

The views and opinions and/or analysis expressed are those of the author as of the date of preparation of this material and are subject to change at any time without notice due to market or economic conditions and may not necessarily come to pass. Furthermore, the views will not be updated or otherwise revised to reflect information that subsequently becomes available or circumstances existing, or changes occurring, after the date of the publication. The views expressed do not reflect the opinions of Morgan Stanley Investment Management and its subsidiaries and affiliates and may not be reflected in all strategies and products the Firm offers.

THE CALVERT-SERAFEIM SERIES

June 2016

# The Financial and Societal Benefits of ESG Integration: Focus on Materiality

AUTHORS:

**George Serafeim**

*Jakurski Family Associate Professor of Business Administration, Harvard Business School*

**Jade Huang**

*Portfolio Manager, Calvert Investments*

**Joshua Linder, CFA**

*Assistant Portfolio Manager, Calvert Investments*

**Patrick Faul, CFA**

*Vice President and Head of Credit Research, Calvert Investments*

**John Streur**

*President and Chief Executive Officer, Calvert Investments*

**With contributions from:**

Yvonne Bishop

Kim Nguyen-Taylor

Emily Kaiser



On December 30, 2016, Calvert Research and Management acquired substantially all of the business assets of Calvert Investment Management, Inc. (CIM), which was founded in 1976. Following the transaction, substantially of the CIM Sustainability Research Group as well certain other members of CIM joined Calvert Research and Management. Calvert Research and Management is a wholly owned subsidiary of Eaton Vance.

Calvert has partnered with George Serafeim, Jakurski Family Associate Professor of Business Administration at Harvard Business School, to conduct joint research that enhances public education and knowledge related to responsible investing and business practices.

The goal of the Calvert-Serafeim Research Series is to explore pervasive topics affecting global investors and businesses to uncover insights that may enable more agile, appropriate strategies to address environmental and social challenges. The series aims to expand upon public and academic dialogue, but also to provide investors with actionable insights they can apply to their own portfolios.

The first study in the Calvert-Serafeim Series, “The Role of Corporation in Society: Implications for Investors,” establishes that the public has set new expectations for corporations and how they should balance the needs of their financial and non-financial stakeholders. With governments in debt and the public sector resource-constrained, informed publics are looking to corporations to help solve challenges ranging from climate change to income inequality. The report suggests that institutional asset owners and retail investors are increasingly allocating capital in a manner that rewards good corporate behavior.

The prior research also establishes a link between corporate sustainability efforts and financial performance. The study suggests that further adoption and implementation of sustainable business practices can create efficiencies that increase shareholder value and mitigate risks.

To date, widespread access to insightful Environmental, Social and Governance (ESG) data remains cloudy, with corporations’ non-financial disclosures remaining inconsistent, noisy and selective. That’s in sharp contrast to financial disclosures—where the quality, consistency, and availability of data has greatly increased in recent decades, to the extent that far fewer stock pickers are able to beat the market as a whole. Capital markets participants are only beginning to harness the ability to separate financially material from immaterial information when evaluating ESG factors. The evolution, however, is certainly under way.

This paper is the second in the series, and builds on previous research, exploring how systematic analysis of ESG data can potentially help boost portfolio returns without additional risk. Current access to insightful ESG data remains inconsistent, providing opportunities for investors analyzing both ESG and financial data sets. The paper finds that in a market environment that increasingly precludes alpha generation based purely on an analysis of financial metrics, the proper integration of ESG information into investment analysis can uncover risks and opportunities that markets have not yet valued.

# Executive Summary

As we discussed in *The Role of the Corporation in Society: Implications for Investors*, companies are engaging in significant environmentally and socially-oriented activities, and these activities have clear business justifications. Companies that engage in these activities effectively show better business model and management quality, more growth, and lower risk of credit default. Recognizing the benefits of corporate environmental, social, and governance (ESG) efforts, investors are incorporating ESG data in portfolio management approaches. Many investment managers, however, are struggling to understand the best way to use the ESG information that companies are disclosing.

In this report, the second of the Calvert-Serafeim Series, we focus on how asset managers can encourage and benefit from strong corporate management of the ESG risks and opportunities that matter most to companies and investors.

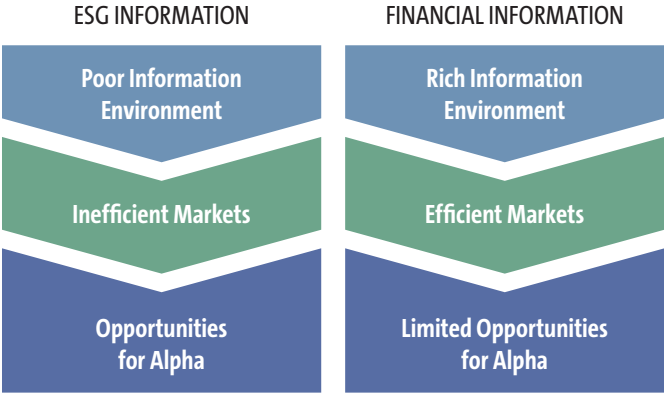
## THE ALPHA-GENERATING POTENTIAL OF ESG DATA

Generating positive alpha, defined as achieving positive stock returns which are greater than a market index used as a benchmark, is becoming increasingly difficult for active managers, who rely on market timing and stock-picking to generate returns. While opportunities to time the market may not have changed over time, stock-picking has become more challenging, likely due to the quality, consistency, and availability of corporate financial data. As the quantity and quality of financial information improve, and as investors develop a better understanding of the implications of various pieces of financial information for the future financial performance of a company, stock prices are incorporating this information with greater efficiency and with less bias. Improvement in the information environment means that opportunities to generate alpha using financial information alone have diminished. This picture exists in complete contrast to the state of the ESG information environment, where non-financial disclosures remain inconsistent, noisy, and selective. This opacity gives rise to opportunities for investors who analyze ESG data along with financial data to generate alpha.

## THE VALUE OF ESG INTEGRATION: EQUITY INVESTMENT DECISIONS

Different ESG issues will be material for different companies, depending on such considerations as industry membership,

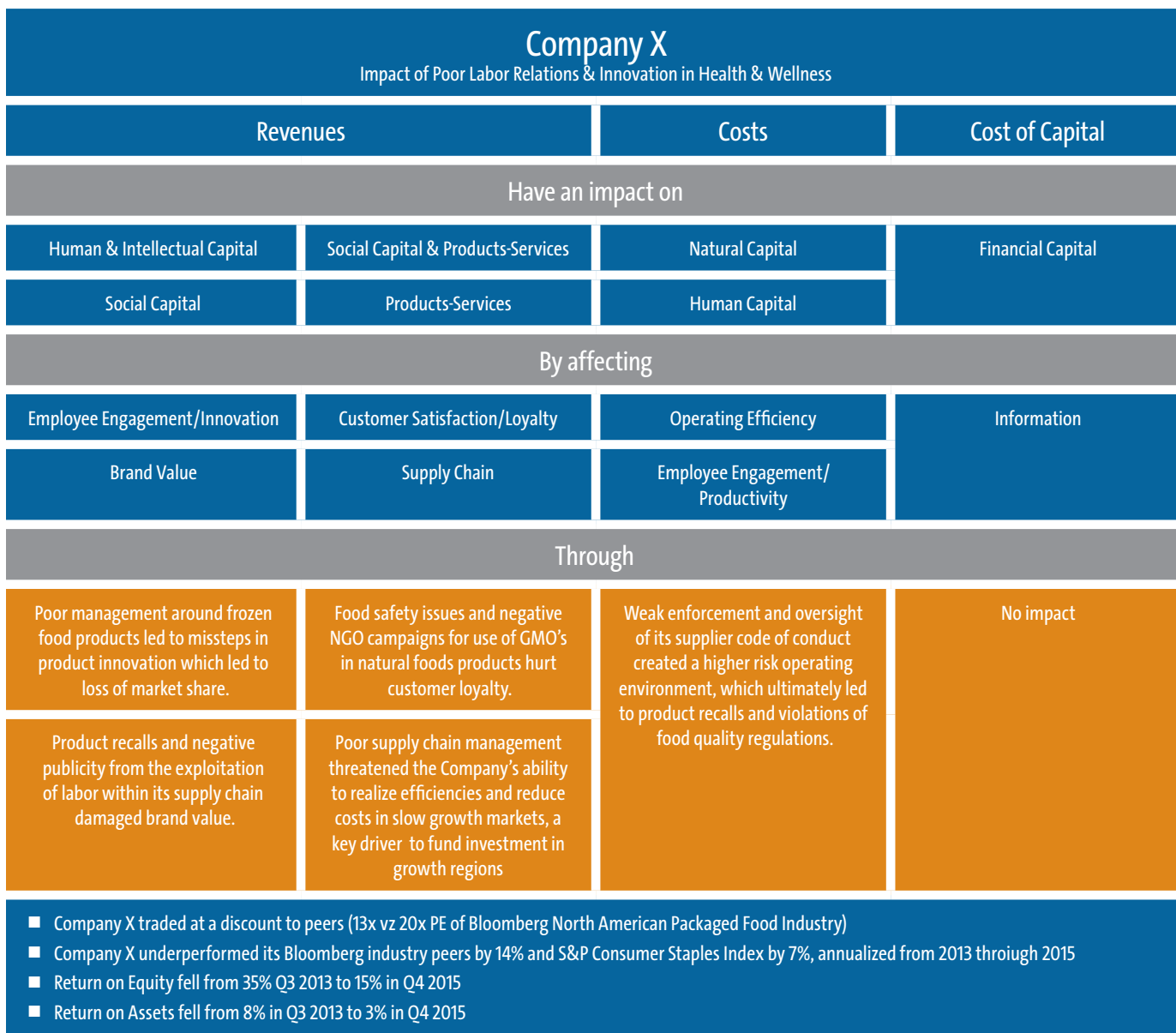
FIGURE 1. OPPORTUNITIES FOR ALPHA: ESG INFORMATION V. FINANCIAL INFORMATION



country exposure, and underlying business model choices. As we described in *The Role of the Corporation*, material ESG issues impact a company's financials in the following areas: (1) revenues, (2) costs, and (3) the cost of capital. Therefore, analysts who incorporate material ESG data into their business analysis can gain an advantage because these data can be leading indicators of future financial performance.

