



THE CALVERT-SERAFEIM SERIES

The Role of the Corporation in Society: Implications for Investors

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Calvert Investments has embarked on a partnership with George Serafeim, Jakurski Family Associate Professor of Business Administration at Harvard Business School, to conduct joint research that enhances knowledge concerning responsible investing and advances approaches to responsible business. We believe that exploration of pervasive topics affecting global investors and businesses will uncover insights that may enable more agile, appropriate strategies to address evolving climate concerns and socio-economic challenges. We aim to expand upon public and academic dialogue, but also to provide investors with actionable insights that they can apply to their own portfolios. We expect that this research will yield findings that will directly benefit Calvert’s investment decisions and the returns that we deliver to our investors.

Read more about Calvert’s approach to responsible investing at www.calvert.com.



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.

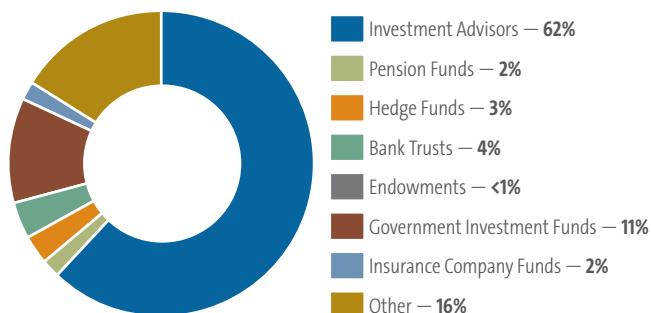
He has served on the Technical Review Committee of the Global Initiative for Sustainability Ratings that is designing a generally accepted standard for sustainability ratings and on the Standards Council of the Sustainability Accounting Standards Board that is engaged in the development and dissemination 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.

Executive Summary

In this report, the first of the Calvert-Serafeim Series, we explore the evolving role of the corporation in society, recognizing the large capital concentration represented by companies and their increasing engagement in environmental and social activities. Companies are investing heavily in efforts to manage their impacts on society and the environment. This report examines how these investments can translate to real benefits, both for businesses and investors.

The 500 largest companies in the world comprise approximately 50% of the world's stock market capitalization. This is an astonishing statistic considering that there are close to 50,000 unique publicly listed and actively traded companies around the world. Given this concentration in financial value, most institutional investors own a piece of the equity of these companies. Our estimates suggest that institutional investors (defined as institutional asset managers and asset owners) hold on average 84% of the outstanding shares of these firms with the rest being held by retail investors, management, and other corporations. Figure E1 shows holdings by investor type. As a result, institutional investors hold equity shares of these 500 firms worth approximately \$24 trillion.

FIGURE E1: EQUITY HOLDINGS IN THE WORLD'S LARGEST FIRMS, BY INVESTOR TYPE



Note: The figure presents the average percentage of outstanding shares held by different types of institutional investors at the end of 2014. We evaluated share ownership data from Bloomberg and considered 441 of the 500 corporations that showed the largest market capitalization as of December 31, 2014, and for which we were able to obtain data. Bloomberg's "Investment Advisors" category includes, but is not limited to ownership of shares by mutual funds, separate accounts, SMAs, CITs and VITs.

At the same time, these corporations are increasingly engaged in environmental and social issues ranging from climate change, biodiversity, civil rights, and conflict minerals, to labor conditions, diversity, corruption, and affordable access to products. They are vocal about social and environmental issues, they commit more and more resources to address these concerns, and they are increasingly transparent about their impact on society and the environment. This engagement influences a corporation's identity, which, in turn, is reflected in the identity of what we receive when we purchase shares of the company.

WHY ARE COMPANIES INVESTING RESOURCES TO ADDRESS ENVIRONMENTAL AND SOCIAL ISSUES?

Our analysis documents both moral and economic reasons for these investments. Global societies are facing increasing pressures due to environmental degradation and social inequality, among other factors. In many cases, corporations are seen as having contributed to the exacerbation of these problems. Indicators of corporations' vast global footprint illustrate their growing social and environmental impacts:

- As of 2012, more than 3.6 million corporations were registered globally.¹
- In the United States, 5.7 million businesses employ 115.9 million people with an annual payroll of \$5.4 trillion.²
- In 2013, the combined activities of agricultural and industrial companies accounted for approximately 88% of worldwide fresh water withdrawals.³

As a result of these impacts, the public has formed social expectations that have guided the corporate sector's increased involvement in contributing to social and environmental solutions. Notwithstanding the moral argument, the economic argument suggests that environmental and social-related investments could protect or enhance shareholder value. To the extent that this is the case, corporate managers are creating value for all stakeholders. In contrast, where trade-offs between "doing good" and "doing well" exist, managers face tough choices over how to optimize long-term financial value subject to constraints.

Recommendation: Corporate investments in environmental and social issues are likely to be part of the license to operate moving forward. As a result, both companies and investors need to develop their ability to assess the impact of those investments.

1. "World Bank Data Indicators," *The World Bank Group* (2014), <http://data.worldbank.org/indicator>.
2. Anthony Caruso, "Statistics of U.S. Businesses Employment and Payroll Summary: 2012," *U.S. Census Bureau* (2015), <http://www.census.gov/content/dam/Census/library/publications/2015/econ/g12-susb.pdf>.
3. "World Bank Data Indicators," *The World Bank Group* (2014), <http://data.worldbank.org/indicator>.

CAN COMPANIES ADDRESS SUCH ISSUES? WHY ARE COMPANY ACTIVITIES IMPORTANT TO OUR ABILITY TO ACHIEVE BETTER SOCIAL AND ENVIRONMENTAL OUTCOMES?

Over time, companies have accumulated increased power relative to other stakeholders. This power has given corporations a license not only to operate, but also to grow and reach a wide diversity of stakeholders across geographies. The largest 500 corporations in the world directly employed more than 43 million people, indirectly controlled hundreds of millions of workers in their supply chain, paid more than \$700 billion in taxes, sold products and services worth over \$22 trillion, controlled assets valued at more than \$100 trillion, and in 2014 spent more than \$1.6 trillion and \$400 billion in capital and research and development expenditures, respectively. The higher financial, human, and technological capabilities of companies compared with the limitations of governments due to indebtedness, inability to attract human capital, and the lack of jurisdiction in a global marketplace uniquely position corporations to respond to environmental and social challenges.

The emergence of the large corporation in society and the accumulation of profits and power have resulted from two centuries' worth of important legal, regulatory, and macroeconomic trends. Google and Walmart provide two examples of leading companies that significantly influence a wide range of stakeholders:

- Google's Gmail product serves approximately 900 million people, more than the population of Europe.⁴ The Google search engine's 5-minute service lapse in August 2013 caused global internet traffic to drop by 40%.⁵
- Walmart hosts more than 250 million customers in its stores each week and approximately 80% of all U.S. consumers at some point during a typical year.⁶ The company uses approximately 0.5% of all electricity produced in the

United States, ranking it ahead of 12 states in electricity consumption.⁷

Companies address social and environmental concerns through several types of activities:

- **Firm-specific Initiatives** — Unilever's Sustainable Living Plan aims to double the size of company's business, while simultaneously reducing its environmental footprint and improving its social impact.
- **Industry Self-regulation** — Gap, H&M, and other apparel brands have implemented codes of conduct that attempt to self-regulate business activities and influence working conditions in overseas factories.
- **Working with Governments and NGOs** — The Extractive Industries Transparency Initiative (EITI) unites national governments, natural resource extractives companies, and civil society organizations to enhance transparency and accountability in the extractive industries.
- **Emerging Markets Engagement** — Grupo Bimbo responded to the Mexican government's health-focused regulations by improving the nutritional profile of its snack food products.

The ability to act also adds another element in answering the first question of why corporations engage with environmental and social issues.

Recommendation: Corporate managers should understand their power relative to different stakeholders and recognize the responsibilities emerging from this power.

HOW DO COMPANIES ADDRESS THESE ISSUES IN RELATION TO THEIR FINANCIAL PERFORMANCE? DO SUCH INVESTMENTS ADD OR CREATE VALUE, DETRACT VALUE, OR HAVE A NEUTRAL IMPACT?

Economic motives are among the key drivers of companies' social sensitivity. Investors can evaluate companies' investments in this space by understanding their implications on firm value. These investments can impact firm financial value through numerous mechanisms (Figure E2). The mechanisms range from operational efficiency and protection of brand value, to revenue growth enabled by new products and customer loyalty, to lower cost of capital through enhanced disclosure. Investors can use this framework to understand the value relevance of different investments.

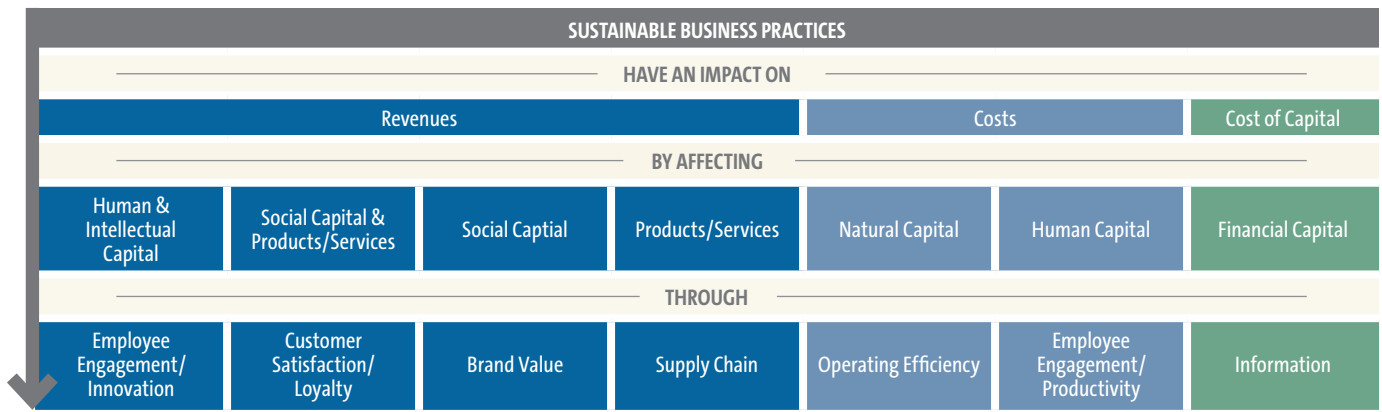
4. Jessica Guynn, "Google's Gmail hits 900 million users, opens up Inbox," *USA Today* (2015), <http://www.usatoday.com/story/tech/2015/05/28/google-inbox-gmail-900-million-users/28016983/>; "International Statistics," in *The 2012 Statistical Analysis*, U.S. Census Bureau (2012), http://www.census.gov/compendia/statab/cats/international_statistics.html.

5. Tim Worstall, "Analyzing Friday's Google Outage," *Forbes* (2013), <http://www.forbes.com/sites/timworstall/2013/08/19/analysing-fridays-google-outage/>.

6. "Our Story," *Walmart* (2015), <http://corporate.walmart.com/our-story/>; "Our Retail Divisions," *Walmart* (2015), <http://news.walmart.com/news-archive/2005/01/07/our-retail-divisions>.

7. Stacy Mitchell and Walter Wuthmann, "Walmart's Dirty Energy Secret," *Institute for Local Self-Reliance* (2014), http://ilsr.org/wp-content/uploads/2014/11/ILSR_WalmartCoal_Final.pdf.

FIGURE E2: FINANCIAL RELEVANCE OF SUSTAINABLE BUSINESS PRACTICES

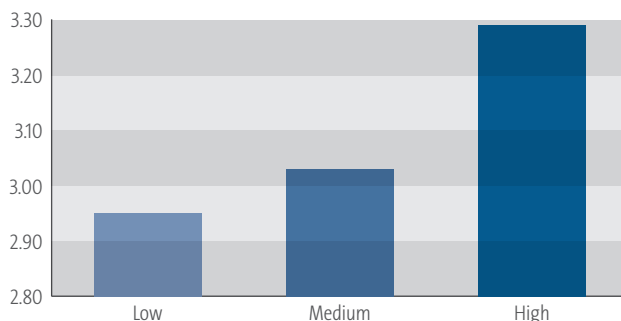


We present novel analyses using recent data both from equity and fixed income standpoints. Overall, we find that sustainability leaders enjoy a valuation premium in both equity and fixed income markets.

- **Environmental, social, and governance (ESG) performance correlates with better management or business model quality.** Valuations of firms with better ESG performance reflect higher expected growth and lower cost of capital. (Figure E3)
- **Investors expect higher growth and require lower cost of capital from firms with higher ESG performance.** These firms trade at higher valuation multiples in equity markets. (Figure E4)
- **Firms with better ESG performance have lower credit default swap spreads.** (Figure E5)

Recommendation: Given the value relevance of companies' investments in environmental and social issues, investors should update valuation models and engage with corporate management when they see opportunities for improvement in companies' performance on environmental and social issues.

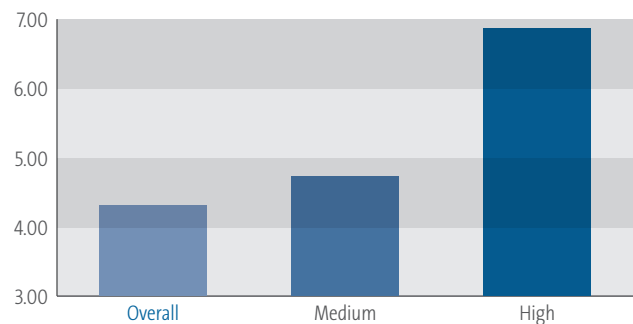
FIGURE E3: MARKET VALUE OVER BOOK VALUE OF EQUITY: FIRMS WITH LOW, MEDIUM, AND HIGH ESG PERFORMANCE



Source: Barra, MSCI, Calvert-Serafeim Research. Firms ranked by their ESG score. Illustrated is the average market-to-book value of equity ratio in each portfolio.

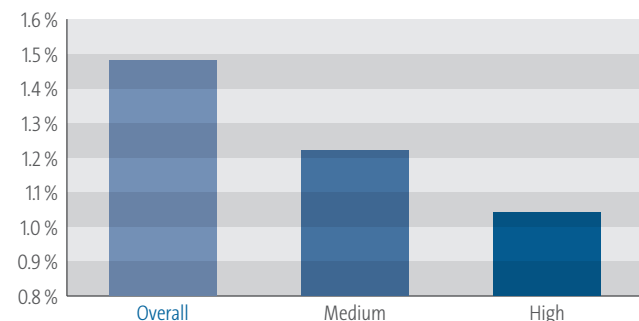
Large corporations in society have a purpose, and that purpose extends beyond simply making profits. Rather, corporations are assuming broader responsibilities that increasingly affect their valuation in the stock market and their value to society. Because corporations are the world's most powerful engines for growth and prosperity, this behavior is a positive development with global impact. By understanding corporations' environmental and social activities and integrating this understanding in investment decisions, investors can advance and benefit from companies' creation of long-term value.

FIGURE E4: EQUITY VALUATION OF PROFITABILITY: FIRMS WITH MEDIUM AND HIGH ESG PERFORMANCE VERSUS OVERALL SAMPLE



Source: Thomson Reuters ASSET4, Calvert-Serafeim Research. Firms ranked by their ESG score. Illustrated is the estimated valuation multiple on profitability in each portfolio.

