2015; World Federation of Exchanges, 2015), mandatory standards for data collection, accounting, and verification have not kept pace.

Looking to the longer term, we see three main parties who should be called upon to guide government-led Data Quality and Methodological and a *next-generation* ESG reporting framework: (1) investors, represented not only through existing bodies such as Ceres and SASB, but also through new entities that reflect the diversity of interests in sustainability; (2) ESG analytics firms that aggregate and disseminate the data collected including both for-profit and not-for-profit entities such as CDP and GRI; and (3) research centers and academic institutions, which can undertake sustainability research, including empirical investigation of the interaction between specific metrics and financial performance. Based on the need for comparability and transparency, it is important that the output of such an effort result in publicly available data frameworks that can be easily accessed by reporting companies and data analytics firms aggregating the metrics.

#### **IV. Conclusion**

Progress on several fronts will be needed to solve the puzzle put forward at the outset of this paper. Specifically, sustainability must be recognized as a multi-dimensional concept about which no two investors will agree precisely. In addition, because sustainability-minded investors vary widely not only in their interests, but also in their financial goals and willingness to accept diminished returns, investors need a *next-generation* ESG framework that offers a *menu* of metrics that provide choice and individual prioritization. Investors of all types also need a more carefully constructed set of ESG metrics that meet a high standard of methodological rigor. Government-mandated ESG *methodological standards* would provide the easiest pathway to much-needed reporting consistency and data integrity. Applied to a *menu* of metrics, such standards would allow investors to choose those ESG factors that best fit their investment priorities and remain confident in the robustness of the underlying data. In the absence of government action, the burden will

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<sup>25</sup> For more information on the COSO Internal Controls – Integrated Framework, see the COSO website, [www.coso.org/guidance](http://www.coso.org/guidance)

be on ESG data providers to provide greater consistency, transparency, and verification of the metrics they publish in line with the suggested approach of SASB and others.

Our interviews suggest that mainstream investors would include sustainability assessments in some part of their market analysis if they had better data, clarity on the elements of sustainability that translate into superior financial performance, scorecards designed with specific investment purposes in mind (Krosinsky and Robins, 2008; Gottsman and Kessler, 1998), and confidence that regulatory frameworks were in place to ensure that enterprises would be penalized for their externalities. This broader sustainable investment interest would, in turn, induce capital to flow toward companies with strong ESG performance on material issues, reinforcing policy efforts to promote sustainability.

Where ESG leadership is found not to correlate with stock market success – or to be negatively correlated – further scrutiny is required. If the issue in question is one where divergent views on what constitutes *sustainability* (e.g., on the value of nuclear power) are expected, then the lack of relationship is not of concern. But a negative relationship with business success on an issue that is fundamental to society’s interest in a sustainable future (e.g., greenhouse gas emissions) should be a red flag for policymakers – perhaps indicating a regulatory failure that needs to be addressed.

Fundamentally, establishing a better foundation for sustainable investing requires a reconceptualization of the task at hand. Defining a common vision of *sustainability* that applies broadly seems unlikely. Given the diversity of investor sustainability interests and values, what is needed is a *standardized ESG metrics framework* from which individuals can construct their own analyses consistent with their own investment strategies. We argue that such a framework should be understood to be a public good – and thus we suggest that government-mandated *ESG methodological standards* be established – building on the emerging best practices for metrics construction. With better analytic underpinnings, the sort of granular studies needed to identify which elements of corporate sustainability leadership correlate with financial success can be undertaken – and the puzzle posed at the outset of this article resolved.



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## Appendix: May 2015 Roundtable Participants and Additional Interviewees

| Participant/Interviewee | Organization   |
|-------------------------|--|
| Arnold, Tammie          | Generation Investment Management   |
| Bolton, Patrick         | Columbia Business School   |
| Booth, David            | Dimensional Fund Advisors  |
| Collins, Andrew         | Sustainability Accounting Standards Board                                |
| DeCew, Stuart           | Yale Center for Business and the Environment                             |
| Gentry, Brad            | Yale Center for Business and the Environment                             |
| Goldstein, John         | Imprint Capital  |
| Irwin, Rodney           | World Business Council for Sustainable Development                       |
| Jenkins, Bob            | Thomson Reuters  |
| Karp, Erika             | Cornerstone Capital Group  |
| Kauffman, Richard       | State of New York  |
| Kenning, Jenn           | Abacus Wealth Management   |
| Kessel, Brent           | Abacus Wealth Management   |
| Krause, Kahne           | Dimensional Fund Advisors  |
| Kriss, Mark             | Macroclimate, LLC  |
| Krosinsky, Cary         | Author of <i>Sustainable investing: The art of long-term performance</i> |
| Lee, Linda-Eling        | MSCI   |
| Lubin, David            | S3   |
| Macey, Jonathan         | Yale Law School  |
| Matthews, Jessica       | Cambridge Associates   |
| Mohin, Tim              | Global Reporting Initiative  |
| Park, Kyung-Ah          | Goldman Sachs  |
| Pierce, Lance           | CDP North America  |
| Ravenel, Ramsey         | Grantham Foundation  |

|                         |  |
|-------------------------|--|
| <b>Ross, Leola</b>      | Russell Investments                                |
| <b>Sherman, Spencer</b> | Abacus Wealth Management                           |
| <b>Sobotka, David</b>   | Bank of America                                    |
| <b>Spitler, Chad</b>    | CamberView Partners                                |
| <b>Swensen, David</b>   | Yale Investments Office                            |
| <b>Takahashi, Dean</b>  | Yale Investments Office                            |
| <b>Urie, Sandra</b>     | Cambridge Associates                               |
| <b>Walker, Chris</b>    | World Business Council for Sustainable Development |
| <b>Yovanjak, Logan</b>  | Morgan Stanley                                     |