Note, this particular advantage only holds under an analysis of financial materiality and is not empirically supported by the incorporation of broader ESG data which are not financially material. A new academic study by George Serafeim and colleagues at Harvard Business School offers analysis that, when

FIGURE 2. VALUE CREATION APPLIED IN THE CASE OF COMPANY X



combined with Calvert’s expertise and research, draws attention to an important need for asset managers to separate the financially material from the financially immaterial when considering ESG factors.<sup>1</sup> Calvert’s analysis of hypothetical food manufacturer Company X demonstrates how various material ESG issues could impact the financial valuation of the company and ultimately influence a change in the investment recommendation to sell. In the food manufacturing industry, Calvert identified labor supply chain issues, product safety, and health and wellness as a few of the most material ESG issues that impacted Company X’s financials.

**Figure 2** shows how Calvert applied the valuation framework that we developed in *The Role of the Corporation* in determining a hypothetical investment recommendation for Company X.

In addition, an understanding of material ESG issues can be important in identifying investment opportunities. Our examination of diversified power management Company Z highlights how a management team recognized significant opportunity, driven by both regulations and consumer trends, and positioned the Company to take advantage of sustainability-related demand growth to take market share and drive growth. In what is a highly competitive manufacturing industry, Company Z stands out among peers for its product positioning and associated growth tied to a focus on energy efficiency and emission controls.

1. Mozaffar Khan Harvard University and University of Minnesota George Serafeim and Aaron Yoon Harvard University (2016) *Corporate Sustainability: First Evidence on Materiality*. *The Accounting Review*: November 2016, Vol. 91, No. 6, pp. 1697-1724.

## THE VALUE OF ESG INTEGRATION: FIXED INCOME INVESTMENT DECISIONS

In credit analysis for fixed income investments, material ESG data can provide unique insights into the quality of a company’s business model and management that financial data alone cannot provide. The mining industry offers one example of an industry where ESG data can be useful for fixed income analysis due to the high environmental and social impacts associated with business operations.

**Figure 3** illustrates the integrated framework used in determining a hypothetical investment recommendation for Company Y.

A problem in any of these ESG areas can stop the operations of a mine almost instantaneously, creating the need for firms in this industry to develop diversified portfolios able to withstand a months-long stoppage at any one mine, thus protecting investment grade ratings. A mining company with only one operating mine is typically given a high yield rating. If such a company has viable new projects that could generate revenues in the future, it can alleviate the perceived risk associated with its lack of diversification. Additional projects provide a cushion against future negative events.

Rigorous integration of material ESG data in fixed income analysis can also provide opportunities for investment decisions that benefit from taking into account the varying maturity of financial instruments offered by issuers that belong to the same industry. Considering ESG risk in the context of duration may present the opportunity for investors to generate alpha while mitigating risk, particularly when an ESG-related controversy is involved. For instance, environmental litigation risk in an energy company could either have minor or very severe implications, ranging from a contained, minimally toxic spill

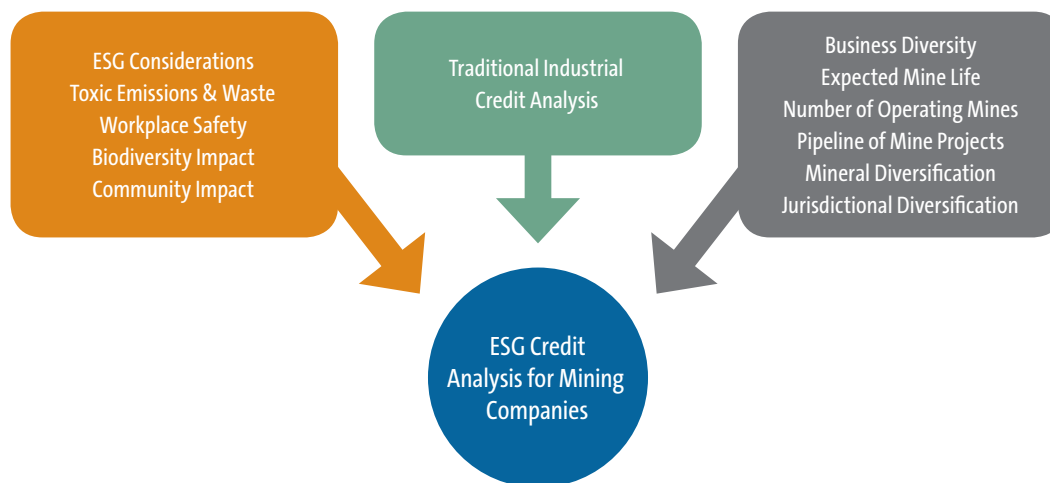
with no subsequent regulatory action, to a spill that results in significant clean-up costs, biodiversity harm, and large penalties or settlements. Depending on the investor’s assessment of the severity of the ESG risk and the shape of the credit curve, i.e., its flatness or steepness, the ESG-related headline could present an attractive buying opportunity in a short-dated bond, where there is a more significant event, or in long-dated exposure to the credit, in the case of a minor event.

## KEY FINDINGS

Calvert’s research has found that in a market environment that increasingly precludes alpha generation on the basis of financial metrics, the proper integration of ESG information into investment analysis can capture value that the markets have not yet recognized. This research outlines several ways that investment managers can integrate non-financial information in portfolio decisions, based on considerations that Calvert finds material for its evaluation of ESG risk and opportunity, thus uncovering value across asset classes, economic sectors, and corporate operating environments. As a key aspect of responsible investing, ESG integration can yield real benefits by enabling better risk-adjusted stock returns and by incenting better management of environmental and social impacts that affect firm value.<sup>2</sup> Better corporate management of these impacts enables better overall firm management, which consequently supports firm longevity and, further, global sustainable development and socio-economic inclusion that are, and increasingly will be, necessary underpinnings of healthy capital markets.

2. Khan, Mozaffar and Serafeim, George and Yoon, Aaron S., Corporate Sustainability: First Evidence on Materiality (November 9, 2016). *The Accounting Review*, Vol. 91, No. 6, pp. 1697-1724.

**FIGURE 3. INTEGRATED CREDIT ANALYSIS OF COMPANY Y**



# 1. Introduction

In our previous report, *The Role of the Corporation in Society: Implications for Investors*, we discussed our viewpoint on corporations' social and environmental impacts and why these impacts, and companies' efforts to manage them, matter for investors. We documented why corporations are increasingly addressing social and environmental issues and what this activity means for companies' future financial performance. Specifically, we showed that firms seeking to limit their negative impact and provide solutions to environmental and social problems can also capture financial benefits through superior employee engagement, customer loyalty, innovation, reputation management, and lower cost of capital.<sup>3</sup>

However, corporate efforts to address environmental and social impact are not the only upward trend; investor efforts in these areas are also on the rise. An increasing number of investors are now using ESG data to inform their capital allocation decisions. According to recent estimates, \$21 trillion in assets under management are allocated by taking into account ESG criteria, while investors managing nearly \$60 trillion have signed principles that commit them to the use of ESG data.<sup>4</sup> This raises the question of how an investor could construct ESG performance metrics that provide information about a firm's future financial performance, and as a result have the potential to improve the risk-return profile of a portfolio.

One way to construct financially material ESG performance metrics is by identifying information that is likely to be a leading indicator of financial performance. For example, information about the amount of water needed to produce a can of soda is likely to be useful in assessing future profitability margins for companies such as Coca-Cola and Pepsico. Understanding whether Novartis or Pfizer is developing and selling products that increase access to healthcare among underprivileged communities can lead to information about future sales growth. Community acceptance rates and safety records related to mining operations may predict operational disruptions and costs of production for BHP Billiton and Rio Tinto. Consistent with this approach, Calvert has developed a proprietary system that guides its investment approach by identifying specific ESG key performance indicators (KPIs) as strategically important in each Global Industrial Classification System (GICS) sub-industry. At the same time, Calvert requires that all companies satisfy a minimum set of requirements in order to be eligible for inclusion in its portfolios. For example, Calvert does not invest in companies that show a pattern of human rights violations or engage in unethical business practices.

While many asset managers are working to include financially material ESG performance metrics in investment decision-making, this has proven to be a rather difficult endeavor. There are multiple reasons for this, but they mostly relate to the current corporate disclosure regime; for instance not all ESG data that companies report are financially material. This does not mean that companies should only report financially material sustainability data. Broader ESG information might be very important for a wider range of stakeholders, such as employees, consumers, or local communities, and therefore should be reported by the company.

Calvert's Principles for Responsible Investment, which govern its ESG investment decision-making, incorporate ESG factors that are both financially material and material to improving societal outcomes. These are not mutually exclusive and there is often convergence among these two characterizations of materiality. However, not all ESG data that are material to improving societal outcomes are financially material, and where possible these data are important to distinguish.

Uncovering ESG factors that are financially material can present opportunities to identify more direct investment signals from ESG data. As such, it is advantageous for investors to make a determination about the financial materiality of ESG data before integrating this data into investment decision-making. Sorting through undifferentiated ESG information layers complexity onto attempts to identify pure investment signals from ESG data; particularly as factors which are financially material vary by industry.

In this report we discuss varying definitions of materiality with a focus on financial materiality. We outline why the construction of financially material ESG performance metrics is likely to produce both financial and social benefits. We argue that ESG data represent the next frontier for alpha generation. We also discuss why and how integration of these ESG data can lead to better societal outcomes, as investors enable or constrain business development by altering the cost of capital and operations for firms with good or poor performance on material ESG issues.

3. George Serafeim, Emily Kaiser, Joshua Linder, Ivan Naranjo, Kim Nguyen-Taylor, and John Streur, "The Role of the Corporation in Society: Implications for Investors," Calvert Investments, September 2015, <http://www.calvert.com/perspective/research/calvert-serafeim-series-report>.

4. Global Sustainable Investment Alliance, "2014 Global Sustainable Investment Review," United Nations Principles for Responsible Investment, <http://www.unpri.org/about-pri/about-pri/>.

## 2. Active Investment Management and ESG Data

### THE CHALLENGE

---

Generating alpha is becoming increasingly difficult for active managers. A series of studies suggests that, on average, actively managed mutual funds fail to outperform their benchmarks. A recent study suggests that, while prior to the 1990s 14% of U.S. equity funds delivered alpha, this percentage declined to 0.6% by 2006.<sup>5</sup> At the same time, asset owners and retail investors spend approximately \$600 billion in management fees for actively managed assets.<sup>6</sup>

However, the fact that active managers are facing more difficulty in their effort to generate alpha is not surprising. To understand why, one needs to understand what drives alpha. Alpha originates from two sources: stock-picking, or selecting stocks that will show superior returns for a given level of risk; and market timing, or investing in securities before the market index increases and selling securities before the market index decreases. While asset managers' ability to time the market might not have changed over time, their ability to pick stocks is likely to have deteriorated. This is because stock-picking still relies heavily on analyzing financial information.