FIGURE E5: CDS SPREAD: FIRMS WITH MEDIUM AND HIGH ESG PERFORMANCE VERSUS OVERALL SAMPLE



Source: MSCI, Calvert-Serafeim Research. Firms ranked by their ESG score. Illustrated is the average credit-default swap spread in each portfolio.

1. Introduction

All companies provide a benefit to society by creating employment opportunities and by supplying products and services that satisfy individual demands in the marketplace. However, in many cases, companies impose costs on society that lead to environmental degradation or social distortions. Increasingly, companies adopt a range of business practices in response to pressure from citizens, who, in their roles as employees, customers, and investors demand that companies align their actions with society's interests.

Consider, for example, surveys that show that more than 80% of the citizens in countries including the United States, the United Kingdom, Germany, France, Canada, and Japan agree with the statement that "Corporations should create economic value in a way that aligns with society's interests, even if that means sacrificing shareholder returns."⁸ These expectations give rise to other dimensions of performance that measure how well the company's objectives are aligned with society's interests. At the same time, they create a conundrum, as it is not clear how business practices that aim to improve environmental and social outcomes impact financial performance.

This is both good and bad news for investors. The good news is that new value-relevant non-financial data can be analyzed and used to improve investment decisions. While financial data have been well understood and priced in markets, this is not the case for non-financial data. Lack of a rigorous accounting infrastructure and limited understanding of this data's value relevance represent significant opportunities for investors to use non-financial information to produce alpha.

The bad news is that incorporating non-financial data in investment decisions proves to be rather difficult and requires hard work. While there are areas where managers can improve both financial and non-financial performance, firms run out of these "low hanging fruit" rather quickly. And then it gets difficult: trade-offs arise between financial and non-financial performance, as well as across different dimensions of non-financial performance. Managers need to make choices, and, for a long time, the simplest choice has been to favor financial performance in all cases. Under increasing social pressure, companies need to develop innovative management practices to avoid making those trade-offs and to simultaneously satisfy the needs of multiple stakeholders. Investors need to identify these management practices in order to benefit from the power of the non-financial data.

Throughout this report, we highlight numerous corporate approaches to managing risks and opportunities related to environmental, social, and governance (ESG) factors. We do not intend for our discussion of these companies to serve as an endorsement of their activities or as a recommendation for investment. Rather, we aim to discuss these approaches objectively, noting that some companies have focused their environmental and social initiatives on a subset of activity that is material to their business, even if the companies' performance across a broader range of material non-financial indicators fails to meet Calvert's investment criteria. As discussed further in this report, we recognize the value of corporate investments in material ESG activities. We also view these investments as promising indicators of firms' commitment to sustainability. Where companies show this commitment, yet stand to improve overall ESG performance, we consider direct engagement to be one of the best ways that investors can advance corporate responsibility and reap both short- and long-term benefits. Calvert's ongoing conversations with the Dow Chemical Company, whose sustainability activities we profile here, provide a recent example of our efforts in this area.

8. "Edelman Annual Trust Barometer," *Edelman*, January 2011, <http://www.slideshare.net/EdelmanInsights/2011-edelman-trust-barometer>.

2. Why do companies engage with environmental and social issues?

Here we outline the main reasons that companies increasingly engage with environmental and social issues. None of these reasons in isolation provides an adequate justification; rather, considered together, they indicate a new status quo where corporations are devoting resources to mitigate their negative impact on society while increasing their positive impact. We note several key reasons for this increased engagement: fundamental environmental and social challenges have worsened over time, in many cases corporations have directly contributed to this deterioration, a small number of corporations has assumed more power relative to other institutions over time, and corporate societal impact can affect firms' financial performance and stock market valuation.

2.1 SOCIETAL PROBLEMS

Fundamental societal problems, such as worsening environmental degradation and social inequality, have been central factors driving increased corporate engagement. Extreme weather events linked to climate change have already begun. Extreme heat waves and heavy rain storms, which previously occurred every 1,000 days on average, are now happening approximately once every 200 days. According to scientists, the most vulnerable communities on earth, i.e., tropical countries with weak infrastructure and high poverty rates, will experience 50 times more extremely hot days and 2.5 more rainy days if average global temperatures increase by 2 degrees Celsius.⁹ The Intergovernmental Panel on Climate Change (IPCC) has estimated that the global average surface air warming will likely increase between 2.4 and 6.4 degrees Celsius. Potential consequences include even more extreme weather patterns such as droughts, floods, and cyclones; risk of crop failure due to changing conditions; increased violent conflict; loss of animal life; and increased stress on overall human health.¹⁰ The IPCC identified manmade greenhouse gas emissions as a major contributor to the temperature shift that would drive these changes.

Declining air and water purity has reflected a trend of global environmental deterioration and influenced corollary social impacts. Combustion processes and power generation

techniques that discharged diesel soot particles and lead particles into the atmosphere were chiefly responsible for the decrease in air quality. According to the World Health Organization (WHO), outdoor air pollution was responsible for 7 million deaths in 2012 worldwide.¹¹ Children are particularly susceptible to disease caused by outdoor air pollution and, as a result, have faced acute and chronic respiratory illnesses and—in the most egregious areas—cancer.¹²

Water pollution also creates health risks. In April 2014, Chinese state media reported that more than half of its underground water supplies were polluted. The survey conducted across 203 cities reported that about 44% of underground water supplies tested at “relatively poor” quality levels while an additional 15.7% tested at “very poor” quality. Of all urban groundwater tested, only three percent was classified as “clean.”¹³ Contaminated water from chemical spills, sewage, or human waste could result in consequences for human health and safety. According to the United Nations, unsafe water caused 4 billion cases of diarrhea each year and resulted in 2.2 million deaths, usually of children under the age of five.¹⁴ The same report identified pollution from industry, mining, and agriculture as common sources of water pollution.¹⁵

9. Karl Mathiesen, “Extreme Weather Already on Increase due to Climate Change, Study Finds,” *The Guardian*, April 27, 2015, <http://www.theguardian.com/environment/2015/apr/27/extreme-weather-already-on-increase-due-to-climate-change-study-finds>.
10. “Climate Change 2014: Impacts, Adaptation, and Vulnerability,” *Intergovernmental Panel on Climate Change* (2014), https://ipcc-wg2.gov/AR5/images/uploads/WG2AR5_SPM_FINAL.pdf.

11. Ami Sedghi, “Air Pollution: Delhi Is Dirty, but How Do Other Cities Fare?” *The Guardian*, June 24, 2015, <http://www.theguardian.com/news/datablog/2015/jun/24/air-pollution-delhi-is-dirty-but-how-do-other-cities-fare>.
12. “Children’s Environmental Health, Air Pollution,” *World Health Organization* (2015), <http://www.who.int/ceh/risks/cehair/en/>.
13. Jonathan Kaiman, “China Says More than Half of Its Groundwater Is Polluted,” *The Guardian*, April 23, 2014, <http://www.theguardian.com/environment/2014/apr/23/china-half-groundwater-polluted>.
14. “Water Quality Facts and Statistics,” *United Nations Environment Programme* (2010), http://www.unwater.org/wwd10/downloads/WWD2010_Facts_web.pdf.
15. Ibid.

While environmental problems have appeared everywhere, they seem to affect the poor disproportionately. Income inequality appears partly to blame. According to the Organization for Economic Co-operation and Development (OECD), income inequality is at its highest level in more than 50 years. The incomes of the top 10% of the OECD's population are nine times higher than the lowest 10% of earners. These figures show a spike from 25 years ago, when the top earners' incomes were seven times higher.¹⁶ Mexico (30.5), Chile (26.5), and the United States (18.8) made up the top three countries with the largest income disparity between the top 10% and the bottom 10%.¹⁷ In the United States, CEOs reportedly earned 331 times as much as average workers. When compared to minimum wage earners, CEOs took home 774 times more pay.¹⁸ The OECD believes that globalization, skill-biased technological change, and failed government policies have encouraged income inequality and warns that it could lead to uncertainty and social unrest.¹⁹

2.2 CORPORATE POWER AND IMPACT

The developments described above can, at least in part, be directly attributed to corporate activity. As a result, many commentators believe that there is a moral case for corporation action, since the private sector has contributed to those problems. Moreover, because corporations have grown in size and scope they are now driving significant macroeconomic trends on a global scale. According to the World Bank, more than 3.6 million corporations were registered in 2012.²⁰ The number of publicly traded companies almost doubled from 26,093 in 1991 to 47,520 in 2012, and their market capitalization more than quadrupled from \$11.3 trillion to \$53.2 trillion in the same period.²¹ Large-scale transnational corporations have also experienced substantial growth, increasing from 7,000 in the late 1960s to 78,000 in 2006 and accumulating more than 780,000 foreign affiliates during that time.²²

To sustain this growth, corporations require vast amounts of both human and natural capital. The global labor force grew

from 2.3 billion in 1990 to 3.3 billion in 2013 with developing countries experiencing the fastest growth.²³ The separation of labor in the public and private sectors varies by country but, in most countries, more labor was occupied in the private sector. In the United States, 5.7 million businesses employ 115.9 million people with an annual payroll of \$5.4 trillion.²⁴ The most significant employers are large enterprises (those with more than 500 employees) that together employ 59.9 million people.²⁵ Very small enterprises employ 20.4 million people, while small and medium enterprises employ 19.4 million people and 16.3 million people, respectively.²⁶

The private sector demonstrates notable natural resource consumption, which has increased over time. Over the past decade, human influence and natural causes have eliminated more than 13 million hectares of forest cover annually, with commercial agriculture causing more than half of that deforestation.²⁷ Businesses also bear major impact on the availability of clean water. In 2013, global fresh water withdrawals totaled 3.9 trillion cubic meters, with South and East Asia withdrawing more than half of the global total.²⁸ Individually, China and India each withdrew more than 1.3 trillion cubic meters of water.²⁹ Additional figures from 2013 highlight the particular role of the private sector in water use. The agricultural sector consumed 70% of withdrawn fresh water that year, while industry consumed 18%.³⁰ Considering the impact of individual products helps to demonstrate just how much water we rely on for everyday needs: an average of 35 gallons of water is used to produce a cup of coffee, and 42 gallons are needed to cultivate one banana.³¹

Environmental impacts resulting from energy consumption also reflect a growth trend. Emissions from fossil fuel burning and cement production totaled 36 gigatons in 2013, an increase of more than 600% since 1950.³² Operations of the 50 largest companies reporting data through the Carbon Disclosure

16. "Inequality," *Organisation for Economic Co-Operation and Development* (2015), <http://www.oecd.org/social/inequality.htm>.

17. Ibid.

18. Kathryn Dill, "Report: CEOs Earn 331 Times As Much As Average Workers, 774 Times As Much As Minimum Wage Earners," *Forbes*, April 15, 2014, <http://www.forbes.com/sites/kathryndill/2014/04/15/report-ceos-earn-331-times-as-much-as-average-workers-774-times-as-much-as-minimum-wage-earners/>.

19. "Inequality," *Organisation for Economic Co-Operation and Development* (2015), <http://www.oecd.org/social/inequality.htm>.

20. "World Bank Data Indicators," *The World Bank Group* (2014), <http://data.worldbank.org/indicator>.

21. Ibid.

22. "UNCTAD World Investment Report 1994," United Nations Conference on Trade and Development (1994), <http://unctad.org/en/Docs/wir94ove.en.pdf>; "UNCTAD World Investment Report 2007," United Nations Conference on Trade and Development (2007), http://unctad.org/en/docs/wir2007_en.pdf.

23. "World Bank Data Indicators," *The World Bank Group* (2014), <http://data.worldbank.org/indicator>.

24. Anthony Caruso, "Statistics of U.S. Businesses Employment and Payroll Summary: 2012," *U.S. Census Bureau* (2015), <http://www.census.gov/content/dam/Census/library/publications/2015/econ/g12-susb.pdf>.

25. Ibid.

26. Ibid.

27. "Global Forest Resources Assessment 2010," *Food and Agriculture Organization of the United Nations* (2010), <http://www.fao.org/docrep/013/i1757e/i1757e.pdf>.

28. "World Bank Data Indicators," *The World Bank Group* (2014), <http://data.worldbank.org/indicator>.

29. Ibid.

30. Ibid.

31. M.M. Mekonnen and A.Y. Hoekstra, "The green, blue and grey water footprint of crops and derived crop products," *Hydrology and Earth System Sciences* (2011), <http://temp.waterfootprint.org/Reports/Mekonnen-Hoekstra-2011-WaterFootprintCrops.pdf>.

32. Johannes Friedrich and Thomas Damassa, "The History of Carbon Dioxide Emissions," *World Resources Institute* (2014), <http://wri.org/blog/2014/05/history-carbon-dioxide-emissions>.

Project (CDP) resulted in seven percent of total global carbon dioxide emissions in 2013, or 2.5 gigatons.³³

Globalized value chains, which rely heavily on international sourcing, production, and transportation, magnify these impacts. Estimates characterize 55% of globally traded manufactured goods as “intermediate goods” that serve as inputs to other products.³⁴ The Apple iPod illustrates the type of consumer product that could only exist in such an interconnected world market. The iPod contains 451 distinct components, the ten most valuable of which originate in six different countries.³⁵ Global business has converted increases in consumption to increases in production. Global GDP has more than tripled from \$22.5 trillion in 1990, to \$77.9 trillion in 2014, with low and middle income countries experiencing an eight-fold increase.³⁶ Between 2000 and 2012, several global economic sectors posted production growth of 100% or better.³⁷ During this period, agricultural production grew from \$1.1 trillion to \$3.1 trillion, industrial production grew from \$9.1 trillion to \$20.8 trillion, manufacturing grew from \$5.8 trillion to \$11.8 trillion, and the services sector grew from \$20.9 trillion to \$44.8 trillion.³⁸

As multinational corporations drive growth on a global scale, they increasingly contribute to the economic well-being of the societies in which they operate and of their individual shareholders. The tax payments contributed by corporations comprise a significant portion of government revenues. The global average commercial tax rate was 53.3% in 2005 and decreased to 44.2% by 2012. Similarly, the U.S. corporate tax rate decreased from 52% in 1960, to 35% in 2014, yet corporate tax revenues increased from \$21.5 billion to \$320.7 billion during that time.³⁹ Pension holdings also underscore individuals’ reliance on sustained corporate productivity and profitability. In 2012, investment in U.S. pensions totaled \$12.1 trillion, or 74.3%

of GDP.⁴⁰ The same year, 36.1% of U.S. pension fund assets were held in equity investments.⁴¹

Considering private sector impacts at the company level, Walmart and Google exemplify the great power that corporations exhibit relative to other institutions. Discount retailer Walmart plays an influential role in the lives of people who make up a key socio-economic segment and whom the company addresses both as consumers and employees. Walmart hosts more than 250 million customers in its stores each week and approximately 80% of all U.S. consumers at some point during a typical year.⁴² The average Walmart customer earns a salary of \$30,000 to \$60,000, and the retailer collected an estimated \$13 billion of the \$80 billion in food stamps that Congress budgeted in 2013.⁴³ Walmart employs approximately 2.2 million people globally and 1.4 million U.S. employees, half of whom receive annual wages totaling less than \$25,000.⁴⁴ The company’s footprint also extends internationally. Approximately 11,000 stores, located in 28 countries, belong to the Walmart family.⁴⁵

Walmart’s expansive range of offerings, enabled by complex supply chains and immense distribution networks, has helped confirm the company’s place as a retail powerhouse. In 2014, Walmart amassed more than \$482 billion in net sales.⁴⁶ Each “supercenter” store stocks more than 142,000 products supported by a global network of more than 100,000 direct suppliers and a U.S. ground transport fleet that travels 700 million miles annually.⁴⁷ The company’s influence on international trade is so significant that its Chinese imports

33. “Sector insights: what is driving climate change action in the world’s largest companies?” *PricewaterhouseCoopers* (2013), <https://www.cdp.net/CDPResults/CDP-Global-500-Climate-Change-Report-2013.pdf>.

