Spring 5-25-2022

Stakeholder Capitalism: An Investigation of the Linkage between Corporate Social Responsibility and Financial Performance

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Stakeholder Capitalism: An Investigation of the Linkage between Corporate Social Responsibility and Financial Performance

DISSERTATION

Submitted in partial fulfillment of the
requirements for the degree of Doctorate of
Business Administration

Kellstadt Graduate School of Business

DePaul University

Chicago, Illinois

May 2022

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Acknowledgments

Recognition and heartfelt thanks are extended to many wonderful individuals who made this achievement possible.

…To my dissertation committee, Dr. Vahap Uysal, Dr. Sanjay Deshmukh, and Dr. Sébastien Michenaud, for your interest and insights. You challenged my thinking, enabling me to produce a product of which I can be proud. A special thanks to my dissertation chair, Dr. Vahap Uysal, whose intellect, wisdom, and calm demeanor expertly guided my research.

…To Dr. Grace Lemmon, whose support, encouragement, and leadership were invaluable during my journey.

…To the DBA faculty for your commitment to this program and for making me a confident evaluator of empirical research.

… To my family for your endless support, patience, and encouragement. A special thanks to my biggest cheerleaders, my husband Tim, and my children Christine and Jack; your support means more than you know.

Biography

Cynthia Walsh has been a practitioner in the Financial Services industry for over 35 years. Currently, she serves as President of Walsh Advisors, a Registered Investment Advisor. Cynthia draws on a deep and varied career that has taken her on a dual path of individual and corporate investment and risk management. Early in her career, she served as Vice President of Foreign Currency Trading at Bank of America. In addition to trading, she also developed and implemented strategic capital markets risk management programs for multi-national corporations. She spent many years as Managing Partner of National Bond and Trust, a national financial benefits provider, where Cynthia developed and implemented a national investment program for individual investors.

As a seasoned fiduciary, Cynthia has lent her investment expertise to service in various trustee roles, including the Indiana Bond Bank, Indiana Public Employee Retirement Pension Fund, and the Indiana State Teachers' Retirement Pension Fund. She has also served as a board member of the Indiana Education Savings Authority.

Cynthia earned her bachelor's degree in Computer Information Technology from Purdue University and her MBA from the University of Chicago, where she specialized in Finance. Cynthia began her Doctoral studies at DePaul University Kellstadt Graduate School of Business in 2019.

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Abstract

Utilizing a large sample of firms over a 13-year period, we examine the impact of ESG Score on profitability. While we fail to find a significant effect for the continuous ESG Score variable, we find conditions where Corporate Social Responsibility (CSR) plays an important role in financial performance. Specifically, after controlling for relevant firm characteristics and fixed effects, we find that the highest quartile of ESG Scores experience an average increase in return on assets of 4%. This effect is amplified for the CSR-sensitive energy industry. Additionally, CSR can play an important role in mitigating loss during times of economic crisis. Our analysis of the Covid-19 Pandemic suggests that firms with high environmental stewardship benefit financially, while firms with low environmental stewardship experience additional losses that compound the overall negative effect of the crisis. Our study suggests that the relationship between CSR and financial performance is complex and subject to certain conditions.

I. Introduction

Stakeholder capitalism is on the rise. Recent societal and cultural changes have renewed interest in stakeholder capitalism, the idea that companies are responsible for not only generating profits but their role in society as well. From the United Nations Climate Conference in Scotland to the CEO-led Business Round Table in the United States, stakeholder capitalism is discussed and debated worldwide. CEOs of major companies are speaking out in favor of prioritizing their clients, employees, and the environment over solely maximizing shareholder profits. For example, Marc Benioff, the Chairman of Salesforce.com, has proclaimed, "Capitalism, as we know it, is dead" (Benioff, 2019). Instead, he favors a model that leverages corporate social responsibility (CSR) to address environmental, social, and governance (ESG) concerns. Another example is Larry Fink, the Chairman and CEO of BlackRock and the world's largest fund manager. In his annual letter to the business community, Fink urges CEOs to integrate ESG criteria into their business plans and argues that if companies work to benefit all stakeholders, including employees, customers, and the environment, they can realize better profits and higher returns (Fink, 2021).

Considering ESG criteria in portfolio construction, or "sustainable investing," serves as a mechanism for socially conscious investors to direct capital to companies prioritizing stakeholder interests. The surge in money flowing into sustainable investment strategies demonstrates that investors have embraced the narrative that they can do good while earning a superior return. In 2020, over $51 billion flowed into U.S. sustainable investment funds, a 138% increase over 2019 and a nearly tenfold increase over 2018 (Hale, 2021). In the United States alone, assets linked to sustainable investing strategies totaled $17.1 trillion in 2020, representing 1 in every 3 dollars of assets under management (U.S. Sustainable Investment Forum, 2021).

This trend has given investors new influence over corporate ESG initiatives through shareholder proxy proposals. Shareholder support for ESG proposals at U.S. companies rose to 32% in 2021 from 21% in 2019, a 50% increase (Sustainable Investment Institute, 2020). The significant money flowing into sustainable mutual funds has allowed socially conscious investors and mutual fund companies such as Blackrock a collective influence on corporate CSR decisions that were previously not possible.

As stakeholder capitalism has grown in financial and economic significance, academic research has also increased. From an academic lens, stakeholder capitalism can be explained through stakeholder theory, which considers shareholders but extends the duty of the firm to also act on behalf of other stakeholders, such as the community, environment, employees, and vendors (Freeman, 1983). It is generally accepted that stakeholder capitalism and CSR can have positive implications for society, but the economic importance of CSR has been debated. Thus, much academic research has focused on the relationship between CSR and firm value. This body of work has provided evidence that in certain conditions, firm social behavior is positively related to financial performance (Atz et al., 2020; Margolis, 2009). Studies of this nature often examine underlying mechanisms such as firm reputation or environmental stewardship to explain the relationship. These mechanisms rely on the belief that firms are comprised of a lexis of contracts, both explicit and implicit, that can add or subtract firm value (Hill & Jones, 1992). By improving stakeholder relations, firms can build social capital through these implicit contracts, manifesting into enhanced performance.

However, questions remain as to whether business leaders can successfully address all stakeholder interests while maintaining financial performance. In their seminal work on CSR,

Jensen and Meckling (1976) posit that firms should not take on social responsibility unless these activities position the firm for sustainable, long-term profitability. Corporate leaders must create an overall CSR profile that comprises a lexis of value-enhancing initiatives to influence general performance.

A body of research supports the contention that creating an overall firm CSR profile that influences financial performance can be complex and subject to certain conditions (Bardos et al., 2020; Buchanan et al., 2018; Eccles et al., 2014; Fauver et al., 2018; Flammer, 2013). Numerous scholars have found the relationship ambiguous and often conflicting (Albertini, 2013; Hang et al., 2019; McWilliams & Siegel, 2000; Servaes & Tamayo, 2013). In their meta-analysis of over 1,200 papers, Atz et al. (2020) find evidence linking CSR and corporate financial performance. Still, the relationship did not translate to an overreaching conclusion when averaged across all studies. Pava & Krausz (1996) conducted a literature review on the relationship. They found that firms perceived as having met CSR criteria have generally been shown to have financial performance on par or worse than control companies. These studies highlight that the economic benefit of CSR is subject to certain conditions.

There is still a limited understanding of the conditions in which the overall CSR profile of a firm can contribute to profitability. Therefore, this study aims to add to the existing literature by systematically examining the overall relationship using a large dataset that spans a 13-year period. By focusing on CSR at the firm level instead of individual mechanisms, we examine the conditions in which overall financial performance can be enhanced. Specifically, we study the relationship through the firm's cash flows which are an integral component of firm value. This approach enables us to uncover a more fundamental relationship between CSR and firm value as

opposed to stock returns which include risk and investor sentiment. Furthermore, given that our data encompasses the recent global economic shock caused by the Covid-19 Pandemic, we can further examine whether a firm's CSR profile provides a level of insurance that can moderate a crisis's financial impact.

Taken as a whole, the literature regarding the relationship between CSR and financial performance provides mixed results. The research is expansive but often focuses on the impact of individual CSR mechanisms such as environmental stewardship and employee relations. We contribute to the literature by examining how a firm's relative overall CSR attractiveness affects profitability. Our study fails to find a significant relationship between the continuous ESG Score variable and financial performance. This finding supports the view that CSR does not provide a strategic advantage to firms. However, we find conditions where CSR plays an important role. Specifically, we provide evidence that the performance claims of stakeholder capitalism hold for firms with the highest category of relative ESG Scores. This effect is amplified for the CSR-sensitive energy industry.

While we find no overall evidence that CSR provides an insurance policy to mitigate loss during a crisis, we find that environmental stewardship plays a significant role during economic downturns. Our analysis of the Covid-19 Pandemic suggests that firms with high environmental stewardship benefit financially, while firms with low environmental stewardship experience additional losses that compound the overall negative effect of the crisis. Again, these claims are magnified and particularly important for the CSR-sensitive energy industry. Taken together, our study suggests that the relationship between CSR and financial performance is complex and subject to certain conditions.

II. Prior Literature and Hypothesis Development

2.1 Corporate Social Responsibility

Links between firm social behavior and financial performance have mainly been studied through the lens of CSR, representing corporate actions not required by law that attempt to further some social good and extend beyond the explicit transactional interests of the firm (McWilliams and Siegel, 2000). Carroll (1979) provided one of the first detailed yet integrated definitions of CSR, stating: "The social responsibility of business encompasses the economic, legal, ethical, and discretionary expectations that society has of organizations at a given point in time." This definition is based on the fundamental assumption that businesses primarily serve society by producing the desired goods and services within the prevailing legal framework. Beyond economic and legal expectations, CSR involves meeting implicit societal expectations such as philanthropic actions to improve social conditions. Carroll (1991) refined his definition, replacing discretionary with philanthropic, proposing a four-part pyramid with economic responsibilities as a base, and building up legal, ethical, and philanthropic categories.

While often used interchangeably, CSR and ESG have some differences. The primary difference is that CSR represents a firm's efforts to positively impact its stakeholders and society. At the same time, ESG involves a standard measurement of the firm's actions in these areas. Despite this, both terms are associated with action taken by a firm related to improving the lives and environment external to the firm itself.

Throughout history, references to the social good of corporations can also be found. Eighteenth-century philosopher Adam Smith argued the invisible hand of free markets produces overall benefits to society, but the benefits are a byproduct of capitalism (Smith, 2002). In

Smith's view, a competitive marketplace provides an equilibrium between business and public interest. In the 1920s, business leaders began purposefully addressing societal needs but primarily to diffuse conflict with critical constituents (Mitchell, 1989). Formal writing on the subject did not emerge until the 1950s, when Howard Bowen published his formative book: *Social Responsibilities of the Businessman* (Bowen, 1953). Later referred to as the father of CSR, Bowen advocated for business ethics and provided a foundation for business responsiveness to societal interests (Carroll, 1999).

In the 1970s, CSR became more widely recognized and adopted. It was also shaped by a few critical events in this decade. First, the Committee for Economic Development (CED) established a "social contract" for business. They declared that corporations operate at the goodwill of society that could impair their existence through public pressure. Therefore, the CED argued companies must develop and foster relationships with key stakeholders. Second, in response to South Africa's Apartheid, the Sullivan Principles were published in 1974 and required companies to divest from South African operations. Failure to comply resulted in the loss of institutional investor capital (Grossman & Sharpe, 1986). This sparked investor activism in the form of exclusionary portfolio construction meant to shape corporate behavior. Following this trend, academic research on CSR emerged in the 1980s. Thomas Jones authored what is generally known to be the first paper that considered CSR as a corporate business decision. His work led to further research focused on operationalizing the CSR construct, which provided new frameworks for evaluation (Carroll, 1999).