Financial information is now not only better understood by investors, but also better reported by companies, due to changes in disclosure and measurement regulations and improvements in the corporate governance process. For example, the adoption of International Financial Reporting Standards (IFRS) by more than one hundred countries around the world improved both the quality of reported information and the comparability of information across countries.<sup>7</sup> Similarly, the Sarbanes-Oxley Act improved the reliability of reported information for U.S.-listed firms.<sup>8</sup> As the quantity and quality of financial information have improved, and as investors develop a better understanding of the implications of various pieces of financial information for the future financial performance of a company, stock prices are incorporating this information faster and with less bias. For example, anomalies associated

with accruals, size, value, and dividend yield have diminished or disappeared following academic studies that documented these effects and subsequent efforts by practitioners to implement strategies that exploit arbitrage opportunities.<sup>9</sup> This process of investment theory influencing investment practice eventually eliminates opportunities to pick stocks that are undervalued relative to their fundamental value and thus to generate alpha. In other words, as the information environment has improved, opportunities to generate alpha using financial information alone have diminished.

### THE OPPORTUNITY

---

The richness of the financial information environment and the related challenges of picking stocks based on this information exist in complete contrast to the state of the ESG information environment, which is at a relatively nascent stage. There are no generally accepted standards for corporate reporting of ESG information although non-governmental organizations (NGOs), such as the Global Reporting Initiative (GRI) and the Sustainability Accounting Standards Board (SASB), are creating and advocating for these standards. Although, in the last ten years, numerous regulations have emerged and mandated the disclosure of ESG information, these regulations do not specify what information an organization should disclose.<sup>10</sup> As a result, comparability of reported information across firms and across time is still limited. The reliability of the reported information is also limited due to firms' lack of external and internal assurance processes for ESG information.<sup>11</sup> In addition, the financial implications of ESG investments are still unclear in many cases. How does an increase in employee training, carbon-reducing technologies, or supply chain auditing capabilities translate into future profitability? How much does profitability increase? How persistent is the effect, and over what time horizon is it apparent? How do these effects impact a technology company compared with a mining company or a pharmaceutical company? For all of these reasons, even value-relevant ESG data are incorporated in stock prices slowly, giving rise to

---

5. Laurent Barras, Olivier Scaillet, and Russ Wermers, "False Discoveries in Mutual Fund Performance: Measuring Luck in Estimated Alphas," *The Journal of Finance* 65, no. 1 (2010): 179-216.

6. Boston Consulting Group, "Global Asset Management 2014: Steering the Course to Growth," [https://www.bcgperspectives.com/content/articles/financial\\_institutions\\_global\\_asset\\_management\\_2014\\_steering\\_course\\_growth/?chapter=2](https://www.bcgperspectives.com/content/articles/financial_institutions_global_asset_management_2014_steering_course_growth/?chapter=2).

7. Joanne Horton, George Serafeim, and Ioanna Serafeim, "Does Mandatory IFRS Adoption Improve the Information Environment?" *Contemporary Accounting Research* 30, no. 1 (2013): 388-423.

8. Haidan Li, Morton Pincus, and Sonja Olhoffs Rego, "Market Reaction to Events Surrounding the Sarbanes-Oxley Act of 2002 and Earnings Management," *Journal of Law and Economics* 51, no. 1 (2008): 111-134.

---

9. Jeremiah Green, John RM Hand, and Mark T. Soliman, "Going, Going, Gone? The Apparent Demise of the Accruals Anomaly," *Management Science* 57, no. 5 (2011): 797-816; Schwert, G. William, "Anomalies and Market Efficiency," *Handbook of the Economics of Finance* 1 (2003): 939-974.

10. Ioannis Ioannou and George Serafeim, "The Consequences of Mandatory Corporate Sustainability Reporting: Evidence from Four Countries," *Harvard Business School Research Working Paper 11-100* (2014).

11. Robert G. Eccles, Ioannis Ioannou, and George Serafeim, "The Impact of Corporate Sustainability on Organizational Processes and Performance," *Management Science* 60, no. 11 (November 2014): 2835-2857.

opportunities to capture alpha. As a result, the incorporation of value-relevant ESG data, which could represent leading indicators of financial performance, in business analysis and valuation could enhance the stock-picking abilities of investors. Figure 1 on page 3 summarizes the relationship between the information environment and opportunities for alpha generation.

## DEFINITIONS OF MATERIALITY

---

Several public and private sector organizations have published definitions of materiality for financial and non-financial disclosures. In the financial space, these definitions are well-established and closely follow the definition provided by the U.S. Supreme Court, focusing on the information that the reasonable investor needs to make investment decisions. U.S. federal law applies this definition in requiring publicly listed companies to disclose 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.”<sup>12</sup>

Accounting standards bodies and the U.S. Securities and Exchange Commission (SEC) take an investor-centric approach to defining the materiality of corporate information, considering materiality in financial terms. Definitions of the materiality of non-financial information, including environmental, social, and governance data, vary considerably more. Several organizations involved in the standard-setting process for non-financial

information have also articulated definitions of the term. The organizations’ standards are provided in detail in the appendix.

The definitions advanced by the Climate Disclosure Standards Board (CDSB), the International Integrated Reporting Council (IIRC), and the Sustainability Accounting Standards Board (SASB) all attempt to conform, to varying degrees, with the financial reporting model. At the extreme, SASB’s definition, like that of the Public Company Accounting Oversight Board (PCAOB), adopts the SEC definition verbatim, focusing on information’s utility to investors. CDSB closely follows the definition adopted by the International Accounting Standards Board (IASB) as outlined in its “Principles of Disclosure.” IIRC also follows IASB’s work, thus reflecting an investor perspective. The Global Reporting Initiative’s (GRI) definition differs because it adopts a multi-stakeholder perspective. Corporate disclosures prepared according to the GRI framework therefore could include ESG data that are material per the GRI definition, even if those data provide information about an important environmental or social impact that lacks clear financial implications.

Overall, it is more difficult to determine which ESG information is material to investors than it is to determine which financial information is material to investors, which complicates the evaluation and integration of ESG information in investment decisions. However, effectively evaluating and integrating ESG data in investment decision-making can prove valuable, and critical if an investor intends for the incorporation of ESG information to yield better risk-adjusted returns.

---

12. TSC Industries, Inc. v. Northway, Inc., 426 U.S. 438 (1976).



### 3. Improving Financial Outcomes

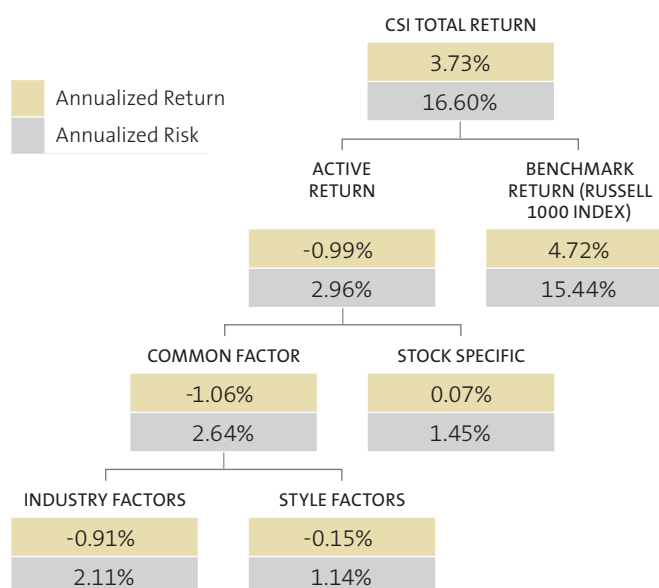
#### THE VALUE OF ESG INTEGRATION

New research by this paper’s lead author and colleagues at Harvard Business School offers an academic analysis that, when combined with Calvert’s expertise and research, draws attention to an important need for asset managers to separate the financially material from the financially immaterial when considering ESG factors.<sup>13</sup> This research and practice help to clarify earlier studies that have failed to identify differentiated performance of sustainable and responsible investment (SRI) portfolios and indices compared with mainstream portfolios and general indices.<sup>14</sup>

Investigating the performance of SRI indices presents the advantage of eliminating the effects of factors such as transaction costs, market timing, and portfolio management skills. However, a comparison of the performance of an SRI index with a broad investment index, while intuitively appealing, is not sufficient to determine if SRI performs differently than a method of investing that ignores ESG data. Differences in performance could be due to differences in industry exposure or firm size that have important impact on portfolio performance. For example, a recent Calvert report found that, compared with the Russell 1000 Index, the Calvert Social Index (CSI) had significant differences in sector and style exposures.<sup>15</sup> CSI over-weighted companies in the Information Technology and Financial sectors and underweighted companies in the Energy and Industrial sectors. Moreover, companies in CSI have been smaller, on average, and more growth-oriented than companies in comparable broader-based indices.

To address this issue, the Calvert study used the Barra portfolio optimization algorithm to construct a series of reweighted CSI portfolios on a monthly basis from June 30, 2000, to Decem-

FIGURE 4: CALVERT SOCIAL INDEX FACTOR-BASED PERFORMANCE ATTRIBUTION (JUNE 2000 TO DECEMBER 2014)



Source: “Perspectives on ESG Integration in Equity Investing,” Calvert Investments, 2015.

ber 31, 2014. The optimization process reweighted individual securities in the screened CSI universe in a way that maximized style and industry consistency with the selected benchmark index (Russell 1000 Index in this analysis), limiting the impact of common risk factors in investment performance analysis. With active factor exposures minimized, the investment returns identified in the analysis were more reflective of ESG-driven stock selection. The size-optimized CSI outperformed the Russell 1000 Index by 11 basis points on an annualized basis while exhibiting similar risk characteristics, but less downside risk (Figure 4).

An additional limitation of earlier studies that found no performance difference between SRI and conventional mutual funds is that they concentrate on a small number of funds that primarily practice negative screening, excluding firms with the worst ESG performance. Recent evidence also can explain this apparent failure to translate ESG data use into stock-picking ability. One study compared the returns of SRI mutual funds with the returns of conventional funds from 1981 to 1990 and found that, once risk was taken into account, there was no statistically significant difference between the returns of the

13. Khan, Mozaffar and Serafeim, George and Yoon, Aaron S., Corporate Sustainability: First Evidence on Materiality (November 9, 2016). *The Accounting Review*, Vol. 91, No. 6, pp. 1697-1724. <http://ssrn.com/abstract=2575912>.  
 14. Mark Fulton, Bruce M. Kahn, and Camilla Sharples, “Sustainable Investing: Establishing Long-Term Value and Performance,” Deutsche Bank, 2012, [https://institutional.deutscheawm.com/content/\\_media/Sustainable\\_Investing\\_2012.pdf](https://institutional.deutscheawm.com/content/_media/Sustainable_Investing_2012.pdf).  
 15. Natalie Trunow and Joshua Linder, “Perspectives on ESG Integration in Equity Investing,” Calvert Investments, 2015, <http://www.calvert.com/NRC/literature/documents/WP10010.pdf>.