34. “Global flows in a digital age: How trade, finance, people, and data connect the world economy,” *McKinsey Global Institute* (2014), http://www.mckinsey.com/~media/McKinsey/dotcom/Insights/Globalization/Global%20flows%20in%20a%20digital%20age/Global_flows_in_a_digital_age_Full_report-March_2015.ashx.

35. Greg Linden, Kenneth L. Kraemer, and Jason Dedrick, “Who captures value in a global innovation network? The case of Apple’s iPod,” *Communications of the ACM*, volume 52, issue 3, March 2009.

36. “World Bank Data Indicators,” *The World Bank Group* (2014), <http://data.worldbank.org/indicator>.

37. M.M. Mekonnen and A.Y. Hoekstra, “The green, blue and grey water footprint of crops and derived crop products,” *Hydrology and Earth System Sciences* (2011), <http://temp.waterfootprint.org/Reports/Mekonnen-Hoekstra-2011-WaterFootprintCrops.pdf>.

38. These are rounded figures derived from World Bank data. “World Bank Data Indicators,” *The World Bank Group* (2014), <http://data.worldbank.org/indicator>.

39. “Historical Tables,” *White House Office of Management and Budget* (2015), <https://www.whitehouse.gov/omb/budget/Historicals>.

40. OECD.StatExtracts, *Organisation for Economic Co-operation and Development*, http://stats.oecd.org/Index.aspx?DatasetCode=PNNI_NEW; Pension Markets in Focus, *Organisation for Economic Co-operation and Development*, (2014), <http://www.oecd.org/daf/fin/private-pensions/Pension-Markets-in-Focus-2014.pdf>.

41. OECD.StatExtracts, *Organisation for Economic Co-operation and Development*, available at http://stats.oecd.org/Index.aspx?DatasetCode=PNNI_NEW.

42. “Our Story,” *Walmart* (2015), <http://corporate.walmart.com/our-story/>; “Our Retail Divisions,” *Walmart* (2015), <http://news.walmart.com/news-archive/2005/01/07/our-retail-divisions>.

43. Jessica Wohl, “Walmart wins with a back-to-basics approach,” *Reuters* (2012), <http://www.reuters.com/article/2012/02/15/us-walmart-idUSTRE81E2F120120215>; Shelly Banjo and Annie Gasparro, “Retailers Brace for Reduction in Food Stamps,” *The Wall Street Journal* (2013), <http://www.wsj.com/news/articles/SB10001424052702303843104579168011245171266>.

44. Form 10-K, *Walmart* (2015) <https://www.sec.gov/Archives/edgar/data/104169/000010416915000011/wmtform10-kx13115.htm>; Susan Berfield, “More Than Half of Walmart’s Hourly Workers Make Less Than \$25,000,” *Bloomberg* (2013), <http://www.bloomberg.com/bw/articles/2013-10-23/more-than-half-of-walmarts-hourly-workers-make-less-than-25-000>.

45. “Our Business,” *Walmart* (2015), <http://corporate.walmart.com/our-story/our-business/>.

46. “Our Story,” *Walmart* (2015), <http://corporate.walmart.com/our-story/>; “Our Retail Divisions,” *Walmart* (2015), <http://news.walmart.com/news-archive/2005/01/07/our-retail-divisions>.

47. “Walmart Logistics,” *Walmart* (2015), <http://corporate.walmart.com/our-story/our-business/logistics>.

contributed to an 11% increase in the U.S.-China trade deficit between 2001 and 2006.⁴⁸

The breadth of Walmart's business is closely linked with environmental impacts. The company uses approximately 0.5% of all electricity produced in the United States, ranking it ahead of 12 states in electricity consumption.⁴⁹ This energy input requires burning 4.2 million tons of coal annually, which results in 7.8 million metric tons of CO₂ emissions.⁵⁰ In 2012, company operations involved withdrawing 44.9 million cubic meters of water.⁵¹

While Walmart exemplifies the asymmetric power of corporations over other stakeholders in the traditional marketplace, Google represents the prototype of a powerful corporation in the digital world, having gained dominance in several areas, including internet search, marketing, and email, since its founding in 1998.⁵² The effect of Google's brief service lapse in August 2013 underscored the company's central role in the world's information exchange. A five-minute outage caused global internet traffic to drop by 40%.⁵³ Each month, more than 2.2 billion people perform more than 100 billion searches via Google's web-based platform.⁵⁴ The company's Gmail product serves approximately 900 million people, more than the population of Europe.⁵⁵ User-driven video streaming site YouTube boasts more than 1 billion users who together upload an average of 50 hours of video per second, contributing to content that attracts more than 4 billion views per day.⁵⁶ Thanks to Google's advertising operations, this web content and traffic yield important returns for business. In 2013 alone, Google's

search and advertising tools helped 1.5 million businesses to generate \$111 billion in revenues.⁵⁷

Employees play a central role in Google's success, and the company goes to great lengths to keep its people happy. Google's position at the leading edge of innovation contributes to its attractiveness as an employer. The company employs more than 50,000 people, though it receives more than 2 million applications each year.⁵⁸ With a recruitment staff of between 500 and 1,000 members, Google's ratio of employees to recruiters is as low as 64:1, compared with the typical large company ratio of 577:1.⁵⁹ Recruiters enjoy their pick of top talent; Stanford and Berkeley are the first and second universities whose graduates find their way into Google's ranks.⁶⁰

Google also cultivates political clout, helping to reinforce its technological influence and powerful market position.⁶¹ Executive Chairman Eric Schmidt and CEO Larry Page have served on several White House advisory panels and visited the White House more than 230 times since the Obama Administration took office.⁶² Google also employs 78 lobbyists on Capitol Hill and, in 2014, registered political lobbying expenses of \$16.8 million, more than any other U.S. corporation.⁶³

The scale and global footprint of corporations reinforces the moral argument for corporate action. Figure 2 shows key data for the largest 500 corporations in the world, in terms of market capitalization. According to our estimates, at the end of 2014, the largest 500 corporations in the world, in terms of market capitalization, comprise 50% of the total market capitalization of approximately 50,000 publically listed firms. These corporations control more than \$100 trillion in assets, recognized on their balance sheets, and have more than \$4 trillion in operating earnings. Hundreds of millions of people work in these companies' supply chains, and the companies' products and services, worth more than \$22 trillion, reach

48. Robert Scott, "Walmart's reliance on Chinese imports costs US jobs," *Economic Policy Institute* (2007), http://www.epi.org/publication/webfeatures_snapshots_20070627/.

49. Stacy Mitchell and Walter Wuthmann, "Walmart's Dirty Energy Secret," *Institute For Local Self-Reliance* (2014), http://ilsr.org/wp-content/uploads/2014/11/ILSR_WalmartCoal_Final.pdf.

50. Ibid.

51. "Walmart Stores, Inc." ESG Ratings Report. MSCI (2015). Print.

52. "Our history in depth," Google, <http://www.google.com/about/company/history/>.

53. Tim Worstall, "Analyzing Friday's Google Outage," *Forbes* (2013), <http://www.forbes.com/sites/timworstall/2013/08/19/analysing-fridays-google-outage/>.

54. Joshua Barrie, "Google+ Active Users," *Business Insider* (2015), <http://www.businessinsider.com/google-active-users-2015-1>; Dan Sullivan, "Google: 100 Billion Searches Per Month," *Search Engine Land* (2012); <http://searchengineland.com/google-search-press-129925>.

55. Jessica Guynn, "Google's Gmail hits 900 million users, opens up Inbox," *USA Today* (2015), <http://www.usatoday.com/story/tech/2015/05/28/google-inbox-gmail-900-million-users/28016983/>; "International Statistics," in *The 2012 Statistical Analysis*, U.S. Census Bureau (2012), http://www.census.gov/compendia/statab/cats/international_statistics.html.

56. "Statistics," *YouTube* (2015), <https://www.youtube.com/yt/press/en-GB/statistics.html>; Alexei Oreskovic, "Exclusive: YouTube hits 4 billion daily video views," *Reuters* (2012), <http://www.reuters.com/article/2012/01/23/us-google-youtube-idUSTRE80MOTS20120123>.

57. "America's businesses are using the web to grow," *Google*, July 17, 2014, <http://googleblog.blogspot.com/2014/07/americas-businesses-are-using-web-to.html>.

58. "Annual report 2014," *Google*, (2014), https://investor.google.com/pdf/20141231_google_10K.pdf; Anne VanderMey, "Inside Google's recruiting machine," *Fortune* (2012), <http://fortune.com/2012/02/24/inside-googles-recruiting-machine/>.

59. Ibid.

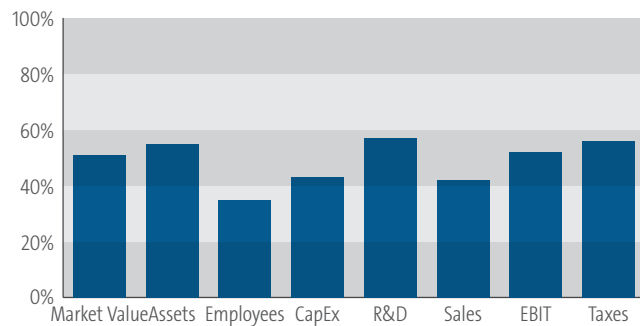
60. Drake Baer, "If You Want to Work For Apple, Microsoft, or Google, Go To One Of These Schools," *Business Insider* (2014), <http://www.businessinsider.com/to-work-for-apple-microsoft-google-go-to-these-schools-2014-5>.

61. "America's businesses are using the web to grow," *Google* (2014), <http://googleblog.blogspot.com/2014/07/americas-businesses-are-using-web-to.html>.

62. Brody Mullins, "Google Makes Most of Close Ties to White House," *The Wall Street Journal* (2015), <http://www.wsj.com/articles/google-makes-most-of-close-ties-to-white-house-1427242076>.

63. "Google, Inc.," *Center for Responsive Politics* (2015), <https://www.opensecrets.org/lobby/clientsum.php?id=D000022008&year=2014>.

FIGURE 2: THE GLOBAL 500



Note: For each metric, the figure shows the value controlled by the Global 500, the world's 500 largest publicly traded companies by market capitalization (as of calendar year end 2014), as a percentage of the sum controlled by all publicly listed firms worldwide.

Source: Worldscope and Bloomberg

billions of consumers around the world. This vast concentration in economic activity and the associated power relative to customers, suppliers, and smaller competitors is reflected in the higher profitability margins that these companies earn. Specifically, in 2014, the combined return-on-assets of the largest 500 companies was almost double that of all other publicly listed firms (4.7% versus 2.5%).

2.3 TRACING THE INCREASING POWER OF THE PRIVATE SECTOR

The emergence of the large corporation in society and the accumulation of profits and power is the result of several important legal, regulatory, and macroeconomic trends over the past two centuries. We summarize some of these trends here to illustrate the evolution of the business environment. Significant legal developments began in 1819, when *Dartmouth College v. Woodward* confirmed that the U.S. Constitution's Contract Clause protected corporations and established limited liability for company owners. Subsequent rulings expanded corporate power by establishing the notion of "corporate personhood," which enabled corporations to access some of the same constitutional protections as citizens.⁶⁴ In the 1886 case *Santa Clara County v. Southern Pacific Railroad Co.*, the court found that corporations, like natural citizens, enjoyed equal protection under the Fourteenth Amendment.⁶⁵ Another notable decision came in 1976 when *Virginia Pharmacy Board v. Virginia Citizens Council* determined that the First Amendment protected commercial speech.⁶⁶ Estimates indicate that, since that ruling, every U.S. private sector company has, on average, been party to 2.2 free speech cases per year, winning favorable rulings in

55% of cases.⁶⁷ More recently, the 2010 ruling in *Citizens United v. Federal Election Commission* effectively eliminated limitations on corporate contributions to political campaigns.⁶⁸ Between 2007 and 2012, the 200 most politically active U.S. corporations spent \$5.8 billion on federal lobbying and campaign contributions.⁶⁹ During the same period, federal contracts and subsidies targeted to the private sector totaled \$4.4 trillion in federal business and support.⁷⁰

The deregulation and privatization of industrial economies, which rapidly increased in the 1980s, reflected a shift to free market policies and an attitude that corporations were better-suited than governments to manage assets efficiently. In the case of financial institutions, the Depository Institutions Deregulation and Monetary Control Act of 1980, which phased out interest rate restrictions to allow commercial banks to compete for deposits, marked the beginning of a wave of deregulation of the U.S. financial sector. The 1999 Gramm-Leach-Bliley Act took deregulation a step further by repealing the 1933 Glass-Steagall Act and allowing investment banks to merge with commercial lending banks.⁷¹ These regulations developed partially in response to the savings and loan crisis of the 1980s and 1990s, which caused a major consolidation of power in the industry. From 1984 to 2003, the number of banking institutions decreased by half, while at the same time the industry's assets grew from \$3.3 trillion to \$9.1 trillion, and banks with more than \$10 billion in assets expanded their share of total industry assets from 42% to 73%.⁷²

After World War II, corporations became increasingly globalized as a result of exchange rate policy decisions and the creation of international agencies and trade regimes. This trend began with the creation of the World Bank and International Monetary Fund in 1944 to promote cross-border collaboration and economic development in emerging markets through private sector mechanisms.⁷³ During this period, governments also passed numerous free trade agreements, beginning with the General

64. *Dartmouth College v. Woodward*, 17 U.S. 518, 654 (1819).

65. *Santa Clara v. Southern Pac. R.R. Co.*, 117 U.S. 394, 409 (1886).

66. *Va. Pharmacy Board v. Va. Citizens Council*, 425 U.S. 748, 771 (1976).

67. John C. Coates, IV, "Corporate Speech and the First Amendment: History, Data, and Implications," *Social Science Research Network* (2015), http://papers.ssrn.com/sol3/papers.cfm?abstract_id=2566785.

68. *Citizens United v. Federal Election Commission*, 558 U.S. 310 (2010).

69. Bill Allison and Sarah Hawkins, "Fixed Fortunes: Biggest corporate political interests spend billions, get trillions" *Sunlight Foundation* (2014), <http://sunlightfoundation.com/blog/2014/11/17/fixed-fortunes-biggest-corporate-political-interests-spend-billions-get-trillions/>.