2.2 Corporate Social Responsibility and Firm Financial Performance

CSR has generated an impressive amount of research through the lens of stakeholder theory which extends the duty of corporate managers to include the needs of not just shareholders but other stakeholders. At its core, stakeholder theory involves the relationship between CSR and financial performance and assumes that CSR manifests into increased shareholder wealth through the positive effects of improved stakeholder relationships. The theory portends that stakeholders of high CSR firms are more inclined to contribute resources back to the firm, which ultimately translates into higher long-term firm performance. A number of scholars contend that an equilibrium between the needs of shareholders and stakeholders can be achieved (Berle & Means, 1932; Coase, 1937; Freeman & Reed, 1983).

The body of work on CSR has provided evidence that in certain conditions, firm social behavior is positively related to financial performance (Atz et al., 2020; Margolis, 2009). Studies of this nature often rely on underlying mechanisms–such as firm reputation–to explain the relationship. For example, a firm that consistently provides a premium product, thus building a favorable reputation with customers, can leverage that reputation to charge a premium price. But to maintain favorable pricing, the firm must uphold consumer expectations. If the firm maintains this implicit contract with customers, it can generate valuable social capital for the firm, which can translate into improved financial performance. Servaes and Tamayo (2013) support this theory by demonstrating that firm value is higher when customers have increased awareness of firm activities as proxied by advertising expenditures. Firms with low customer awareness found the relationship is either negative or insignificant. But for firms with a poor reputation, the effect of customer awareness reverses the CSR-financial performance relationship. And when CSR initiatives are not recognized or deemed disingenuous, these efforts do not pay off. Kruger

(2015) found that firms engaging in CSR where the manager is likely to receive personal gain experience lower firm value. However, firms experience a positive effect if CSR initiatives aim to improve stakeholder relations. This study supports the notion that CSR initiatives can add value to the firm, but only under certain conditions. Reputation is just one example of how value can be built through implicit contracts with stakeholders (Cornell & Shapiro, 1987).

Regarding human capital, Edmans (2011) found that firms with higher employee satisfaction had higher stock returns. The theory here is that CSR, in this case, a positive work environment, led to improved employee productivity and financial performance. However, from an investor perspective, the market ignored this factor, allowing these companies to produce higher than expected cash flows and returns.

Turning to environmental concerns, Boone & Uysal (2020) found that firms with negative environmental reputations have a significantly lower probability of being acquired. Furthermore, returns to acquirers are lower when the target firm maintains lower reputational capital. Dowell et al. (2000) argue that firms who adopt environmental standards exceeding regulatory requirements have higher firm values. These stringent standards create social capital, which can enhance financial performance. Flammer (2013) used event study methodology to examine investor reactions to environmental proxy announcements and found eco-friendly initiatives create firm value. At the same time, harmful environmental initiatives reduce firm value. Furthermore, Chava (2014) provided evidence that lenders charge a significantly higher interest rate on bank loans issued to firms with environmental concerns.

While previous studies present evidence of a positive relationship between CSR and financial performance, the relationship is complex and subject to certain conditions (Bardos et al., 2020; Buchanan et al., 2018; Eccles et al., 2014; Fauver et al., 2018; Flammer, 2013).

Numerous scholars have found the relationship ambiguous and often conflicting (Albertini, 2013; Hang et al., 2019; McWilliams & Siegel, 2000; Servaes & Tamayo, 2013). In their meta-analysis of over 1,200 papers, Atz et al. (2020) find evidence linking CSR and corporate financial performance. Still, the relationship did not translate to an overreaching conclusion when averaged across all studies. Pava & Krausz (1996) conducted a literature review on the relationship. They found that firms perceived as having met CSR criteria have generally been shown to have financial performance on par or worse than control companies. These studies highlight that the economic benefit of CSR is subject to certain conditions which are little understood.

2.3 Hypothesis Development

Firms are comprised of a lexis of contracts, both explicit and implicit, that can add or subtract firm value (Hill & Jones, 1992). The literature supports the concept that firms can improve financial performance by using CSR to build social capital through implicit contracts with stakeholders (Atz et al., 2020; Margolis, 2009). Prior research has identified several mechanisms such as environmental stewardship, employee relations, and firm reputation that can be used to build social capital (Boone & Uysal, 2020; Dowell et al., 2000; Edmans, 2011; Kruger, 2015). Corporate leaders are faced with many decisions regarding the use of these mechanisms in their CSR initiatives. However, to positively influence financial performance, corporate leaders must implement a combination of initiatives that collectively add value to the firm. In their seminal work on CSR, Jensen and Meckling (1976) argue that firms should not take on social responsibility unless these activities position the firm for sustainable, long-term profitability. While corporate leaders may not always make perfect decisions regarding CSR, it is

reasonable to assume that implementing most value-enhancing CSR initiatives would still lead to a high overall CSR profile.

Thus, social capital generated through specific mechanisms such as reputation, employee satisfaction, and environmental stewardship can be consistent with maximizing shareholder wealth and achieving broader societal goals. Therefore:

Hypothesis 1: Firms with higher overall CSR profiles experience better financial performance.

In the relationship between CSR and financial performance, implicit contracts that manifest into social capital can play an even more critical role in times of crisis. By their nature, implicit contracts are not compulsory. In times of crisis or economic downturns, these contracts could be breached by either the firm or its stakeholders. Given past cooperation and attention by the firm, stakeholders such as employees or customers may be more willing to help high CSR firms weather a crisis. Research has provided evidence that the implicit contracts of high CSR firms have more value in economic downturns. Lins et al. (2017) studied the financial crisis in 2009 and find that firms with high social capital, measured as CSR intensity, had stock returns that were 4-7% higher than firms with low social capital. High CSR firms also experienced higher profitability, growth, and sales per employee. This suggests that stakeholder trust and loyalty provide insurance during adverse shocks. However, they find no evidence that high CSR firms outperformed low CSR firms after the crisis, suggesting that the benefits were already incorporated in stock prices. Thus, during times of crisis, the social capital generated through implicit contracts of high CSR can be harvested to help maintain financial soundness. Therefore:

Hypothesis 2: Firms with high CSR profiles will experience higher operating performance than lower CSR firms during economic downturns.

III. Data and Methodology

3.1 Data and Sample

We utilize the MSCI overall ESG Rating to proxy firm CSR and test our hypotheses. These ratings are obtained from the MSCI Time Series database (formerly known as KLD Research and Data Analytics Database). These ratings aim to measure a company's resilience to long-term ESG risks. MSCI Research rates companies from AAA (best) to CCC (worst) according to ESG risks and how well companies manage those risks relative to their peers. MSCI's process entails a weekly review of over 1,000 data points from company disclosures and alternative datasets across 35 key ESG issues combined to produce an overall firm score. They rate the issues most relevant to each company. Combining the issue scores and weights forms an overall ESG score for each company. Key issues include a firm's contribution to climate change, pollution, community relations, consumer safety, and corporate ethics. MSCI provides a numerical score corresponding to the published alphabetic rating that we use as our primary independent continuous variable *(ESG Score).* A firm's *ESG Score* is expressed relative to firms in the same industry and thus considered industry adjusted. In addition to an overall score, MSCI provides a separate numerical score for environmental, social, and governance elements of a firm's overall CSR profile. Our MSCI ESG dataset includes annual ratings for the firms comprising the Russell 3000 Equity Index from 2007 to 2020. We remove firms without overall ESG scores from the sample.

We utilize the COMPUSTAT database to obtain additional financial characteristics found in prior research to influence firm profitability. We merge the COMPUSTAT data with our MSCI ESG dataset and remove observations with missing data used in our analysis. The

resulting dataset consists of an uneven panel of 13,930 observations representing 2,547 unique firms from 2007 through 2020.

Table 1 reports the descriptive statistics of the sample. The mean *ROA* of the 13,930 firm year observations equals 9.8% representing our primary dependent variable of interest. *ESG Score* represents a continuous variable proxy for CSR and has a mean value of 4.246 on a scale of 1 to 10. Table 1 also reports the control variables used in the model. The average *Market-to-Book* is 2.169, *Log (Sales)* equals 7.499, and *Leverage* equals .172. We utilize three additional control variables to further reduce bias. The mean scores for these variables are reflected as follows *R&D* (.038), *CAPEX* (.046), and *Herfindahl Index* (.067). Definitions and calculations for these variables can be found in Appendix A. Overall our sample characteristics are similar to past studies providing additional support for our results (Deng et al., 2013).

3.2 Empirical Tests

Our empirical objective is to determine whether CSR initiatives influence financial performance. We measure a firm's CSR using the *ESG Score* assigned by MSCI to reflect the overall profile of the firm's CSR initiatives. Our primary measure of financial performance is *ROA,* which represents the ratio of *EBITDA* (earnings before interest, taxes, depreciation, and amortization) to total assets *(TA)*. *ROA* serves as a comparable measure of profits and represents our dependent variable.

To help reduce omitted variables bias in estimating the relation between CSR and financial performance, we include several control variables that have been found in prior research to influence profitability. These variables enhance the internal validity of our study by limiting the influence of extraneous firm characteristics. We control for firm size using the

natural logarithm of *Sales* as a proxy to distinguish between large and small firms. We include *Leverage* which measures a firm's indebtedness and serves as a proxy for risk. We control for perceived firm growth opportunities by including the *Market-to-Book* control variable. A firm's expenditures to secure future profitability are represented in our model with the variables: *R&D* and *CAPEX*. Finally, profitability can be affected by industry competitiveness. Therefore, we include the *Herfindahl Index* to proxy for the competitive nature of a firm's industry. We also include industry-fixed effects in some of our models to control for endogeneity using Fama and French Industry Classifications (12). As we assume CSR's impact on financial performance is not contemporaneous, we use a lagged independent variable to measure the relationship more precisely. Appendix A provides further details on all variable calculations.

To test H1, we estimate the following regression model:

$$\boldsymbol{ROA = b_0 + b_1(ESG\ Score) + b_2(Log(Sales)) + b_3(Market\text{-}to\text{-}Book) + b_4(Leverage) + b_5(CAPEX) + b_6(R\&D) + b_7(Herfindahl\ Index)}$$

In testing the second hypothesis, we use the COVID-19 Pandemic to measure the economic downturn. The COVID-19 Pandemic created the most significant worldwide disruption in history. To quell the virus, millions of people in the United States and worldwide entered a lockdown in 2020, sending a ripple effect through the global economy. The World Economic Forum reports that 114 million people lost their jobs in 2020 (Richter, 2021). With nearly every business affected worldwide, the Pandemic represents an unprecedented economic landscape to test the benefits of social capital for high CSR firms. Including an interaction term between the pandemic and *ESG Score* allows us to isolate that relationship. An interaction indicates that the effect of CSR on financial performance is different during the Pandemic.

To test H2, we estimate the following regression model:

$$\textit{ROA} = b_0 + b_1(\textit{ESG Score}) + b_2(\textit{Pandemic}) + b_3(\text{ESG}x\textit{Pandemic}) + b_4(\textit{Log(Sales)}) + b_5(\textit{Market-to-Book}) + b_6(\textit{Leverage}) + b_7(\textit{CAPEX}) + b_8(\textit{R\&D}) + b_9(\textit{Herfindahl Index})$$

IV. Empirical Analysis and Results

4.1 Impact of CSR on Financial Performance

Table 2 reports the results of our primary analysis of Hypothesis 1. Model (1) reports that the coefficient estimate for *ESG Score* is zero and not statistically significant (p-value of .702). We replicate the multivariate regression in Models (2) through (5) by adding various combinations of industry, year, and firm fixed effects. We continue to find an insignificant effect in these models. These findings suggest that CSR does not provide a strategic advantage to firms.