Note: On June 19, 2015 the Calvert Social Index was renamed the Calvert U.S. Large Cap Core Responsible Index. Certain changes were also made to the index rule. For more information, please visit Calvert.com.

two groups.<sup>16</sup> A follow-up review of SRI mutual funds found that their performance was better than conventional funds of equal asset size, although the difference was not statistically significant.<sup>17</sup> After investigating the performance of SRI stock mutual funds matched to randomly selected conventional funds with similar levels of assets under management, another study found that the investment performance of SRI funds does not differ significantly from that of conventional funds.<sup>18</sup>

However, these studies did not take into account the differential materiality of ESG data across companies. A recent study by this paper’s lead author and colleagues at Harvard Business School used guidance on materiality of ESG data from the Sustainability Accounting Standards Board (SASB) to address this void.<sup>19</sup> Industry by industry, the authors hand-mapped SASB’s recommended non-financial reporting topics to data points that reflected company investments in material sustainability areas. For instance, managing environmental impact is a very important element of business strategy for firms in the fossil fuel and transportation industries. Environmental impact is less important for financial institutions and healthcare companies. In contrast, fair marketing and advertising of products are very important for companies in these sectors. Noting these differences in the materiality of ESG concerns across sectors, the authors constructed one index that ranked companies based on investments in material issues and a second index that ranked companies based on investments in immaterial issues. The materiality and immateriality indices were

constructed to be uncorrelated with firm profitability, valuation, size, investments in R&D or capital expenditures, institutional ownership and financial leverage, as well as sector membership. The authors then constructed portfolios of companies based on the materiality or the immateriality index, controlling for other systematic risk factors, including market, size, value, momentum, and liquidity.

Portfolio and index analysis showed very consistent results: firms making investments in material ESG issues outperformed peers in terms of future risk-adjusted stock price performance and profitability margin growth. In contrast, firms making investments in immaterial ESG issues demonstrated very similar performance to peers, suggesting that immaterial ESG investments are not, on average, value-relevant.

**Figure 5** shows future changes in profitability margins, measured as return-on-sales, for one to five years ahead. For two groups of firms that were otherwise similar, the portfolio of firms with strong performance on material ESG issues outperformed the portfolio of firms with poor performance. Specifically, while firms with good material ESG performance experienced increases in their profitability margins, firms with poor material ESG performance experienced declines. In fact, where portfolios included firms that were similar except for their performance on immaterial ESG issues, there was no statistically-significant difference in future changes in profitability margins.

This accounting outperformance was accompanied by stock market outperformance when the materiality of ESG issues was taken into account. **Figure 6** shows the evolution of \$1 invested in a portfolio of firms scoring in the top decile in terms of change in material ESG score, or ESG momentum, versus similar investment in a portfolio of firms scoring in the bottom decile. Portfolios were value-weighted to represent the opportunity set that investment managers face. A portfolio of firms with better performance on material ESG issues showed better future stock market performance.

16. Sally Hamilton, Hoje Jo, and Meir Statman, “Doing Well While Doing Good? The Investment Performance of Socially Responsible Mutual Funds,” *Financial Analysts Journal*, 1993, [www.scu.edu/business/finance/research/upload/doing-well-while-doing-good.pdf](http://www.scu.edu/business/finance/research/upload/doing-well-while-doing-good.pdf).  
 17. Meir Statman, “Socially Responsible Mutual Funds,” <http://www.scu.edu/business/finance/research/upload/sri-corrected.pdf>.  
 18. Zakri Y. Bello, “Socially Responsible Investing and Portfolio Diversification,” *Journal of Financial Research*, 2004, <http://ssrn.com/abstract=524962>.  
 19. Mozaffar Khan, George Serafeim, and Aaron Yoon, “Corporate Sustainability: First Evidence on Materiality,” *The Accounting Review*, forthcoming, <http://ssrn.com/abstract=2575912>.

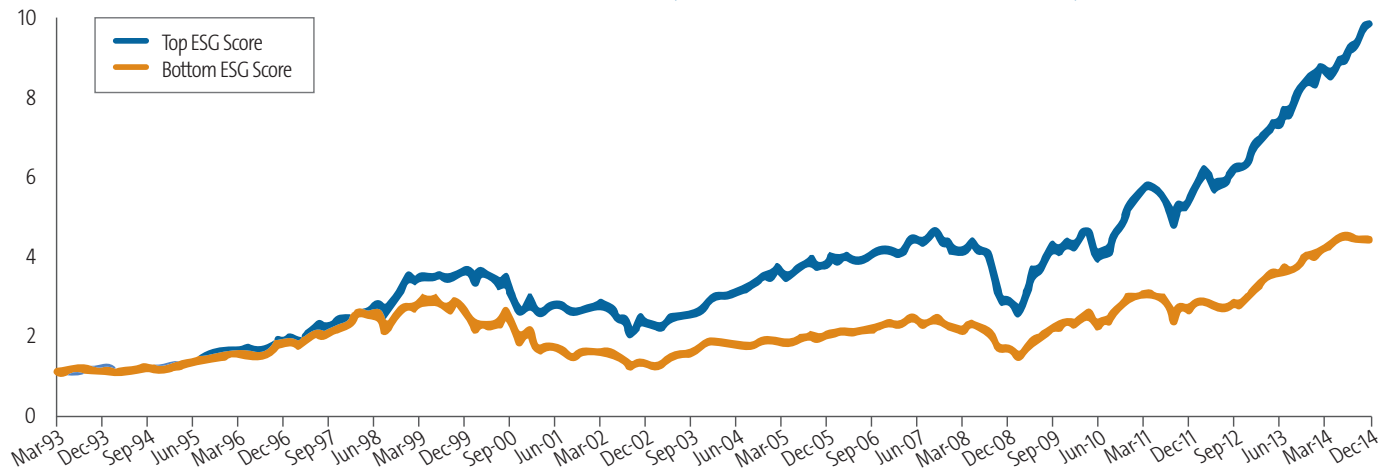
**FIGURE 5. MATERIAL ISSUES ESG MOMENTUM AND CHANGES IN PROFITABILITY MARGINS**

MATERIAL	T=0 TO T=1	T=0 TO T=2	T=0 TO T=3	T=0 TO T=4	T=0 TO T=5
LOW	0.71%	-0.97%	-2.51%	-4.69%	-5.61%
HIGH	0.99%	5.91%	4.74%	3.04%	3.59%
DIFFERENCE	0.28%	6.89%*	7.26%*	7.74%*	9.20%*
IMMATERIAL	t=0 to t=1	t=0 to t=2	t=0 to t=3	t=0 to t=4	t=0 to t=5
LOW	-0.69%	-0.70%	-0.27%	-3.23%	-8.23%
HIGH	-2.44%	-0.08%	-3.68%	-1.98%	-4.36%
DIFFERENCE	-1.75%	0.63%	-3.41%	1.25%	3.88%

Source: Khan, Mozaffar and Serafeim, George and Yoon, Aaron S., *Corporate Sustainability: First Evidence on Materiality* (November 9, 2016). *The Accounting Review*, Vol. 91, No. 6, pp. 1697-1724. <http://ssrn.com/abstract=2575912>

\* Is statistically significant difference at the 5% level.

**FIGURE 6. MATERIAL ISSUES ESG MOMENTUM AND STOCK PERFORMANCE (EVOLUTION OF \$1 INVESTED IN MARCH 1993)**



Source: Khan, Mozaffar and Serafeim, George and Yoon, Aaron S., Corporate Sustainability: First Evidence on Materiality (November 9, 2016). *The Accounting Review*, Vol. 91, No. 6, pp. 1697-1724. <http://ssrn.com/abstract=2575912>

### INTEGRATING ESG DATA IN BUSINESS ANALYSIS FOR EQUITY INVESTMENT DECISIONS

As we described in our previous report, *The Role of the Corporation in Society: Implications for Investors*, material ESG issues impact a company’s financials in the following areas: (1) revenues, (2) costs, and (3) the cost of capital.<sup>20</sup> Therefore, analysts who incorporate financially material ESG data in their business analysis can gain an advantage because these data can be leading indicators of future financial performance. As reflected in the case examples below, integrated ESG analysis addresses aspects of business operations, such as supply chain management and product development, which are also familiar to equity analysts who take more traditional approaches.

Despite the clear relevance of these concepts as indicators of the strength of a business model or management quality, both key determinants of firm performance, most traditional analysis focuses strictly on financial information. Integrated ESG analysis considers both financial information and material non-financial factors in a fundamental review of a company.

Consideration of ESG issues can provide better insight into a company’s ability to capitalize on opportunities and operate in a lower risk environment than peers, which should drive superior returns over the long term. Further, effective ESG integration is nuanced and considers ESG factors that are material for a particular industry, recognizing that diverse business models and product and service offerings are associated with

20. George Serafeim, Emily Kaiser, Joshua Linder, Ivan Naranjo, Kim Nguyen-Taylor, and John Streur, *The Role of the Corporation in Society: Implications for Investors*, Calvert Investments, September 2015. <http://www.calvert.com/perspective/research/calvert-serafeim-series-report>.

differing material ESG impacts. Compared with traditional financial analysis, ESG integration offers a robust method of fundamental analysis that effectively navigates a challenging ESG information environment to evaluate companies comprehensively, taking into account a more complete set of the risks and opportunities that may affect performance.

#### ESG Integration as Risk Management: Equity Investment Context\*

Analysis of the hypothetical food manufacturer Company X (Figure 2, page 4) demonstrates how various ESG issues could impact a company’s financial valuation and ultimately influence an investor’s sell recommendation. Company X, produces frozen foods under several leading brand names. Analysis of material ESG issues raised concerns about management’s ability to offset secular headwinds, particularly in the frozen entrees category, and capitalize on consumer trends related to healthy living and sustainability. The food manufacturing industry is notable in that the most significant sales growth has been driven by consumers’ increasing concerns over both environmental and social issues, such as the obesity epidemic, genetically modified food, sugar consumption, and healthy eating habits. A frozen food company’s ability to anticipate, innovate, and deliver to meet consumer demands in these areas should translate into higher sales growth in a mature, low-growth market and enhance brand value.