70. Ibid.

71. Matthew Sherman, "A Short History of Deregulation in the United States," *Center for Economic and Policy Research* (2009), <http://www.cepr.net/documents/publications/dereg-timeline-2009-07.pdf>.

72. Kenneth D. Jones and Tim Critchfield, "Consolidation in the US Banking Industry: Is the 'Long, Strange Trip' About to End?" *FDIC* (2005), <https://www.fdic.gov/bank/analytical/banking/2006jan/article2/article2.pdf>.

73. "History of the World Bank," [https://www.worldbank.org/en/about/history](https://www.worldbank.org/en/about/history;); "History of the IMF," <http://www.imf.org/external/about/history.htm>.

Agreement on Tariffs and Trade in 1947.⁷⁴ Interconnected trading systems continue to develop today as governments negotiate the Transatlantic Trade and Investment Partnership and Trans-Pacific Partnership.⁷⁵ Accelerated growth and development of information and communication technology, particularly during the latter part of the 20th Century, magnified the effect of these agreements and revolutionized global business. The rise of the internet and network technologies created new advantages in scale of production and reduced international barriers to entry, as evidenced by the increase of global cross-border transfers of goods from \$1.8 trillion in 1980 to \$17.2 trillion in 2011; transfers of services from \$1.5 trillion in 2001 to \$4.1 trillion in 2011; financial flows from \$2.5 trillion in 2002 to \$3.9 trillion in 2012; and the global commodities trade from \$1.0 trillion in 2002 to \$5.2 trillion in 2012.⁷⁶

Governments have encouraged private sector growth by providing economic incentives to businesses. The South Korean government's industrialization policy and support for massive "chaebol" conglomerates helped the country to surpass its neighbors in economic development.⁷⁷ South Korea grew from the world's thirty-first largest economy in 1960, with a GDP of \$3.9 billion, to the world's thirteenth largest economy in 2014, with a GDP of \$1.4 trillion.⁷⁸ In the United States, the federal government began subsidizing private agricultural production after the Great Depression, believing that this investment would help to ensure national food security and protect employment.⁷⁹ The U.S. government continues to subsidize this industry with average annual expenditures of \$20 billion.⁸⁰

It is important to note, though, that significant regulatory activity has taken place to restrict corporate power and protect public interest. Governments have passed new laws and regulations in response to the increased social and environmental outcomes driven by the growth of corporations. The U.S. government has passed several anti-trust laws to protect consumers and prohibit anti-competitive behavior by corporations. The Sherman Anti-Trust Act of 1890 allowed the government to utilize the federal court system to investigate and dismantle monopolistic

corporations whose market shares enabled price fixing or anti-competitive behavior. U.S. authorities notably applied the provisions of the Act to break up the large conglomerates Standard Oil Co. in 1911 and AT&T in 1982.⁸¹

Responding to increased concern over environmental degradation, in 1970, U.S. President Richard Nixon created the Environmental Protection Agency (EPA) to write and enforce regulation aimed at safeguarding human health and the environment.⁸² The EPA implemented several Clean Air and Clean Water Acts, passed by Congress throughout the 1970s, which regulated industrial emissions and discharges of pollutants into the environment.⁸³ More recently, Congress passed the 2010 Dodd-Frank Wall Street Reform and Consumer Protection Act in response to the 2008 financial crisis, instituting a variety of measures to prevent future financial crises.⁸⁴ Among these measures was the establishment of the Consumer Financial Protection Bureau whose mission is to prevent unethical practices in the financial services sector.⁸⁵ Several legal cases have further enshrined the notion of corporate responsibility, such as a suit brought by Holocaust survivors against European banks, insurance companies, and industries for complicity in wartime human rights violations.⁸⁶ Incorporation rules also have evolved to permit alternative structures for corporate behavior, implicitly recognizing the negative externalities associated with conventional business approaches. Namely, companies that incorporate as benefit corporations, or "B Corps," and low-profit limited liability companies (L3Cs) are required by law to pursue social goals in addition to financial returns.⁸⁷

Similarly, responses from international organizations and non-governmental organizations (NGOs) have promoted accountability and responsibility in the face of significant corporate influence and impact. The United Nations issued its Global Compact in 2000, and the United Nations Human Rights Council endorsed the Guiding Principles on Business and Human Rights in 2011 to encourage businesses to adopt and report on socially responsible practices.⁸⁸ In general, NGO resources and

74. "Current background and historical trends," *World Trade Report* (2011), https://www.wto.org/english/res_e/booksp_e/anrep_e/wtr11-2b_e.pdf.

75. Ibid.

76. "Global flows in a digital age: How trade, finance, people, and data connect the world economy," *McKinsey Global Institute* (2014), http://www.mckinsey.com/~media/McKinsey/dotcom/Insights/Globalization/Global%20flows%20in%20a%20digital%20age/Global_flows_in_a_digital_age_Full_report-March_2015.ashx.

77. Cho Mu-hyun, "The chaebols: The rise of South Korea's mighty conglomerates," CNET (2015), <http://www.cnet.com/news/the-chaebols-the-rise-of-south-koreas-mighty-conglomerates/>.

78. "World Economic Outlook Database," *International Monetary Fund* (2015), <http://www.imf.org/external/pubs/ft/weo/2015/01/weodata/index.aspx>.

79. "Farm Programs," *U.S. Government Accountability Office*, http://www.gao.gov/key_issues/farm_programs/issue_summary.

80. Ibid.

81. "Guide to Antitrust Laws," *Federal Trade Commission*, www.ftc.gov/bc/antitrust.

82. "EPA History," *U.S. Environmental Protection Agency*, <http://www2.epa.gov/aboutepa/epa-history>.

83. "Laws and Regulations," *U.S. Environmental Protection Agency*, <http://www.epa.gov/>.

84. H.R. 4173, 111th Cong. (2010).

85. Ibid.

86. Steven R. Ratner, "Corporations and Human Rights: A Theory of Legal Responsibility," *Yale L.J.* 443 (2001), <http://www.yalelawjournal.org/article/corporations-and-human-rights-a-theory-of-legal-responsibility>.

87. Carter G. Bishop, "Fifty State Series: L3C & B Corporation Legislation Table," *Suffolk University Law School Research Paper No. 10-11* (2014), http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1561783##.

88. "U.N. Global Compact," *United Nations Global Compact*, <https://www.unglobalcompact.org/>; "U.N. Guiding Principles on Business and Human Rights," *Shift* (2015), <http://www.shiftproject.org/page/un-guiding-principles-business-and-human-rights>.

activity have increased steadily over time. In the United States, more than 1.4 million non-profit organizations were registered with the IRS in 2009, showing an increase of 19% between 1999 and 2009.⁸⁹ Assets of U.S. public charities grew from \$632 billion in 1999, to \$1 trillion in 2009. In 2010, total private giving in the United States was \$290.89 billion, and 26% of adults volunteered through a non-profit organization.⁹⁰

2.4 TRUST IN BUSINESS

While corporations have faced criticism for contributing to worsening environmental and social conditions and have accumulated significant power over time, overall, the public trust tends to favor business over government. In the United States, trust in the federal government “just about always” or “most of the time” had deteriorated over the last half-century. In 1958, 73% of the U.S. public trusted their government, while in 2014, only 24% of respondents fell into this category.⁹¹ Meanwhile, 45% of U.S. respondents claimed they trusted business in 2014.⁹²

While this number is still low, trust in business to solve societal problems has remained higher than trust in government. Moreover, people express at least as much trust in business as they do in governments to provide solutions to problems that governments are mandated to regulate and solve, such as obesity, affordable drug prices, outsourcing of jobs to foreign countries, and environmental pollution.⁹³

89. “The Nonprofit Sector in Brief: Public Charities, Giving, and Volunteering, 2011,” *The Urban Institute*.

90. “The Nonprofit Sector in Brief: Public Charities, Giving, and Volunteering, 2011,” *The Urban Institute*.

91. “Public Trust in Government: 1958-2014,” Pew Research Center for the People and the Press, November 13, 2014, <http://www.people-press.org/2014/11/13/public-trust-in-government/>.

92. “Trust in Financial Services - 2014 Edelman Trust Barometer,” *Edelman* (2014), <http://www.edelman.com/insights/intellectual-property/2014-edelman-trust-barometer/trust-in-business/trust-in-financial-services/>.

93. “2005 Edelman Trust Barometer,” *Edelman* (2005), <http://www.edelman.com/assets/uploads/2014/01/2005-Trust-Barometer-Global-Findings.pdf>.

3. How the Private Sector Can Have a (More) Positive Societal Impact

While many environmental and social issues have been traditionally considered the domain of government activity, the increasing operating constraints of governments have restricted their ability to deal effectively with these issues. Specifically, financial constraints, ability to attract human capital, and limited jurisdiction over global challenges have severely inhibited governmental ability to provide solutions to environmental and social issues.

Since the 1970s, government indebtedness has steadily increased across all advanced economies.⁹⁴ This increased debt strained the purses of advanced economies worldwide and pressured local governments to reconsider public spending. In the United States, these new constraints led to diminished funding for social safety net programs and slashed budgets for regulatory agencies. In 2014, WIC, a nutrition program for low-income women and infants, had its budget cut by \$93 million, while the Environmental Protection Agency's budget was cut by 34% in 2013.⁹⁵ In general, increasing financial constraints have limited governments' supply of public goods and services.

Meanwhile, the increasing attractiveness of careers in business and NGOs has steered high-quality human capital away from the public sector, further constricting governments' ability to perform. Indicatively, less than six percent of graduating college seniors say that their ideal career is in the federal government.⁹⁶ Only seven percent of federal employees are under 30 years old, only a third of the level in 1975 and the lowest in eight years.⁹⁷ A recent survey found that federal employee satisfaction had dropped over four consecutive years beginning in 2010.⁹⁸ Rather than joining government, individuals interested in public service seem to prefer careers with non-profit groups, international organizations, or socially responsible corporations and investing.

In addition, globalization has created global markets for goods, services, and employment, further restricting the ability of governments to impose and enforce standards and regulations. For example, financial regulators face difficulty overseeing financial institutions, as many financial activities are moving to markets legislated by countries with weaker regulations. Similarly, tax authorities struggle with restricting tax evasion when companies or individuals move offshore and establish legal entities with preferential tax treatment. In yet another example, regulators struggle to enforce minimum standards of employee or product safety, as supply chains move to emerging markets.

Many large companies that operate across country boundaries have created corporate programs designed to address this void, motivated both by moral arguments and financial consequences. These companies have implemented initiatives to address unmet social needs. Companies have approached these initiatives in three ways: through firm-specific initiatives, industry self-regulation, and cooperation with regulators.

3.1 FIRM-SPECIFIC INITIATIVES

Some companies have attempted to tackle social challenges using a firm-specific approach. For example, Aetna, an American healthcare company, announced in January 2015 that it would increase its U.S. minimum wage base to \$16 and would offer an enhanced medical benefit plan to low-wage employees. This move was projected to effect 5,700 domestic employees and would provide an average wage increase of 11%, while some employees would see a raise of 33%. Overall, the change would affect 12% of Aetna's current workforce. Moreover, the new benefits program was expected to reduce employee's out-of-pocket costs without an increase in monthly payments. An estimated 7,000 employees would be able to take advantage of the program and would see savings of up to \$4,000.⁹⁹ Analysts

94. S.M. Ali Abbas, Laura Blattner, Mark De Broeck, Asmaa El-Ganainy, and Malin Hu, "Sovereign Debt Composition in Advanced Economies: A Historical Perspective," *IMF Working Paper*, no. WP/14/162 (September 2014), <http://www.imf.org/external/pubs/ft/wp/2014/wp14162.pdf>.

95. John Pepitone, "WIC Program Faces Millions of Dollars in Cuts," *fox4kc.com*, December 15, 2014, <http://fox4kc.com/2014/12/15/wic-program-faces-millions-of-dollars-in-cuts/>; Darren Goode, "House Panel Approves Bill with Deep Cuts for EPA - Darren Goode," *POLITICO*, July 24, 2013, <http://www.politico.com/story/2013/07/epa-budget-cuts-94632.html>.

96. "College Students Are Attracted to Federal Service, but Agencies Need to Capitalize on Their Interest," *Partnership for Public Service and NACE*, March 2014, http://www.govexec.com/media/gbc/docs/pdfs_edit/031713e2.pdf.

97. Stephen Lurie, "No Wonder No One Wants to Work for the Federal Government," *The Washington Post*, June 18, 2014, <http://www.washingtonpost.com/posteverything/wp/2014/06/18/no-wonder-no-one-wants-to-work-for-the-federal-government/>.

98. "Governmentwide Management Report: Results From the 2013 Federal Employee Viewpoint Survey," *United States Office of Personnel Management* (2013), http://www.fedview.opm.gov/2013files/2013_Governmentwide_Management_Report.PDF.

99. Anna Wilde Mathews and Theo Francis, "Aetna Sets Wage Floor: \$16 an Hour," *The Wall Street Journal*, January 12, 2015, <http://www.wsj.com/articles/aetna-to-boost-incomes-of-lowest-paid-workers-1421105445>.

speculated that the higher wage floor would also increase employee bonuses and 401(k) contributions.

Aetna hoped the move would cut into its large turnover costs, estimated at \$120 million per year, by attracting qualified employees and reducing turnover overall. Aetna estimated a 2014 total project cost of \$14 million and expected this figure to increase to \$25.5 million by 2016.¹⁰⁰ Notably, the program came at the heels of an incredibly successful year for Aetna. At the end of 2014, Aetna boasted 23.5 million customers—a 6% increase from the previous year.¹⁰¹ Analysts projected that Aetna would continue its positive gains with forecasted revenue into 2015 of \$62 billion, with operating profits standing at \$2.4 billion.

Like Aetna, the Dow Chemical Company has instituted firm-specific initiatives to increase their social and environmental impact while padding their bottom line. Dow's presence across geographic boundaries is prevalent: with \$58.2 billion in net sales in 2014, Dow recorded a full-year adjusted EBITDA of \$9.3 billion.¹⁰² Dow views its sustainability initiatives as a value driver that has helped to build a new line of products, tighten operations, and limit the company's environmental impact.¹⁰³ Sustainability-oriented products include high-performing insulation that reduce consumer's cooling costs by 20% and biobased dielectric insulating fluids designed to improve the efficiency of transformers while reducing environmental impact.¹⁰⁴ Dow reported that these innovative products had produced \$5.7 billion in revenue in 2013 alone.¹⁰⁵ Dow's sustainability goals and initiatives were heavily influenced by the United Nation's Millennium Development Goals (MDGs) and aimed to achieve significant societal and environmental impact. Dow aspired to develop innovative, scalable technologies and business models to significantly improve the quality of lives around the world and advance progress toward the MDGs. Dow's Omega-9 oils, for example, have contributed to the creation of healthier foods. Dow estimates that the use of Omega-9 oils has so far eliminated from the North American diet more than one billion pounds of trans and saturated fats, which heighten risks related to heart disease and type 2 diabetes.¹⁰⁶

Unilever has also pursued positive societal impact in its operations. The company established its Sustainable Living Plan in 2010 as a blueprint for doubling the size of the business, while simultaneously reducing the company's environmental footprint and improving its social impact. Unilever's approach to its Lipton Tea brand provides one example of how the company is leveraging its Sustainable Living Plan to advance these objectives. Unilever is working to ensure that all Lipton tea originates from Rainforest Alliance-certified farms that respect conservation practices and pay fair wages to workers. In the first half of 2010, Unilever achieved its interim target to source all Lipton Yellow Label tea sold in Western Europe from Rainforest Alliance-certified farms. By 2018, Unilever aims to have all the tea sold in Turkey (the world's fifth-largest tea producer) sourced from accredited farms.