The findings reported in Table 2 for the included control variables are mainly consistent with expectations formed by prior research. The coefficient for *Log (Sales)* is positive and statistically significant at the 1% level, indicating that larger companies experience greater profitability. Conversely, the coefficient for *Leverage* is negative at the 1% level. This is consistent with the expectation that higher levels of indebtedness adversely affect financial performance. A firm's expenditures to secure future profitability are represented in our model with the variables: *R&D* and *CAPEX*. The regression coefficient for *R&D* is negative significant at $p<.01$. While *R&D* represents more long-term investments, we find a more immediate benefit of *CAPEX* with a positive impact on *ROA* for models (1) through (4). However, we fail to find a significant relationship when including year and firm fixed effects in model (5). We also fail to find significance for the *Herfindahl Index* in all models.

We further expand upon the primary analysis described above by evaluating firms with high and low CSR profiles. We create a *High ESG Dummy* variable that takes the value of "1" when the *ESG Score* is in the top quartile of observations. We also create a *Low ESG Dummy* variable that takes the value of "1" when the *ESG Score* is in the bottom quartile of observations. We again employ control variables as well as various fixed effects. Table 3 reports the analysis results of high CSR companies as proxied by the *High ESG Dummy* variable. Model (1) reports the results without incorporating fixed effects, while Models (2) through (5) introduce different combinations of year, industry, and firm fixed effects in the same manner as the primary analysis. Models (1) through (4) report small positive effects of the *High ESG Dummy*, but we do not find statistical significance (p-values ranging from .297 to .701). However, Model (5) reports that firms with a high CSR profile on average experience a *ROA* 0.4% higher than other firms in the sample. Given the sample mean ROA of 9.8%, this represents a 4% improvement in *ROA* for high CSR firms. This result represents a modest improvement in *ROA* and is statistically significant at the P<.10 level, including year and firm fixed effects.

Table 4 reports the analysis results of low CSR companies as proxied by the *Low ESG Dummy* variable. Model (1) reports the results without incorporating fixed effects, while Models (2) through (5) introduce different combinations of year, industry, and firm fixed effects in the same manner as the primary results. Models (1), (2), and (5) report small positive effects of the *Low ESG Dummy*, but we do not find statistical significance (p-values ranging from .101 to .281). However, Models (3) and (4) report that firms with a low CSR profile on average experience an increase in *ROA* equal to 0.7% as compared to all other firms in the sample. This represents a 7% improvement in *ROA* for low CSR firms. Both models report the same coefficient at the p<.05 level. Model (3) includes industry-fixed effects, while Model (4) includes

year and industry-fixed effects. However, the results are not statistically significant when including firm fixed effects as in Model (5).

In our primary analysis, we find partial support for Hypothesis 1. Specifically, companies with high CSR profiles as measured by *High ESG Dummy* experience improved financial performance. However, we see a similar positive effect for companies with low CSR profiles suggesting a concave relationship between CSR and financial performance. This may in part explain the insignificant effect of continuous ESG variable on ROA and inconclusive findings of previous studies.

Impact of the Pandemic as a Moderator

Table 5 presents the results of our test of hypothesis 2, in which we examine the role of CSR as an insurance policy to mitigate losses in a crisis. To do so, we create a *Pandemic Dummy* variable that takes the value of "1" when the reporting year of our dependent variable *ROA* is in the year 2020, the year in which the world's economy was halted due to the Covid-19 Pandemic. We also introduce an interaction term for the *Pandemic Dummy* and *ESG Score* designed to isolate the moderating effect of CSR during times of crisis. Appendix A details the computation of this variable. Models (1) through (3) represent the *ESG Score* and its interaction with the Pandemic using various combinations of fixed effects. These models demonstrate that the Pandemic has a significant negative impact on firm profitability with *ROA*. For example, Model (3), which includes firm fixed effects, reports a negative 2.9% effect of the Pandemic on *ROA*, corresponding to a 28.42% decrease from the mean ROA of 9.8% for the sample. While the Pandemic has a significant impact on firm profitability, the results of Models (1) through (3) do not demonstrate significance for the pandemic interaction term (p-values ranging from .471 to

.537). We also continue to see a lack of significant effects on the overall ESG score consistent with our primary analysis of Hypothesis 1 reported in Table 3.

We further expand upon the analysis described above by evaluating firms with higher and lower CSR profiles during the economic crisis. We utilize the *High and Low ESG Dummy* variables defined in our primary analysis and reported in Tables (3) and (4). We also create pandemic interaction terms for both the *High ESG Dummy* and *Low ESG Dummy* to evaluate the moderating effect of CSR on profitability during the economic crisis. Panel A of Table 6 reports the results for high CSR firm observations, and Panel B reports the results for low CSR firm observations. Model (1) reports the results without incorporating fixed effects, while Model (2) and (3) use industry and firm fixed effects, respectively. As reported in Table 5, the *Pandemic Dummy* reports an economically and statistically significant negative impact on ROA. However, as reported in Panel A, we do not find significant results in the *High ESG*Pandemic* interaction term (p-values ranging from .223 to .851). We also fail to find significant results for the *Low ESG*Pandemic* interaction term for any of the Models in Panel B of Table 6.

These results do not support Hypothesis 2, which posits that CSR initiatives can provide an insurance policy to mitigate losses during the economic crisis. The reported results suggest that a firm's CSR profile does not moderate the negative effect on profitability during the Pandemic.

4.2 Analysis of ESG Score Sub-Components

While the *ESG score* is our primary independent variable of interest, we also consider environmental and social sub-components. We conduct an analysis using these sub-components as independent variables to provide additional evidence regarding the relationship between CSR

and financial performance. It is generally accepted that good governance positively influences economic performance. Therefore, we limit our analysis to environmental and social issues as they are the primary focus of existent literature. MSCI provides a separate score called a pillar score for each sub-component. The pillar scores range from 1 to 10 and represent the weighted average of the underlying issue scores for each pillar theme. For example, issues about toxic waste would be used in the *Environmental Pillar Score* calculation. As with the *ESG Score*, each pillar score provides a continuous independent variable of interest for our analysis.

Table 7 reports the results of the multivariate analysis of the environmental and social sub-components of the overall *ESG Score*. We include all control variables used in the primary analysis. We replicate our primary analysis by creating dummy variables representing pillar scores in the top and bottom quartiles. Panel A reports the results for the *Environmental Pillar Score*, and Panel B reports the *Social Pillar Score.* All models include year and firm fixed effects. Model (1) of Panel A reports that the coefficient estimate (.001) is small but positive at the 10% level. This result indicates that firms with higher levels of environmental stewardship experience, on average slight improvements in profitability, further supporting Hypothesis 1. Model (2) reports that coefficient estimate of *High Environmental Pillar Scores* is not significant, suggesting that firms with *High Environmental Pillar Scores* experience no difference in *ROA* compared to other firms in the sample. However, Model (3) provides further support for Hypothesis 1. Firms with *Environmental Pillar Scores* in the bottom quartile experience, on average, a .6% decrease in *ROA* and significant at the $p<.05$ level, which translates to a 5.88% decline in profitability.

Regarding social issues, Model (1) of Panel B reports that the coefficient estimate of Social Pillar Score is negative but not statistically significant. (p-value=.151). Model (2) also

reports that firms with *High Social Pillar Scores* experience no difference in *ROA* compared to other firms in the sample. The regression coefficient (-.001) is not statistically significant. Lastly, Model (3) indicates that firms with *Low Social Pillar Scores* again experience no significant difference in *ROA.*

Overall, results from our examination of the sub-components partially support Hypothesis 1. While environmental stewardship plays a role in financial performance, we fail to find a significant relationship for social issues.

Impact of the Pandemic as a Moderator

We expand our analysis of *Environmental and Social Pillar Scores* by examining the moderating effect of the Pandemic on the relationship between the *ESG Score* subcomponents and profitability in Table 8. Specifically, we create an interaction term between the *Environmental Pillar Score* and the *Pandemic* to isolate the effect of environmental stewardship during an economic crisis. Model (1) reports a positive coefficient estimate (.005) of the *EnvironmentalxPandemic* interaction term significant at the 1% level. We further examine this relationship by creating two more interaction terms: *High EnvironmentalxPandemic* and *Low EnvironmentalxPandemic,* to isolate the top and bottom quartiles of *Environmental Pillar Scores.* Model (2) reports that firms with high environmental stewardship on average experience a 1.3% higher ROA compared to other firms in our sample during the Pandemic. This equates to a 12.74% improvement in ROA and is significant at the 1% level. Model (3) reports that firms in the lowest quartile of environmental stewardship on average experience a 3.6% lower ROA compared to other firms in the sample. This result is economically and statistically significant, representing a 35.28% decline in ROA at the $p<.01$ level.

We follow the same process for the *Social Pillar Score*. As reported in Panel B, we fail to find significance between the *Social Pillar Score*, the *Pandemic*, and *ROA*. Taken together, our examination of these subcomponents provides partial support for Hypothesis 2. Our results suggest that environmental stewardship can moderate the negative financial impact of an economic crisis. Furthermore, the adverse effects of the financial crisis may be amplified for firms with poor environmental practices.

Impact of CSR on Profitability for Firms in the Energy Industry

The energy industry is widely considered the most sensitive to CSR concerns (S&P Global, 2019). Not only are energy companies such as oil and gas producers exposed to significant environmental concerns, but they are also subject to increasing overall public scrutiny given the changing social climate (JPT, 2020). Thus, we focus on the effect of CSR on profitability for firms that fall into the energy industry as defined by the Fama-French Industry Classification Model. If CSR influences financial performance, the effect will be more prominent within industries that rely on or benefit from enhanced corporate CSR initiatives. We test whether firms with higher *ESG Scores* experience higher *ROA* when they fall into the energy industry.

Table 9 reports the results of our regression analysis using control variables discussed in sub-section 3.1 and controlling for year and firm fixed effects. Model (1) reports a small positive coefficient estimate for *ESG Score* (.003); however, we do not find statistical significance ($p<.674$). Model (2) reports results using *High ESG Dummy* as the independent variable of interest. We find that energy companies with *ESG Scores* in the top quartile of our sample report *ROA* on average 3.8% higher than their peers, which is significant at $p<.05$. The average *ROA* for

the energy sector in our sample equals 6.9%. Therefore, this translates to a 26.22% improvement in *ROA*. Model (3) reports results using *Low ESG Dummy* as the independent variable. We find that firms in the bottom quartile in terms of *ESG Score* experience, on average, a 3.5% higher *ROA* significant at the 10% level, translating to a 24.15% improvement.

Our analysis of energy companies partially supports Hypothesis 1, suggesting that high CSR can provide a significant financial benefit. Our results indicate that energy firms at the low end of CSR also experience substantial economic benefits. Our examination of energy companies mirrors our primary results suggesting a concave relationship between CSR and financial performance.

Impact of the Pandemic as a Moderator for Energy Firms

We include in our examination of energy firms the moderating effect of the Pandemic on the relationship between CSR and profitability. Table 10 reports the results of our analysis. All models include the control variables described in sub-section 3.1 and control for firm fixed effects. Consistent with the findings in Table 5, all models report a significant negative impact of the Pandemic on *ROA* as measured by the *Pandemic Dummy*. However, for energy firms, the effect is much greater, with declines in ROA ranging from 12% to 15%. Model (1) reports the interaction effect of *ESG Score* and the Pandemic using *ESGxPandemic* as the independent variable of interest. While we find a small positive coefficient estimate (.009), we do not find statistical significance at $p<.362$. However, for firms with high ESG Scores as measured by *High ESGxPandemic,* our analysis suggests that they experience a significant positive benefit of CSR during the Pandemic. Model (2) reports a 6.4% higher *ROA* significant at the 10% level,

translating to a 44.16% improvement. Model (3) reports a small positive regression coefficient for the *Low ESGxPandemic* (.004) but is not statistically significant (p<.944).