Within the food manufacturing industry, a few of the most material ESG issues that impact Company X’s financials are labor issues, product safety, health and wellness, and supply chain concerns. Figure 2 on page 4 shows how the valuation framework that we developed in *The Role of the Corporation* applies in the context of Company X.

\*Note: While the companies in these case examples are unnamed, the discussions reflect actual analysis of existing companies that was conducted by Calvert.

A few significant ESG factors could drive an investment recommendation to sell the holding. First, Company X's management failed to take advantage of favorable health and wellness growth trends it should have been well positioned for, given the strength and reach of its natural foods brand. At a time when sales of organic and natural foods significantly outpaced other food categories, this natural foods brand delivered lackluster growth and lost market share. Upon acquiring the brand, Company X immediately tried to integrate the niche brand into its existing operations and, in doing so, lost touch with its target consumer. Furthermore, management's missteps with the brand attracted negative attention and publicity from prominent NGOs over its use of products containing genetically modified organisms (GMOs) in the brand's frozen entrees. While the consumer backlash ultimately led Company X to change its labelling practices, the negative publicity and consumer backlash hurt consumer trust in the brand.

Company X has also faced significant brand damage when a high profile television journalist exposed indications of forced labor practices in its seafood supply chain. One of Company X's tier two suppliers relies on a workforce of migrant laborers. Several workers went on record to allege that armed security personnel contracted by the supplier routinely intimidated them during production hours, to the extent of committing violence against them if they failed to meet productivity targets. The journalist documented the use of old, malfunctioning processing equipment, which workers operated without wearing protective gloves and eyewear, resulting in frequent injuries. The news spread rapidly through social media and led to consumer boycotts.

Consumer-facing industries are particularly vulnerable to negative publicity in mainstream press which can tarnish brand value. Company X's management of these ESG issues may influence an investor to reduce revenue growth projections, noting anticipated continued market share losses in key product categories, particularly the frozen entrees segment, which already faced secular headwinds as consumers began opting for refrigerated entrees and fresh foods.

The forced labor controversy also illustrates weakness in Company X's approach to managing its vast network of suppliers and ensuring decent working conditions for the thousands of people it employs. While Company X embedded human rights and workplace safety provisions in its supplier code of conduct, the code applied only to Company X's first-tier suppliers, and it did not conduct audits to evaluate code compliance beyond its first-tier suppliers.

Company X also struggled with food safety challenges at the hands of suppliers. Two years before the release of the damaging investigative report, Company X began to work with several new suppliers in an effort to improve margins as part of a broader, five-year restructuring plan. It aimed to reinvest cost savings from the United States and developed markets, where frozen food sales are struggling, in higher growth regions, largely in emerging markets. In an effort to grow foreign sales, Company X established a direct sourcing relationship with a foreign frozen food processing and packaging company. This company manufactured and packaged ice cream and frozen dairy desserts for Company X's frozen dessert product line, targeted primarily to young consumers. While Company X closely engages the suppliers that it identifies as high risk, it did not identify this supplier as such and thus did not provide quality assurance training to its employees or conduct audits of its facilities. The U.S. Food and Drug Administration recalled several frozen dessert products manufactured by the supplier after the products were linked with cases of serious food poisoning. In addition, authorities identified excessive bacteria levels in the supplier's facilities and ordered the temporary closure of two factories for sanitary reasons. The factory closures slowed production and distribution of Company X's frozen dessert line, as Company X scrambled to engage an alternative manufacturer and address public concerns about food safety.

Company X's management decisions related to its supply chains prevented the company from identifying and mitigating real risks to its indirect workforce, its customers, and to its brand. They also prevented Company X from maximizing efficiency and productivity, when doing so was critical to a company-wide restructuring plan, while exposing the company to increased costs related to lost sales and regulatory fines. As a result, Company X has failed to meet targets for cost savings and investment levels outlined in its restructuring plan. Failure to meet these goals may, in turn, increase the possibility of missed consensus earnings estimates, continued stagnant sales growth, and margin erosion. Since the future growth of the company relies on management's ability to cut costs in slow-growth markets and redeploy investment in higher growth markets, these developments could cause investors to revise earnings projection estimates and make a sell recommendation, especially if competitors succeed in managing supply chain risks while implementing similar cost savings initiatives.

### **ESG Integration as Risk Management: Fixed Income Investment Context\***

In credit analysis for fixed income investments, material ESG data can provide unique insights into the quality of a company's business model and the quality of management that financial data alone cannot provide. The mining industry offers one

\*Note: While the companies in these case examples are unnamed, the discussions reflect actual analysis of existing companies that was conducted by Calvert.

example of an industry where ESG data can be useful for fixed income analysis due to the high environmental and social impacts associated with business operations.<sup>21</sup> Most types of mining involve waste rock and waste water that may contain toxins. If companies release these toxins into the environment, they risk contaminating ecosystems and water sources and may face regulatory and legal costs. Other frequent concerns include labor issues, indigenous people’s rights issues, and opposition from neighboring communities. A problem in any of these ESG areas can stop the operations of a mine almost instantaneously, creating the need for firms in this industry to create diversified portfolios able to withstand a months-long stoppage at any one mine, thus protecting investment grade ratings.

Fixed income analysis of a mining company would examine the estimated life of a company’s operating mines and the company’s ability to open new mines, replacing the revenues of depleted and closed mines. A mining company that has only one operating mine is typically given a high yield rating. Rating agencies are unlikely to give credit for projects that are years from production. Prospective bondholders may be much more willing to take these future projects into account in their analysis. If a company has viable new projects that could generate revenues in the future, it can alleviate the perceived risk associated with its lack of diversification. Most importantly, the additional projects provide a cushion against future negative events.

Consider the hypothetical mining company; Company Y (Figure 7).

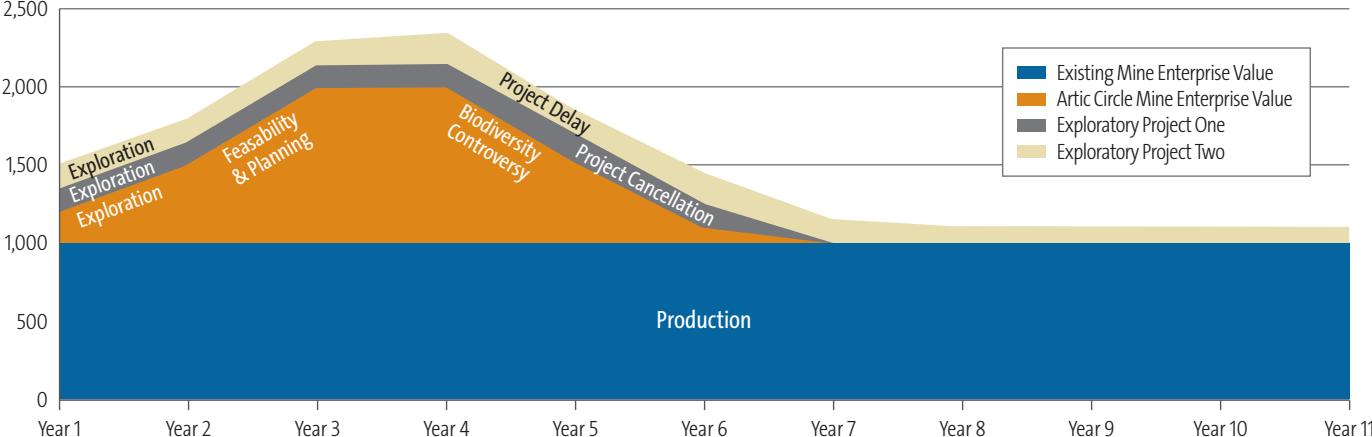
21. For Calvert’s view on how ESG considerations factor into fixed income assessment of the airlines, see Kim Nguyen-Taylor and Mauricio Agudelo, “How Environmental Factors Affect Airlines’ Cost Structures,” Advisor Perspectives, July 16, 2015.

Company Y has an existing silver and gold mine that has an estimated remaining life of ten years and an estimated net asset value of \$1 billion. The company prospected an undeveloped project near the Arctic Circle that has a large amount of high grade ore. Company Y spent \$100 million developing the mine and commentary from the investment community indicated that ultimate development seems fairly certain, though new mines are frequently subject to cost overruns and delays. The company also has two other prospective properties on which exploration is still being done to define the grade and amount of ore.

The ratings agencies rate Company Y’s bond issue as a low single B credit based solely on the existing mine. However, bond investors comparing Company Y to its single B peers noted that the prospective mine provides the company with an opportunity for a rating upgrade. An upgrade would be expected when the mine is brought successfully into production. Alternatively, Company Y may be purchased by a higher rated peer primarily for its attractive project. Should Company Y need cash to develop the prospective mine, investors realize that the company has options to raise money through a joint venture for the mine, or by selling partial ownership in its existing mine. Because of these options, Company Y seems considerably less risky than its peers and its bonds trade at a lower yield than the peer group.

The bonds’ value proposition decreased drastically, however, due to Company Y’s failure to identify and mitigate a material ESG risk. Regulatory authorities revoked Company Y’s license to develop the mine after determining that it posed unacceptable risks to fauna over a wide area. The local Departments of Fish and Game and Natural Resources, which are responsible for protecting endangered wildlife, found that continued development of the mine would encroach upon the nesting ground of an endangered bird species. Lacking both a policy on environmental disturbance

FIGURE 7. ENTERPRISE VALUE OF COMPANY Y



and an ecosystem protection program, Company Y failed to conduct advanced analysis to identify the mine's potential impact upon the vulnerable bird population.

Following the revocation of Company Y's license, the net asset value of the prospective mine fell to near zero in the eyes of investors. Prospective buyers of the bonds immediately demanded higher yields on the bonds, which therefore fell significantly in price. While the ratings of Company Y do not capture this risk dynamic, a widely-used tool based on the work of Robert C. Merton does capture this effect. Based on Merton's work, analysts look at the equity value of a company as a call option on the enterprise value of the company. Equivalently, the value of a risky bond is equal to the value of a risk-free bond minus the value of a put option that is a function of the enterprise value of the company with a strike price equal to the face value of debt; as the company's ability to repay bondholders deteriorates the value of the put option increases.<sup>22</sup> In the Company Y example, the ESG risks associated with the prospective mine project greatly impaired the enterprise value of the company, compared to the value earlier. The default risk of the company has clearly increased, which in turn increases the value of the put option, even though the credit ratings have barely moved. Company Y provides a cautionary tale for investors who rely only on traditional credit tools and ignore ESG risks.