Another Lipton initiative aims to enhance the productivity of tea plants to ensure their quality and overall sustainability. This effort will involve a research and development program focused on sustainable horticultural methods that limit agrochemical use and enable the cultivation of more tea on less land. The project also aims to help arrest any decline in tea crop diversity that could limit the crop's future ability to withstand drought, disease, and pests. Unilever will conduct his project in partnership with Nature Source Genetics at the company's Kenyan tea plantation.

3.2 INDUSTRY SELF-REGULATION

At times, sustainability initiatives have promoted novel company partnerships. Both GlaxoSmithKline and Pfizer agreed to combine their HIV drug therapies into one company, ViiV Healthcare, in order to achieve greater research and development, economies of scale, and improved access to medicines in developing nations. ViiV Healthcare now provides customers in low-income countries, including those in sub-Saharan Africa, with discounted access to its anti-retroviral portfolio.¹⁰⁷ This move preceded any forced government regulation and allowed the two companies to publicize their ingenuity and positive social impact.

Other companies have united to tackle industry-wide issues. For example, H&M and Gap both operate in the highly competitive apparel industry and, as a result, constantly seek less costly manufacturing options. H&M does not own any factories; instead, the company sources its products from more than 700 factories in Asia.¹⁰⁸ Similarly, Gap relies on factories in emerging markets where the production costs are significantly lower than those in devel-

100. Ibid.

101. Anna Wilde Mathews and Michael Calia, "Aetna Raises Outlook as Revenue Beats Views," *The Wall Street Journal*, February 3, 2015, <http://www.wsj.com/articles/aetna-raises-outlook-as-revenue-beats-expectations-1422962749>.

102. "2014 Annual Report," *The Dow Chemical Company*, <http://www.dow.com/en-us/investor-relations/financial-reporting/annual-reports>.

103. Ibid.

104. "Global Challenges: Energy and Climate Change," *The Dow Chemical Company*, (2015), <http://www.dow.com/en-us/science-and-sustainability/global-challenges/global-challenges-energy-climate-change>.

105. "2014 Annual Report," *The Dow Chemical Company*, <http://www.dow.com/en-us/investor-relations/financial-reporting/annual-reports>.

106. "Dow Declares Omega-9 Healthy Oils as 'Breakthrough,'" *The Dow Chemical Company*, June 25, 2012, <http://www.dow.com/news/press-releases/dow%20declares%20omega-9%20healthy%20oils%20as%20breakthrough>.

107. "Health Care Sector Industry Briefs, Pharmaceuticals," *Sustainability Accounting Standards Board*, <http://www.sasb.org/approach/our-process/industry-briefs/health-care-sector/industry-briefs/>.

108. Jennifer Kesik, "Challenges of Corporate Social Responsibility Within The Apparel Industry: Implications on IHRM Practices," November 2013, <http://www.slideshare.net/JenniferKesik/challenges-of-csr-within-the-apparel-industry-28665135>.

oped markets.¹⁰⁹ Operating in emerging markets may involve risks related to human rights, child labor, and health and safety, especially where relevant legal and regulatory frameworks are considered “inadequate, outdated, or insufficiently enforced by the local government.”¹¹⁰ As a response to these challenges, both H&M and Gap implemented codes of conduct that attempt to self-regulate business activities and influence working conditions in overseas factories. At Gap, a team of 100 full-time employees is responsible for implementing the company’s code of conduct.¹¹¹

Other industries have established programs with international NGOs as a way to self-police and encourage reform. The United Nations Principles for Responsible Investment (UN PRI) provided such a platform for the financial services industry, by bringing together portfolio managers and asset allocators that vowed to incorporate environmental, social, and governance (ESG) variables into their investment decisions. Membership in the UN PRI has signaled an enhanced commitment to transparency and helped to address corporate governance concerns in this industry, among advancing other objectives. This new responsible investing approach has attracted a broad following. Since the UN PRI’s launch in 2006, more than 1,300 financial services companies representing \$59 trillion in assets under management have joined the initiative, and approximately 94% of these signatories have adopted responsible investment policies.¹¹² While the principles have been signed by a large number of asset managers and owners, application of the principles is still in the early stages.

3.3 WORKING WITH GOVERNMENTS AND NGOS

Often, companies work directly with governments and international NGOs to promote positive societal outcomes. For example, the Extractive Industries Transparency Initiative (EITI) was founded in 2002 with the goal of enhancing good governance of natural resource development by improving transparency and accountability in the extractive industries. The EITI is an organization composed of sponsoring countries, natural resource extractive companies, other NGOs representing civil society interests, and partner organizations that have come together to develop a framework for the disclosure of payments to governments based on two primary elements: a) Companies will publish (disclose) what they pay to governments, and governments will publish what they receive in an EITI report; and b) a multi-stakeholder group of governments, companies, and civil society oversee the disclosure process.

Adoption of the EITI standard is discretionary, and implementation is the responsibility of individual countries. The EITI has gained significant support. More than 90 major companies involved in oil, gas, and mining have committed to supporting the EITI, through operations in implementing countries, international-level commitments, and industry associations. The EITI also has won the support of more than 90 global investment institutions that collectively manage over \$19 trillion. A broad coalition of governments, civil society, and international organizations supports the EITI, including 400 NGOs, the World Bank, the International Monetary Fund, the International Council on Mining and Metals, and regional development banks. These organizations provide technical and financial support to implementing countries and support EITI outreach. The EITI has successfully driven an increase in corporate transparency around government payments. As of April 2015, 48 countries had implemented EITI standards, 237 country-years have been covered by EITI reports, and \$1.6 trillion worth of government revenues from oil, gas, and minerals had been disclosed.¹¹³

3.4 EMERGING MARKETS

With an increasing percentage of economic growth coming from emerging markets, companies have even greater potential to improve their financial standing when they fully embrace new local environmental and social regulation. These new laws often allow companies to adapt positively to changes in consumer demand and demographic trends that are catching up to those in developed countries. Mexico-based Grupo Bimbo is an example of an emerging markets company that has not only responded well to recent social regulation, but has also harnessed its power as the world’s largest baked-goods producer to invest in proactive and innovative sustainability practices that should benefit its bottom line meaningfully. In particular, Grupo Bimbo modified key product offerings in response to an 8% Value Added Tax on high calorie products in Mexico, given the government’s concern about obesity in the country (instituted in the same spirit as the Mexican government’s January 2002 20% tax on high fructose corn syrup-based soft drinks). Given Grupo Bimbo’s significant position in the confectionary industry, the company reformulated its indulgent products, decreasing its sugar content by 10% through stevia substitution. The company also rolled out a gluten-free product line. Grupo Bimbo’s other sustainability efforts include using biodegradable packaging, relying on a wind farm for electricity needs, deploying electric-powered trucks for distribution, offering supportive financing options for small-scale retailers, and aiming to reduce occupational safety incidents through the use of safer machinery in manufacturing facilities.

109. “Social & Environmental Responsibility Report 2011, 2012,” *Gap*, <http://www.gapinc.com/content/csr/html.html>.

110. *Ibid.*

111. Michiel van Yperen, “Corporate Social Responsibility in the Textile Industry,” *IVAM* (2006), <http://danangtimes.vn/Portals/0/Docs/2021144728-Corporate%20social%20responsibility%20in%20the%20Textile%20industry%20-%20International%20Overview.pdf>.

112. “PRI Fact Sheet | Principles for Responsible Investment,” *UN Principles for Responsible Investing*, <http://www.unpri.org/news/pri-fact-sheet/>.

113. “Fact Sheet,” *Extractives Industries Transparency Initiative*, https://eiti.org/files/document/EITI_Factsheet_EN.pdf.

4. Impact on Financial Value

With the world's largest corporations increasingly engaging with environmental and social issues, a question that arises is how this engagement affects companies' ability to create financial value over time. As a result, many studies have examined the relationship between a firm's ESG performance and its financial performance. These studies lead to the overall conclusion that firms scoring higher on ESG issues tend to show better stock market and accounting performance in the future, although some studies fail to find evidence, and a few studies find a negative impact.

Recent studies shed further light on the value implications of sustainable business practices by using new data. On ESG integration, a recent study finds a robust relationship between a firm's performance in material sustainability areas and future stock market performance.¹¹⁴ The authors follow the Sustainability Accounting Standards Board's (SASB) industry-specific guidance on materiality of ESG issues and find significant risk-adjusted returns for portfolios that include companies with superior performance in these areas. Importantly, the authors find no differential performance when constructing portfolios on the basis of ESG issues that are not classified as material.

On active ownership and engagement, a recent study finds that after successful investor engagements, particularly on environmental and social issues, targeted companies improve their accounting performance and corporate governance.¹¹⁵ These results are consistent with industry efforts to enable active ownership by institutional investors in order to engage productively with corporate management.

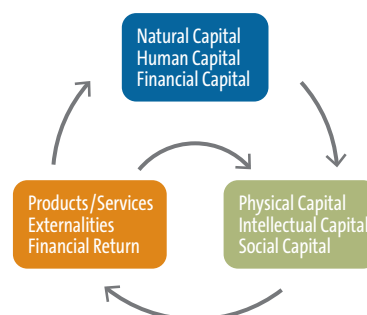
While many of the studies now find a positive link between ESG and financial performance, the mechanisms that establish such a link can be diverse. These range from operational efficiency and protection of brand value, to revenue growth enabled by new products and customer loyalty, to lower cost of capital through enhanced disclosure. In this section, we provide the reader with a framework that documents the different mechanisms through which sustainable business practices contribute to the financial performance of a company.

We begin by describing the value creation process inside a firm. The framework described here and illustrated in Figure 3 shows that a company's competitiveness depends on preserving and enhancing the different types of resources and capabilities that the firm uses to deliver excellent products and services, while concurrently minimizing the negative externalities generated in the process.

Firms use resources that can be classified as natural capital, such as water, forest, and minerals; human capital, such as skills, capabilities, and experiences of people; and financial capital, such as funds secured from investors or from the reinvestment of funds generated by operations. Firms use these resources to develop capabilities. These capabilities can be classified as intellectual capital, resulting from employee efforts to produce new knowledge; physical capital, such as property, plant, and equipment; and social capital, such as trust from society to continue company operations. Leveraging these capabilities, firms exchange products and services for financial compensation.

Products and services are not the only output generated by a company's production process. Externalities are another outcome of a company's activities. Positive externalities arise when a company's actions generate marginal private benefit that is less than the marginal social benefit. Negative

FIGURE 3: HOW RESOURCES DRIVE FIRMS' VALUE AND EXTERNALITIES



114. Mozaffar Khan, George Serafeim, and Aaron Yoon, "Corporate Sustainability: First Evidence on Materiality (Working Paper)," *Harvard Business School* (2015), http://papers.ssrn.com/sol3/papers.cfm?abstract_id=2575912.

115. Elroy Dimson, Oguzhan Karakas, and Xi Li, *Active Ownership*, August 13, 2014.

externalities arise when a company's actions generate marginal private costs that are smaller than the marginal social costs. While both positive and negative externalities can be imposed by a company on society, negative externalities such as pollution, climate change, and excessive risk-taking have affected the value creation process described here.¹¹⁶

Figure 4 provides an overarching framework that helps to conceptualize the relationship between sustainable business practices and financial performance. The top line shows the financial variables that sustainable business practices affect: revenues, costs, and cost of capital. The second line shows the types of capital that the financial variables affect, with every type of capital represented in the value creation cycle described above. The third line represents the mechanisms through which the capital in the second line is affected. We discuss each one of these mechanisms in detail below and provide real life examples along the way.

4.1 OPERATIONAL EFFICIENCY

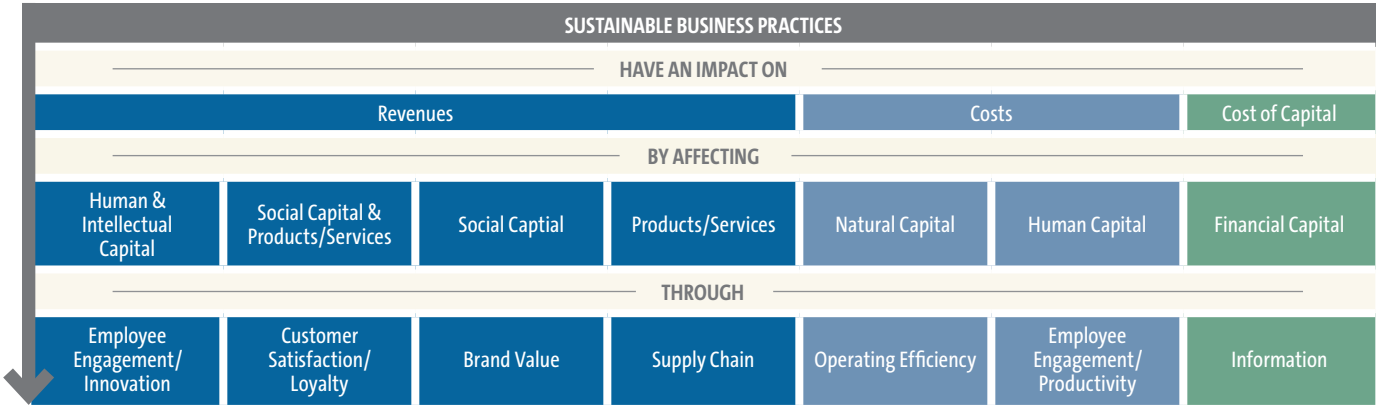
One of the most frequently claimed benefits of sustainable business practices is improved operational efficiency, which results in cost savings. Most often, these cost savings come from environmental initiatives that reduce water use, energy consumption, carbon emissions, and waste. Efforts that aim to improve operational efficiency take place both within the company and throughout its supply chain. Depending on a firm's degree of vertical integration, the largest benefits may be achieved either within the company itself or in its supply chain.