Overall, we do not find a significant relationship for the *ESGXPandemic* interaction term for energy companies. However, during economic downturns, CSR provides loss mitigation for energy firms with *ESG Scores* in the highest quartile of ESG Score.

Impact of Environmental Stewardship on financial Performance for Energy Firms

We expand our analysis of the CSR-sensitive energy industry by examining the effect of environmental stewardship on profitability. It would stand to reason that the energy industry would be most sensitive to environmental concerns as proxied by the *Environmental Pillar Score.* Thus, we use the *Environmental Pillar Score* as the independent variable in our analysis of energy companies to further understand the drivers of the overall relationship between CSR and financial performance. Table 11 reports the results of our regression analysis using control variables discussed in sub-section 3.1 and controlling for year and firm fixed effects. Model (1) reports a small positive coefficient estimate for the *Environmental Pillar Score* (.004); however, we do not find statistical significance (p<.685). Model (2) reports results using the *High Environmental Pillar Score* as the independent variable of interest. Model (3) reports results using *Low Environmental Pillar Score.* For *Environmental Pillar Scores* at the top and bottom quartile, as represented in Models (2) and (3) we do not find statistical significance. Thus, we find no significant relationship between environmental stewardship and profitability for energy companies.

Impact of the Pandemic as a Moderator for Environmental Stewardship and Energy Firms

Table 12 reports the results of our analysis of the moderating effect of the *Pandemic* on the relationship between the *Environmental Pillar Score* and *ROA* for energy firms. All models include control variables described in sub-section 3.1 and control for firm fixed effects. As expected, all models report a significant negative impact on ROA during the Pandemic as measured by the *Pandemic Dummy*. Model (1) reports the interaction effect of *the Environmental Pillar Score* and the *Pandemic* using Environmental*xPandemic* as the independent variable of interest. The interaction term is positive (.037) and statistically significant at the 1% level. Model (2) also reports that firms with high environmental stewardship as proxied by *High EnvironmentalxPandemic* experience a 12.9% higher *ROA,* nearly offsetting the 13.4% average loss to energy firms reported during the Pandemic. Model (3) reports that firms with *ESG scores* in the lowest quartile experience a 9.1% lower *ROA* further compounding the effect of the Pandemic (p-value<.10).

In our primary analysis of Hypothesis 2 discussed in sub-section 4.1, we did not find that CSR helps to mitigate loss during the economic crisis. However, by examining the components, we provide partial support Hypothesis 2, and find that CSR influences firm profitability differently in different types of firms. Specifically, we find that firms in the CSR-sensitive energy industry are greatly impacted by environmental stewardship during times of crisis.

These findings highlight interesting insights into the relationship between CSR and profitability. Taken together, we find that environmental stewardship plays an important role in financial performance and provides profitability mitigation during times of crisis, and is significantly amplified for firms in the CSR-sensitive energy industry. Contrary to prior research, we find no significant relationship between social initiatives and financial performance,

4.4 Robustness

Tables 13 through 19 report the results of a series of robustness checks and additional analysis relative to the primary tests of Hypothesis 1 reflected in table 2. These other tests include alternative measures of financial performance, variations of ESG Score, and an instrumental variable approach.

Alternative Measures of Financial Performance

We use *ROA* as our primary dependent variable to measure financial performance. *ROA* provides a measure of management's effectiveness in converting total capital to net income. As an accounting measure, ROA can be influenced by accounting practices and random variation. Thus, we employ additional tests of our primary model using *ROE* and *EBITDA Margin as our dependent variables*. Appendix A details the calculations of these other variables. *ROE* provides an alternative measure of performance in that it measures the return on net capital as opposed to total capital which includes debt. As in our primary analysis detailed in sub-section 4.1, Table 13 reports results using ROE as the dependent variable and includes *ESG Score* as our independent variable of interest. We also add all control variables employed in our primary analysis detailed in sub-section 3.1. Model (1) reports a positive coefficient estimate for *ESG Score* (0.202) but is not statistically significant (p-value of .273). We replicate the multivariate regression ins Models (2) through (5) by adding various combinations of industry, year, and firm fixed effects. We continue to find an insignificant impact on these models. Table 14 reports our results using *EBITDA Margin* as the dependent variable of interest. *EBITDA Margin* measures operating profitability and factors out potential extraneous factors that may affect net income. We repeat

the same process as employed for our examination of *ROE*. Models (1) through (5) report the same coefficient estimate of (-0.001). However, none of these results are statistically significant, with p-values ranging from (0.380) to (0.637). These tests are consistent with our primary analysis in observing a lack of statistical significance for the effect of *ESG Score* on financial performance.

Variations of ESG Score as Independent Variable

ESG Score is our primary independent variable of interest and measures the combined value of individual CSR areas of concern. However, the composite score is also industry adjusted to represent a firm's score in relation to its peers, not necessarily the market. Therefore, industry effects could impact our results. Table 15 reports the results of our additional analysis using the *Raw ESG Score*, which represents the unadjusted combined score. Model (1) does not include fixed effects and reports a small positive coefficient estimate (0.002) significant at the 10% level. Model (2) controls for year fixed effects and reports a small positive coefficient estimate (0.004) significant at the 1% level. However, when we include combinations of year, industry, and firm fixed effects in Models (3) through (5), we find no statistical significance (p-values ranging from 0.321 to 0.994).

We recognize that a relationship between CSR and profitability is not likely contemporaneous, and therefore we lag our independent variables, including *ESG Score* by one year in our primary analysis. However, it is possible that the relationship requires a longer timeframe to manifest. Thus, we repeat our primary analysis using a 1- and 2- year lagged *ESG Score*, representing a 2- and 3-year difference between our independent variable of interest and the dependent variable *ROA*. Table 16 reports the results using *ESG Score Lagged 1 Year*. We

find near-zero coefficient estimates for Models (1) through (5) which control for various combinations of fixed effects. We find no statistical significance in any of the models. (p-value ranging from 0.335 to 0.686). Table 17 reports the results for *ESG Score Lagged 2 Years.* We repeat the same process, including control variables and controlling for various combinations of year, industry, and firm fixed effects. Again, we find near-zero coefficient estimates and observe lack of statistical significance for all Models.

We expand our robustness testing to examine changes in firm *ESG Scores* as our primary independent variable of interest. We recognize that ESG Score may be stable for many firms over time. While we control for year and firm fixed effects, our results can still be subject to endogeneity. Therefore, we calculate a continuous variable representing the year-over-year change in ESG Score. We identify 8,983 firm observations of *ESG Score* rating changes. To provide statistical validity, we calculate the difference in *ROA* for each corresponding *ESG Score Change* observation. The resulting variable *ROA Change* is used as our dependent variable. Table 18 reports the results of our analysis. We find zero coefficient estimates for Models (1) through (5), which control for various combinations of fixed effects. We find no statistical significance in any of the models. (p-value ranging from 0.499 to 0.997).

We vary methods of representation of our primary independent variable ESG Score to identify potential measurement errors. Our series of tests, including using *Raw ESG Score*, *1- and 2- Year Lagged ESG Score*, and *ESG Score Change* as alternative, independent variables produce results consistent with our primary analysis. We continue to observe a lack of statistical significance in the relationship between the overall CSR profile of a firm and financial performance consistent with our primary analysis.

Instrumental Variable Approach

While we employ methods to control for endogeneity in our primary model, the relationship between CSR and financial performance could be subject to reverse causality. Firms with better financial performance may be more likely to engage in CSR, which reverses the proposed relationship from our hypotheses. To address this concern, we run a two-stage least squares regression with instrumental variables. A valid instrument would satisfy two conditions and allow us to uncover the causal effect of CSR on financial performance. The relevance condition requires that the instrumental variable induce changes in the independent variable, *ESG Score*. Instrument exogeneity condition requires that the variable has no independent effect on *ROA*. Following Bardos et al. (2020) and Deng et al. (2013), we use the geographic location of the firm's headquarters as the basis of our instruments. Husted (2016) provides evidence that location significantly affects a firm's CSR activities through spillover effects and societal pressures. Thus, we expect a firm's CSR to be affected by social and community-related activities around the firm's location. In this spirit, we use two instrumental variables shown by Deng (2103) to impact CSR. The first instrumental variable, *Religious Rank*, measures the religious ranking of the state in which the acquirer's headquarters is located. The ranking is based on the ratio of the number of religious adherents in the acquirer's state to the total population in that state. Based on previous studies, we expect that firms located in more religious states will have higher CSR profiles and thus higher *ESG Scores*. The second instrumental variable, *Blue State*, is a dummy variable that equals one if a firm's headquarters is in a blue or Democratic state and zero otherwise. We expect that firms located in Democratic states will have higher CSR profiles. However, we do not expect any direct correlation between these variables and firm profitability. It would stand to reason that any societal impact from a firm's location would only

affect profitability through some form of CSR initiative. Thus, we believe these variables satisfy the exclusion condition for instrumental variable regression. In our regressions, we use the same control variables we use in our primary analysis and detailed in sub-section 3.1. We present our instrumental variable regression results in Table 18. The F-statistic of our first stage regressions is 66.6 and greater than ten, indicating that our instrumental variables are not weak. Prior research and results from our first-stage regression suggest that our instrumental variables meet the relevance condition. P-values of both Sargan and Basmann chi-squared overidentification tests are not significant, suggesting that our instruments are valid. However, Model (1) reports that the second stage coefficient estimate for ESG Score is not significant in the second stage of the instrumental variable regression. While this result does not provide evidence supporting the causality issue, it is consistent with our primary analysis of the continuous variable ESG Score detailed in Table 2.

V. Discussion

This study aims to identify the conditions in which CSR can influence profitability. Studies of CSR often rely on individual mechanisms such as firm reputation or environmental stewardship to explain the relationship and provide evidence that firm social behavior is positively related to financial performance (Dowell et al., 2000; Edmans, 2011; Servaes & Tamayo, 2013). However, when these mechanisms are combined to form an overall CSR profile, the relationship becomes complex and subject to conditions. Specifically, we find no significant relationship between the continuous variable, *ESG Score,* and financial performance. We do, however, identify several situations in which CSR plays an important role in financial performance.

We find profitability improvement for firms with high and low CSR profiles. Firms with high CSR as measured by *ESG Scores* in the top quartile of observations experience a 4% average *ROA* improvement. While this result provides partial support for our primary hypothesis, we also find a similar result for firms with low CSR profiles. Firm *ESG Scores* in the bottom quartile experience an average *ROA* improvement of 7%. We find similar but amplified results for the CSR-sensitive energy industry. Together these results suggest that the relationship between CSR and financial performance is concave in nature. One explanation may involve the cost of CSR. Social and environmental initiatives often require some form of capital expenditures, and it is plausible that firms with low CSR profiles benefit financially from lower CSR expenses. Our results suggest that at the higher end of the CSR spectrum, the benefits outweigh the expense and manifest into a value-enhancing position. This complexity may contribute to the lack of significance of our analysis of the continuous variable, *ESG Score*.