### **ESG Integration as Revenue Opportunity: Equity Investment Context\***

While Company X and Company Y represent case studies of ESG integration as a means for risk management, the evaluation of Company Z's material ESG activities reflects the revenue opportunity that can be uncovered when there is a deeper understanding of ESG trends. Company Z is a global, diversified manufacturer of products and systems that help customers manage electrical and mechanical power. Key to the customer value proposition is the ability of these products to maximize energy efficiency and minimize emissions. Sustainable solutions drive the growth opportunity for more than one third of Company Z's revenues. With regulations and companies around the globe increasingly focused on improving energy efficiency, Company Z stands out in its product positioning and growth opportunity across product segments. The explosion of demand growth for efficient LED lighting products, lighting control systems, and software programs that allow customers to manage energy consumption presents a significant growth opportunity for the company. Tighter regulation around improved fuel economy and emissions regulations also drive more demand for Company Z's products from its vehicle segment, including its hybrid

power system technologies, which improve the fuel efficiency of cars, trucks, and commercial vehicles. In the United States, Company Z is developing hybrid trucks for several corporations in the transportation, retail, and beverage industries that rely on complex logistics networks and large fleets. Company Z has also expanded its water solutions business line, which features water treatment and water use efficiency technologies targeted toward energy producers. Depending on scale, these technologies can enable customers to reduce reliance on local water sources by more than 1 million gallons per day and also save customer expenses related to the purchase of potable water. Company Z's strong management has positioned it to benefit from these sustainability trends and take market share over the long term.

### **FACTORING DURATION INTO ASSESSMENTS OF ESG RISK AND OPPORTUNITY**

---

Rigorous integration of material ESG data in fixed income analysis can also provide opportunities for investment decisions that benefit from taking into account the varying maturity of financial instruments offered by issuers that belong to the same industry. Considering ESG risk in the context of duration may present the opportunity for investors to generate alpha while mitigating risk, particularly when an ESG-related controversy is involved. For instance, environmental litigation risk in an energy company could have minor or very severe implications, ranging from a contained, minimally toxic spill with no subsequent regulatory action, to a spill that results in significant clean-up costs, biodiversity harm, and large penalties or settlements. Depending on the investor's assessment of the severity of the ESG risk and the shape of the credit curve, i.e., its flatness or steepness, the ESG-related headline could present an attractive buying opportunity in a short-dated bond, where there is a more significant event, or in long-dated exposure to the credit, in the case of a minor event.

The hypothetical W Corporation, for example, maintains a global portfolio of power generation assets. Two of its subsidiaries in particular issue secured first mortgage bonds that are backed by company assets. The subsidiaries also face business and regulatory uncertainty primarily due to the coal generation plants that make up a substantial part of their assets. The bonds of these two local utilities have different credit ratings that are, in part, a reflection of the relative severity of the problems that affect each company. When using an ESG lens to evaluate prospective bond purchases from utility companies, investors may consider the industry's broader movement toward renewable energy generation and the time horizon of that change. Therefore, they would likely be willing to purchase Baa2/BBB- first mortgage bonds that mature on December 31, 2016, but, at the same time, be unwilling to consider for purchase A2/BBB+ first mortgage bonds that mature on June 30, 2045.

---

22. Robert C. Merton, "On the Pricing of Corporate Debt: The Risk Structure of Interest Rates", *The Journal of Finance* 29, no. 2, 449-470, May 1974.

\*Note: While the companies in these case examples are unnamed, the discussions reflect actual analysis of existing companies that was conducted by Calvert.

## 4. Improving Environmental and Social Outcomes

### THE VALUE OF ESG INTEGRATION

---

In addition to yielding financial returns for investors, integration of ESG data in investment decisions can also drive environmental and social outcomes, particularly through the direct effect on a firm's cost of capital. To the extent that investors price a firm's securities with better ESG performance, requiring a lower cost of capital, this would enable firms with strong ESG performance to expand and force firms with weak ESG performance to contract. The effect occurs because firms with strong ESG performance are able to accept new business development projects with a lower hurdle rate compared to firms with weak ESG performance. As this effect repeats, the marketplace should see a steady increase in sound ESG management and outcomes reflected in factories with better working conditions, products with more positive environmental impact, and services promoted through accurate and fair advertising.

Studies document that some of this cost of capital adjustment is already happening. Research finds that firms with better ESG performance enjoy better access to finance, as shown in indices of capital constraints.<sup>23</sup> In an analysis of 267 U.S. firms, one study found that stocks of companies with improved environmental risk management experience less volatility in performance, and that the market frequently rewards this behavior with lower cost of equity capital.<sup>24</sup> However, we have yet to understand whether this cost of capital adjustment effect is significant enough to translate into fewer negative externalities.

We also identify an indirect relationship between firm ESG performance and social and environmental outcomes, which

is driven by stigma. Investors that shy away from firms with poor ESG performance might reinforce negative sentiment concerning the company, thus limiting its ability to attract both employees and customers. The rationale underlying this theory is that individuals will not want to be associated with companies that have poor ESG performance, fearing that they will be stigmatized themselves. Research suggests that the effect of stigma is very real. In a study of four computer firms that had filed for bankruptcy, managers from the bankrupt firms found that suppliers, customers, personal friends, and other business contacts were likely to disengage with the relationship partly or fully.<sup>25</sup> Another study evaluated the impact of a company scandal on employees' future earnings, using a sample of more than 2,000 executives.<sup>26</sup> The study found that individuals who had worked at a firm that had been implicated in a financial scandal received lower compensation after finding employment with another firm, even if the individuals themselves had not been implicated in the scandal.<sup>27</sup> Future employers were less likely to hire these stigmatized individuals, forcing them to accept lower compensation. Such effects are already materializing in the fossil fuel industry, which has faced significant stigma in the form of divestment by university endowments and divestment campaigns led by students and alumni.<sup>28</sup> As the negative sentiment concerning fossil fuel companies intensifies, these companies likely will face increasing difficulty attracting young engineers and other talent. As a result, companies might be forced to pay higher compensation to attract talent, thus decreasing their profitability margins and internal cash flow directed toward business expansion.

- 
23. Beiting Cheng, Ioannis Ioannou, and George Serafeim, "Corporate Social Responsibility and Access to Finance," *Strategic Management Journal* 35, no. 1, 1–23, January 2014.
  24. Mark P. Sharfman and Chitru S. Fernando, "Environmental Risk Management and the Cost of Capital," *Strategic Management Journal*, 29, 569–562, 2008.

- 
25. R. I. Sutton and A. L. Callahan, "The Stigma of Bankruptcy: Spoiled Organizational Image and Its Management," *Academy of Management Journal* 30 (3), 405–436, 1987.
  26. Boris Groysberg, Eric Lin, and George Serafeim, "Scandal and Stigma: Does Corporate Misconduct Affect the Future Compensation of Bystander Managers?" Harvard Business School Working Paper, 2015.
  27. *Ibid.*
  28. "Stranded Assets and the Fossil Fuel Divestment Campaign: What Does Divestment Mean for the Valuation of Fossil Fuel Assets?" Smith School of Enterprise and the Environment, 2013.

## Conclusion

Over the last decade, a growing number of investment managers have begun incorporating ESG data into investment decision-making. While ESG investing is becoming a more common approach among mainstream asset managers, many managers still struggle to understand how they can use the growing wealth of ESG information that companies are disclosing. Limited consistency and quality and varying investment relevance render ESG data difficult to integrate in investment decision-making. Opacity gives rise to opportunities for investors who analyze ESG data along with financial data to generate alpha. Thus, investors who are able to identify meaningful signals despite the challenges of working with ESG information can capitalize on insights that markets have not yet recognized.

This research outlines several ways that investment managers can integrate non-financial information in portfolio decisions. These case examples show the value of integrating ESG data in investment decisions across asset classes, economic sectors, and corporate operating environments. Critically, this value proposition only holds when financially material ESG factors are taken into account; integrating ESG considerations without regard to their financial materiality erases outperformance, according to our findings. As a key aspect of responsible investing, ESG investments that are financially material to a company can yield real benefits by enabling better risk-adjusted stock returns and incenting better management of environmental and social impacts that affect firm value. Better corporate management of these impacts enables better overall firm management, which consequently supports firm longevity as well as global sustainable development and socio-economic inclusion that are, and increasingly will be, necessary underpinnings of healthy capital markets.



# Appendix

## DEFINITIONS OF MATERIALITY—FINANCIAL INFORMATION

**Financial Accounting Standards Board (FASB).**<sup>29</sup> “Information is material if omitting it or misstating it could influence decisions that users make on the basis of the financial information of a specific reporting entity. In other words, materiality is an entity-specific aspect of relevance based on the nature or magnitude or both of the items to which the information relates in the context of an individual entity’s financial report. Consequently, the Board cannot specify a uniform quantitative threshold for materiality or predetermine what could be material in a particular situation.”<sup>30</sup>

**International Accounting Standards Board (IASB).**<sup>31</sup> Information is material if omitting it or misstating it could influence decisions that the primary users of general purpose financial reports...make on the basis of financial information about a specific reporting entity. In other words, materiality is an entity-specific aspect of relevance based on the nature or magnitude, or both, of the items to which the information relates in the context of an individual entity’s financial report. Consequently... IASB cannot specify a uniform quantitative threshold for materiality or predetermine what could be material in a particular situation.”<sup>32</sup>

**Public Company Accounting Oversight Board (PCAOB).**<sup>33</sup> “In interpreting the federal securities laws, the Supreme Court of the United States has held that a fact is material if there is ‘a substantial likelihood that the...fact would have been viewed by the reasonable investor as having significantly altered the ‘total mix’ of information made available.’” As the Supreme Court has noted, determinations of materiality require “delicate assessments of the inferences a ‘reasonable shareholder’ would draw from a given set of facts and the significance of those inferences to him...”<sup>34</sup>

**Securities and Exchange Commission (SEC).**<sup>35</sup> The SEC’s definition of materiality is rooted in financial reporting; however, the definition is not limited to financial reporting.

- “Materiality concerns the significance of an item to users of a registrant’s financial statements. A matter is ‘material’ if there is a substantial likelihood that a reasonable person would consider it important.”<sup>36</sup>
- “The Supreme Court of the United States has held that a fact is material if there is ‘a substantial likelihood that the...fact would have been viewed by the reasonable investor as having significantly altered the ‘total mix’ of information made available.”<sup>37</sup>
- “As the Supreme Court has noted, determinations of materiality require ‘delicate assessments of the inferences a ‘reasonable shareholder’ would draw from a given set of facts and the significance of those inferences to him...”<sup>38</sup>

29. The Financial Accounting Standards Board is the designated organization in the private sector for establishing U.S. standards of financial accounting that govern the preparation of financial reports by nongovernmental organizations. Those standards are officially recognized as authoritative by the Securities and Exchange Commission. Read more about FASB at <http://www.fasb.org>.