For example, Dow, an energy-intensive advanced materials company, reported that energy efficiency programs led to savings of \$9.4 billion and 1,800 trillion Btu between 1994 and 2010.¹¹⁷ While energy savings are the most typical outcome of initiatives that aim to improve operational efficiency, waste reduction is usually the second most typical outcome. In 2010, General Motors reported that it had cut total waste produced in its global operations by 43% since 2000. Between 2010 and 2013, the company disclosed a decrease in total waste generated per vehicle by another 10%.¹¹⁸ The company repurposed waste for productive uses, by reconditioning oil for use in General Motors facilities, reusing and rebuilding wooden pallets or grinding them into landscaping chips, converting cardboard into sound-absorption material, and using paint sludge to create plastic shipping containers. The company also worked with its 10,000 suppliers to improve packaging, by minimizing shrink wrap, taping, and bagging; eliminating glues and staples from cardboard; and replacing wooden pallets and supports with cardboard when possible. General Motors has reported that all of its manufacturing facilities recycle or reuse 84% of the waste that they generate; the company has estimated that the resulting savings total \$1 billion per year.¹¹⁹ In another example, the Campbell Soup Company discovered in 2008 that it saved roughly one dollar for each pound that it reduced in packaging and shipping needs. By redesigning their Pace Mexican Sauce bottles, Campbell shed half a million pounds in annual shipping and saved about half a million dollars as a result.¹²⁰ The redesign saved space on the shipping pallet,

116. "Integrated Governance: A New Model of Governance for Sustainability," U.N. Environment Programme Finance Initiative Asset Management Working Group and KKS Advisors (2014), http://www.unepfi.org/fileadmin/documents/UNEPFI_IntegratedGovernance.pdf.

117. One British Thermal Unit (Btu) is a unit of energy equivalent to approximately 1055 joules. "2011 Annual Report," *The Dow Chemical Company*, <http://www.dow.com/en-us/investor-relations/financial-reporting/annual-reports>.
 118. "Waste Reduction," *General Motors*, http://www.gm.com/vision/waste_reduction_.html.
 119. "Sustainability for Business: Innovation, Cost Savings, Opportunity," *NJPRO Foundation*, April 2012, <http://www.njprofoundation.org/pdf/sustain.pdf>; "Waste Reduction," *General Motors*, http://www.gm.com/vision/waste_reduction_.html.
 120. "Sustainability for Business: Innovation, Cost Savings, Opportunity," *NJPRO Foundation*, April 2012, <http://www.njprofoundation.org/pdf/sustain.pdf>.

FIGURE 4: FINANCIAL RELEVANCE OF SUSTAINABLE BUSINESS PRACTICES



limited glass shipments to Campbell's factories, increased the amount of product on the shelf, and decreased store deliveries. The company's packaging redesign for Pepperidge Farm's Goldfish snack crackers maximized space, removed virgin fiber, and introduced recycled content.

In summary, companies frequently claim cost savings as benefits of and an economic justification for environmental initiatives. This economic justification relates the organization's efficient use of natural capital resources to the organization's overall operating efficiency.

4.2 BRAND VALUE

The second most frequently cited benefit of sustainable business practices is risk management, in particular through the protection of the firm's reputation and brand value. At the most basic level, this effort aims to safeguard a firm's socially-determined license to operate. As we will see next, NGO activism coupled with consumer awareness is a powerful combination that can disrupt a company's business model and hamper performance. Importantly, these disruptions can affect a company, regardless of whether public dissatisfaction arises from an event that occurs within the company itself or within its supply chain.

4.2.1 Civil Society Activism

Non-governmental organizations representing civil society have seen significant recent growth in power and influence. NGOs in 26 countries account for 31 million employees, or almost seven percent of the total workforce of those countries.¹²¹ Annually, NGOs in these 26 countries spend about \$1.2 trillion, an amount nearly equal to the capital expenditures of the world's largest 500 companies.¹²² Emerging economies, such as India, Brazil, and the Philippines, which demonstrated historically weak presence of local NGOs, have now registered more than 200,000 NGOs.¹²³

As a result of expanded financial and human resources, NGO campaigns against specific corporations or against whole industries are becoming more sophisticated and more effective. These campaigns can significantly impact a company by damaging its brand and decreasing its social capital. Many campaigns have prompted regulatory actions that have affected the cost of doing business, while others have shifted customer attitude, thereby affecting sales numbers. At the

extreme, NGO campaigns have put companies' license to operate, and even those of entire industries, at risk.

In addition to increases in financial and human resources that have amplified campaign impact, two other trends have allowed NGO campaigns to become more effective. One is information technologies, such as the Internet and social media, which allow fast, low cost, and wide dissemination of information. The ability to disseminate information quickly and cheaply has enabled NGOs to inform people around the world about their campaigns and to mobilize large numbers of people to participate in protests and boycotts. The second is the "trust premium" enjoyed by NGOs. Many public opinion surveys rank NGOs as one of the most trusted institutions in society, with this trust premium increasing over time, while trust in business and government has declined.¹²⁴

NGO campaigns frequently target the oil and gas industry due to its major environmental impact. In 1995, Greenpeace organized a high profile media campaign against Shell's plan to sink the Brent Spar oil tanker in the North Sea. Greenpeace had submitted a critique to the British government citing Shell's lack of technical and environmental expertise and expressing concern over the precedent that the government would set by permitting Brent Spar's disposal. On April 30, 1995, Greenpeace activists occupied Brent Spar, attracting international attention. Greenpeace activists demonstrated at more than 300 Shell stations in Germany, causing these stations to lose up to 50% in sales.¹²⁵ Companies and public authorities began to cancel or threaten to cancel their contracts with Shell. Later in 1995, Shell towed the Brent Spar to Norway and moored it in a fjord where it was later dismantled. In July 1998, governments in the northeast Atlantic region agreed to ban the sinking of steel-built oil installations.¹²⁶

NGO campaigns have also targeted pharmaceutical firms for failing to provide medicines in underdeveloped areas of the world. In 2000, the Treatment Action Campaign (TAC), a South Africa-based AIDS advocacy group, began a media campaign to convince the public and the Pharmaceutical Manufacturers Association that it was "immoral and unjust for drug companies to maintain their prohibitively high prices and to prevent developing countries from manufacturing generics."¹²⁷ As a result of TAC's campaign, pharmaceutical company Pfizer faced

121. Jane Nelson, "The operation of non-governmental organizations (NGOs) in a world of corporate and other codes of conduct," *Corporate Social Responsibility Initiative*, working paper No. 34, 2007.

122. Ibid.

123. Ibid.

124. See for example the surveys that underpin the Trust Barometer of consulting firm Edelman.

125. Jesper Grolin, "Corporate legitimacy in risk society: the case of Brent Spar," *Business Strategy and the Environment* 7, no. 4 (1998): 213-222.

126. Alex Kirby, "Brent Spar's long saga," *BBC News*, November 25, 1998, <http://news.bbc.co.uk/2/hi/science/nature/218527.stm>.

127. Steven Robins, "Treating AIDS with Activism in South Africa," *Citizenship DRC Case Study Series*, January 6, 2010, http://www.drc-citizenship.org/system/assets/1052734344/original/1052734344-benequista_etal.2009-treating.pdf?1288873236.

outcry regarding the cost of the name-brand medications in March 2001 and soon after the company made its drugs available to South African government run clinics free of charge.¹²⁸ Other pharmaceutical firms learned from the Pfizer crisis. Novartis began selling Coartem, an anti-malarial drug, at cost in developing countries. Novartis explained that this “was a carefully considered decision on the part of Novartis in weighing its economic responsibilities to shareholders with its societal responsibilities. Intangible benefits—such as reputation, credibility and, ultimately, sustainability—counterbalance any potential loss of revenues.”¹²⁹

NGO campaigns to increase awareness around human rights violations have been some of the most effective. In the early 1990s, a wave of media investigations exposed the widespread use of child labor in Nike’s supply chain. Protests began against Nike, with activists appearing at store openings, and college students protesting Nike sponsorships at their schools. After initial resistance, Nike’s CEO admitted that “the Nike product has become synonymous with slave wages, forced overtime, and arbitrary abuse. I truly believe the American consumer doesn’t want to buy products made under abusive conditions.”¹³⁰ Nike announced a number of labor reforms and took an active role in forming the Fair Labor Association, an entity designed to audit, monitor, and enforce working conditions in member factories around the world. In 2001, Nike published its first Corporate Responsibility Report, in which its CEO concluded, “The performance of Nike and every other global company in the 21st century will be measured as much by our impact on quality of life as it is by revenue growth and profit margins.”¹³¹

Consumer goods companies, with their long supply chains in underdeveloped regions of the world, have not been the only firms targeted for human rights violations. An unusual suspect, technology firms, was also accused of promoting the violation of human rights. In 2011, the Human Rights Law Foundation, an NGO focused on bringing perpetrators of human rights abuses to justice, filed a class action lawsuit against Cisco Systems for its role in designing the Golden Shield. The Golden Shield technology had been used by the Chinese government to commit human rights abuses against practitioners of Falun Gong, a Chinese spiritual discipline.¹³² The case raised the question of whether U.S. companies can be held liable if foreign governments use their products to violate human rights.

These cases suggest that reactions from civil society in the form of NGO campaigns, consumer boycotts, and pressure for regulatory intervention seriously impact a company’s social capital.

4.2.2 Supply Chain

Companies are being held accountable for practices and events that occur in their value chain and not solely within the boundaries of the corporation itself. When Total S.A. was charged with negligence in oil transport relating to the 1999 Erika oil spill, which resulted in €200 million in coastline cleaning expenses and €192 million paid to victims of the pollution, the company claimed that the verdict was unfair.¹³³ Total argued that it had been blamed for lack of care in purchasing the tanker, though the company claimed that it had relied on fraudulent certificates that masked the ship’s severely deteriorated condition. In a press release, Total stated that it was “merely a user of ships” and that “it [was] not its role or its business to act as a substitute for inspection companies and classification societies, the ship-owner or the flag state.”¹³⁴ However, Total’s argument did not convince French courts. In January 2008, the company was found liable for its role in the Erika spill.

An increasing number of companies realize the importance of environmental and social issues in their supply chain and the need to manage these challenges in order to avoid events that could lead to increased costs triggered by regulatory interventions or decreased revenues due to product recalls, lack of key raw materials, or tainted brand image. Palm, a cell phone manufacturer, realized the hard way the need for its suppliers to comply with environmental standards in a key geographic market. When Palm’s suppliers failed to meet new the European directive “Restriction of Hazardous Substances,” which sought to limit the amount of hazardous substances in electronic goods, Palm decided to stop shipping the Treo 650 smart phone to Europe. Investors quickly revised their forecasts of the company’s future revenues. As a result, Palm’s stock value fell 14%.¹³⁵ Similarly, Mattel was forced to recall 20 million products when a supplier used lead-contaminated paint on the company’s toys in 2007.¹³⁶ Mattel blamed the problem on flaws in the manufacturing process at Chinese plants and suffered from negative media coverage. The company’s stock price fell 18% between August and December 2007, and the company became the target of litigation.¹³⁷ Mattel spent \$110 million on

128. Ibid.

129. Debora L. Spar, Morgan Hall, and Lane T. La Mure, “The Power of Activism Assessing the Impact of NGOs on Global Business.”; “The Power of Activism,” *California Management Review* 45, no. 3 (2003): 78-101.

130. Ibid.

131. Ibid.

132. “Doe vs Cisco,” *Human Rights Law Foundation*, <http://www.hrlf.net/announcements.html>.

133. “Total Compensates Third Parties,” *Total Press Release*, January 25, 2008, <http://www.total.com/en/about-total/news/news-940500.html&idActu=1875&textsize=1>.

134. Ibid.

135. Jason Busch, “Quantifying the Cost of Supply Chain Disruptions Due to Sustainability Issues/Violations,” *Spend Matters*, December 28, 2010.

136. “Value of Sustainable Procurement Practices,” *PricewaterhouseCoopers, EcoVadis, and INSEAD Social Innovation Centre* (2010), http://www.pwc.com/en_GX/gx/operations consulting-services/pdf/value-sustainable-procurement-practices.pdf.

137. Ibid.

recall expenses and a PR campaign that tried to mitigate the impact of the negative publicity.¹³⁸

Regulators are not the only enforcers of good environmental or social performance in the supply chain. Capital markets have heavily influenced Walmart's approach to supply chain management. A Norwegian pension fund sold €414 million in Walmart shares due to labor conditions in the company's supply chain.¹³⁹ The Norwegian finance minister, Kristin Halvorsen, said at the time, "These companies are excluded because, in view of their practices, investing in them entails an unacceptable risk that the fund may be complicit in serious, systematic or gross violations of norms."¹⁴⁰ The ministry said the fund's ethical council had found "an extensive body of material" indicating that Walmart had employed minors in breach of international rules, allowed hazardous working conditions at many supplier sites, and blocked workers' efforts to unionize. The exclusion of Walmart from the sovereign fund was officially announced on June 6, 2006, and Walmart's stock price fell by 11% between June 1 and mid-July that year.¹⁴¹

Conventional wisdom holds that maintaining a robust supply chain helps to prevent disruptions in supplies that could affect the ability of a company to distribute products and services, thereby affecting revenues. Moreover, these examples demonstrate some of the repercussions that may occur when a company experiences challenges in supply chain management. Where companies are able to limit these challenges, they not only ensure the continuity and efficiency of supplier services and products, but they also reduce the risk of reputational damage and mitigate against decrease in brand value.

4.3 EMPLOYEE ENGAGEMENT

Studies have found positive relationships between employee engagement and organizational performance outcomes including employee retention, productivity, profitability, customer loyalty, and safety.¹⁴² In terms of profitability, research has shown that companies with more engaged employees are likely to exceed the industry average in revenue growth.¹⁴³ A meta-study analyzed close to 8,000 business units in 36 companies to examine the relationship at the business unit level between employee

engagement and the business unit outcomes of customer satisfaction, productivity, profit, employee turnover, and accidents.¹⁴⁴ Business units that placed in the top quartile on the employee engagement measure enjoyed approximately 1 to 4% higher profitability, while productivity, measured in revenue per month, had increased on average between \$80,000 and \$120,000 during the test period.¹⁴⁵

Mechanisms that influence employee engagement are becoming increasingly important as executives realize the value of an engaged workforce and as more evidence suggests that most employees lack high levels of engagement. On average, only 31% of employees worldwide are engaged in their jobs, with engagement levels varying across geographies, from 35% in India, to 17% in China.¹⁴⁶ Importantly, engagement levels appear to be even lower among young people, a phenomenon that is especially problematic for companies that compete on the basis of product innovation and thus rely on the creativity and energy of a younger workforce.

While managerial practices, such as job rotation and performance-based incentives, have been recognized as capable of increasing employee engagement, a company's purpose and contribution to society can also lead to higher employee engagement. Companies with a broader mission to benefit society are more likely to inspire their employees to work toward common goals, since intrinsic motivation increases with the positive impact that one's job will have on society. Moreover, the positive aura around the company's brand and its increased legitimacy in society is likely to make employees feel prouder working for the company, further increasing their engagement. Consistent with a company's prosocial motivation driving better employee engagement, studies find that prosocial motivation can predict higher levels of performance in engineering, hospitals, education, firefighting, nursing, and government work.¹⁴⁷

138. Ibid.

139. Ibid.

140. Terry Macalister, "Biggest pension fund boycotts Walmart," *The Guardian*, June 6, 2006, <http://www.guardian.co.uk/business/2006/jun/07/supermarkets.asda>.

141. "Value of Sustainable Procurement Practices," PWC, EcoVadis, and INSEAD Social Innovation Centre (2010), http://www.pwc.com/en_GX/gx/operations consulting-services/pdf/value-sustainable-procurement-practices.pdf.