The subcomponents of the *ESG Score* provide interesting insights into the relationship. Regarding environmental concerns, prior research provides evidence that environmental stewardship enhances firm value. For example, Dowell et al. (2000) argue that firms who adopt environmental standards exceeding regulatory requirements have higher firm values. They posit that stringent environmental standards create social capital, enhancing firm value. However, our results only partially support that view and again suggest a more complex relationship. We find that firms with low environmental stewardship experience a modest decline in profitability. However, we find no significant effect for firms with high environmental stewardship.

Regarding social concerns, most of the literature focuses on individual mechanisms such as firm reputation or employee satisfaction in evaluating the relationship to financial performance. Edmans (2011) finds that firms with higher employee satisfaction had higher stock

returns. The theory here is that CSR, in this case, a positive work environment, led to improved employee productivity and financial performance. However, we find no significant relationship between the *Social Pillar Score* and profitability. We continue to find no significance when examining high and low social scores. Our results again suggest that combining individual mechanisms into an overall firm profile complicates the relationship with financial performance.

An important consideration regarding CSR is whether it provides loss mitigation during times of crisis. Our results show no overall moderating effect of CSR on profitability during the Pandemic. We find no significant effect for firms with CSR profiles in the top or bottom quartile. However, we uncover interesting insights when examining environmental concerns. Specifically, high stewardship provides greater benefits during the Pandemic. Furthermore, firms with low environmental stewardship experience 3.6% lower *ROA*s than other firms in our sample, representing a 35% decline in *ROA.* This result is greatly amplified for environmental concerns in the CSR-sensitive energy industry. We find that firms in the energy industry with high environmental stewardship experience financial benefits that nearly offset the negative effect of the Pandemic. For firms with low environmental stewardship, the negative impact of the Pandemic is compounded by a decrease in ROA of over 60%. By examining the CSR-sensitive components and industries, we provide evidence to support Hypothesis 2. We find that environmental stewardship plays an important role in mitigating loss during times of crisis and is significantly amplified for firms in the CSR-sensitive energy industry.

Taken as a whole, this evidence would suggest that the performance claims of stakeholder capitalism hold for only those firms with the highest category of relative ESG Scores. These claims are particularly important for the CSR-sensitive energy industry and in

times of economic crisis. High ESG rankings may warrant consideration as an additional factor in investment decisions.

VI. Conclusion

Research concerning CSR and financial performance is expansive but often focuses on the impact of individual CSR mechanisms. We contribute to the literature by examining how and when a firm's relative overall CSR attractiveness affects profitability. Utilizing a large sample of firms over a 13-year period, we construct a model using *ESG Scores* developed by MSCI, Inc. as a proxy for firm Corporate Social Responsibility. While we fail to find a significant effect for the continuous *ESG Score* variable, we find conditions where CSR plays an important role in financial performance. Specifically, we find *ESG Scores* in both the highest and lowest quartile experience a moderate increase in *ROA*. We find the same but amplified effect for the CSR-sensitive energy industry. One explanation for our results may involve the cost of CSR. Our results suggest that firms do not realize net financial benefits until they achieve a high CSR profile. However, achieving high CSR requires significant expense, and therefore, it is plausible that firms with average CSR may not realize financial benefits for their CSR initiatives. On the other end of the spectrum, firms with low CSR may experience better financial results simply because they incur fewer expenses related to CSR initiatives. This complexity may contribute to the lack of significance of our analysis of the continuous variable, *ESG Score*.

Additionally, CSR can play an important role in mitigating loss during times of economic crisis. Our primary results do not support the view that CSR provides loss mitigation during economic crisis. However, our analysis of the Covid-19 Pandemic suggests that firms

with high environmental stewardship benefit financially, while firms with low environmental stewardship experience additional losses that compound the overall negative effect of the crisis. This result is further amplified for firms in the energy industry.

Taken together, our study provides valuable insights to the financial implications of stakeholder capitalism. Undertaking CSR involves a cost that only manifests into improved performance at the highest levels. Finally, Environmental stewardship plays a dominant role in the overall relationship between CSR and financial performance.

The results of this dissertation also have important implications for practitioners. First, portfolio managers should consider specific CSR thresholds and ESG component measures when constructing portfolios. A common practice in sustainable investment strategies is to exclude firms with low ESG scores. However, our results suggest that portfolio managers should also consider excluding firms with average ESG scores when considering performance. Second, our findings provide insights for corporate managers as well. In determining individual CSR initiatives, managers should consider the effect on the firm's overall CSR profile. Regarding the overall performance effects of a firm's CSR initiatives, managers should consider a firm wide collective approach.

References

Albertini, E. (2013). Does Environmental Management Improve Financial Performance? A Meta-Analytical Review. *Organization & Environment*, *26*(4), 431–457. https://doi.org/10.1177/1086026613510301

Atz, U., Van Holt, T., & Liu, Z. Z. (2020). Do Corporate Sustainability and Sustainable Finance Generate Better Financial Performance? A Review and Meta-analysis. *Working Paper*. https://doi.org/10.2139/ssrn.3708495

Bardos, K. S., Ertugrul, M., & Gao, L. S. (2020). Corporate social responsibility, product market perception, and firm value. *Journal of Corporate Finance*, *62*, 101588. https://doi.org/10.1016/j.jcorpfin.2020.101588

Benioff, M. (2019). We need a new capitalism. *The New York Times. https://www.nytimes.com/2019/10/14/opinion/benioff-salesforce-capitalism.html*

Berle, A., & Means, G. (1932). *The Modern Corporation and Private Property*. The MacMillen Company, New York.

Boone, A., & Uysal, V. B. (2020). Reputational concerns in the market for corporate control. *Journal of Corporate Finance*, *61*, 101399. https://doi.org/10.1016/j.jcorpfin.2018.08.010

Buchanan, B., Cao, C. X., & Chen, C. (2018). Corporate social responsibility, firm value, and influential institutional ownership. *Journal of Corporate Finance*, *52*, 73–95. https://doi.org/10.1016/j.jcorpfin.2018.07.004

Carroll, A. B. (1979). A Three-Dimensional Conceptual Model of Corporate Performance. *The Academy of Management Review*, *4*(4), 497–505. JSTOR. https://doi.org/10.2307/257850

Carroll, A. B. (1991). The Pyramid of Corporate Social Responsibility: Toward the Moral Management of Organizational Stakeholders. *Business Horizons*, *34*(4), 39–48.

Carroll, A. B. (1999). Corporate Social Responsibility: Evolution of a Definitional Construct. *Business & Society*, *38*(3), 268–295. https://doi.org/10.1177/000765039903800303

Chava, S. (2014). Environmental Externalities and Cost of Capital. *Management Science*, *60*(9), 2223–2247. https://doi.org/10.1287/mnsc.2013.1863

Coase, R. H. (1937). The Nature of the Firm. *Economica*, *4*(16), 386–405.

Cornell, B., & Shapiro, A. C. (1987). Corporate Stakeholders and Corporate Finance. *Financial Management*, *16*(1), 5. https://doi.org/10.2307/3665543

Deng, X., Kang, J., & Low, B. S. (2013). Corporate social responsibility and stakeholder value maximization: Evidence from mergers. *Journal of Financial Economics*, *110*(1), 87–109. https://doi.org/10.1016/j.jfineco.2013.04.014

Dowell, G., Hart, S., & Yeung, B. (2000). Do Corporate Global Environmental Standards Create or Destroy Market Value? *Management Science*, *46*(8), 1059–1074. https://doi.org/10.1287/mnsc.46.8.1059.12030

Eccles, R. G., Ioannou, I., & Serafeim, G. (2014). The Impact of Corporate Sustainability on Organizational Processes and Performance. *Management Science*, *60*(11), 2835–2857. https://doi.org/10.1287/mnsc.2014.1984

Edmans, A. (2011). Does the stock market fully value intangibles? Employee satisfaction and equity prices. *Journal of Financial Economics*, *101*(3), 621–640. https://doi.org/10.1016/j.jfineco.2011.03.021

Fauver, L., McDonald, M. B., & Taboada, A. G. (2018). Does it pay to treat employees well? International evidence on the value of employee-friendly culture. *Journal of Corporate Finance*, *50*, 84–108. https://doi.org/10.1016/j.jcorpfin.2018.02.003

Fink, L. (2021). Larry Fink's 2021 Letter to Shareholders. *Blackrock.* https://www.blackrock.com/us/individual/2021-larry-fink-ceo-letter

Flammer, C. (2013). Corporate Social Responsibility and Shareholder Reaction: The Environmental Awareness of Investors. *Academy of Management Journal*, *56*(3), 758–781. https://doi.org/10.5465/amj.2011.0744

Freeman, R. E., & Reed, D. L. (1983). Stockholders and Stakeholders: A New Perspective on Corporate Governance. *California Management Review*, *25*(3), 88–106. https://doi.org/10.2307/41165018

Grossman, B. R., & Sharpe, W. F. (1986). Financial Implications of South African Divestment. *Financial Analysts Journal*, *42*(4), 15–29. http://www.jstor.org/stable/4478945

Hale, J. (2021). A Broken Record: Flows for U.S. Sustainable Funds Again Reach New Heights. *Morningstar. https://www.morningstar.com/articles/1019195/a-broken-record-flows-for-us-sustainable-funds-again-reach-new-heights*

Hang, M., Geyer-Klingeberg, J., & Rathgeber, A. W. (2019). It is merely a matter of time: A meta-analysis of the causality between environmental performance and financial performance. *Business Strategy and the Environment*, *28*(2), 257–273. https://doi.org/10.1002/bse.2215

Hill, C. W. L., & Jones, T. M. (1992). STAKEHOLDER-AGENCY THEORY. *Journal of Management Studies*, *29*(2), 131–154. https://doi.org/10.1111/j.1467-6486.1992.tb00657.x

Husted, B. W., Jamali, D., & Saffar, W. (2016). Near and dear? The role of location in CSR engagement: Near and Dear? The Role of Location in CSR Engagement. *Strategic Management Journal*, *37*(10), 2050–2070. https://doi.org/10.1002/smj.2437

Jensen, C., & Meckling, H. (1976). THEORY OF THE FIRM: MANAGERIAL BEHAVIOR, AGENCY COSTS AND OWNERSHIP STRUCTURE. *Journal of Financial Economics*, 56.

Journal of Petroleum Technology. (2020). *Top ESG Trends in Energy. https://www.spglobal.com/en/research-insights/articles/esg-industry-report-card-oil-and-gas*

Kruger, P. (2015). Corporate Goodness and Shareholder Wealth. *Journal of Financial Economics*, *15*(2). https://www.sciencedirect.com/science/article/pii/S0304405X14001925

Lins, K. V., Servaes, H., & Tamayo, A. (2017). Social Capital, Trust, and Firm Performance: The Value of Corporate Social Responsibility during the Financial Crisis. *Journal of Finance*, 53.

Margolis, J. D. (2009). *Does It Pay To Be Good? A Meta-analysis and Redirection of Research on the Relationship Between Corporate Social and Financial Performance*. 79. https://ssrn.com/abstract=1866371

McWilliams, A., & Siegel, D. (2000). Corporate Social Responsibility and Financial Performance: Correlation or Misspecification? *Strategic Management Journal*, 9.

Pava, M. L., & Krausz, J. (1996). The Association Between Corporate Social-Responsibility and Financial Performance: The Paradox of Social Cost. *Journal of Business Ethics*, 38.

Richter, F. (2021). Covid-19 Has Caused a Huge Amount of Lost Working Hours. *World Economic Forum.* https://www.weforum.org/agenda/2021/02/covid-employment-global-job-loss/

S&P Global. (2019). *ESG Industry Report Card: Oil and Gas*. https://www.spglobal.com/en/research-insights/articles/esg-industry-report-card-oil-and-gas.