30. Financial Accounting Standards Board, “Statement of Financial Accounting Concepts No. 8,” <http://www.fasb.org/cs/BlobServer?blobcol=urldata&blobtable=MungoBlobs&blobkey=id&blobwhere=1175822892635&blobheader=application%2Fpdf>.

31. The International Accounting Standards Board is the independent standard-setting body of the IFRS Foundation (an independent, not-for-profit private sector organization working in the public interest). Its members (currently 15 full-time members) are responsible for the development and publication of International Financial Reporting Standards. Read more about the International Accounting Standards Board and the International Financial Reporting Standards at <http://www.ifrs.org/The-organisation/Pages/IFRS-Foundation-and-the-IASB.aspx>.

32. International Accounting Standards Board and International Financial Reporting Standards Foundation, “Exposure Draft Conceptual Framework for Financial Reporting,” [http://www.ifrs.org/Current-Projects/IASB-Projects/Conceptual-Framework/Documents/May%202015/ED\\_CF\\_MAY%202015.pdf](http://www.ifrs.org/Current-Projects/IASB-Projects/Conceptual-Framework/Documents/May%202015/ED_CF_MAY%202015.pdf); Deloitte IAS Plus, “Conceptual Framework for Financial Reporting 2010 (the IFRS Framework) approved by the IASB,” <http://www.iasplus.com/en/standards/standard4>.

33. The Public Company Accounting Oversight Board is a nonprofit corporation established by the U.S. Congress to oversee the audits of public companies in order to protect investors and the public interest by promoting informative, accurate, and independent audit reports. Read more about the Public Company Accounting Oversight Board at <http://pcaobus.org/About/Pages/default.aspx>.

34. Public Company Accounting Oversight Board, “Auditing Standard No. 11: Consideration of Materiality in Planning and Performing an Audit,” 2010, [http://pcaobus.org/Standards/Auditing/pages/auditing\\_standard\\_11.aspx](http://pcaobus.org/Standards/Auditing/pages/auditing_standard_11.aspx).

35. The mission of the U.S. Securities and Exchange Commission is to protect investors, maintain fair, orderly, and efficient markets, and facilitate capital formation. Read more about the U.S. Securities and Exchange Commission at <http://www.sec.gov/about/whatwedo.shtml>.

36. Securities and Exchange Commission, “SEC Staff Accounting Bulletin: No. 99 – Materiality,” <http://www.sec.gov/interps/account/sab99.htm>.

37. Ibid.

38. Ibid.

## DEFINITIONS OF MATERIALITY— NON-FINANCIAL INFORMATION

**Climate Disclosure Standards Board (CDSB).**<sup>39</sup> “In financial re-  
porting, information is material if its omission, misstatement  
or misinterpretation could influence the decisions that  
users make on the basis of an entity’s financial information.  
Because materiality depends on the nature and amount of the  
item judged in the particular circumstances of its omission  
or misstatement, it is not possible to specify a uniform  
quantitative threshold at which a particular type of information  
becomes material. When considering whether financial  
information is a faithful representation of what it purports  
to represent, it is important to take into account materiality  
because such omissions, misstatements or misinterpretations  
will result in information that is incomplete, biased or not free  
from error.”<sup>40</sup>

**Global Reporting Initiative (GRI).**<sup>41</sup> “The [information in a  
GRI-compliant] report should cover Aspects<sup>42</sup> that: Reflect  
the organization’s significant economic, environmental, and  
social impacts; or substantively influence the assessments  
and decisions of stakeholders. Organizations are faced with  
a wide range of topics on which they could report. Relevant  
topics are those that may reasonably be considered important  
for reflecting the organization’s economic, environmental and  
social impacts, or influencing the decisions of stakeholders, and,  
therefore, potentially merit inclusion in the report. Materiality is  
the threshold at which Aspects become sufficiently important  
that they should be reported.”<sup>43</sup>

**International Integrated Reporting Council (IIRC).**<sup>44</sup> “An  
integrated report should disclose information about matters that  
substantively affect the organization’s ability to create value over  
the short, medium and long term...The materiality determination  
process for the purpose of preparing and presenting an  
integrated report involves: Identifying relevant matters based on  
their ability to affect value creation...; evaluating the importance  
of relevant matters in terms of their known or potential effect on  
value creation...; prioritizing the matters based on their relative  
importance...; [and] determining the information to disclose  
about material matters...This process applies to both positive  
and negative matters, including risks and opportunities and  
favourable and unfavourable performance or prospects. It also  
applies to both financial and other information. Such matters  
may have direct implications for the organization itself or may  
affect the capitals<sup>45</sup> owned by or available to others. To be most  
effective, the materiality determination process is integrated into  
the organization’s management processes and includes regular  
engagement with providers of financial capital and others.”<sup>46</sup>

**Sustainability Accounting Standards Board (SASB).**<sup>47</sup> “Federal  
securities law seeks to protect individual investors by requiring  
publicly listed companies to disclose annual and other periodic  
performance information that would be necessary for a  
reasonable investor to make informed investment decisions. U.S.  
Federal law requires publicly listed companies to disclose material  
information, defined by the U.S. Supreme Court as information  
presenting ‘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.’ (TSC Industries, Inc. v. Northway, Inc., 426 U.S.  
438 (1976))...SASB uses the U.S. Supreme Court definition of  
materiality in its development process.”<sup>48</sup> SASB uses the Securities  
and Exchange Commission definition of materiality as interpreted  
by the U.S. Supreme Court.<sup>49</sup>

39. The Climate Disclosure Standards Board is a consortium of business and environmental organizations jointly advancing its international reporting framework for companies, helping them disclose information about their climate change-related risks and opportunities, carbon footprints, carbon reduction strategies, and their implications for shareholder value. Read more about the Climate Disclosure Standards Board at <http://www.cdsb.net/about-cdsb>.

40. Climate Disclosure Standards Board, “Climate Change Reporting Framework –Edition 1.1,” 2012, [http://www.cdsb.net/sites/cdsbnet/files/cdsbframework\\_v1-1.pdf](http://www.cdsb.net/sites/cdsbnet/files/cdsbframework_v1-1.pdf).

41. The Global Reporting Initiative is a non-profit organization that promotes economic, environmental and social sustainability. GRI provides all companies and organizations with a comprehensive sustainability reporting framework that is widely used around the world. Read more about the GRI at <https://www.globalreporting.org/information/about-gri/Pages/default.aspx>.

42. The term “Aspect” is used in the GRI G4 Guidelines (Guidelines) to refer to the list of subjects for disclosure that are covered by the Guidelines. Aspects are set out into three Categories –Economic, Environmental and Social. The Social Category is further divided into four sub-Categories, which are Labor Practices and Decent Work, Human Rights, Society and Product Responsibility. See <https://www.globalreporting.org/resource/library/GRIG4-Part1-Reporting-Principles-and-Standard-Disclosures.pdf>.

43. Global Reporting Initiative, “G4 Sustainability Reporting Guidelines, Reporting Principles and Standard Disclosures,” <https://www.globalreporting.org/resource/library/GRIG4-Part1-Reporting-Principles-and-Standard-Disclosures.pdf>.

44. The International Integrated Reporting Council is a global coalition of regulators, investors, companies, standard setters, the accounting profession and NGOs. Together, this coalition shares the view that communication about businesses’ value creation should be the next step in the evolution of corporate reporting. The IIRC is leading the development of a global framework for Integrated Reporting. Read more about the IIRC at <http://www.theiirc.org>.

45. The six “Capitals” are: Financial, Manufactured, Intellectual, Human, Social and Relationship and Natural. See International Integrated Reporting Council, “Draft International <IR> Framework,” <http://www.theiirc.org/wp-content/uploads/Consultation-Draft/Consultation-Draft-of-the-InternationalIRFramework.pdf>.

46. International Integrated Reporting Council, “International Integrated Reporting Council, The International <IR> Framework,” 2013, <http://integratedreporting.org/wp-content/uploads/2015/03/13-12-08-THE-INTERNATIONAL-IR-FRAMEWORK2-1.pdf>.

47. The Sustainability Accounting Standards Board is a U.S. 501(c)3 non-profit engaged in the creation and dissemination of sustainability accounting standards for use by publicly-listed corporations in disclosing material sustainability issues for the benefit of investors and the public. Read more about the Sustainability Accounting Standards Board at <http://www.sasb.org/sasb/vision-mission/>.

48. Sustainability Accounting Standards Board, “Materiality: Why Is It Important?” <http://www.sasb.org/materiality/important/>.

49. TSC Industries v. Northway, Inc., 426 U.S. 438, 449 (1976). See also Basic, Inc. v. Levinson, 485 U.S. 224 (1988).



**GEORGE SERAFEIM**

*Jakurski Family Associate Professor of Business Administration, Harvard Business School*

George Serafeim is the Jakurski Family Associate Professor of Business Administration at Harvard Business School. He has taught courses in the MBA and doctoral programs, chaired Executive Education programs, written more than 100 articles and business cases, and presented his research in more than 100 conferences and seminars in 20 countries around the world. He is one of the most popular business authors, according to rankings of the Social Science Research Network.

Professor Serafeim's work focuses on accounting, finance, and strategic management. He has published numerous articles in prestigious academic and practitioner journals including the Strategic Management Journal, Journal of International Business Studies, Review of Accounting Studies, Journal of Finance, Journal of Accounting Research, Management Science, The Accounting Review, Financial

Analysts Journal, MIT Sloan Management Review, Journal of Applied Corporate Finance, and Harvard Business Review. His work often appears in media outlets including BBC, The New York Times, Bloomberg, Financial Times, The Wall Street Journal, Economist, The Guardian, Al Jazeera, and NPR.

He has served on the Technical Review Committee of the Global Initiative for Sustainability Ratings that is designing a generally accepted standard for sustainability ratings and on the Standards Council of the Sustainability Accounting Standards Board that is engaged in the development and dissemination of industry-specific sustainability accounting standards. He is a member of the board of directors of the High Meadows Institute. Moreover, he has been an advisor to organizations around the world and is a co-founder of KKS Advisors.

## About Calvert Research and Management

Calvert Research and Management is a leader in Responsible Investing. The company traces its roots to Calvert Investments, which was founded in 1976 and launched the Calvert Balanced Portfolio in 1982 as the first mutual fund to oppose investing in companies that support apartheid in South Africa. Today, the Calvert Funds are one of the largest and most diversified families of responsibly invested mutual funds, encompassing actively and passively managed U.S. and international equity strategies, fixed-income strategies and asset allocation funds managed in accordance with the Calvert Principles for Responsible Investment. Calvert Research and Management is a wholly owned subsidiary of Eaton Vance.