142. S. Markos and M.S. Sridevi, "Employee Engagement: The Key to Improving Performance," *International Journal of Business and Management* (2010), 5(12), 89-96, <http://www.ccsenet.org/journal/index.php/ijbm/article/viewFile/6745/6332>.

143. Ibid.

144. J.K. Harter, F.L. Schmidt and T.L. Hayes, "Business-unit-level relationship between employee satisfaction, employee engagement, and business outcomes: A meta-analysis," *Journal of Applied Psychology* (2002), 87, 268-279, <http://fullsailstrategies.web12.hubspot.com/Portals/172297/docs/Employee-Engagement-and-Profits.pdf>.

145. Ibid.

146. "Employee Engagement Report 2011, Beyond the numbers: A practical approach for individuals, managers and executives," *BlessingWhite* (2011), <http://www.nine-dots.org/documents/Blessing%20White%202011%20%20Employee%20Engagement%20Report.pdf>.

147. Adam Grant and John Sumanth, "Mission Possible? The Effect of Prosocially Motivated Employees Depends on Manager Trustworthiness," *Journal of Applied Psychology* (2009), 94 (4): 927-944.

4.4 CUSTOMER VALUE AND INNOVATION

4.4.1 New Products and Services

A survey of Chief Financial Officers (CFOs) and investment professionals conducted by Boston College and McKinsey & Co. cited innovation, new products, new customers, and new markets as specific areas where ESG factors have demonstrable impact on overall organizational growth.¹⁴⁸ In interviews conducted in 69 countries for the PricewaterhouseCoopers (PwC) 14th Annual Global CEO Survey, almost half of the CEOs expected consumers to factor environmental and corporate responsibility practices into purchasing decisions.¹⁴⁹ The CEOs indicated that they would adjust their strategy in the next three years to capture this customer and employee sentiment.

Many of the largest companies in the world have already recognized the need for innovation to satisfy social and environmental needs. Since 2007, Novartis has focused on three goals: “to extend the company’s lead in innovation, turn innovation into growth, and drive productivity into improving margins.”¹⁵⁰ Further elaborated, these include: “extending our lead in innovation through the research and development of new offerings and the expansion of applications for current offerings; accelerating growth across all divisions with new launches and a greater presence in emerging markets; and enhancing productivity through efficiency initiatives that free up resources for our R&D investment.”¹⁵¹ This approach has allowed Novartis to craft a business model unlike other pharmaceutical companies. The company’s CEO has stated, “If you are thinking along traditional lines, when a drug does not promise profitability and market size and growth, it will not enter the portfolio. But if we have a possibility to significantly improve the lives of patients who cannot be well treated, we will go ahead, irrespective of the size of the market.”¹⁵² Novartis’ portfolio rejuvenation drove overall growth for the company, with a growing contribution of new product sales in total sales.¹⁵³

In 2005, General Electric (GE) launched its “Ecomagination” initiative, a business strategy aimed at creating new value for customers and investors by focusing on energy, efficiency, and water challenges. In order to qualify for the Ecomagination portfolio, “products and services must significantly and measurably improve customers’ operating performance or value proposition and environmental performance.”¹⁵⁴ From 2005 to 2013, GE invested \$12 billion in research and development and realized \$160 billion in revenues.¹⁵⁵ By 2015, Ecomagination had generated over \$200 billion in revenue.

Consumers have begun to demand products with a more sustainable profile. Organic Monitor indicates that global sales of organic food and beverages increased from \$46 billion in 2007 to \$71.2 billion in 2012. Global sales of organic food and beverages are forecast to reach \$161.5 billion by 2018.¹⁵⁶ In the garment and textile sector, global retail sales of organic cotton apparel, home, and personal care products increased by 20% to just over \$5.16 billion from 2009 to 2010.¹⁵⁷ Major retailers are starting to see positive sales impacts. With a solid overall growth in sales of 5.5% in 2010, retail giant Carrefour had almost 60% more store brand organic food products in 2010 compared to 2007, and 220% more fair trade products on its shelves.¹⁵⁸ Developments in the tourism sector are equally promising. The Green Economy Report highlights that more than a third of travelers today favor environmentally friendly tourism and are willing to pay a premium of 25 to 40% for this experience.¹⁵⁹

Embedded in corporations’ broad effort to pursue greater customer attraction and new markets includes the challenge of reaching low-income consumers who represent a market of \$5 trillion. Four billion people at the base of the pyramid (BOP), with annual local purchasing power below \$3,000, live in relative poverty. Considered together, these individuals represent a substantial global consumer market. Empirical evidence of this group’s consumer behavior and purchasing power suggest important market-based opportunities to meet their needs, increase their productivity and incomes, and empower their entry into the formal economy.

148. “How Virtue Creates Value for Business and Society: Investigating the Value of Environmental, Social and Governance Activities,” Boston College Centre for Corporate Citizenship, (Boston: Carroll School of Management, 2009).

149. “Growth Reimagined: Prospects in Emerging Markets Drive CEO Confidence,” *PricewaterhouseCoopers* (2011), <https://www.pwc.com/gx/en/ceo-survey/pdf/14th-annual-global-ceo-survey.pdf>.

150. Lydia Dishman, “Innovation Agents: Joe Jimenez, CEO of Novartis,” *Fast Company*, July 19, 2011, <http://www.fastcompany.com/1768184/innovation-agents-joe-jimenez-ceo-novartis>.

151. “Innovation drives Novartis to double-digit growth for 2010,” *Novartis*, January 27, 2011, <http://www.novartis.com/newsroom/media-releases/en/2011/1482782.shtml>.

152. Chuck Salter and Erica Westly, “Most Innovative Companies 2010,” *Fast Company*, July 12, 2012, <http://www.fastcompany.com/mic/2010/profile/novartis>.

153. “Novartis delivers strong underlying financial performance in 2011, expects 2012 sales to be in line with 2011,” *Novartis*, January 25, 2012, <http://www.novartis.com/newsroom/media-releases/en/2012/1579903.shtml>.

154. “Ecomagination Portfolio,” *General Electric*, <http://www.ecomagination.com/portfolio>.

155. “GE 2013 Global Impact Report | Ecomagination Overview,” *General Electric*, <http://www.ge.com/globalimpact2013/#/ecomagination>.

156. “Global Market for Organic Foods and Beverages to Reach Nearly \$161.5 Billion by 2018; Asian Countries Moving at 22.9% CAGR,” *BCC Research*, July 7, 2014, [http://www.bccresearch.com/pressroom/fod/global-market-organic-foods-beverages-reach-nearly-\\$161.5-billion-2018](http://www.bccresearch.com/pressroom/fod/global-market-organic-foods-beverages-reach-nearly-$161.5-billion-2018); Cornis Van Der Lugt, “Sustainable Return on Investment Opportunity (RIO): The Business Case for the Green Economy,” June 2012.

157. *Ibid.*

158. *Ibid.*

159. “Towards a Green Economy: Pathways to Sustainable Development and Poverty Eradication,” *United Nations Environment Programme* (2011), <http://www.unep.org/greeneconomy/GreenEconomyReport/tabid/29846/Default.aspx>.

Business does not only anticipate market demand, but it also attempts to create and shape it. There is a fundamental need to educate consumers and help them make choices that favor sustainable products. While consumer demand for sustainable products is growing, confusion persists as to which companies are truly sustainable. A U.K. study found that 44% of consumers want more information on what companies are doing to be “green,” but 70% of consumers do not feel confident about identifying which companies are sustainable.¹⁶⁰ Evaluating a product’s sustainable attributes can be equally complicated. Non-standard, limited information about corporate sustainability further complicates consumers’ ability to identify sustainable products. For example, Consumers International highlighted consumer inability to understand the sustainability attributes of products as a barrier to increasing demand for certified coffee.¹⁶¹

However, research indicates that the importance of empowering consumers to assess the sustainability of a product will increase in the future, as consumers in emerging markets become more sensitive to sustainable products and approaches. The National Geographic Society’s 2014 survey of 18,000 people in 18 countries found that consumers in India, China, South Korea, and Brazil scored the highest in terms of increasing their environmentally friendly behavior.¹⁶²

4.4.2 Customer Loyalty and Satisfaction

Increasingly, a key element of the competitive landscape is the relative positioning of each company along sustainability dimensions. Companies vary in the extent to which they rely on sustainability activities for branding and product development, versus the brands and products of their competitors. Some companies, such as Timberland, Body Shop, Whole Foods, and Unilever, have affiliated themselves with environmental and social causes, becoming known as the socially responsible brand in an industry. For example, Whole Foods espouses the value of “caring about our communities and our environment.” This value is integrated in the organization’s business strategy and operations and includes conducting organic sourcing and environmentally-friendly distribution, encouraging employees to volunteer time for social causes, and donating at least 5% of its annual profits to a variety of causes. Whole Foods’ strategy has contributed to its success, creating consumers who act

as “ambassadors” for the company. The footwear company Timberland has integrated a similar set of principles in its operations. Since 2005, every Timberland product has carried a “nutritional label,” informing consumers of its environmental and social impact. This strategy has resulted in high levels of customer loyalty.¹⁶³

The impact of sustainable business practices on customer behavior can be significant because, compared to other firm attributes, such as operational excellence or product innovation, a company’s actions in the sustainability space can reveal aspects of corporate culture, specifically the values that shape the organization’s identity.¹⁶⁴ Such an identity is not only more memorable, but also more anthropomorphic, enabling consumers to identify with the company. In other words, unlike other positioning strategies, sustainability positioning humanizes a company or brand, encouraging consumers not simply to like, respect, or admire the company, but to actually identify with it.¹⁶⁵ In turn, the benefits to the company of such identification can exceed the transactional benefits to the company, such as increased sales, to include rarer, longer-term relational benefits, such as loyalty and advocacy.¹⁶⁶

4.4.3 Drivers of Competitive Advantage in the Product Market

Multiple forces may enable sustainable business practices to produce a competitive advantage. These forces can be classified into three drivers that will benefit companies in the product market (Figure 5). The first driver is government regulation, which takes three forms: economic incentives, minimum requirements, and prohibitions. Economic incentives enable firms that offer products and services with a more desirable environmental and social profile to access lower taxes or tariffs, or to receive preferential status in government procurement decisions. In the United States, manufacturers of energy efficient dishwashers, washing machines, and refrigerators that meet the government’s Energy Star certification are eligible for tax breaks.¹⁶⁷ Minimum requirements set standards that products and services must satisfy in order to compete in the product market. Under the European Union’s Car Regulation,

160. “Global Ecolabel Monitor: Towards Transparency,” *World Resource Institute*, 2010, http://www.ecolabelindex.com/downloads/Global_Ecolabel_Monitor2010.pdf.

161. “From Bean to Cup: How Consumer Choice Impacts Upon Coffee Producers and the Environment,” *Consumers International and IIED*, December 2005, <http://www.consumersinternational.org/media/306514/coffee%20report%20%28english%29.pdf>.

162. National Geographic Society: <http://environment.nationalgeographic.com/environment/greendex/>.

163. “Grocers Jumping on the Organic Bandwagon,” *The Colorado Springs Business Journal*, January 20, 2006.

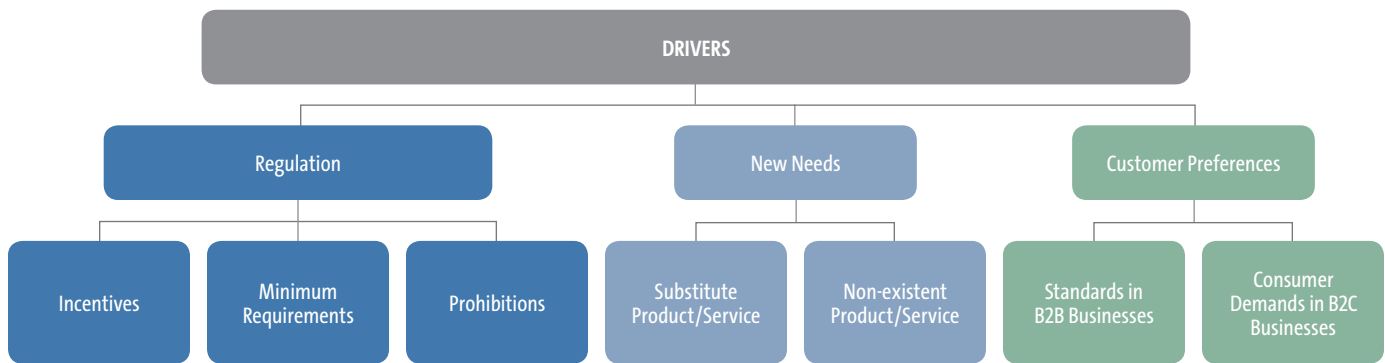
164. Daniel B. Turban and Daniel W. Greening, “Corporate social performance and organizational attractiveness to prospective employees,” *Academy of Management Journal* 40, no. 3 (1997): 658-672.

165. Chitrabhan B. Bhattacharya and Sankar Sen, “Consumer-company identification: A framework for understanding consumers’ relationships with companies,” *Journal of Marketing* 67, no. 2 (2003): 76-88.

166. Steve Hoeffler and Kevin Lane Keller, “Building brand equity through corporate societal marketing,” *Journal of Public Policy & Marketing* 21, no. 1 (2002): 78-89; Jill Klein and Niraj Dawar, “Corporate social responsibility and consumers’ attributions and brand evaluations in a product-harm crisis,” *International Journal of research in Marketing* 21, no. 3 (2004): 203-217.

167. “Federal Tax Credits for Energy Efficiency,” *U.S. Small Business Association*, <http://www.sba.gov/content/federal-tax-credits-energy-efficiency>.

FIGURE 5: DRIVERS OF COMPETITIVE ADVANTAGE THROUGH SUSTAINABLE BUSINESS



the fleet emissions average for all new cars must be less than 130 grams of CO₂ per kilometer (g/km) by 2015, and 95 g/km by 2021.¹⁶⁸ Prohibitions set limits on marketing and distributing certain products and services that governments believe will cause adverse environmental or social consequences. Chlorofluorocarbons (CFCs), commonly used in refrigerants and propellants, are known to have destructive effects on the atmosphere's ozone layer and have been banned in all developed countries.¹⁶⁹

The second driver of competitive advantage is the new set of needs created by the shifting environmental and social landscape. Companies will satisfy these new needs in two ways. First, companies will change attributes of existing products and services in order to accommodate new needs. In 2008, Clorox introduced its Green Works line of household cleaners, which contain environmentally friendly chemicals and cleaning agents.¹⁷⁰ Companies will also meet these new needs by developing entirely new products and services. Demand for alternative energy sources has fostered advances in solar panel technology, bringing to market new solar panel types that are more cost competitive with traditional forms of energy generation.¹⁷¹

The third driver of competitive advantage is customer preference. In the business-to-business (B2B) domain, this

phenomenon primarily takes shape through the environmental and social standards that companies take into account when they choose suppliers. Walmart has worked with the Sustainability Consortium in creating a sustainability index, which helps Walmart evaluate suppliers' performance with regard to product lifecycle.¹⁷² In the business-to-consumer (B2C) domain, consumers express preferences to buy products and services from sustainable companies. Patagonia, an outdoor clothing company, has built its reputation and brand by minimizing its ecological impact and by convincing consumers that its products are worth a premium price.¹⁷³

It is important to note that these drivers do not operate in isolation from one other. Rather, each driver tends to reinforce the others' impact on sales. For example, consumer demand to eliminate child labor in the supply chain will likely lead to tighter government regulation of child labor and to companies' implementation of stricter supplier standards. All of these forces are likely to reflect prevailing social expectations about the attributes of products and services and about the processes by which they are generated. As we will see in the next section, failing to meet these social expectations can damage a firm's reputation and therefore its brand value.