Servaes, H., & Tamayo, A. (2013). The Impact of Corporate Social Responsibility on Firm Value: The Role of Customer Awareness. *Management Science*, *59*(5), 1045–1061. https://doi.org/10.1287/mnsc.1120.1630

Sustainable Investment Institute. (2020). 2020 si2 Mid Year Review Summary. *Sustainable Investment Institute.* file:///C:/Users/Cynthia%20Walsh/Downloads/2020%20Si2%20Mid%20Year%20Review%20Summary,%20Sept.%202020%20(3).pdf

U.S. Sustainable Investment Forum. (2021). *Report on U.S. Sustainable and Impact Investing Trends 2020*. https://www.ussif.org/files/US%20SIF%20Trends%20Report%202020%20Executive%20Summary.pdf

Tables and Exhibits

Table 1: Summary Statistics

Table 1 describes a sample of 13,930 firm observations between 2007 and 2020. Definitions of all variables are provided in Appendix A.

Variable	*Obs.*	*Mean*	*Std. Dev.*	*Min.*	*Max.*
CAPEX	13,930	0.046	0.049	0	0.276
Down ESG Change Dummy	8,983	0.473	0.499	0	1
Environmental Pillar Score	13,930	4.666	2.045	0	10
ESG Score	13,930	4.246	1.988	0	10
ESG Score Change	8,983	0.089	1.244	-8.3	8.67
EBITDA Margin	13,914	-0.013	0.287	-14.247	0.13
ESG Change	8,983	0.089	1.24	-8.3	8.67
ESGxPandemic	13,930	0.531	1.593	0	1
Herfindahl Index	13,930	0.067	0.057	0.019	1
High ESG Dummy	13,930	0.172	0.377	0	1
High ESGxPandemic	13,930	0.228	0.149	0	1
Leverage	13,930	0.172	0.157	0	0.694
Log (Sales)	13,930	7.499	1.806	1.69	11.716
Low ESG Dummy	13,930	0.153	0.360	0	1
Low ESGxPandemic	13,930	0.015	0.121	0	1
Market-to-Book	13,930	2.169	1.575	0.725	9.569
Pandemic Dummy	13,930	0.118	0.323	0	1
Raw ESG Score	11,228	4.46	0.989	0	9.2
ROA	13,930	0.098	0.140	-0.605	0.397
ROA Change	11,278	-0.005	0.078	-1.002	0.974
ROA Energy Sector	647	0.069	0.181	-0.605	0.397
ROE	13,917	0.039	22.980	-2649	132.718
R&D	13,930	0.038	0.081	0	0.472
Social Pillar Score	13,930	4.373	1.591	0	10
Up ESG Change Dummy	8,983	0.527	0.499	0	1

Table 2: Primary Multivariate Analysis - Continuous Variable ESG Score Effect on ROA

Table 2 reports regression results using *ESG score* as the continuous independent variable of interest. All Models include control variables described in sub-section 3.1. Model (1) does not account for fixed effects. Models (2) through (5) control for combinations of year, industry, and firm fixed effects. All models cluster standard errors by firm. P-values are in parenthesis. *, ** and *** indicate 10%, 5% and 1% statistical significance, respectively. Definitions and calculations of all variables are provided in Appendix A.

Variables	(1) ROA	(2) ROA	(3) ROA	(4) ROA	(5) ROA
ESG Score	0.000	0.000	-0.001	-0.001	0.001
	(0.702)	(0.859)	(0.159)	(0.430)	(0.387)
Log (Sales)	0.022***	0.022***	0.021***	0.021***	0.026***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Market-to-Book	0.026***	0.027***	0.026***	0.027***	0.020***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Leverage	-0.106***	-0.091***	-0.082***	-0.067***	-0.093***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
CAPEX	0.096**	0.083**	0.275***	0.254***	-0.020
	(0.017)	(0.038)	(0.000)	(0.000)	(0.660)
R&D	-0.987***	-0.989***	-0.993***	-0.998***	-0.179***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.002)
Herfindahl Index	0.015	-0.006	0.022	-0.045	0.036
	(0.494)	(0.837)	(0.399)	(0.198)	(0.140)
Year FE	No	Yes	No	Yes	Yes
Industry FE	No	No	Yes	Yes	No
Firm FE	No	No	No	No	Yes
Constant	-0.072***	-0.077***	-0.074***	-0.073***	-0.121***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.006)
Observations	13930	13930	13930	13930	13610
R-squared	0.451	0.460	0.489	0.498	0.827
F	241.021	241.631	230.555	230.265	33.162

Table 3: High ESG Dummy Effects on ROA

Table 3 reports regression results using *High ESG Dummy* as the independent variable of interest. *High ESG Dummy* takes the value of "1" when *ESG Score* is in the top quartile of observations in the sample. All Models include control variables described in sub-section 3.1. Model (1) does not account for fixed effects. Models (2) through (5) control for combinations of year, industry, and firm fixed effects. All models cluster standard errors by firm. P-values are in parenthesis. *, ** and *** indicate 10%, 5% and 1% statistical significance, respectively. Definitions and calculations of all variables are provided in Appendix A.

Variables	(1) ROA	(2) ROA	(3) ROA	(4) ROA	(5) ROA
High ESG Dummy	0.004	0.004	0.001	0.001	0.004*
	(0.297)	(0.235)	(0.858)	(0.701)	(0.062)
Log (Sales)	0.022***	0.022***	0.021***	0.021***	0.026***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Market-to-Book	0.026***	0.027***	0.026***	0.027***	0.020***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Leverage	-0.106***	-0.091***	-0.081***	-0.066***	-0.093***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
CAPEX	0.097**	0.084**	0.276***	0.255***	-0.020
	(0.015)	(0.036)	(0.000)	(0.000)	(0.666)
R&D	-0.988***	-0.990***	-0.994***	-0.999***	-0.179***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.002)
Herfindahl Index	0.016	-0.005	0.023	-0.044	0.036
	(0.459)	(0.862)	(0.375)	(0.206)	(0.140)
Year FE	No	Yes	No	Yes	Yes
Industry FE	No	No	Yes	Yes	No
Firm FE	No	No	No	No	Yes
Constant	-0.072***	-0.076***	-0.077***	-0.075***	-0.120***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.007)
Observations	13930	13930	13930	13930	13610
R-squared	0.451	0.460	0.488	0.498	0.827
F	241.088	241.774	230.303	230.151	36.175

Table 4: Low ESG Dummy Effects on ROA

Table 4 reports regression results using *Low ESG Dummy* as the independent variable of interest. *Low ESG Dummy* takes the value of "1" when *ESG Score* is in the bottom quartile of observations in the sample. All Models include control variables described in sub-section 3.1. Model (1) does not account for fixed effects. Models (2) through (5) control for combinations of year, industry, and firm fixed effects. All models cluster standard errors by firm. p-values are in parenthesis . *, ** and *** indicate 10%, 5% and 1% statistical significance, respectively. Definitions and calculations of all variables are provided in Appendix A.

Variables	(1) ROA	(2) ROA	(3) ROA	(4) ROA	(5) ROA
Low ESG Dummy	0.005	0.005	0.007**	0.007**	0.002
	(0.101)	(0.102)	(0.019)	(0.024)	(0.281)
Log (Sales)	0.022***	0.022***	0.021***	0.021***	0.026***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Market-to-Book	0.026***	0.027***	0.026***	0.027***	0.020***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Leverage	-0.107***	-0.092***	-0.082***	-0.067***	-0.093***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
CAPEX	0.096**	0.082**	0.275***	0.254***	-0.019
	(0.017)	(0.040)	(0.000)	(0.000)	(0.682)
R&D	-0.987***	-0.988***	-0.993***	-0.998***	-0.180***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.002)
Herfindahl Index	0.015	-0.007	0.021	-0.044	0.035
	(0.516)	(0.802)	(0.408)	(0.207)	(0.145)
Year FE	No	Yes	No	Yes	Yes
Industry FE	No	No	Yes	Yes	No
Firm FE	No	No	No	No	Yes
Constant	-0.074***	-0.078***	-0.078***	-0.076***	-0.119***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.008)
Observations	13930	13930	13930	13930	13610
R-squared	0.451	0.460	0.489	0.498	0.827
F	241.470	242.292	231.085	231.206	31.822

Table 5: Moderating Effect of Pandemic on ROA

Table 5 reports regression results, including *Pandemic Dummy* and *ESGxPandemic* variables of interest. *Pandemic Dummy* takes the value of "1" when the *ROA* reporting year is 2020, the year the worldwide Covid-19 pandemic economic shutdown. *ESGxPandemic* measures the interaction effect of CSR during a crisis. All models include control variables utilized in the primary analysis outlined in Table 2 and described in sub-section 3.1. Model (1) does not include fixed effects. Model (2) includes industry fixed effects. Model (3) includes firm fixed effects. p-values are in parenthesis . *, ** and *** indicate 10%, 5% and 1% statistical significance, respectively. All models cluster standard errors by firm. Definitions and calculations of all variables are provided in Appendix A.

Variables	(1) ROA	(2) ROA	(3) ROA
ESG Score	0.000	-0.001	-0.001
	(0.812)	(0.237)	(0.310)
Pandemic Dummy	-0.036***	-0.034***	-0.029***
	(0.000)	(0.000)	(0.000)
ESGxPandemic	0.001	0.001	0.001
	(0.471)	(0.549)	(0.537)
Control Variables	Yes	Yes	Yes
Year FE	No	No	No
Industry FE	No	Yes	No
Firm FE	No	No	Yes
Observations	13930	13930	13610
R-squared	0.456	0.493	0.823
F	207.412	195.692	34.462

Table 6: Moderating Effect of Pandemic with High and Low ESG Dummies on ROA

Table 6 reports the regression results for *High ESGxPandemic* and *Low ESGxPandemic* variables of interest. The analysis measures the interaction effect of ESG during a crisis. Panel A reports results for *High ESGxPandemic*, and Panel B reports *Low ESGxPandemic*. *High ESGxPandemic* is calculated as the product of *High ESG Dummy* and *Pandemic. Low ESGxPandemic* is calculated as the product of *Low ESG Dummy* and *Pandemic Dummy.* All models include control variables utilized in the primary analysis outlined in Table 2 and described in section 3.1. Model (1) does not include fixed effects. Model (2) includes industry fixed effects. Model (3) includes firm fixed effects. All models cluster standard errors by firm. p-values are in parenthesis . *, ** and *** indicate 10%, 5% and 1% statistical significance, respectively. Definitions and calculations of all variables are provided in Appendix A.

Panel A

	(1)	(2)	(3)
Variables	ROA	ROA	ROA
High ESG Dummy	0.004	0.001	0.002
	(0.273)	(0.785)	(0.472)
Pandemic Dummy	-0.032***	-0.031***	-0.027***
	(0.000)	(0.000)	(0.000)
High ESGxPandemic	0.001	0.002	0.005
	(0.851)	(0.739)	(0.223)
Control Variables	Yes	Yes	Yes
Year FE	No	No	No
Industry FE	No	Yes	No
Firm FE	No	No	Yes
Observations	13930	13930	13610
R-squared	0.456	0.493	0.823
F	207.380	195.937	36.193

Panel B

	(1)	(2)	(3)
Variables	ROA	ROA	ROA
Low ESG Dummy	0.004	0.006*	0.003
	(0.258)	(0.067)	(0.188)
Pandemic Dummy	-0.032***	-0.032***	-0.026***
	(0.000)	(0.000)	(0.000)
Low ESGxPandemic	0.009	0.008	0.002
	(0.349)	(0.383)	(0.792)
Control Variables	Yes	Yes	Yes
Year FE	No	No	No
Industry FE	No	Yes	No
Firm FE	No	No	Yes
Observations	13930	13930	13610
R-squared	0.456	0.493	0.823
F	207.307	195.657	33.312

Table 7: Environmental and Social Sub-Components Effects on ROA

Table 7 reports the regression results with the sub-components: *Environmental Pillar Score* and *Social Pillar Score* as independent variables of interest. These variables range from 1 to 10 and represent the weighted average of the issue scores for each theme. High and low dummy variables were created for each pillar score consistent with the primary analysis presented in Tables 3 and 4. Models 1-3 include all control variables utilized in the primary analysis as outlined in Table 2 and described in sub-section 3.1. All Models cluster standard errors by firm and include year and firm fixed effects. Panel A reports results for *Environmental Pillar Score,* and Panel B reports *Social Pillar Score.* p-values are in parenthesis . *, ** and *** indicate 10%, 5% and 1% statistical significance, respectively. Definitions and calculations of all variables are provided in Appendix A.