### IMPORTANT INFORMATION

#### Risk Considerations

Investing involves risk including the risk of loss. There is no guarantee that any investment strategy, including those with an ESG focus, will work under all market conditions. Investors should evaluate their ability to invest for the long-term, especially during periods of downturn in the market. Past performance is no guarantee of future results.

The views and opinions and/or analysis expressed are those of the author or the investment team as of the date of preparation of this material and are subject to change at any time without notice due to market or economic conditions and may not necessarily come to pass. Furthermore, the views will not be updated or otherwise revised to reflect information that subsequently becomes available or circumstances existing, or changes occurring, after the date of publication. The views expressed do not reflect the opinions of all investment personnel at Morgan Stanley Investment Management

(MSIM) and its subsidiaries and affiliates (collectively "the Firm"), and may not be reflected in all the strategies and products that the Firm offers.

This material has been prepared on the basis of publicly available information, internally developed data and other third-party sources believed to be reliable.

However, no assurances are provided regarding the reliability of such information and the Firm has not sought to independently verify information taken from public and third-party sources.

This material is a general communication, which is not impartial and all information provided has been prepared solely for informational and educational purposes and does not constitute an offer or a recommendation to buy or sell any particular security or to adopt any specific investment strategy. The information herein has not been based on a consideration of any individual investor circumstances and is not investment advice, nor should it be construed in any way as tax, accounting, legal or regulatory advice. To that end, investors should seek independent legal and financial advice, including advice as to tax consequences, before making any investment decision.

The Firm does not provide tax advice. The tax information contained herein is general and is not exhaustive by nature. It was not intended or written to be used, and it cannot be used by any taxpayer, for the purpose of avoiding penalties that may be imposed on the taxpayer. Each Jurisdiction tax laws are complex and constantly changing. You should always consult your own legal or tax professional for information concerning your individual situation.



Charts and graphs provided herein are for illustrative purposes only. Past performance is no guarantee of future results.

This material is not a product of Morgan Stanley's Research Department and should not be regarded as a research material or a recommendation.

The Firm has not authorised financial intermediaries to use and to distribute this material, unless such use and distribution is made in accordance with applicable law and regulation. Additionally, financial intermediaries are required to satisfy themselves that the information in this material is appropriate for any person to whom they provide this material in view of that person's circumstances and purpose. The Firm shall not be liable for, and accepts no liability for, the use or misuse of this material by any such financial intermediary.

This material may be translated into other languages. Where such a translation is made this English version remains definitive. If there are any discrepancies between the English version and any version of this material in another language, the English version shall prevail.

The whole or any part of this material may not be directly or indirectly reproduced, copied, modified, used to create a derivative work, performed, displayed, published, posted, licensed, framed, distributed or transmitted or any of its contents disclosed to third parties without the Firm's express written consent. This material may not be linked to unless such hyperlink is for personal and non-commercial use. All information contained herein is proprietary and is protected under copyright and other applicable law.

Calvert is part of Morgan Stanley Investment Management. Morgan Stanley Investment Management is the asset management division of Morgan Stanley.

This material is only intended for and will only be distributed to persons resident in jurisdictions where such distribution or availability would not be contrary to local laws or regulations. MSIM, the asset management division of Morgan Stanley (NYSE: MS), and its affiliates have arrangements in place to market each other's products and services. Each MSIM affiliate is regulated as appropriate in the jurisdiction it operates. MSIM's affiliates are: Eaton Vance Management (International) Limited, Eaton Vance Advisers International Ltd, Calvert Research and Management, Eaton Vance Management, Parametric Portfolio Associates LLC, and Atlanta Capital Management LLC.

#### DISTRIBUTION

This material has been issued by any one or more of the following entities:

##### EMEA

This material is for Professional Clients/Accredited Investors only.

In the EU, MSIM and Eaton Vance materials are issued by MSIM Fund Management (Ireland) Limited ("FMIL"). FMIL is regulated by the Central Bank of Ireland and is incorporated in Ireland as a private company limited by shares with company registration number 616661 and has its registered address at The Observatory, 7-11 Sir John Rogerson square, Dublin 2, D02 VC42, Ireland.

Outside the EU, MSIM materials are issued by Morgan Stanley Investment Management Limited (MSIM Ltd) is authorised and regulated by the Financial Conduct Authority. Registered in England. Registered No. 1981121. Registered Office: 25 Cabot Square, Canary Wharf, London E14 4 AB.

In Switzerland, MSIM materials are issued by Morgan Stanley Co. International plc, London (Zurich Branch) Authorised and regulated by the Eidgenössische Finanzmarktaufsicht (FINMA). Registered Office: Beethovenstrasse 33, 8002 Zurich, Switzerland.

Outside the US and EU, Eaton Vance materials are issued by Eaton Vance Management (International) Limited ("EVM") 125 Old Broad Street, London, EC2N 1AR, UK, which is authorised and regulated in the United Kingdom by the Financial Conduct Authority.

Italy: MSIM FMIL (Milan Branch), (Sede Secondaria di Milano) Palazzo Serbelloni Corso Venezia, 16 20121 Milano, Italy. The Netherlands: MSIM FMIL (Amsterdam Branch), Rembrandt Tower, 11th Floor Amstelplein 1 1096HA, Netherlands. France: MSIM FMIL (Paris Branch), 61 rue de Monceau 75008 Paris, France. Spain: MSIM FMIL (Madrid Branch), Calle Serrano 55, 28006, Madrid, Spain. Germany: MSIM FMIL (Ireland) Limited Frankfurt Branch, Große Gallusstraße 18, 60312 Frankfurt am Main, Germany (Gattung: Zweigniederlassung (FDI) gem. § 53b KWG). Denmark: MSIM FMIL (Copenhagen Branch), Gorrissen Federspiel, Axel Towers, Axelstorv2, 1609 Copenhagen V, Denmark.

##### MIDDLE EAST

Dubai: MSIM Ltd (Representative Office, Unit Precinct 3-7th Floor-Unit 701 and 702, Level 7, Gate Precinct Building 3, Dubai International Financial Centre, Dubai, 506501, United Arab Emirates. Telephone: +97 (0)14 709 7158).

##### U.S.

NOT FDIC INSURED | OFFER NO BANK GUARANTEE | MAY LOSE VALUE | NOT INSURED BY ANY FEDERAL GOVERNMENT AGENCY | NOT A DEPOSIT

Calvert Research and Management is a subsidiary of Eaton Vance Corp. and an affiliate of Eaton Vance Distributors Inc., Member FINRA/SIPC. Two International Place Boston, MA 02110

Latin America (Brazil, Chile Colombia, Mexico, Peru, and Uruguay)

This material is for use with an institutional investor or a qualified investor only. All information contained herein is confidential and is for the exclusive use and review of the intended addressee, and may not be passed on to any third party. This material is provided for informational purposes only and does not constitute a public offering, solicitation or recommendation to buy or sell for any product, service, security and/or strategy. A decision to invest should only be made after reading the strategy documentation and conducting in-depth and independent due diligence.

ASIA PACIFIC

Hong Kong: This material is disseminated by Morgan Stanley Asia Limited for use in Hong Kong and shall only be made available to “professional investors” as defined under the Securities and Futures Ordinance of Hong Kong (Cap 571). The contents of this material have not been reviewed nor approved by any regulatory authority including the Securities and Futures Commission in Hong Kong. Accordingly, save where an exemption is available under the relevant law, this material shall not be issued, circulated, distributed, directed at, or made available to, the public in Hong Kong. Singapore: This material is disseminated by Morgan Stanley Investment Management Company and should not be considered to be the subject of an invitation for subscription or purchase, whether directly or indirectly, to the public or any member of the public in Singapore other than (i) to an institutional investor under section 304 of the Securities and Futures Act, Chapter 289 of Singapore (“SFA”); (ii) to a “relevant person” (which includes an accredited investor) pursuant to section 305 of the SFA, and such distribution is in accordance with the conditions specified in section 305 of the SFA; or (iii) otherwise pursuant to, and in accordance with the conditions of, any other applicable provision of the SFA. This publication has not been reviewed by the Monetary Authority of Singapore. Australia: This material is disseminated in Australia by Morgan Stanley Investment Management (Australia) Pty Limited ACN: 122040037, AFSL No. 314182, which accept responsibility for its contents. This publication, and any access to it, is intended only for “wholesale clients” within the meaning of the Australian Corporations Act. Calvert Research and Management, ARBN 635 157 434 is regulated by the U.S. Securities and Exchange Commission under U.S. laws which differ from Australian laws. Calvert Research and Management is exempt from the requirement to hold an Australian financial services licence in accordance with class order 03/1100 in respect of the provision of financial services to wholesale clients in Australia.

Japan

For professional investors, this material is circulated or distributed for informational purposes only. For those who are not professional investors, this material is provided in relation to Morgan Stanley Investment Management (Japan) Co., Ltd. (“MSIMJ”)’s business with respect to discretionary investment management agreements (“IMA”) and investment advisory agreements (“IAA”). This is not for the purpose of a recommendation or solicitation of transactions or offers any particular financial instruments. Under an IMA, with respect to management of assets of a client, the client prescribes basic management policies in advance and commissions MSIMJ to make all investment decisions based on an analysis of the value, etc. of the securities, and MSIMJ accepts such commission. The client shall delegate to MSIMJ the authorities necessary for making investment. MSIMJ exercises the delegated authorities based on investment decisions of MSIMJ, and the client shall not make individual instructions. All investment profits and losses belong to the clients; principal is not guaranteed. Please consider the investment objectives and nature of risks before investing. As an investment advisory fee for an IAA or an IMA, the amount of assets subject to the contract multiplied by a certain rate (the upper limit is 2.20% per annum (including tax)) shall be incurred in proportion to the contract period. For some strategies, a contingency fee may be incurred in addition to the fee mentioned above. Indirect charges also may be incurred, such as brokerage commissions for incorporated securities. Since these charges and expenses are different depending on a contract and other factors, MSIMJ cannot present the rates, upper limits, etc. in advance. All clients should read the Documents Provided Prior to the Conclusion of a Contract carefully before executing an agreement. This material is disseminated in Japan by MSIMJ, Registered No. 410 (Director of Kanto Local Finance Bureau (Financial Instruments Firms)), Membership: the Japan Securities Dealers Association, The Investment Trusts Association, Japan, the Japan Investment Advisers Association and the Type II Financial Instruments Firms Association.

© 2022 Morgan Stanley. All rights reserved.