4.5 ACCESS TO FINANCE AND COST OF CAPITAL

When the likelihood of agency costs is high, and the amount of capital that the firm requires for investments exceeds its net worth, capital providers are compensated for their information and monitoring costs by pricing capital at a higher interest

168. "Reducing CO₂ emissions from passenger cars," *European Commission*, http://ec.europa.eu/clima/policies/transport/vehicles/cars/index_en.htm.

169. "The Montreal Protocol on Substances that Deplete the Ozone Layer," *U.S. Environmental Protection Agency*, <http://www.epa.gov/ozone/intpol/index.html>.

170. "Green Products: Using sustainable attributes to drive growth and value," *PricewaterhouseCoopers*, December 2010, <http://www.pwc.com/us/en/corporate-sustainability-climate-change/assets/green-products-paper.pdf>.

171. Justin Gerdes, "Solar Power More Competitive Than Decision-Makers or Consumers Realize," *Forbes*, May 24, 2012, <http://www.forbes.com/sites/justingerdes/2012/05/24/solar-power-more-competitive-than-decision-makers-or-consumers-realize/>.

172. "Global Responsibility - Sustainability Index," *Walmart*, <http://corporate.walmart.com/global-responsibility/environment-sustainability/sustainability-index>.

173. Seth Stevenson, "Patagonia's Founder is America's Most Unlikely Business Guru," *The Wall Street Journal*, April 26, 2012, <http://online.wsj.com/article/SB10001424052702303513404577352221465986612.html>.

rate.¹⁷⁴ Consequently, the greater these market frictions are, the steeper the supply curve and the higher the cost of external financing.

Capital constraints can be a significant impediment to the growth of a firm, affecting its ability to undertake strategic investments and remain competitive in the marketplace. Financially constrained firms are more likely to reduce investments in a wide range of strategic activities, including investments in inventory and R&D activities.¹⁷⁵ Research shows that small U.S. firms' asset growth is constrained by their internal capital and that firms able to raise additional external funds enjoy a higher growth rate.¹⁷⁶ Using survey data from global companies, another study documents that firm performance is vulnerable to various financial constraints, and that small companies are disproportionately affected by tighter constraints.¹⁷⁷

The adoption and implementation of practices that reduce informational asymmetries or reduce the likelihood of agency costs also reduce capital constraints. Considerable evidence indicates that firms with sustainable business practices face lower capital constraints.¹⁷⁸ This relationship can be attributed to two mechanisms. First, these firms have better stakeholder engagement practices that significantly reduce the likelihood of opportunistic behavior and introduce a more efficient form of contracting with key constituents. In other words, stakeholder engagement based on mutual trust and cooperation reduces potential agency costs by pushing managers to adopt a long-term rather than a short-term orientation.¹⁷⁹

Second, firms with a sustainable strategy are more likely to disclose more non-financial information and are also more likely to provide assurance of such reports by third parties, therefore increasing the credibility of the information disclosed. Consequently, non-financial reporting increases transparency regarding companies' social and environmental impact and governance structure, potentially leading to changes in

internal control systems that further improve compliance with regulations and the reliability of reporting. As a result, the extended availability of credible non-financial data, in addition to its inclusion in financial disclosures, reduces information asymmetry and results in lower capital constraints.

4.6 RECENT EVIDENCE ON VALUATION IMPLICATIONS

We conducted our own analysis using data from 2010 to 2014 to understand the value implications of ESG performance. Our analysis explored whether scores that represent proxies of firms' efforts to reduce negative externalities and produce a positive societal impact are related to superior valuations both from equity and fixed income perspectives.

First, we conducted an analysis to understand whether firms with higher ESG performance have higher equity market valuation. Since a wide array of factors can influence valuations, we used the Barra Long-Term U.S. Equity Model¹⁸⁰ to isolate the effect of ESG performance on firms' market-to-book value of equity ratios. Using Barra's factor neutralization process, we removed the portion of ESG scores related to all fundamental factors except the value factor. Barra's factor neutralization process conducts a linear regression with the error term, or the residual, representing the components of the ESG score unrelated to the firms' exposure to the other Barra factors. Since we did not neutralize value factor exposure, any relationship between ESG scores and valuation was retained in the residual, while controlling for other firm characteristics that might affect valuations such as earnings growth and leverage.

Figure 6 shows the market valuation of firms as a function of their ESG performance. We classify the firms in the sample in three portfolios according to their ESG score. We find that firms with high ESG performance have higher market valuation (3.29) compared to firms with low ESG performance (2.95). Investors are willing to pay a premium for firms with high ESG performance consistent with investors expecting these firms to have higher profitability in the future. While this finding does not necessarily mean that better ESG performance causes the higher market valuation, it suggests that ESG performance is correlated with better management or business model quality.

While the analysis above could be attributed to high ESG performers' higher profitability margins, we also sought to understand whether we could expect this higher profitability to be of higher quality in terms of its persistence. Using regression

174. For a full exposition of the model, based on neoclassical assumptions, see p.195-198 of Hubbard, R.G., 1998. Capital-market imperfections and investment. *Journal of Economic Literature*, 36: 193-225.

175. R.E. Carpenter, S.M. Fazzari, and B.C. Petersen, "Financing constraints and inventory investment: A comparative study with high-frequency panel data," *Review of Economics and Statistics* (1998), 80: 513-519; C.P. Himmelberg and B.C. Petersen, "R&D and Internal Finance: A Panel Study of Small Firms in High Tech Industries," *Review of Economics and Statistics* (1994), 76(1): 38-51.

176. R. Carpenter, and B. Petersen, "Is the growth of small firms constrained by internal finance?" *Review of Economics and Statistics* (2002), 84(2): 298-309.

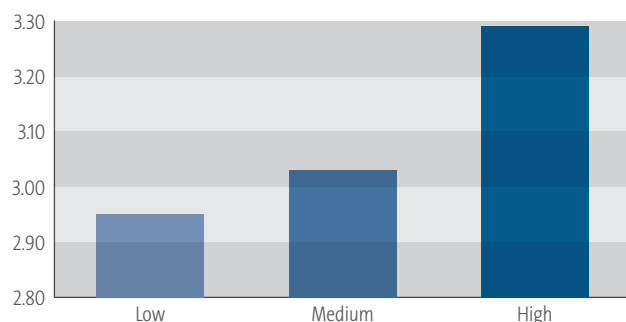
177. T. Beck, A. Demirguc-Kunt, L. Laeven, and R. Levine, "Financial and legal constraints to growth: Does firm size matter?" *Journal of Finance* (2005), 60(1): 137-177.

178. Beiting Cheng, Ioannis Ioannou, and George Serafeim, "Corporate social responsibility and access to finance," *Strategic Management Journal* 35, no. 1 (2014): 1-23.

179. Robert G. Eccles, Ioannis Ioannou, and George Serafeim, "The impact of corporate sustainability on organizational processes and performance," *Management Science* 60, no. 11 (2014): 2835-2857.

180. Barra's U.S. Long-Term Equity Model (USE3L) is a fundamental factor model that explains a stock's risk and return based on its exposure to 13 style factors and 55 industry factors. "Barra US Equity Model Long-Term (USE3L)," MSCI Barra, <http://admin.epiq11.com/online/documents/trb/exhibits/dcl%20exhibits/D1557.pdf>.

FIGURE 6: MARKET VALUE OVER BOOK VALUE OF EQUITY: FIRMS WITH LOW, MEDIUM, AND HIGH ESG PERFORMANCE



Note: The figure shows the average market-to-book value ratio for firms classified in three portfolios: low, medium, and high ESG performers. Estimated using ordinary least squares model and data from 2010-2014. Estimated with quarterly data. ESG performance is measured using MSCI IVA data. Number of observations equals 27,007.

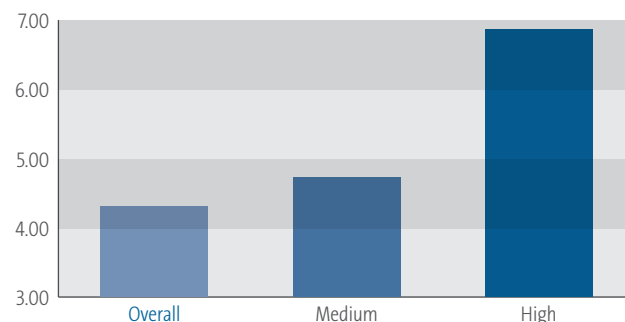
analysis, we sought to understand if the valuation multiple on corporate profits was higher for firms with better ESG performance. To the extent that better ESG performance led to enhancement and protection of brand value, future growth through customer loyalty and new product sales, employee engagement and operating efficiency, and lower cost of capital, we expected that stock market participants would assign a higher valuation multiple on corporate profits of firms with high ESG performance. We expected this result because the higher the forecast growth and the lower the cost of capital, the higher the valuation multiple assigned to corporate profitability by investors.¹⁸¹

Analysis confirmed this prediction. Figure 7 shows the valuation multiple assigned by investors on net income on an equity valuation basis. For all firms in our sample we find on average a valuation multiple on profitability of 4, while firms with high ESG performance have a valuation multiple of 7. These results support the notion that investors expect higher growth and require lower cost of capital from firms with higher ESG performance.

Finally, we investigated whether firms with better ESG performance had lower credit default swap (CDS) spreads to understand whether non-financial data are relevant for fixed income investors.¹⁸² Higher CDS spread on a corporate bond translated to a more expensive insurance premium for an investor that wants to protect against the corporation

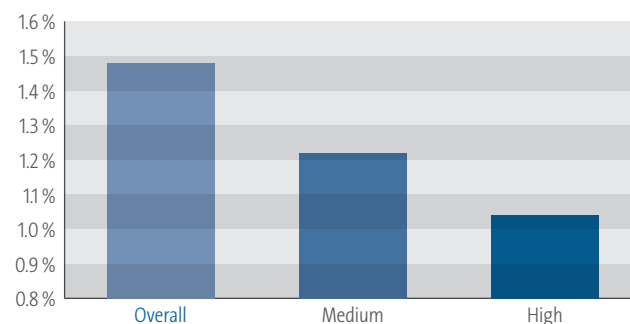
defaulting on its debt. Therefore, higher CDS spread implied higher probability of default. Consistent with the equity analysis, we found that firms with better ESG performance had lower CDS spreads. In the overall sample, we found CDS spreads close to 1.5% (Figure 8). For firms with ESG scores in the middle tercile, i.e., the middle 33% of the distribution, we found that CDS spreads decline by 25 basis points. For firms with ESG scores in the high tercile, i.e., the top 33% of the distribution, we found that CDS spreads decline by 45 basis points.

FIGURE 7: EQUITY VALUATION OF PROFITABILITY: FIRMS WITH MEDIUM AND HIGH ESG PERFORMANCE VERSUS OVERALL SAMPLE



Note: The figure shows the estimated coefficient on return-on-equity for the overall sample, as well as the sums of the estimated coefficient for the overall sample and the estimated coefficients on variables indicating whether a firm has medium or high ESG performance multiplied by a firm's return-on-equity. Dependent variable is market value of equity over book value of equity. Controls included in the regression: industry indicator variables, country indicator variables, year indicator variables, financial leverage, dividends over sales, capital expenditures over sales, and research and development expenditures over sales. Estimated using ordinary least squares estimation and data from 2010-2013. ESG performance is measured using Thomson Reuters ASSET4 data. Number of observations equals 9,922.

FIGURE 8: CDS SPREAD: FIRMS WITH MEDIUM AND HIGH ESG PERFORMANCE VERSUS OVERALL SAMPLE



Note: The figure shows the estimated coefficient on a variable indicating whether a firm has medium or high ESG performance, as well as the CDS spread for the overall sample. Dependent variable is the credit default swap. Controls included in the regression: industry indicator variables, country indicator variables, year indicator variables, financial leverage, size, and equity volatility. Estimated using ordinary least squares estimation and data from 2010-2013. Estimated with quarterly data. ESG performance is measured using MSCI IVA data. Number of observations equals 10,705.

181. The equity value of a firm can be expressed as: $V/B = 1 + ROE/r - r/g$, where V is the market value of equity, B is the book value of equity, ROE is the firm's net income over shareholder's equity, r is the firm's cost of equity, and g is the growth in B (Healy and Palepu 2008).

182. We chose to use CDS data given the following advantages: 1) Constant maturity – therefore we would not have to consider the concept of rolldown during the simulation; 2) Considered to be most liquid throughout the time frame – robust continuous data; 3) A better reflection of price action – better indicator of current prices; and 4) standardized senior unsecured level in the capital structure to be able to make accurate inferences about time frame comparable performance.

Conclusion

Corporations are assuming broader responsibilities to address important environmental and social problems. Because corporations are the world's most powerful engines for growth and prosperity, this behavior is a positive development with global impact. Moreover, the adoption and implementation of sustainable business practices can increase the value of various forms of capital and minimize negative externalities. As a result, firms that adopt such practices tend to outperform their competitors in the long term. However, the mechanisms to improve long-term performance are not the same for every company. Moreover, the potential level of improvement in long-term performance depends on how critical each form of capital is for a company.

The extent of cost savings from better management of natural resources depends on a company's resource intensity relating to water, energy, carbon emissions, and waste. For example, conventional electricity companies emit the largest amounts of carbon, while paper companies demonstrate the most intensive energy and water requirements. Mining companies, especially gold miners, generate the largest amounts of waste.

Similarly, the financial value of higher employee engagement differs across firms. Firms in industries where the ratio of employee salaries and benefits over sales is higher would probably find employee engagement to be particularly important, since labor-related expenses represent a higher proportion of their total economic value. From an economic perspective, a higher ratio signals that, at the industry level, employees can capture more of the economic rents generated by a firm and, as a result, enjoy more bargaining power. Apart from an industry's reliance on human capital, other factors driving this dynamic may include excess demand and limited supply of labor, structural characteristics such as union activity, or the need for highly skilled employees. Therefore, firms in

labor-intensive industries, such as insurance brokerage, or consumer-facing businesses like hospitality and media, may be especially sensitive to changes in employee engagement. Further, many industries that require specialized skills and face a scarcity of skilled human capital, including software, computer services, biotechnology, and pharmaceuticals may also find value in prioritizing employee engagement.

Increasingly, companies' improved ability to measure, analyze, drive, and communicate corporate performance on environmental and social issues will yield wide advantages. Companies will enjoy enhanced capability to mitigate risks and seize upon opportunities that relate to environment and a range of stakeholders. Governments and consumers will recognize companies' social value and license to operate, providing incentives for stronger management of ESG risks and opportunities. With more accurate information on these corporate approaches, investors will be better positioned to incorporate non-financial data in their valuation models, simultaneously benefiting from and contributing to responsible business.

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