Panel A

	(1)	(2)	(3)
Variables	ROA	ROA	ROA
Environmental	0.001*		
Pillar Score	(0.079)		
High Environmental		0.000	
Pillar Score		(0.827)	
Low Environmental			-0.006**
Pillar Score			(0.023)
Control Variables	Yes	Yes	Yes
Year FE	Yes	Yes	Yes
Industry FE	No	No	No
Firm FE	Yes	Yes	Yes
Observations	13604	13604	13604
R-squared	0.827	0.827	0.827
F	32.190	31.971	31.807

Panel B

	(1)	(2)	(3)
Variables	ROA	ROA	ROA
Social	-0.001		
Pillar Score	(0.151)		
High Social		-0.001	
Pillar Score		(0.651)	
Low Social			0.002
Pillar Score			(0.358)
Control Variables	Yes	Yes	Yes
Year FE	Yes	Yes	Yes
Industry FE	No	No	No
Firm FE	Yes	Yes	Yes
Observations	13604	13604	13604
R-squared	0.827	0.827	0.827
F	31.699	32.587	31.738

Table 8: Moderating effect of Pandemic with Environmental and Social Scores on ROA

Table 8 reports regression results for the interaction effect of the pandemic and *Environmental* and *Social Pillar Scores*. Panel A reports results for environmental concerns. Model (1) includes *EnvironmentalxPandemic* as the independent variable of interest and calculated as the product of *Environmental Pillar Score* and *Pandemic Dummy*. Model (2) reports results using *High EnvironmentalxPandemic* as the independent variable and calculated as the product of *High Environmental Pillar Score* and *Pandemic Dummy*. Model (3) reports results for the interaction of *Low Environmental Pillar Score* and *Pandemic Dummy*. Panel B reports results for social concerns. Model (1) includes *SocialxPandemic* as the independent variable of interest and calculated as the product of *Social Pillar Score* and *Pandemic Dummy*. Model (2) reports results using *High SocialxPandemic* as the independent variable and calculated as the product of *High Social Pillar Score* and *Pandemic Dummy*. Model (3) reports results for the interaction of *Low Social Pillar Score* and *Pandemic Dummy*. All models include control variables described in sub-section 3.1, control for firm fixed effects, and cluster standard errors by firm. p-values are in parenthesis . *, ** and *** indicate 10%, 5% and 1% statistical significance, respectively. Definitions and calculations of all variables are provided in Appendix A.

Panel A

	(1)	(2)	(3)
Variables	ROA	ROA	ROA
Pandemic	-0.049***	-0.030***	-0.018***
	(0.000)	(0.000)	(0.000)
Environmental X Pandemic	0.005***		
	(0.000)		
High Environmental X Pandemic		0.013***	
		(0.006)	
Low Environmental X Pandemic			-0.036***
			(0.000)
Control Variables	Yes	Yes	Yes
Year FE	No	No	No
Industry FE	No	No	No
Firm FE	Yes	Yes	Yes
Observations	13604	13604	13604
R-squared	0.824	0.823	0.824
F	33.639	33.377	33.876

Panel B

	(1)	(2)	(3)
Variables	ROA	ROA	ROA
Pandemic	-0.018***	-0.024***	-0.025***
	(0.008)	(0.000)	(0.000)
Social X Pandemic	-0.002		
	(0.262)		
High Social X Pandemic		-0.008	
		(0.108)	
Low Social X Pandemic			-0.004
			(0.476)
Control Variables	Yes	Yes	Yes
Year FE	No	No	No
Industry FE	No	No	No
Firm FE	Yes	Yes	Yes
Observations	13604	13604	13604
R-squared	0.823	0.823	0.823
F	33.240	35.285	34.206

Table 9: ESG Score Effects on ROA for Energy Industry

Table 9 reports the regression results using only observations related to firms in the energy sector as defined by Fama-French Industry Classification (4). Model (1) reports results for *ESG Score* as the independent variable of interest. Model (2) reports results for *High ESG Dummy* as the independent variable of interest. Model (3) utilizes *Low ESG Dummy* as the independent variable. All Models include the control variables described in sub-section 3.1, control for year and firm fixed effects, and cluster standard errors by firm. p-values are in parenthesis . *, ** and *** indicate 10%, 5% and 1% statistical significance, respectively. Definitions and calculations of all variables are provided in Appendix A.

Variables	(1) ROA	(2) ROA	(3) ROA
ESG Score	0.003		
	(0.674)		
High ESG Dummy		0.038**	
		(0.033)	
Low ESG Dummy			0.035*
			(0.054)
Control Variables	Yes	Yes	Yes
Year F.E.	Yes	Yes	Yes
Industry F.E.	No	No	No
Firm F.E.	Yes	Yes	Yes
Observations	627	627	627
R-squared	0.583	0.584	0.586
F	7.471	8.630	8.350

Table 10: Moderating Effects of Pandemic on ROA for the Energy Industry

Table 10 reports the regression results using only observations related to firms in the energy sector as defined by Fama-French Industry Classification (4). Models (1) through (3) analyze the moderating effect of CSR during the crisis on firms in the energy sector. Model (1) reports results for *ESG xPandemic* interaction term as the independent variable of interest. Model (2) reports results for the *High ESGxPandemic* interaction term as the independent variable of interest. Model (3) utilizes the *Low ESGxPandemic* interaction term as the independent variable. All Models include the control variables described in subsection 3.1 and cluster standard errors by firm. p-values are in parenthesis . *, ** and *** indicate 10%, 5% and 1% statistical significance, respectively. Definitions and calculations of all variables are provided in Appendix A.

Variables	(1) ROA	(2) ROA	(3) ROA
Pandemic Dummy	-0.158***	-0.130***	-0.122***
	(0.001)	(0.000)	(0.000)
ESGxPandemic	0.009		
	(0.362)		
High ESGxPandemic		0.064*	
		(0.090)	
Low ESGxPandemic			0.004
			(0.944)
Control Variables	Yes	Yes	Yes
Year FE	No	No	No
Industry FE	No	No	No
Firm FE	Yes	Yes	Yes
Observations	629	629	629
R-squared	0.433	0.435	0.435
F	13.410	13.929	13.654

Table 11: Environmental Score Effects on ROA for Energy Industry

Table 11 reports regression results using the *Environmental Pillar Score* as the independent variable of interest, including only observations related to firms in the energy sector as defined by the Fama-French Industry Classification (4). Model (1) reports results for the *Environmental Pillar Score* as the independent variable of interest. Model (2) reports High Environmental Pillar Score results as the independent variable of interest. Model (3) utilizes *Low Environmental Pillar Score* as the independent variable. All Models include the control variables described in sub-section 3.1, control for year and firm fixed effects, and cluster standard errors by firm. p-values are in parenthesis . *, ** and *** indicate 10%, 5% and 1% statistical significance, respectively. Definitions and calculations of all variables are provided in Appendix A.

Variables	(1) ROA	(2) ROA	(3) ROA
Environmental Pillar Score	0.004		
	(0.685)		
High Environmental Pillar Score		0.036	
		(0.227)	
Low Environmental Pillar Score			-0.008
			(0.744)
Control Variables	Yes	Yes	Yes
Year FE	Yes	Yes	Yes
Industry FE	No	No	No
Firm FE	Yes	Yes	Yes
Observations	627	627	627
R-squared	0.583	0.584	0.583
F	7.404	6.997	7.422

Table 12: Effect of Pandemic with Environmental Score on ROA for Energy Industry

Table 12 reports regression results using the *Environmental Pillar Score*, including only observations related to firms in the energy sector as defined by Fama-French Industry Classification (4). Models (1) through (3) analyze the moderating effect of environmental stewardship during the crisis on firms in the energy sector. Model (1) reports results for *EnvironmentalxPandemic* interaction term as the independent variable of interest. Model (2) reports results for the *High Environmental Pandemic* interaction term as the independent variable of interest. Model (3) utilizes the *Low EnvironmentalxPandemic* interaction term as the independent variable. All Models include the control variables utilized in the primary analysis as outlined in Table 2, control for firm fixed effects, and cluster standard errors by firm. p-values are in parenthesis . *, ** and *** indicate 10%, 5% and 1% statistical significance, respectively. Definitions and calculations of all variables are provided in Appendix A.

Variables	(1) ROA	(2) ROA	(3) ROA
Pandemic Dummy	-0.240***	-0.134***	-0.086***
	(0.000)	(0.000)	(0.001)
Environmentalx Pandemic	0.037***		
	(0.001)		
High Environmentalx Pandemic		0.129***	
		(0.000)	
Low Environmentalx Pandemic			-0.091**
			(0.020)
Control Variables	Yes	Yes	Yes
Year FE	No	No	No
Industry FE	No	No	No
Firm FE	Yes	Yes	Yes
Observations	629	629	629
R-squared	0.444	0.438	0.441
F	17.310	18.057	14.180

Table 13: Robustness - ESG Score Effects on ROE

Table 13 reports the regression results using *ROE* as the dependent variable of interest. All Models include the control variables described in sub-section 3.1. Model (1) does not account for fixed effects. Models (2) through (5) control for combinations of year, industry, and firm fixed effects. All models cluster standard errors by firm. p-values are in parenthesis . *, ** and *** indicate 10%, 5% and 1% statistical significance, respectively. Definitions and calculations of all variables are provided in Appendix A.

	(1)	(2)	(3)	(4)	(5)
Variables	ROE	ROE	ROE	ROE	ROE
ESG Score	0.202	0.207	0.210	0.213	0.215
	(0.273)	(0.256)	(0.273)	(0.260)	(0.249)
Control Variables	Yes	Yes	Yes	Yes	Yes
Year FE	No	Yes	No	Yes	Yes
Industry FE	No	No	Yes	Yes	No
Firm FE	No	No	No	No	Yes
Observations	13917	13917	13917	13917	13598
R-squared	0.001	0.001	0.001	0.002	0.155
F	2.480	2.705	2.428	2.761	0.776

Table 14: Robustness – ESG Score Effects on EBITDA Margin

Table 14 reports the regression results using *EBITA Margin* as the dependent variable of interest. All Models include the control variables described in sub-section 3.1. Model (1) does not account for fixed effects. Models (2) through (5) control for combinations of year, industry, and firm fixed effects. All models cluster standard errors by firm. p-values are in parenthesis . *, ** and *** indicate 10%, 5% and 1% statistical significance, respectively. Definitions and calculations of all variables are provided in Appendix A.

Variables	(1) EBITDA Margin	(2) EBITDA Margin	(3) EBITDA Margin	(4) EBITDA Margin	(5) EBITDA Margin
ESG Score	-0.001	-0.001	-0.001	-0.001	-0.001
	(0.637)	(0.628)	(0.406)	(0.400)	(0.380)
Control Variables	Yes	Yes	Yes	Yes	Yes
Year FE	No	Yes	No	Yes	Yes
Industry FE	No	No	Yes	Yes	No
Firm FE	No	No	No	No	Yes
Observations	13914	13914	13914	13914	13594
R-squared	0.037	0.038	0.042	0.043	0.737
F	3.328	3.150	3.607	3.268	1.803

Table 15: Robustness - Raw ESG Score Effects on ROA

Table 15 reports the regression results using the *Raw ESG Score* as the independent variable of interest. All Models include the control variables described in sub-section 3.1. Model (1) does not account for fixed effects. Models (2) through (5) control for combinations of year, industry, and firm fixed effects. All models cluster standard errors by firm. p-values are in parenthesis . *, ** and *** indicate 10%, 5% and 1% statistical significance, respectively. Definitions and calculations of all variables are provided in Appendix A.

	(1)	(2)	(3)	(4)	(5)
Variables	ROA	ROA	ROA	ROA	ROA
Raw ESG Score	0.002*	0.004***	-0.000	0.001	-0.001
	(0.098)	(0.010)	(0.994)	(0.321)	(0.407)
Control Variables	Yes	Yes	Yes	Yes	Yes
Year FE	No	Yes	No	Yes	Yes
Industry FE	No	No	Yes	Yes	No
Firm FE	No	No	No	No	Yes
Observations	11228	11228	11228	11228	10855
R-squared	0.467	0.474	0.505	0.511	0.832
F	241.957	242.570	219.266	218.748	19.983

Table 16: Robustness - ESG Score Lagged 1 Year Effects on ROA

Table 16 reports the regression results using *ESG Score Lagged 1 Year* as the independent variable of interest. All Models include the control variables described in section 3.1. Model (1) does not account for fixed effects. Models (2) through (5) control for combinations of year, industry, and firm fixed effects. All models cluster standard errors by firm. p-values are in parenthesis . *, ** and *** indicate 10%, 5% and 1% statistical significance, respectively. Definitions and calculations of all variables are provided in Appendix A.

	(1)	(2)	(3)	(4)	(5)
Variables	ROA	ROA	ROA	ROA	ROA
ESG Score	0.000	0.000	-0.001	-0.000	0.000
Lagged 1 Year	(0.868)	(0.587)	(0.355)	(0.618)	(0.608)
Control Variables	Yes	Yes	Yes	Yes	Yes
Year FE	No	Yes	No	Yes	Yes
Industry FE	No	No	Yes	Yes	No
Firm FE	No	No	No	No	Yes
Observations	11383	11383	11383	11383	11054
R-squared	0.431	0.440	0.473	0.481	0.818
F	199.175	197.824	199.146	196.761	28.587

Table 17: Robustness - ESG Score Lagged 2 Years Effects on ROA

Table 17 reports the regression results using *ESG Score Lagged 2 Years* as the independent variable of interest. All Models include the control variables described in sub-section 3.1. Model (1) does not account for fixed effects. Models (2) through (5) control for combinations of year, industry, and firm fixed effects. All models cluster standard errors by firm. p-values are in parenthesis . *, ** and *** indicate 10%, 5% and 1% statistical significance, respectively. Definitions and calculations of all variables are provided in Appendix A.

	(1)	(2)	(3)	(4)	(5)
Variables	ROA	ROA	ROA	ROA	ROA
ESG Score	0.001	0.001	-0.000	-0.000	0.000
Lagged 2 Years	(0.463)	(0.397)	(0.759)	(0.872)	(0.666)
Control Variables	Yes	Yes	Yes	Yes	Yes
Year FE	No	Yes	No	Yes	Yes
Industry FE	No	No	Yes	Yes	No
Firm FE	No	No	No	No	Yes
Observations	9156	9156	9156	9156	8902
R-squared	0.407	0.417	0.451	0.461	0.815
F	157.400	155.576	163.570	161.226	22.121

Table 18: Robustness - Change in ESG Score Effects on Change in ROA

Table 18 reports the regression results using the change in *ESG Score* as the independent variable of interest and the change in ROA as the dependent variable. *ESG Score Change* represents the year-over-year change in *ESG Score*, and *ROA Change* represents a year-over-year change in *ROA.* This test includes 8,983 observations changes in *ESG Score.* All Models include the control variables utilized in the primary analysis, as outlined in Table 2. Model (1) does not account for fixed effects. Models (2) through (5) control for combinations of year, industry, and firm fixed effects. All models cluster standard errors by firm. p-values are in parenthesis . *, ** and *** indicate 10%, 5% and 1% statistical significance, respectively. Definitions and calculations of all variables are provided in Appendix A.

Variables	(1) ROA Change	(2) ROA Change	(3) ROA Change	(4) ROA Change	(5) ROA Change
ESG Score Change	-0.000	0.000	-0.000	0.000	-0.000
	(0.549)	(0.828)	(0.499)	(0.891)	(0.997)
Control Variables	Yes	Yes	Yes	Yes	Yes
Year FE	No	Yes	No	Yes	Yes
Industry FE	No	No	Yes	Yes	No
Firm FE	No	No	No	No	Yes
Observations	8905	8905	8905	8905	8562
R-squared	0.018	0.036	0.022	0.040	0.212
F	8.332	9.921	7.315	7.801	11.676

Table 19: Instrumental Variable Approach

Table 19 reports the two-stage least squares regression results using instrumental variables. The first instrumental variable, Religious Rank, measures the religious ranking of the state in which the acquirer's headquarters is located. The ranking is based on the ratio of the number of religious adherents in the acquirer's state to the total population in that state. Based on previous studies, we expect that firms located in more religious states will have higher CSR profiles and thus higher ESG Scores. The second instrumental variable, Blue State, is a dummy variable that equals one if a firm's headquarters is in a blue or Democratic state and zero otherwise. We expect that firms located in Democratic states will have higher CSR profiles. All Models include the control variables utilized in the primary analysis, as outlined in Table 2. Model (1) does not account for fixed effects and clusters standard errors by firm. p-values are in parenthesis . *, ** and *** indicate 10%, 5% and 1% statistical significance, respectively. Definitions and calculations of all variables are provided in Appendix A.

	(1)
Variables	ROA
ESG Score	0.003
	(0.556)
Log (Sales)	0.021***
	(0.000)
Market-to-Book	0.026***
	(0.000)
Leverage	-0.105***
	(0.000)
CAPEX	0.102***
	(0.001)
R&D	-0.991***
	(0.000)
Herfindahl Index	-0.020
	(0.000)
Constant	-0.079***
	(0.000)
Observations	13930
R-squared	0.4490
First Stage F-stat	66.6***
Sargan Score	0.875
(pvalue=0.3495)	
Basmann Chi2	0.875
(pvalue=0.3496)	

Appendix A. Variable Definitions

Variable	Definition
Book Debt	Long-term debt (Compustat Item: DLTT) plus short-term debt (Compustat Item: DLC).
CAPEX	Funds used for additions to Property, Plant, and Equipment (Compustat Item: CAPX) divided by *Total Assets.*
EBITDA	Operating income before depreciation (Compustat Item: OIBDP).
EBITDA Margin	*EBITDA divided* by sales (Compustat Item: SALE).
ESG Score	Weighted average of individual issue scores adjusted relative to industry peers. Numerical ratings ranging from 1 to 10 calculated by MSCI, Inc. *https://www.msci.com/documents/1296102/21901542/MSCI+ESG+Ratings+Methodology+-+Exec+Summary+Nov+2020.pdf*
ESG Score Change	Continuous variable measures the year-over-year change in *ESG Score*. It is calculated as *ESG Score* minus prior year *ESG Score.*
ESGxPandemic	Interaction term calculated as the product of *ESG Score* and *Pandemic Dummy*.
Environmental Pillar Score	Measures firm management of and exposure to key environmental risks and opportunities. Scores represent a weighted average of issue scores and range from 10 (best) to 0 (worst)
EnvironmentalxPandemic	Interaction term calculated as the product of *Environmental Pillar Score* and *Pandemic Dummy*.
Herfindahl Index	Computed measure of market concentration for the firm industry by year. Computed using Stata model (Yujun Lian, 2016. "HHI5: Stata module to generate Herfindahl-Hirschman index (HHI) variables," Statistical Software Components S458203, Boston College Department of Economics. *https://ideas.repec.org/c/boc/bocode/s458203.html*
High Environmental Pillar Score	Dummy variable taking the value of "1" when *Environmental Pillar Score* value falls within the top quartile of observations.
High EnvironmentalxPandemic	Interaction term calculated as the product of *High Environmental Pillar Score* and *Pandemic Dummy*.
High ESG Dummy	Dummy variable taking the value of "1" when *ESG Score* value falls within the top quartile of observations.
High ESGxPandemic	Interaction term calculated as the product of *High ESG Dummy* and *Pandemic Dummy*.
High Social Pillar Score	Dummy variable taking the value of "1" when *Social Pillar Score* value falls within the top quartile of observations.

High SocialxPandemic	Interaction term calculated as the product of *High Social Pillar Score* and *Pandemic Dummy*.
Leverage	*Book Debt* divided by *Market Value*.
Log (Sales)	Natural logarithm of Sales (Compustat Item: SALE).
Low Environmental Pillar Score	Dummy variable taking the value of "1" when *Environmental Pillar Score* value falls within the bottom quartile of observations.
Low EnvironmentalxPandemic	Interaction term calculated as the product of *Low Environmental Pillar Score* and *Pandemic Dummy*.
Low ESG Dummy	Dummy variable taking the value of "1" when *ESG Score* value falls within the bottom quartile of observations.
Low ESGxPandemic	Interaction term calculated as the product of *Low ESG Dummy* and *Pandemic Dummy*.
Low Social Pillar Score	Dummy variable taking the value of "1" when *Social Pillar Score* value falls within the bottom quartile of observations.
Low SocialxPandemic	Interaction term calculated as the product of *Low Social Pillar Score* and *Pandemic Dummy*.
Market Equity	Common shares outstanding (Compustat Item: CSHO) multiplied by the stock price (Compustat Item: PRCC_F).
Market-to-Book	*Market Value* divided by *Total Assets*
Market Value	(*Total Assets* minus book value equity (Compustat Item: CEQ)) + *Market Equity*.
Pandemic Dummy	Dummy variable taking the value of "1" when *ROA* reporting year equals 2020, the year of the Covid-19 pandemic lockdowns.
R&D	Costs related to the development of new products or services (Compustat Item: XRD) divided by *Total Assets*
Raw ESG Score	Weighted average of individual issue scores not industry adjusted. Numerical ratings ranging from 1 to 10 calculated by MSCI, Inc. *https://www.msci.com/documents/1296102/21901542/MSCI+ESG+Ratings+Methodology+-+Exec+Summary+Nov+2020.pdf*
ROA	*EBITDA* divided by *Total Assets*.
ROA Change	Continuous variable measures the year-over-year change in *ROA*. Calculated as *ROA* minus prior-year *ROA*.
ROE	*EBITDA* divided by book value of equity calculated as (*Total Assets* minus total liabilities (Compustat Item: L.T.) plus deferred tax (Compustat Item: TXDITC) minus preferred stock (Compustat Item: pre_stock).
Social Pillar Score	Measures management of and exposure to key social risks and opportunities. Scores represent a weighted average of issue scores ranging from 10 (best) to 0 (worst).

SocialxPandemic	Interaction term calculated as the product of *Social Pillar Score* and *Pandemic Dummy*.
Total Assets	Book value of assets (Compustat Item: AT).